WESTERN AUSTRALIA.

REPORT

OF THE

DEPARTMENT OF MINES

FOR THE YEAR

1908.

1909.

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FOR THE YEAR

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PERTH :
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1909.

Hon. H Gregory, M.L.A.
Minister for Mines

1909

MAP OF WESTERN AUSTRALIA

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

BY

A. GIBB MAITLAND
GOVERNMENT GEOLOGIST.

Scale of English statute miles

50 40 30 20 10 0 50 100 150 200

REFERENCE

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

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

Longitude 121° East of Greenwich

150

H. J. Pether, Government Lithographer, Perth, W.A.
1909

ANNUAL REPORT OF THE DEPARTMENT OF MINES, WESTERN AUSTRALIA, 1908.

TABLE OF CONTENTS.

DIVISION I.

DIVISION II.

DIVISION III.

DIVISION IV.

DIVISION V.

DIVISION VI.

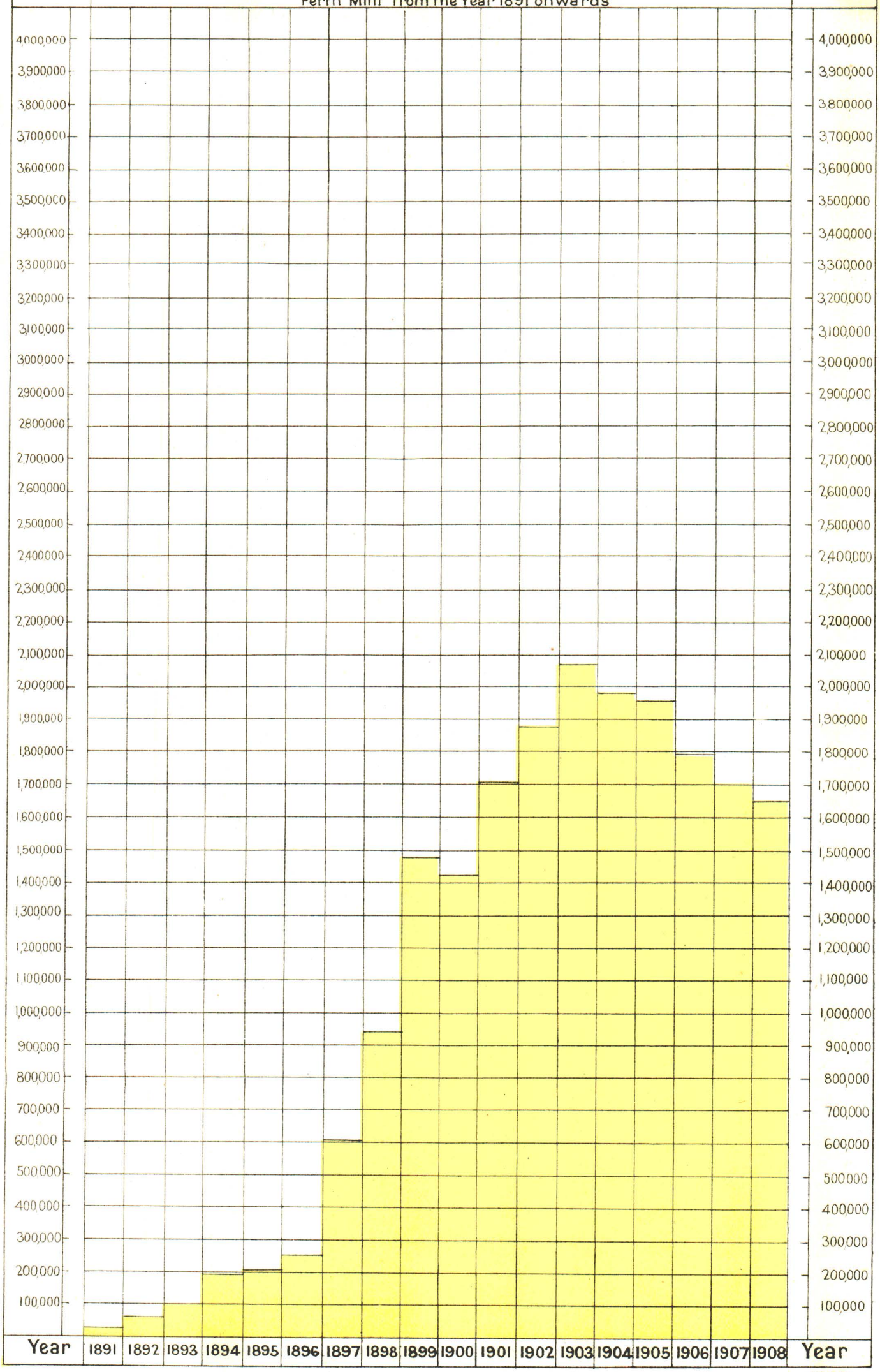
DIVISION VII.

DIVISION VIII.

APPENDIX.

DIAGRAM

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



1909

COMMONWEALTH OF AUSTRALIA.

STATE OF WESTERN AUSTRALIA.

Report of the Department of Mines for the State of Western Australia for the Year 1908.

To the Hon. the Minister for Mines.

SIR,

I have the honour to submit the Annual Report of the Department for the year 1908, 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, 1909.

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 1908 was £7,243,253, being £426,237 less than that for the previous year.

The principal decreases were in gold, copper, and tin. Gold fell off to the extent of £210,867; copper by £146,285; and tin, £82,844. It will be noted by Table I. that the figures quoted for 1907 in some instances differ from those given in that year's report in the same Table. The explanation is that the figures now used are those obtained from the Customs where shown as "exported," they being regarded as more reliable.

The value of the gold yield was £6,999,882, being 96.63 per cent. of the total output. The value of the copper output was £57,091, and of tin, £83,295. The continued low prices ruling for the baser metals is accountable for the depression in that class of mining.

The dividends paid during the year by gold mining companies amounted to £1,487,317, a decrease of £250,846 as compared with the preceding year.

To the end of 1908 the value of the total mineral production was £87,882,109, the total gold production was £85,004,291, while the dividends amounted to £18,963,895.

GOLD.

The gold yield, as in the previous year, again shows a decrease, though not so large a one as in 1907, the difference being 49,643 ozs.; while the output for 1907 was 96,993 ozs. less than that for 1906.

The average value per ton of ore treated in the State as a whole has fallen from 46.81 shillings in 1907 to 43.58 shillings in 1908, and in the East Coolgardie field, from which comes over 50 per cent. of the State's yield, from 49.90 shillings to 44.94 shillings.

Comparing the tonnage of ore treated in the years 1907 and 1908, an increase of 73,781 tons appears in the latter year, during which 3,081,824 tons were treated. The largest increases were in the East Coolgardie and East Murchison fields, the excess of ore treated over the previous year being in the case of the former 90,047 tons, and in the latter 73,392 tons. As in previous years, the fall in the gold production of some of the fields can be traced to the smaller yield of one or two of the larger mines; for example, in the Murchison field, where a decrease of 11,550 ozs. is shown, the amount is considerably exceeded by the decrease in the output of the Great Fingall mine, viz., 17,669 ozs.; in the Mt. Margaret goldfield, where the output decreased by 15,869 ozs., the production of two mines was lesser than the preceding year by 15,038 ozs.; while the decrease of 46,466 ozs. in the East Coolgardie goldfield is exceeded by the decrease of one mine, the Oroya Brown Hill, viz., 56,515 ozs. Seven fields show an increase over the previous year's figures, viz., Ashburton, Dundas, East Murchison, North Coolgardie, Phillips River, West Pilbara, and Yilgarn, and to these should be added Pilbara (see explanation, page 24 herein). In the others the yield has declined, the most marked being East Coolgardie, Coolgardie, Mt. Margaret, and Murchison.

The area held under mining lease for all minerals has decreased from 61,688 acres in 1907 to 58,140 acres in 1908. The area held for gold mining is less by 780 acres than in 1907, and for minerals by 2,768 acres. The area held under Prospecting Areas for both gold and minerals is very large, viz., 36,631 acres, including 19,400 acres for oil and coal, which accounts for the shrinkage in the Lease Areas, the Prospecting Area being a cheaper and consequently a more popular form of title.

The number of men engaged in all classes of mining is 17,266, a decrease of 1,847 as compared with the previous year. The number of men engaged in mining for minerals other than gold has decreased by 685, principally in tin and copper mines. In coal mining there was an increase of 27. In gold mining the decrease was 1,162. The average value of gold produced per man employed on gold mines has increased from £438.32 in 1907 to £443.80 in 1908. The average tonnage raised by each man was 203.69 tons as against 187.32 tons in 1907.

In the East Murchison goldfield vigorous prospecting has been pursued, and the Black Range and Wiluna centres have shown marked progress. The locality known as Youanme, situated about 60 miles south of Sandstone, and formerly forming portion of the North Coolgardie goldfield but now included in the Black Range district, has been showing much promise, and the State Battery about to be erected there will go to prove its permanency or otherwise. The output of this goldfield was greater than the previous year by 25,585 ozs.

In the Murchison goldfield the Cue, Day Dawn, and Mt. Magnet centres each showed decreases totalling 18,577 ozs., but the Nannine centre showed an increase of 7,028 ozs., due in a great measure to the satisfactory returns from the mines in and around Meekatharra which have been opening up splendidly. At

Yaloginda, about eight miles from Meekatharra, in the month of October the holders of the claim known as the "Black Jack" obtained 1,230 ozs. in about a fortnight. Other properties in the vicinity have been opening up excellently, and this centre gives much promise.

The production of the Mt. Margaret field has decreased by 15,869 ozs., as compared with 1907, due largely to the suspension of operations at the Lancefield mine, which, however, is only temporary. The mines in the Leonora district have been developing well.

With the exception of the East Coolgardie goldfield, which shows a decrease over the preceding year of 46,466 ozs., the Coolgardie field shows the largest decrease, the output being 20,781 ozs. less than that for 1907. This decrease is largely attributable to the falling-off in the output from the Westralia East Extension mine at Bonnievale, Burbanks Birthday mine at Burbanks, and the New Bayley's Mines, Ltd., at Coolgardie. In other centres of this field vigorous prospecting has been pursued with encouraging results.

The North Coolgardie field, which in 1907 showed a decrease of 24,166 ozs. as compared with 1906, shows an increase for 1908 of 4,460 ozs. over 1907. With the exception of the Ularring centre, where matters are very quiet, prospecting has been vigorously pursued throughout the field, and localities such as Mt. Ida and Yundaga are looking very bright.

The North-East Coolgardie field again shows a decrease, the production being 8,058 ozs. less than in 1907, and mining matters throughout have been very quiet. The Bulong district of this field was, during the year, attached to the East Coolgardie field.

The Broad Arrow goldfield shows a decrease of 3,477 ozs. as compared with 1907, attributable to the closing down of the Broad Arrow Consols and the New Slug Hill mines. The greatest activity has been in the Siberia centre, from whence two very rich yields were reported, viz., 46 tons for 812 ozs. from Gold Mining Lease 1345W, and 18 tons for 1,173 ozs. from Prospecting Area 251W.

In the East Coolgardie goldfield the number of men engaged in mining was 5,677; and in 1907, 5,812. This goldfield gave employment to about 35 per cent. of the number of men employed in gold mining in the State and produced, during the year 1908, 890,773 fine ounces, about 56 per cent. of the reported yield. The tonnage treated during the year was 1,676,226 tons, being greater than in 1907 by 90,047 tons. The average grade of the ore fell from 49.90 shillings in 1907 to 44.94 shillings in 1908, and the output for the latter year fell by 46,466 ozs., as compared with the production for the year 1907. This can be more than accounted for by the reduced output from one mine alone, viz., the Oroya Brown Hill. Although the output of the field has decreased the developments in the deep levels in most of the large mines have been very satisfactory, and the future is most promising.

The output of the Yilgarn field is greater than in 1907 by 2,871 ozs., and developments in several centres give promise of a marked improvement in the coming year.

The Dundas goldfield again shows a greater production than in the preceding year, the figures for 1908 being 5,041 ozs. greater than for 1907. This field has shown great progress, and the completion of the railway early in 1909 will, it is anticipated, further improve matters.

The Phillips River field, as in 1907, shows an increased gold yield, the figures for 1908 being 91 ozs. greater than in the preceding year. Copper, however, decreased by 8,399 tons, valued at £48,040, due in a large measure to the low prices ruling for the metal. The completion of the railway from Hopetoun to Ravensthorpe and the re-commencement of operations at the Smelters will probably cause an improvement in 1909.

In the northern goldfields, Kimberley, Pilbara, West Pilbara, Ashburton, and Gascoyne, matters have remained very quiet. The construction of the railway from Port Hedland to Marble Bar, now authorised, and the consequent reduction in transport charges, should give an impetus to mining in that district.

TIN.

The quantity of tin exported was less than in 1907 by 409 tons, valued at £82,844. The Greenbushes mineral field was the largest producer, with the Pilbara goldfield next, but both produced less than in the preceding year. The reduction is attributable to the continued low price ruling for the metal.

TANTALITE.

£400 worth of this mineral was exported during the year, but owing to the continued absence of a market little or no work has been done on the mines.

COPPER.

The value of copper exported was less than in 1907 by 2,347 tons, valued at £146,285, doubtless in a great measure owing to the low market price prevailing. The largest producer was the Mt. Morgans district of the Mt. Margaret goldfield, although it was considerably less than in 1907, owing to the closing down of the mines at Eulaminna. West Pilbara ranks next, followed by Phillips River, but each with smaller productions than in the preceding year. In the latter field the completion of the railway from Hopetoun, and the re-commencement of active operations at the smelters should result in an improved output during 1909. One hundred and eighty-eight tons of ore, valued at £2,311, were raised in the Ashburton goldfield, 6.77 tons, valued at £69, in the East Murchison goldfield, 133.55 tons, valued at £1,482, in the Yandanooka mineral field, and 50.67 tons, valued at £330, in the East Coolgardie goldfield. None of these fields produced any copper during 1907. The average number of men engaged in copper mining was 283, and in 1907, 611.

COAL.

Five collieries are working on the Collie Coal field, and the output for the year was 175,248 tons, being 32,875 tons greater than the preceding year, and constituting a record. The improved output is consequent on the establishment of a bunkering trade at Bunbury and Fremantle, which has developed very satisfactorily. The number of men employed, 280, is larger by 27 than in 1907, and the output per man was 626 tons, and in 1907, 563 tons.

OTHER MINERALS.

The quantity of silver obtained as a bye-product and exported was 168,455ozs. valued at £18,877, and for the preceding year 189,265ozs. valued at £25,382. No ironstone or limestone was raised during the

year, the non-working of the smelters at Fremantle and Ravensthorpe resulting in there being no demand for them. In 1907, 1,094 tons of the former, valued at £438, and 3,602 tons of the latter, valued at £1,382, were raised.

Forty tons of asbestos valued at £1,600 were raised in the Pilbara goldfield.

It will be noted that Western Australia is not alone among the Australian States in a reduced gold output, most of the others showing decreases, but, notwithstanding the smaller production in this by far the most important branch of the State's mineral industry, there is every reason to believe that the industry is on a sound footing.

Little outside capital for mining ventures has been introduced into the State for several years past, and without it no speedy progress can be anticipated, for it cannot be expected that the small population of Western Australia, with its immense partially developed territory, can find capital adequate to properly develop its vast mineral resources and at the same time provide the money needed in so many other directions for the development of the State.

That prospecting must be encouraged is true, and the large area held as prospecting areas, over 17,000 acres, goes to show that the prospector is by no means idle. The fact, however, remains that, no matter what facilities are given for prospecting, the resources of the average prospector are necessarily limited, and he can do little more, unless the surface prospects are exceptionally rich, than prove the existence of minerals to a shallow depth; so that, unless he has a prospect of obtaining assistance for further development, the inducements, under present conditions, to unearth new deposits are few.

Much mineral territory in this State is unprospected; many known mineral deposits are unworkable owing to their remoteness from railways or sea transport; but in the vicinity of many of the older and easily accessible mining centres much country remains that will well repay careful prospecting, as is evidenced by many recent discoveries.

PART II.—MINERALS RAISED.

TABLE 1.

Quantity and Value of all the Minerals produced during 1907 and 1908.

Description of Minerals.	1907.		1908.		Increase or Decrease for Year compared with 1907.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
		£		£		£
1. Antimony (exported), statute tons ...	25	630	..	...	− 25	− 630
2. Asbestos (reported) do.	...	...	40	1,600	+ 40	+ 1,600
3. Coal (reported) do.	142,373	55,158	175,248	75,694	+ 32,875	+ 20,536
4. Copper { Ore (exported), do.	3,727	61,493	2,503	29,272	− 1,224	− 32,221
4. Copper { Ingot and Matte (exported), statute tons	1,602	141,883	479	27,819	− 1,123	− 114,064
5. Gold (exported and minted), fine ounces...	1,697,554	7,210,749	1,647,911	6,999,882	− 49,643	− 210,867
6. Ironstone (reported), statute tons ...	1,094	438	...	...	− 1,094	− 438
7. Lead Ore (exported) do.	...	307	...	...	...	− 307
8. Limestone (reported) do.	3,602	1,382	...	...	− 3,602	− 1,382
9. Mica (exported) do.	...	...	...	10	...	+ 10
10. Pig Lead (exported) do.	...	...	...	...	...	...
11. Scheelite (exported) do.	4	140	...	...	− 4	− 140
12. Silver (exported), fine ounces	189,265	25,382	168,455	18,877	− 20,810	− 6,505
13. Silver Lead Ore (exported), statute tons	111	1,866	405	4,427	+ 294	+ 2,561
14. Tantalite (exported), statute tons ...	...	...	400	...	...	+ 400
15. Tin, Ore and Ingot (exported), statute tons	1,502	166,139	1,093	83,295	− 409	− 82,844
16. Zinc, Spelter, etc. (exported), statute tons	65	3,390	...	...	− 73	− 3,390
Unenumerated (exported)	...	533	...	1,977	...	+ 1,444
Total Values ... £	...	7,669,490	...	7,243,253	...	− 426,237

The above Table shows a decrease of £426,237, the principal decreases being in gold £210,867; copper £146,285; and tin £82,844. The coal output shows an increase of £20,536, and a few other minerals slight increases. It should be noted that the figures in this Table for 1907 differ from those published for that year, the exported figures being given for some minerals, they being more reliable than the reported ones.

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 1908.

Fig. 1

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

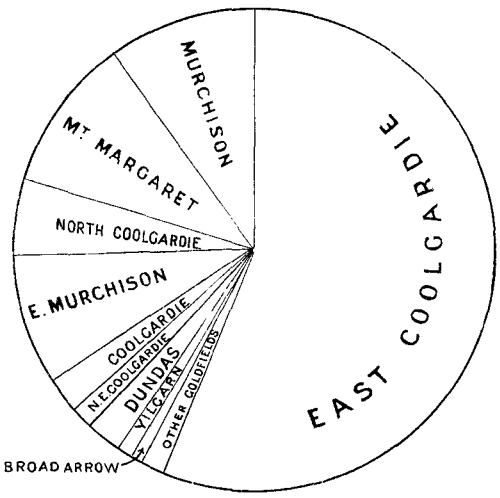


Fig. 2

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

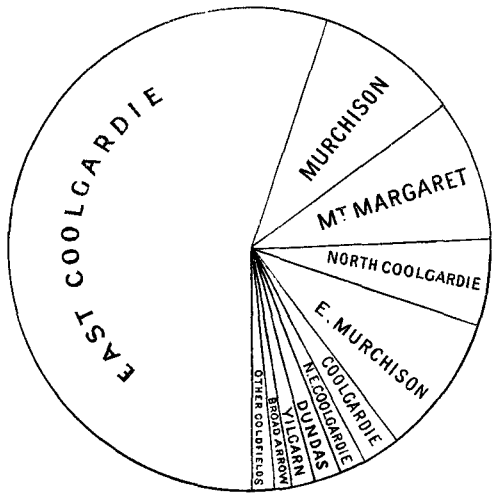


Fig. 3

Value of Gold and other Minerals.

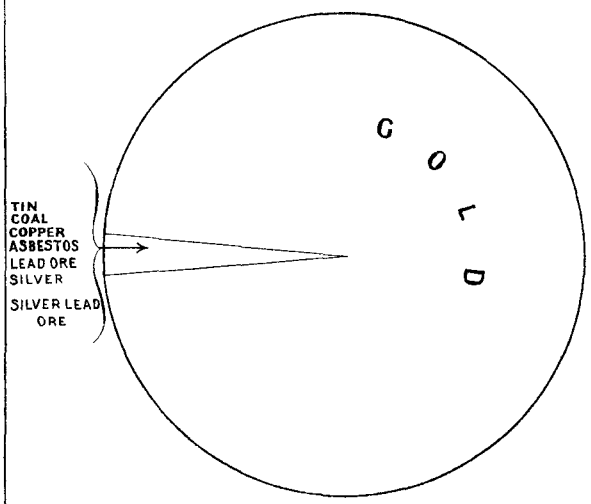


Fig. 4

Value of Minerals other than Gold.

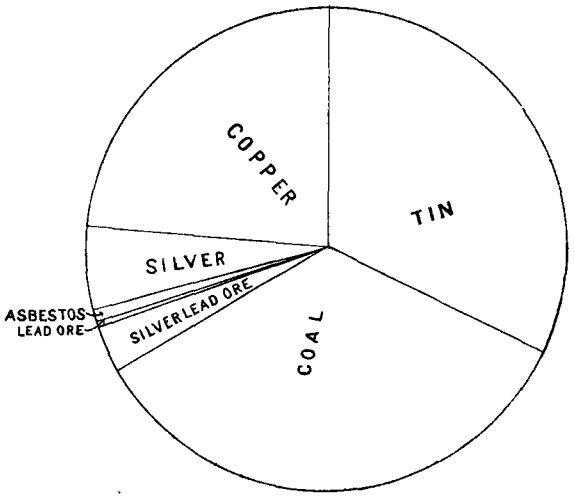


Fig. 5

Areas of Land leased for Goldmining on various Goldfields.

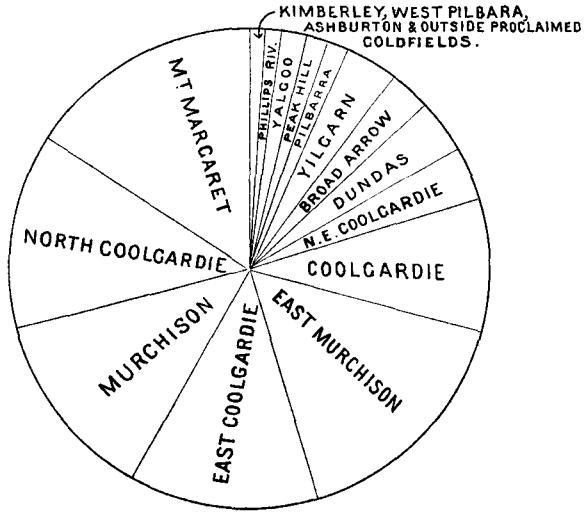


Fig. 6

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

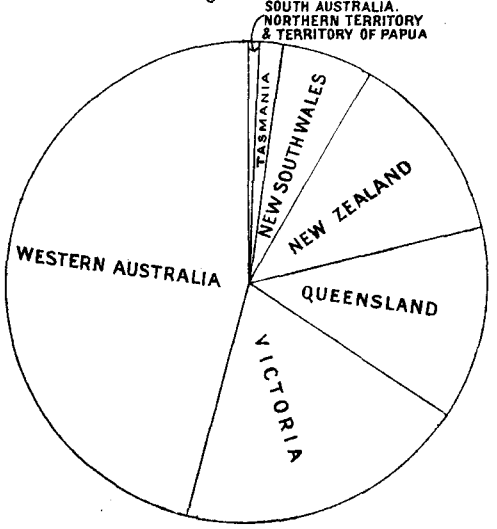


TABLE 2.

Summary of Gold Exported and received at the Perth Branch of the Royal Mint during 1907 and 1908, 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.	
	1907.	1908.	1907.	1908.	1907.	1908.	1907.	1908.
	fine ozs.	fine ozs.	fine ozs.	fine ozs.			shillings.	shillings.
1. Kimberley	362	**338**	337	**150**	·02	**·01**	33·34	**38·37**
2. Pilbara	4,131	**8,172**	10,043	**6,966**	·60	**·43**	108·60	**155·66**
3. West Pilbara	332	**1,077**	464	**1,006**	·03	**·06**	60·84	**35·07**
4. Ashburton	42	**46**	143	**162**	·01	**·01**	...	...
5. Gascoyne	8	**32**	...	...	...	...	...	...
6. Peak Hill	5,919	**9,864**	8,111	**7,980**	·48	**·50**	13·20	**13·17**
7. East Murchison	120,627	**147,729**	119,207	**144,792**	7·13	**9·07**	40·40	**37·88**
8. Murchison	170,309	**157,024**	169,398	**157,848**	10·19	**9·89**	44·82	**41·38**
9. Yalgoo	3,200	**457**	4,371	**551**	·26	**·03**	45·80	**32·70**
10. Mt. Margaret	178,049	**167,204**	169,466	**153,597**	10·13	**9·62**	39·92	**38·53**
11. North Coolgardie	85,942	**83,402**	86,791	**91,251**	5·19	**5·72**	56·01	**64·36**
12. Broad Arrow	17,903	**11,560**	21,907	**18,430**	1·31	**1·15**	48·15	**57·72**
13. North-East Coolgardie ...	28,533	**24,827**	35,130	**27,073**	2·10	**1·70**	44·88	**41·65**
14. East Coolgardie	966,689	**925,686**	937,239	**890,773**	56·02	**55·81**	49·90	**44·94**
15. Coolgardie	62,722	**41,854**	60,810	**40,029**	3·63	**2·51**	45·99	**46·12**
16. Yilgarn	23,311	**20,866**	19,292	**22,163**	1·15	**1·39**	32·20	**34·82**
17. Dundas	22,831	**41,203**	23,602	**28,644**	1·41	**1·80**	60·26	**57·71**
18. Phillips River	5,559	**4,600**	4,314	**4,405**	·26	**·28**	98·79	**55·95**
State generally	1,085	**1,970**	1,368	**271**	·08	**·02**	...	...
Totals and averages ...	1,697,554	**1,647,911**	1,671,993	**1,596,091**	100·00	**100·00**	46·80	**43·58**

Throughout this report, in comparing the outputs of the various fields, the reported yields are referred to. 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. The Ashburton, Dundas, East Murchison, North Coolgardie, Phillips River, West Pilbara, and Yilgarn each show an increase; the others decreases, with the exception of Pilbara, the output of which field for 1907 included figures for preceding years not hitherto reported, and the output for 1908 was larger than the actual one for 1907. The average value per ton of ore treated is 43.58 shillings as against 46.80 shillings in 1907. The figures for the East Coolgardie and North-East Coolgardie fields are affected this year by the excision of the Bulong district from the latter and its inclusion in the former.

TABLE 3.

Number of Gold-producing Mines in the several Goldfields and Districts during 1907 and 1908.

Goldfield.	District.	1907.		1908.		Increase or Decrease.
		District.	Goldfield.	District.	Goldfield.	
Kimberley	... ...	...	1	...	1	=
Pilbara	Marble Bar ...	8	20	12	25	+ 5
	Nullagine	12		13		
West Pilbara	... ...	...	3	...	6	+ 3
Ashburton	... ...	...	...	...	...	...
Gascoyne	... ...	...	...	...	...	...
Peak Hill	... ...	...	8	...	9	+ 1
East Murchison ...	Lawlers	49	114	49	102	− 12
	Black Range ...	65		53		
Murchison	Cue	63	184	67	188	+ 4
	Nannine	68		66		
	Day Dawn ...	12		10		
	Mt. Magnet ...	41		45		
Yalgoo	... ...	...	13	...	10	− 3
Mt. Margaret ...	Mt. Morgans ...	22	125	21	116	− 9
	Mt. Malcolm ...	45		48		
	Mt. Margaret ...	58		47		
North Coolgardie ...	Menzies	64	175	59	170	− 5
	Ularring	34		32		
	Niagara	35		31		
	Yerilla	42		48		
Broad Arrow	... ...	...	50	...	52	+ 2
North-East Coolgardie	Kanowna	50	54	45	49	− 5
	Kurnalpi	4		4		
East Coolgardie ...	East Coolgardie ...	101	121	99	114	− 7
	Bulong	20		15		
Coolgardie	Coolgardie	78	107	67	90	− 17
	Kunanalling ...	29		23		
Yilgarn	... ...	...	31	...	39	+ 8
Dundas	... ...	...	32	...	37	+ 5
Phillips River	... ...	...	24	...	26	+ 2
Totals		...	1,062	...	1,034	− 28

TABLE 4.

Increase or Decrease in Output of certain producing Gold Mines in 1908, as compared with 1907.

Goldfield.	District.	Name of Mine.	Production.		Increase or Decrease for Year, compared with 1907.
			1907.	1908.	
			Fine ozs.	Fine ozs.	Fine ozs.
Peak Hill ...	... ...	1. Peak Hill Goldfield, Ltd.	7,375·53	7,199·77	− 175·76
East Murchison ...	Lawlers ...	2. Bellevue, Ltd.	7,301·93	6,715·13	− 586·80
Do. ...	do. ...	3. Gwalia Consolidated, Ltd.	10,675·90	17,213·85	+ 6,537·95
Do. ...	do. ...	4. Northern Mines, Ltd.	12,301·04	18,802·94	− 6,501·90
Do. ...	do. ...	5. Vivien G.M. Co., Ltd.	10,679·04	12,996·22	+ 2,317·18
Do. ...	Black Range ...	6. Black Range Kohinoor Mining Co., N.L.	1,709·87	2,581·83	+ 871·96
Do. ...	do. ...	7. Black Range Mining Co., N.L.	18,344·56	19,850·06	+ 1,505·50
Do. ...	do. ...	8. Havilah G.M. Co., N.L.	6,993·09	6,129·96	− 863·13
Do. ...	do. ...	9. Maninga Marley leases	3,860·97	473·36	− 3,387·61
Do. ...	do. ...	10. Oroya Black Range, Ltd.	13,059·26	30,460·95	+17,401·69
Murchison ...	Cue	11. Barrambie Ranges G.M. Co., N.L. ...	5,683·13	2,885·62	− 2,797·51
Do. ...	do. ...	12. Victory United G.M. Co., N.L.	4,268·39	1,714·47	− 2,553·92
Do. ...	Nannine ...	13. Fenian	4,192·57	6,265·25	+ 2,072·68
Do. ...	do. ...	14. Ingliston Extended G.Ms., Ltd.	6,280·34	6,338·64	+ 58·30
Do. ...	do. ...	15. Marmont	2,887·69	6,065·94	+ 3,178·25
Do. ...	do. ...	16. New Alliance leases	2,686·28	1,669·63	− 1,016·65
Do. ...	Day Dawn ...	17. Great Fingall Consolidated, Ltd.	99,253·43	81,584·62	−17,668·81
Do. ...	Mt. Magnet ...	18. Great Boulder No. 1, Ltd.	...	4,201·46	+ 4,201·46
Do.	do. ...	19. Morning Star Quartz Co., N.L.	3,428·53	444·69	− 2,983·84
Yalgoo	... ...	20. Royal Standard leases	1,902·68	11·81	− 1,890·87
Mt. Margaret ...	Mt. Morgans ...	21. Alex Junior	1,786·31	396·90	− 1,389·41
Do.	do.	22. Mt. Morgans Transvaal G.Ms., Ltd. ...	524·14	1,099·89	+ 575·75
Do.	do.	23. Westralia Mt. Morgans G.Ms. Co., Ltd. ...	19,600·03	16,316·63	− 3,283·40
Do.	Mt. Malcolm ...	24. Great Tower Hill G.Ms., Ltd.	1,043·41	211·74	− 831·67
Do.	do.	25. Malcolm Prospecting Co., N.L.	341·65	2,159·17	+ 1,817·52
Do.	do.	26. Merton's Reward G.M. Co., Ltd.	5,707·32	2,202·54	− 3,504·78
Do.	do.	27. Sons of Gwalia, Ltd.	56,905·81	55,587·04	− 1,318·77
Do.	do.	28. Sons of Gwalia South G.Ms., Ltd.	5,319·91	14,377·10	+ 9,057·19
Do.	Mt. Margaret ...	29. Augusta	3,230·91	1,991·93	− 1,238·98
Do.	do.	30. Ida H. G.M. Co., Ltd.	9,426·02	7,662·68	− 1,763·34
Do.	do.	31. Lancefield G.M. Co., Ltd.	25,993·20	14,460·23	−11,532·97
North Coolgardie ...	Menzies	32. Menzies Consolidated, Ltd.	9,953·32	10,691·98	+ 738·66
Do.	do.	33. Menzies Gold Mine leases	4,466·00	3,162·97	− 1,303·03
Do.	do.	34. Menzies Mining and Exploration Corporation, Ltd.	2,654·10	1,137·31	− 1,516·79
Do.	do.	35. Queensland Menzies G.M. Co., N.L. ...	1,328·99	123·92	− 1,205·07
Do.	Ularring... ...	36. Golden Pole G.Ms., Ltd.	6,891·09	7,873·58	+ 982·49
Do.	do.	37. Lady Gladys G.M. Co., N.L....	2,784·82	1,770·69	− 1,014·13
Do.	do.	38. Westralia Waihi G.Ms., N.L.	2,843·94	3,124·12	+ 280·18
Do.	Niagara	39. Englishman: Cosmopolitan Proprietary, Ltd.	7,758·74	10,333·36	+ 2,574·62
Do.	do.	40. Orion Mines, Ltd.	1,200·95	2,535·61	+ 1,334·66
Do.	Yerilla	41. Neta leases	1,181·85	629·18	− 552·67
Do.	do.	42. Potosi Consolidated, Ltd.	1,525·25	1,088·03	− 437·22
Broad Arrow ...	... ...	43. New Slug Hill G.M. Co., Ltd.	4,850·42	341·11	− 4,509·31
N.E. Coolgardie ...	Kanowna ...	44. Gentle Polly	3,260·24	2,044·34	− 1,215·90
Do.	do. ...	45. North White Feather G.Ms., Ltd. ...	7,852·14	9,775·89	+ 1,923·75
Do.	do. ...	46. Queen Margaret G.M. Co., Ltd.	6,060·95	2,929·60	− 3,131·35
Do.	do. ...	47. White Feather Main Reef (1906), Ltd. ...	1,960·05	2,104·80	+ 144·75
East Coolgardie ...	East Coolgardie	48. Associated G.Ms. of W.A., Ltd.	56,023·31	60,480·63	+ 4,457·32
Do.	do. ...	49. Associated Northern Blocks (W.A.), Ltd....	38,829·85	25,015·49	−13,814·36
Do.	do. ...	50. Golden Horseshoe Estates Co., Ltd. ...	147,744·38	145,469·75	− 2,274·63
Do.	do. ...	51. Golden Ridge G.M. Co., N.L.	9,089·91	14,424·45	+ 5,334·54
Do.	do. ...	52. Great Boulder Perseverance G.M. Co., Ltd.	80,927·16	71,025·63	− 9,901·53
Do.	do. ...	53. Great Boulder Proprietary G.Ms., Ltd. ...	132,793·33	136,579·03	+ 3,785·70
Do.	do. ...	54. Hainault G.Ms., Ltd.	16,106·00	19,084·60	+ 2,978·60
Do.	do. ...	55. Hill End Consols	8,138·79	235·74	− 7,903·05
Do.	do. ...	56. Ivanhoe Gold Corporation, Ltd.	123,118·25	117,855·76	− 5,262·49
Do.	do. ...	57. Kalgurli G.Ms., Ltd.	81,832·80	81,970·70	+ 137·90
Do.	do. ...	58. Lake View Consols, Ltd.	38,436·04	36,115·51	− 2,320·53
Do.	do. ...	59. Oroya Brownhill Co., Ltd.	101,709·79	45,194·41	−56,515·38
Do.	do. ...	60. South Kalgurli G.Ms., Ltd.	32,401·01	34,948·38	+ 2,547·37
Do.	Bulong	61. New Santa Claus G.M. Co., Ltd.	1,283·57	845·82	− 437·75
Do.	do. ...	62. Queen Margaret G.M. Co., Ltd.	985·45	174·49	− 810·96
Coolgardie ...	Coolgardie ...	63. Burbanks Birthday G.Ms., Ltd.	5,892·27	3,110·81	− 2,781·46
Do.	do.	64. Burbanks Main Lode (1904), Ltd.	8,112·41	7,987·57	− 124·84
Do.	do.	65. Redhill Westralia G.Ms., Ltd.	3,440·82	2,575·25	− 865·57
Do.	do.	66. Westralia and East Extension Mines, Ltd.	12,374·58	5,353·19	− 7,021·39
Do.	Kunanalling ...	67. Carbine	1,338·62	1,657·26	+ 318·64
Yilgarn	... ...	68. British and Foreign Development Syndicate, Ltd.	4,642·53	4,550·19	− 92·34
Do.	... ...	69. Greenmount Mines, Ltd.	4,035·60	3,131·39	− 904·21
Do.	... ...	70. Transvaal	2,371·05	387·88	− 1,983·17
Dundas	... ...	71. Cumberland G.M. Co., N.L.	7,159·55	7,137·61	− 21·94
Do.	... ...	72. Mararoa G.M. Co., N.L.	2,606·09	8,188·08	+ 5,581·99
Do.	... ...	73. Princess Royal G.M. Co., N.L.	2,756·77	3,221·58	+ 464·81
Phillips River ...	... ...	74. Flag Gold and Copper Mining Co., Ltd. ...	...	1,234·02	+ 1,234·02
Do.	... ...	75. Two Boys	44·38	964·09	+ 919·71
		Totals	1,343,530·10	1,248,657·85	−94,872·25

Of the above 75 gold mines, 44 produced 186,709·29 fine ounces less, and 31 produced 91,837·04 fine ounces more than in 1907, being a net decrease of 94,872·25 fine ounces.

TABLE 5.

Averages of Gold Ore raised and treated, and Gold produced therefrom, per man employed on the several Goldfields of the State, during 1907 and 1908.

Goldfield.	1907.				1908.			
	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	...	...	...	...	...	130·00	...	58·71
2. Pilbara	125·35	66·16	160·21	84·56	49·43	22·40	90·57	41·04
3. West Pilbara	75·75	27·55	54·25	19·73	68·36	35·81	28·22	14·78
4. Ashburton	...	...	...	...	...	...	...	...
5. Gascoyne	...	...	...	...	...	...	...	...
6. Peak Hill	821·03	410·52	127·61	63·81	944·14	392·76	146·31	60·87
7. East Murchison	321·19	157·96	152·58	75·04	356·00	190·92	158·72	85·12
8. Murchison	340·21	193·84	179·51	102·29	375·34	201·70	182·80	98·24
9. Yalgoo	176·34	85·06	95·07	45·86	38·93	18·79	14·98	7·23
10. Mt. Margaret	322·20	167·79	151·47	78·89	319·45	176·67	144·85	80·11
11. North Coolgardie	133·73	80·01	88·17	52·75	124·74	73·61	94·50	55·77
12. Broad Arrow	221·37	130·49	125·46	73·95	201·74	111·79	137·07	75·95
13. North-East Coolgardie ...	144·17	92·00	76·16	48·60	168·54	109·32	82·63	53.60
14. East Coolgardie	491·07	275·76	288·47	161·99	536·91	295·32	284·04	156·24
15. Coolgardie	147·54	93 56	79·87	50·65	130·40	80·70	70·80	43·81
16. Yilgarn	290·48	137·02	110·08	51·92	337·80	154·87	138·43	63·46
17. Dundas	189·99	103·63	134·76	73·51	229·62	131·32	155·97	89·20
18. Phillips River	80·22	46·13	93·28	53·64	181·11	10·03	119·29	66·07
Total Averages ...	336·28	187·32	185·25	103·19	366·75	203·69	188·12	104·48

The average value of gold produced per man employed above and underground was £438.32 in 1907, and £443.80 in 1908. The average tonnage of ore raised increased from 187.32 tons to 203.69 tons. The average tonnage raised per man is as in the preceding year highest in the Peak Hill and East Coolgardie Goldfields, viz.:—392.76 tons, average value £259 in the former, and 295.32 tons, average value £664 in the latter.

TABLE 6.

Output of Gold from the several States of Australia, the Territory of Papua, and the Dominion of New Zealand during 1908.

State.	Output of Gold.	Value.	Percentage of Output.
	Fine ozs.	£	
1. Western Australia	1,647,911	6,999,882	46·31
2. Victoria	670,910	2,849,838	18·85
3. Queensland	465,085	1,975,554	13·07
4. New South Wales	224,792	954,854	6·31
5. Tasmania	57,085	242,482	1·61
6. South Australia and Northern Territory ...	8,552	36,243	·24
7. Territory of Papua	12,439	52,837	·35
8. New Zealand	471,967	2,004,789	13·26
Total	3,558,741	15,116,479	100·00

TABLE 7.

Dividends paid by Western Australian Gold Mining Companies during 1908 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 1908. No.	Paid in 1908. Total Amount.	Grand Total paid to end of 1908.
		£		£ s. d.	£ s. d.		£	£
Peak Hill	Peak Hill Goldfields, Ltd.	160,000	Ord. 25,000 Def. 300,000	1 0 0 0 4 0	1 4 0	...	...	160,666
East Murchison	Black Range G.M. Co., N.L.	80,000	72,500	1 0 0	1 0 0	12	37,156	97,812
Do.	Havilah G.M. Co., N.L.	48,000	42,000	1 0 0	1 0 0	3	3,150	5,250
Do.	Oroya Black Range, Ltd.	200,000	200,000	1 0 0	1 0 0	2	25,000	25,000
Do.	Other Companies ...	...	...	...	...	...	...	62,750
Murchison	Great Fingall Consolidated, Ltd.	125,000	250,000	0 10 0	0 10 0	4	131,250	1,675,000
Do.	Other Companies ...	...	...	...	...	...	...	77,945
Mt. Margaret	Sons of Gwalia, Ltd.	350,000	325,000	1 0 0	1 0 0	4	56,875	515,050
Do.	Sons of Gwalia South G.Ms., Ltd.	30,000	60,000	0 10 0	0 10 0	3	12,500	12,500
Do.	Other Companies ...	...	...	...	...	...	...	328,830
North Coolgardie	Various Companies	...	...	...	...	...	...	438,931
North-East Coolgardie	Various Companies	...	...	...	...	...	...	82,971
East Coolgardie	Associated Gold Mines of W.A., Ltd.	500,000	495,364	1 0 0	1 0 0	3	86,688	641,913
Do.	Associated Northern Blocks (W.A.), Ltd.	350,000	350,000	1 0 0	1 0 0	2	87,500	612,500
Do.	Golden Horseshoe Estates Co., Ltd.	1,500,000	300,000	5 0 0	5 0 0	3	240,000	2,760,000
Do.	Golden Ridge G.M. Co., N.L.	50,000	92,805	0 10 0	0 10 0	4	23,948	33,597
Do.	Great Boulder Perseverance G.M. Co., Ltd.	1,500,000	1,400,007	1 0 0	1 0 0	1	35,000	1,356,250
Do.	Great Boulder Proprietary G.Ms., Ltd.	175,000	1,750,000	0 2 0	0 2 0	4	262,500	2,906,800
Do.	Ivanhoe Gold Corporation, Ltd.	1,000,000	200,000	5 0 0	5 0 0	4	240,000	2,108,750
Do.	Kalgurli G.Ms., Ltd.	120,000	120,000	1 0 0	1 0 0	4	172,500	757,500
Do.	Lake View Consols, Ltd.	350,000	346,771	1 0 0	1 0 0	1	17,500	1,413,750
Do.	Oroya Brown Hill Co., Ltd.	450,000	450,000	1 0 0	1 0 0	2	33,750	2,101,241
Do.	South Kalgurli G.Ms., Ltd.	200,000	200,000	1 0 0	1 0 0	2	10,000	65,000
Do.	Other Companies ...	...	...	...	...	...	...	194,310
Coolgardie	Burbanks Main Lode (1904), Ltd.	30,000	150,000	0 4 0	0 4 0	1	3,000	6,000
Do.	Other Companies ...	...	...	...	...	...	...	323,001
Yilgarn	Various Companies ...	...	...	...	...	...	...	48,578
Dundas	Cumberland G.M. Co., N.L.	40,000	80,000	0 10 0	0 6 0	2	4,000	20,000
Do.	Mararoa G.M. Co., N.L.	40,000	100,000	0 8 0	0 3 0	1	5,000	5,000
	Other Companies ...	...	...	...	...	...	...	127,000
	Total Dividends paid during 1908	...	...	...	...	...	£1,487,317	...
	Total Dividends paid to end of 1908	...	...	...	...	...	...	£18,963,895

TABLE 8.

Quantity and Value of Minerals, other than Gold and Coal, reported to the Mines Department during 1908.

Goldfield, District, or Mineral Field.	Quantity.	Value.	Increase or Decrease for Year compared with 1907.	
			Quantity.	Value.
	tons.	£	tons.	£
BLACK TIN.				
Pilbara Goldfield (Marble Bar District) ...	403·03	30,636	– 450·66	– 54,967
Greenbushes Mineral Field	576·33	41,046	– 193·67	– 31,999
Total	979·36	71,682	– 644·33	– 86,966
COPPER ORE.				
Pilbara Goldfield (Marble Bar District) ...	...	...	– 7·77	– 190
West Pilbara Goldfield	1,486·00	17,691	– 1,879·50	– 45,857
Ashburton Goldfield	188·00	2,311	+ 188·00	+ 2,311
East Murchison Goldfield (Lawlers District) ...	6·77	69	+ 6·77	+ 69
Murchison Goldfield (Nannine District) ...	...	...	...	...
Murchison Goldfield (Day Dawn District) ...	...	...	– 31·71	– 274
Yalgoo Goldfield	9·50	97	– ·50	– 33
Northampton Mineral Field	...	...	...	...
Yandanooka Mineral Field	133·55	1,482	+ 133·55	+ 1,482
Mt. Margaret Goldfield (Mt. Morgans District)	4,404·10	20,221	– 737·42	– 38,667
Mt. Margaret Goldfield (Mt. Margaret District)	...	...	– 2·85	– 26
North Coolgardie Goldfield (Menzies District)	...	...	– 1·42	– 18
East Coolgardie Goldfield (East Coolgardie District)	50·67	330	+ 50·67	+ 330
Phillips River Goldfield	2,015·71	9,233	– 8,398·86	– 48,040
State generally	...	..	– 3·08	– 40
Total	8,294·30	51,434	– 10,684·12	– 128,953
IRONSTONE.				
State generally	...	...	– 1,093·53	– 438
LEAD ORE.				
Northampton Mineral Field	57·00	461	+ 47·00	+ 333
SILVER LEAD ORE.				
Ashburton Goldfield	727·25	6,914	+ 727·25	+ 6,914
LIMESTONE.				
Murchison Goldfield (Cue District)	...	...	– 298·00	– 772
Yilgarn Goldfield	...	...	...	...
State generally	...	...	– 3,303·95	– 610
Total	...	...	– 3,601·95	– 1,382
ASBESTOS.				
Pilbara Goldfield (Marble Bar District) ...	40·00	1,600	+ 40 00	+ 1,600

The output of black tin shows a decrease, and the same obtains with copper. Some of the fields which produced copper in the preceding year did not produce any, but on the other hand Ashburton, East Murchison, and East Coolgardie, from which none was produced in 1907, each contributed to the output in 1908. Yandanooka is also shown as a producer, but the figures given were not reported in previous years.

The Pilbara field also produced £1,600 worth of asbestos.

£400 of tantalite is shown in Table I. as exported, this metal was raised in previous years.

It will be noted that the figures in this Table differ from those in Table I. 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 9.

Quantity of Coal raised during 1907 and 1908, 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	1907	142,373	55,158	74	179	795	563
	1908	**175,248**	**75,694**	**76**	**204**	**859**	**626**

The number of men employed in connection with Collieries has increased by 27, and the output of coal by 32,875 tons.

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

TABLE 10.

Total Number and Acreage of Leases held for Mining on 31st December, 1907 and 1908.

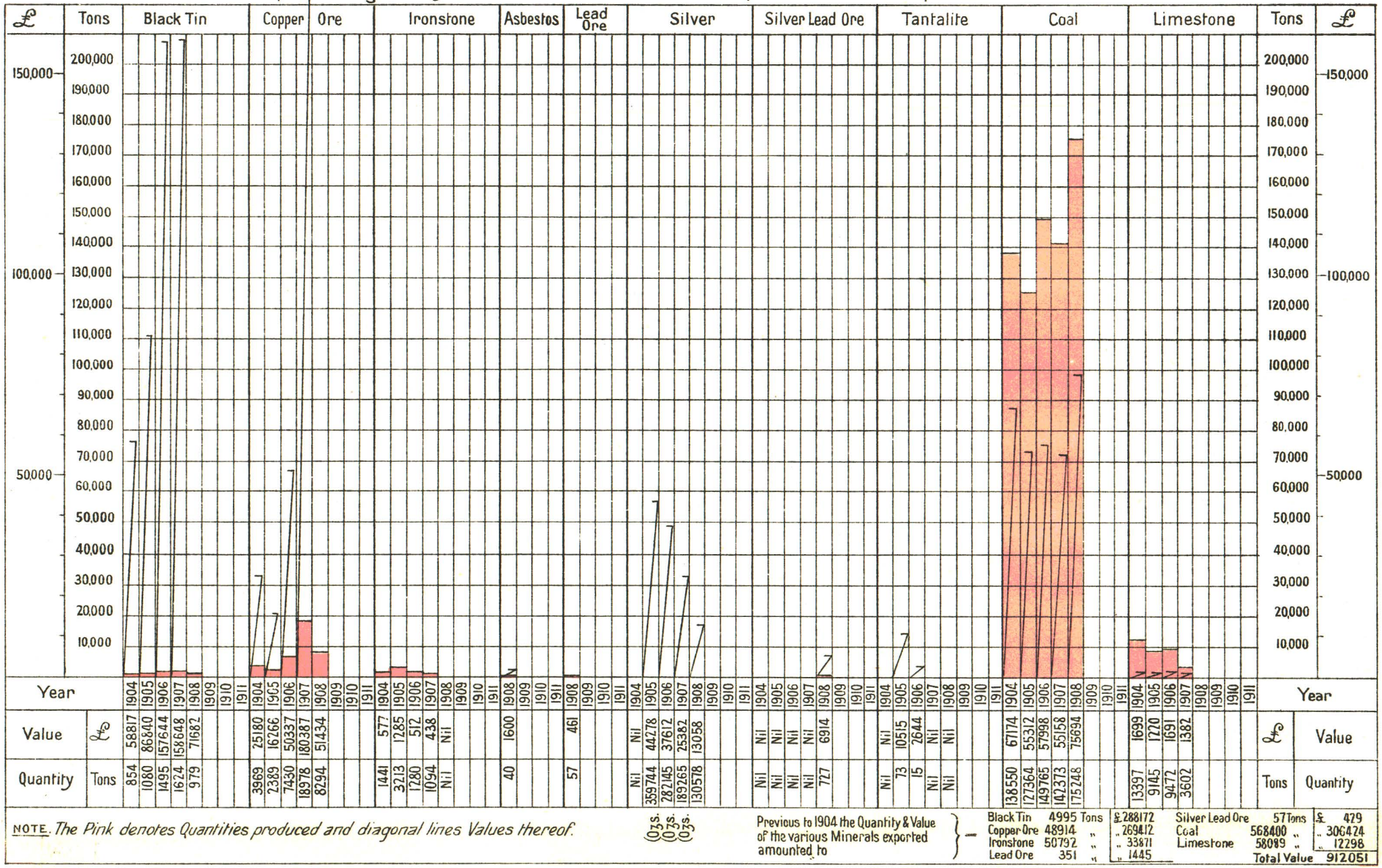
Description of Leases.	1907.		1908.	
	No.	Acreage.	No.	Acreage.
Gold mining leases on Crown land	2,031	27,587	**1,972**	**26,665**
„ „ „ private property ...	...	...	**7**	**142**
Mineral leases on Crown land	471	33,962	**326**	**31,263**
„ „ private property	5	139	**3**	**70**
	2,507	61,688	**2,308**	**58,140**

The total number of Leases held for mining has decreased by 199 as compared with 1907, and the acreage by 3,548 acres. Leases for gold-mining have decreased in number by 52, and in area by 780 acres.

The acreage held under Mineral Leases has decreased by 2,768 acres, and the number of Leases by 147. The number of Leases for mining on private property has increased by 5 and the area by 73 acres.

DIAGRAM

of the Mineral Output, showing Quantity & Value of Minerals other than Gold, reported to the Mines Department from the Year –1904– onwards



NOTE. *The Pink denotes Quantities produced and diagonal lines Values thereof.*

(0)3s. (0)3s. (0)3s.

Previous to 1904 the Quantity & Value of the various Minerals exported amounted to

Black Tin	4995 Tons	£ 288172	
Copper Ore	48914 "	" 269412	
Ironstone	50792 "	" 33871	
Lead Ore	351 "	" 1445	
Silver Lead Ore	57 Tons	£ 429	
Coal	568400 "	" 306424	
Limestone	58089 "	" 12298	
		Total Value	912051

1909

Table 11.

Number and Acreage of Gold Mining Leases in force each year for the Five Years ending the 31st December, 1908.

Goldfields.		Districts.		1904.		1905.		1906.		1907.		1908.		Percentage of Total Acreage.		Increase or Decrease for 1908 compared with 1907.		Goldfields.
Name.	Proclaimed.	Name.	Proclaimed.	Leases.	Acreage.	Leases.	Acreage.	Leases.	Acreage.	Leases.	Acreage.	Leases.	Acreage.	1907.	1908.	Increase.	Decrease.	
																acres.	acres.	
Kimberley ...	20-5-86	... ...	...	2	13	2	13	2	13	2	13	**2**	**13**	·04	**·04**	...	...	Kimberley
Yilgarn	1-10-08	... ...	...	62	861	61	924	64	1,017	60	924	**60**	**1,011**	3·34	**3·73**	87	...	Yilgarn
Pilbara	1-10-88	Marble Bar ...	6-11-96	20	204	22	267	19	204	14	192	**14**	**180**	1·63	**1·66**	...	4	Pilbara
		Nullagine ...	6-11-96	24	286	30	322	29	320	23	257	**24**	**265**					
Ashburton ...	11-12-90	... ...	...	...	...	1	12	1	12	...	...	**1**	**6**	...	**·02**	6	...	Ashburton
Murchison ...	24-9-91	Cue	10-1-96	113	1,007	110	1,152	111	1,294	111	1,386	**99**	**1,152**	15·11	**13·89**	...	442	Murchison
		Nannine ...	7-12-94	98	1,187	119	1,291	131	1,560	125	1,466	**126**	**1,491**					
		Day Dawn ...	10-1-96	98	1,058	98	1,035	87	890	84	832	**65**	**639**					
		Mount Magnet ...	7-12 94	77	656	66	532	54	443	52	484	**47**	**444**					
Dundas	31-8-93	... ...	...	88	913	84	956	59	732	59	740	**78**	**1,038**	2·69	**3·87**	298	...	Dundas
Coolgardie ...	6-4-94	Coolgardie ...	1-9-97	167	2,104	173	2,273	148	1,949	134	1,709	**136**	**1,760**	7·88	**8·50**	108	...	Coolgardie
		Kunanalling ...	1-9-97	72	882	55	679	35	475	38	464	**42**	**521**					
East Coolgardie ...	21-9-94	... ...	...	246	3,579	258	3,708	243	3,570	206	2,967	**208**	**2,994**	10·76	**12·23**	...	62	East Coolgardie
		Bulong	13-11-96	74	1,084	64	944	41	518	28	376	**23**	**287**					
Yalgoo	23-1-95	... ...	...	27	284	32	344	37	435	32	365	**39**	**467**	1·33	**1·74**	102	...	Yalgoo
North Coolgardie	28-6-95	Menzies	20-3-96	135	1,649	106	1,335	108	1,403	86	1,185	**79**	**1,055**	12·76	**13·05**	...	18	North Coolgardie
		Ularring ...	23-9-96	77	909	83	1,016	63	824	57	737	**58**	**759**					
		Yerilla	20-3-96	81	1,232	86	1,366	66	1,135	42	694	**62**	**965**					
		Niagara	12-3-97	111	1,297	88	1,090	69	875	69	902	**55**	**721**					
East Murchison ...	28-6-95	Lawlers	1-7-04	164	2,392	155	2,144	111	1,664	136	2,009	**137**	**2,085**	16·58	**15·43**	...	336	East Murchison
		Black Range ...	1-7-04	89	1,017	118	1,486	117	1,581	179	2,564	**151**	**2,152**					
West Pilbara ...	20-9-95	... ...	...	5	78	6	102	7	102	9	132	**12**	**156**	·48	**·58**	24	...	West Pilbara
North-East Coolgardie	20-3-96	Kanowna ...	13-11-96	82	1,073	89	1,151	97	1,240	88	1,054	**77**	**885**	5·38	**3·52**	...	163	N.E. Coolgardie
		Kurnalpi ...	13-11-96	27	612	11	198	6	66	5	54	**6**	**60**					
Broad Arrow ...	17-11-96	... ...	...	88	1,144	76	943	84	1,039	63	789	**57**	**683**	2·86	**2·54**	...	106	Broad Arrow
Peak Hill ...	19-3-97	... ...	...	62	719	47	492	42	370	40	337	**42**	**352**	1·22	**1·82**	15	...	Peak Hill
Mount Margaret...	12-3-97	Mount Margaret	12-3-97	159	2,454	172	2,676	118	1,953	104	1,753	**85**	**1,407**	16·65	**15·65**	...	398	Mount Margaret
		Mount Malcolm	12-3-97	143	2,384	144	2,467	117	2,095	107	2,070	**113**	**2,036**					
		Mount Morgans	2-4-02	55	933	74	1,152	68	1,015	52	772	**49**	**754**					
Gascoyne	25-6-97	... ...	...	5	66	4	54	...	...	...	...	...	..	...	...	...	...	Gascoyne
Donnybrook ...	11-11-99	Crown Land ...	...	5	56	...	...	...	...	...	...	...	...	...	...	...	...	Donnybrook
		Private Property	...	13	132	...	...	...	...	...	...	...	...					
Phillips River ...	21-9-00	... ...	...	15	229	13	149	43	480	22	264	**24**	**303**	·95	**1·13**	39	...	Phillips River
Greenbushes ...	...	... ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Greenbushes
Newcastle ...	...	Private Property	...	4	36	...	...	...	...	...	...	...	...	...	...	...	...	Newcastle
Other Localities ...	...	... ...	...	...	...	...	...	4	96	4	96	**1**	**24**	·34	**·08**	...	72	
Murray	...	Private Property	...	...	...	...	...	...	...	...	...	**6**	**118**	...	**·44**	118	...	
West Pilbara ...	...	Private Property	...	...	...	...	...	...	...	...	...	**1**	**24**	...	**·08**	24	...	
Totals ...	...	... ...	...	2,488	32,530	2,447	32,273	2,181	29,370	2,031	27,587	**1,979**	**26,807**	100·00	**100·00**	821	1,601	

52 Leases : 780 acres decrease for 1908.

Taking all goldfields, the largest percentage of then the East Murchison, Murchison, North Coolland leased is in the Mt. Margaret goldfield, in gardie, and East Coolgardie goldfields, with percentwhich 15.65 per cent. of the total area is leased, ages of 15.43, 13.89, 13.05, and 12.23 respectively.

TABLE 12.

Number and Acreage of Mineral Leases in force 31st December each year, for the Five Years ending 31st December, 1908.

Mining Districts.		Sub-Districts.		1904.		1905.		1906.		1907.		1908.		Increase or Decrease for 1908, compared with 1907.		Districts.
Name.	Proclaimed.	Name.	Proclaimed.	Leases.	Acreage.	Leases.	Acreage.	Leases.	Acreage.	Leases.	Acreage.	Leases.	Acreage.	Increase.	Decrease.	
														acres.	acres.	
Kimberley ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Kimberley
Ashburton ...	11-12-90	...	...	...	...	...	...	4	126	20	567	12	383	...	184	Ashburton
		Cue ...	7-12-94	...	...	...	...	...	...	2	58	...	...	...	58	Cue
		Nannine ...	7-12-94	...	...	...	...	3	80	7	193	4	126	...	67	Nannine
Murchison ...	24-9-91	Day Dawn ...	10-1-96	1	6	1	6	1	6	1	6	1	6	...	...	Day Dawn
		Mt. Magnet ...	7-12-94	...	...	...	...	...	...	...	...	...	...	...	...	Mt. Magnet
Greenbushes ...	7-4-92	...	...	30	597	39	706	62	1,127	100	1,585	60	989	...	596	Greenbushes
Pilbara	16-6-92	Marble Bar ...	16-6-92	4	180	11	290	32	768	36	763	34	1,114	351	...	Marble Bar
		Nullagine ...	6-11-96	...	...	...	...	...	...	2	72	1	48	...	24	Nullagine
Yalgoo	23-1-95	...	...	...	...	...	...	1	24	5	168	3	96	...	72	Yalgoo
Yilgarn	22-3-95	...	...	1	60	1	3	...	...	...	...	...	...	...	...	Yilgarn
		Coolgardie ...	22-3-95	3	42	2	22	3	41	4	61	2	21	...	40	Coolgardie
Coolgardie ...	22-3-95	Kunanalling ...	1-9-97	...	...	...	...	...	...	...	...	...	...	...	...	Kunanalling
		...	...	11	130	10	55	5	20	8	116	7	49	...	67	East Coolgardie
East Coolgardie ...	22-3-95	Bulong ...	15-4-96	...	...	...	...	...	...	...	...	...	...	...	...	Bulong
		Lawlers ...	1-7-04	3	14	2	12	...	...	2	42	5	132	90	...	East Murchison
East Murchison ...	28-6-95	Black Range ...	1-7-04	...	...	...	...	...	...	3	7	2	4	...	3	
		Menzies ...	15-4-96	1	12	...	...	1	48	1	48	1	48	...	...	Menzies
		Ularring ...	15-4-96	1	10	1	4	...	...	1	48	...	...	...	48	Ularring
North Coolgardie	16-8-95	Yerilla ...	15-4-96	...	...	...	...	...	...	...	...	...	...	...	...	Yerilla
		Niagara ...	1-3-97	...	...	...	...	...	...	...	...	...	...	...	...	Niagara
West Pilbara ...	1-11-95	...	...	3	194	3	194	15	401	54	1,402	22	683	...	719	West Pilbara
Dundas	27-12-95	...	...	1	6	1	6	1	6	1	6	1	6	...	...	Dundas
Collie	21-2-96	...	...	68	20,975	74	22,894	74	22,895	80	24,815	80	24.815	...	...	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	48	...	...	1	20	1	20	...	...	Broad Arrow
		...	...	1	20	...	...	5	124	21	412	11	247	...	165	Northampton
Northampton ...	1-1-97	Private Property	...	...	...	...	...	...	...	1	20	1	20	...	...	
Peak Hill ...	1-4-97	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Peak Hill
		Mt. Margaret...	1-4-97	1	3	1	3	1	3	1	3	1	48	45	...	Mt. Margaret
Mt. Margaret ...	1-4-97	Mt. Malcolm ...	1-4-97	10	145	8	51	5	32	3	12	3	12	...	...	Mt. Malcolm
		Mt. Morgans ...	2-4-02	...	...	3	55	4	65	13	330	6	139	...	191	Mt. Morgans
Gascoyne	15-4-97	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Gascoyne
		Crown Lands...	...	1	65	2	40	1	20	3	60	...	...	...	60	Yandanooka
Yandanooka ...	1-12-97	Private Property	...	...	...	2	50	2	50	2	50	2	50	...	...	
Phillips River ...	1-7-99	...	...	31	839	28	754	49	1,151	57	1,323	42	1,047	...	276	Phillips River
Donnybrook ...	27-11-99	...	...	2	31	...	...	...	...	...	...	...	...	...	...	Donnybrook
		Crown Lands ...	...	6	240	38	1,300	4	184	45	1,845	27	1,230	...	615	Other Localities
Other localities ...	...	Private Property	...	...	...	...	...	...	...	2	69	...	...	...	69	
Totals ...	...	...	...	180	23,589	228	26,493	273	27,171	476	34,101	329	31,333	486	3,254	

Decrease for 1908: 147 leases, 2,768 acres.

In the Collie field the largest area is held, viz., principally for copper, Greenbushes 989 acres for 24,815 acres occupied entirely for coal mining, then tin, and West Pilbara 683 acres principally for follows Pilbara with 1,162 acres worked principally copper.
for tin and asbestos, Phillips River 1,047 acres

Table 13.

Number and Acreage of Mineral Leases in force on 31st December, 1908, showing Minerals for which they are worked.

Minerals.	Broad Arrow.		Murchison.				Pilbara.				Ashburton.		Greenbushes.		Coolgardie.		East Coolgardie.		North Coolgardie.		Dundas.		West Pilbara.		Yalgoo.	
			Day Dawn.		Nannine.		Nullagine.		Marble Bar.		Uaroo.				Coolgardie.				Menzies.							
	Leases.	Acres.	Leases.	Acres.	Leases.	Acres.	Leases.	Acres.	Leases.	Acres.	Leases.	Acres.	Leases.	Acres.	Leases.	Acres.	Leases.	Acres.	Leases.	Acres.	Leases.	Acres.	Leases.	Acres.	Leases.	Acres.
Coal	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Copper	1	20	...	...	4	126	1	48	1	48	8	300	...	...	...	...	1	24	1	48	...	...	20	612	3	96
Ironstone	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Limestone	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	6	...	...	...	...
Copper, Silver, and Lead	...	...	...	...	...	...	...	...	...	...	1	48	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tin	...	...	...	...	...	...	...	...	17	446	...	...	60	989	...	...	...	...	...	...	...	...	...	...	...	...
Silver and Lead	...	...	...	...	...	...	...	...	...	...	3	35	...	...	...	...	...	...	...	...	...	...	1	48	...	...
Copper and Silver	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Clay	...	...	6	...	...	...	...	...	...	...	...	...	...	...	2	21	4	15	...	...	...	...	...	...	...	...
Building Stone	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	10	...	...	...	...	...	...	...	...
Lime	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Copper and Lead	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	23	...	...
Lead	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Asbestos	...	...	...	...	...	...	...	...	13	576	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tantalite	...	...	...	...	...	...	...	...	3	44	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Magnesite	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wolfram	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals	1	20	1	6	4	126	1	48	34	1,114	12	383	60	989	2	21	7	49	1	48	1	6	22	683	3	96

Minerals.	East Murchison.				Collie.		Northampton.		Mt. Margaret.						Yandanooka.		Phillips River.		Crown Lands outside proclaimed Mining Districts.		Total Acreage.
	Black Range.		Lawlers.						Mt. Margaret.		Mt. Malcolm.		Mt. Morgans.								
	Leases.	Acres.	Leases.	Acres.	Leases.	Acres.	Leases.	Acres.	Leases.	Acres.	Leases.	Acres.	Leases.	Acres.	Leases.	Acres.	Leases.	Acres.	Leases.	Acres.	
Coal	...	...	...	...	80	24,815	...	...	...	...	...	...	...	...	...	...	...	...	...	...	24,815
Copper	...	...	5	132	...	...	...	30	1	48	...	...	5	124	2	50	39	988	20	894	3,588
Ironstone	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	10	5	240	250
Limestone	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	48	...	...	54
Copper, Silver, and Lead	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	48
Tin	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1,435
Silver and Lead	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	83
Copper and Silver	...	...	...	...	...	...	...	...	...	...	...	...	1	15	...	...	...	...	1	48	63
Clay	1	3	...	...	...	...	...	...	...	...	3	12	...	...	...	...	...	...	...	...	57
Building Stone	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10
Lime	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Copper and Lead	...	...	...	...	...	...	6	130	...	...	...	...	...	...	...	...	...	...	...	...	153
Lead	...	...	...	...	...	...	4	107	...	...	...	...	...	...	...	...	...	...	...	...	107
Asbestos	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	576
Tantalite	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	44
Magnesite	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
Wolfram	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	1
Totals	2	4	5	132	80	24,815	12	267	1	48	3	12	6	139	2	50	42	1,047	27	1,230	31,333

TABLE 14.

Claims and Authorised Holdings under "The Mining Act, 1904," and Regulations, existing on 31st December, 1907 and 1908.

Claims, etc.	Yalgoo.		Yilgarn.		Pilbara.				Ashburton.		Murchison.								Dundas.		Coolgardie.				East Coolgardie.				North Coolgardie.							
					Marble Bar.		Nullagine.				Cue.		Day Dawn.		Nannine.		Mt. Magnet.				Coolgardie.		Kunanalling		East Coolgardie.		Bulong.		Menzies.		Ularring.		Yerilla.		Niagara.	
	1907.	1908.	1907.	1908.	1907.	1908.	1907.	1908.	1907.	1908.	1907.	1908.	1907.	1908.	1907.	1908.	1907.	1908.	1907.	1908.	1907.	1908.	1907.	1908.	1907.	1908.	1907.	1908.	1907.	1908.	1907.	1908.	1907.	1908.	1907.	1908.
Water Rights ...	...	...	6	2	4	5	6	6	...	...	9	8	23	18	1	3	...	...	14	11	15	14	14	12	31	28	9	2	16	19	7	8	6	5	16	15
Area of Water Rights	...	...	25	16	13	19	9	10	...	...	23	20	70	28	1	5	...	...	182	133	43	41	60	55	677	639	39	22	38	43	31	32	12	11	38	36
Lode Claims ...	2	...	...	1	8	8	16	20	...	...	4	3	...	...	2	1	8	8	...	...	12	13	8	8	48	14	40	...	...	...	...	...	4	4	11	11
Alluvial Claims ...	...	...	1	...	33	21	...	...	...	...	...	...	...	...	1	2	...	...	1	...	...	...	...	...	41	3	35	...	...	...	...	...	2	1	...	...
Dredging Claims ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Prospecting Areas ...	7	15	28	39	22	19	1	4	...	3	26	27	9	12	36	59	98	33	28	26	78	86	24	20	32	47	9	15	50	63	23	29	54	48	40	30
Residence Areas ...	4	5	...	1	7	8	5	5	...	1	20	19	9	13	42	46	6	5	...	...	46	47	1	2	74	90	55	24	3	3	...	...	2	3	2	2
Business Areas ...	18	18	18	20	37	36	4	5	...	...	23	13	...	...	13	22	8	7	3	2	13	8	6	5	14	14	5	4	9	12	4	4	31	29	20	18
Machinery Areas ...	1	2	...	...	4	4	3	4	...	...	...	2	...	...	1	1	1	1	3	5	...	5	4	5	5	2	6	3	3	3	1	1	2	2	3	3
Tailings Areas ...	2	2	8	3	2	2	1	3	...	...	4	3	1	1	6	6	1	2	2	...	1	2	...	...	7	7	2	2	1	2	...	...	2	2	2	2
Garden Areas ...	3	3	3	3	12	13	4	4	...	...	2	2	7	6	7	7	8	8	2	...	10	9	...	...	34	30	...	...	5	6	1	1	...	...	8	13
Washing Areas ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

Claims, etc.	East Murchison.				*West Pilbara.		North-East Coolgardie.				Broad Arrow.		Peak Hill.		Mount Margaret.						Greenbushes.		Phillips River.		Outside Goldfields.		TOTAL.		Increase or Decrease for 1908 compared with 1907.	
	East Murchison.		Black Range.				Kanowna.		Kurnalpi.						Mount Margaret.		Mount Malcolm.		Mount Morgans.												
	1907.	1908.	1907.	1908.	1907.	1908.	1907.	1908.	1907.	1908.	1907.	1908.	1907.	1908.	1907.	1908.	1907.	1908.	1907.	1908.	1907.	1908.	1907.	1908.	1907.	1908.	1907.	1908.	Increase.	Decrease.
Water Rights	41	29	...	4	5	...	5	5	...	...	11	12	13	12	27	29	57	56	23	23	21	14	13	13	...	...	393	353	...	40
Area of Water Rights ...	84	46	...	8	28	...	30	30	...	...	37	38	125	124	73	80	257	250	91	91	67	62	73	73	...	...	2,126	1,912	...	214
Lode Claims	...	...	...	...	...	...	89	9	11	2	6	4	...	2	9	6	4	4	1	...	...	...	...	6	...	...	283	124	...	159
Alluvial Claims	...	...	...	...	...	...	195	4	3	1	2	...	...	...	7	7	...	...	2	...	74	45	...	...	...	...	397	84	...	313
Dredging Claims	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Prospecting Areas	45	52	66	49	17	9	24	23	3	6	56	46	5	6	37	43	74	66	24	30	...	...	42	38	24	19	982	962	...	20
Residence Areas	20	15	32	61	5	3	6	5	4	...	...	...	11	11	49	49	2	2	5	5	38	34	...	...	...	...	448	459	11	...
Business Areas	21	3	22	35	10	8	4	5	2	2	11	9	2	2	46	46	12	12	22	20	6	6	2	2	...	...	391	367	...	24
Machinery Areas	7	4	2	2	...	...	5	5	2	2	5	6	1	...	2	2	3	3	...	...	10	10	1	1	...	...	75	78	3	...
Tailings Areas	5	2	...	1	...	...	2	3	...	...	3	7	...	1	5	5	3	4	...	...	5	3	2	2	...	...	67	67	...	...
Garden Areas	23	18	5	10	2	3	3	2	...	...	3	4	...	...	14	15	15	15	3	3	2	5	11	11	...	...	189	191	2	...
Washing Areas	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

In 1907 an error occurred in quoting the number of Prospecting Areas in existence at the close of that year. This should have been shown as 982 instead of 1,659, the figures given for Menzies being 727 instead of 50, the former figures were the acreage held. This year the number held is practically the same, viz., 962, a decrease of 20. The area held is 36,631 acres. These figures include 8 areas of 19,400 acres for coal and oil.

TABLE 15.—*Miners' Rights issued during 1907 and 1908.*

Place of Issue.	Miners' Rights.		Consolidated Miners' Rights.		Place of Issue.	Miners' Rights.		Consolidated Miners' Rights.	
	1907.	1908.	1907.	1908.		1907.	1908.	1907.	1908.
Albany	9	...	...	...	Marble Bar	516	285	...	...
Ashburton	68	39	...	...	Meekatharra ...	...	169	...	...
Black Range	456	399	...	...	Menzies	233	259	...	...
Boulder	...	30	...	...	Mount Magnet ...	226	194	...	...
Bridgetown	...	1	...	...	Mount Malcolm ...	338	285	...	...
Broad Arrow	201	147	...	...	Mount Morgans ...	123	113	...	...
Broome	1	...	...	...	Mulline	...	2	...	...
Bulong	60	43	...	...	Nannine	242	298	...	...
Bunbury	3	2	...	...	Narrogin	...	11	...	...
Busselton	6	3	...	...	Newcastle	7	1	...	...
Carnarvon	26	7	...	...	Norseman	183	205	...	...
Collie	5	6	...	...	Northampton ...	75	10	...	...
Coolgardie	488	435	...	...	Nullagine	70	101	...	...
Cue	366	334	...	...	Peak Hill	59	64	...	...
Davyhurst	120	96	...	...	Perth	194	97	...	...
Derby	47	15	...	...	Phillips River ...	262	144	...	...
Duketon	...	3	...	...	Pinjin	...	26	...	...
Esperance	...	1	...	...	Port Hedland ...	36	29	...	...
Geraldton	1	...	...	...	Roebourne	152	74	...	...
Greenbushes	458	179	3	...	Southern Cross ...	132	161	...	...
Kalgoorlie	736	1,462	...	...	Wagin	8	9	...	...
Kanowna	257	201	...	...	Waverley	...	48	...	...
Katanning	12	8	...	...	Williams	3	...	...	...
Kimberley	49	37	...	...	Wiluna	...	106	...	...
Kookynie	299	116	...	...	Wyndham	9	11	...	...
Kurnalpi	41	46	...	...	Yalgoo	145	84	...	...
Lake Darlot	...	52	...	...	Yarri	...	28	...	...
Laverton	225	207	...	...	York	68	7	...	...
Lawlers	148	122	...	...	Yundamindera ...	...	59	...	...
Leonora	...	140	...	...					
Lyndon	...	19	...	...		7,163	7,030	3	...

TABLE 16.

Number and Acreage of Miners' Homestead Leases in force on 31st December, 1907 and 1908.

Goldfield.	District.	1907.		1908.		Increase.		Decrease.	
		Leases.	Acreage.	Leases.	Acreage.	Leases.	Acreage.	Leases.	Acreage.
Greenbushes	... ...	6	460	6	600	...	140	...	...
Pilbara ...	Marble Bar ...	2	25	3	125	1	100	...	...
	Nullagine	1	20	1	20	...	...	...	...
Dundas	... ...	18	773	18	769	...	...	...	4
Broad Arrow	... .	5	600	4	570	...	...	1	30
Yilgarn	... ...	9	155	9	252	...	97	...	...
Mt. Margaret ...	Mt. Morgans ...	7	140	8	240	1	100	...	...
	Mt. Malcolm ...	13	2,324	11	2,054	..	...	2	270
	Mt. Margaret ...	9	500	9	335	...	...	...	165
Murchison ...	Cue	7	719	8	829	1	110	...	...
	Day Dawn... ...	13	155	13	153	...	...	...	2
	Nannine	18	2,007	18	1,982	...	...	...	25
	Mt. Magnet ...	...	...	2	40	2	40	...	...
Yalgoo	... ...	1	200	1	200	...	...	...	...
Coolgardie ...	... ...	44	4,316	46	4,706	2	390	...	...
	Kunanalling ...	1	20	1	20	...	...	...	...
East Coolgardie ...	... ...	60	2,743	92	4,133	32	1,390	...	...
Phillips River ...	... ...	99	6,646	120	8,888	21	2,242	...	...
Peak Hill	... ...	11	1,840	12	1,865	1	25	...	...
North-East Coolgardie	Kanowna	18	345	24	935	6	590	...	...
North Coolgardie	Menzies	9	633	10	648	1	15	...	...
	Yerilla	1	10	2	20	1	10	...	...
	Niagara	7	405	5	384	...	...	2	21
	Ularring	1	20	2	25	1	5	...	...
East Murchison	... ...	5	1,110	7	1,119	2	9	...	...
	Black Range ...	10	1,548	13	1,604	3	56	...	...
		375	27,714	445	32,516	75	5,319	5	517

As compared with the year 1907, there is an increase in the number of leases by 70, and in acreage by 4,802 acres

PART IV.—MEN EMPLOYED.

TABLE 17.

Average Number of Men engaged in Mining during 1907 and 1908.

Goldfield.	District.	Reef or Lode.		Alluvial.		Total.	
		1907.	1908.	1907.	1908.	1907.	1908.
1. Kimberley	...	...	**1**	9	**6**	9	**7**
2. Pilbara	Marble Bar	45	**52**	31	**55**	76	**107**
	Nullagine	63	**76**	14	**26**	77	**102**
3. West Pilbara	...	11	**21**	49	**27**	60	**48**
4. Ashburton	...	...	...	5	**5**	5	**5**
5. Gascoyne	...	...	...	...	...	...	...
6. Peak Hill	...	124	**125**	8	**9**	132	**134**
7. East Murchison	Lawlers	750	**892**	64	**42**	814	**934**
	Black Range	834	**803**	130	**62**	964	**865**
8. Murchison	Cue	468	**369**	16	**14**	484	**383**
	Nannine	272	**362**	80	**118**	352	**480**
	Day Dawn	710	**674**	25	**22**	735	**696**
	Mt. Magnet	191	**173**	7	**3**	198	**176**
9. Yalgoo	...	85	**29**	31	**2**	116	**31**
10. Mt. Margaret	Mt. Morgans	384	**381**	44	**42**	428	**423**
	Mt. Malcolm	1,032	**949**	50	**31**	1,082	**980**
	Mt. Margaret	725	**583**	40	**40**	765	**623**
11. North Coolgardie	Menzies	549	**618**	3	**5**	552	**623**
	Ularring	406	**353**	43	**39**	449	**392**
	Niagara	384	**299**	22	**21**	406	**320**
	Yerilla	299	**355**	36	**32**	335	**387**
12. Broad Arrow	...	285	**231**	74	**73**	359	**304**
13. North-East Coolgardie	Kanowna	529	**451**	82	**72**	611	**523**
	Kurnalpi	48	**30**	21	**19**	69	**49**
14. East Coolgardie	East Coolgardie	5,752	**5,627**	60	**50**	5,812	**5,677**
	Bulong	100	**49**	106	**48**	206	**97**
15. Coolgardie	Coolgardie	950	**710**	58	**32**	1,008	**742**
	Kunanalling	228	**190**	49	**37**	277	**227**
16. Yilgarn	...	371	**349**	4	...	375	**349**
17. Dundas	...	319	**313**	15	**10**	334	**323**
18. Phillips River	...	80	**65**	3	**3**	83	**68**
State generally	...	64	...	...	...	64	...
Total—Gold Mining	...	16,058	**15,130**	1,179	**945**	17,237	**16,075**
MINERALS OTHER THAN GOLD.							
Tin	Greenbushes M.F.	...	...	*512	***331**	512	**331**
	Marble Bar D.	...	...	*491	***283**	491	**283**
Copper	Mt. Morgans D.	89	**38**	...	...	89	**38**
	Phillips River G.F.	358	**187**	...	...	358	**187**
	Menzies D.	8	...	...	...	8	...
	Nannine D.	7	...	...	...	7	...
	Yalgoo G.F.	11	**4**	...	...	11	**4**
	Ashburton G.F.	...	**9**	...	...	...	**9**
	Lawlers D.	...	**1**	...	...	...	**1**
	Marble Bar D.	1	...	...	...	1	...
	West Pilbara G.F.	130	**42**	...	...	130	**42**
	Day Dawn D.	2	...	...	...	2	...
	Mt. Margaret D.	1	...	...	...	1	...
	East Coolgardie G.F.	2	**2**	..	...	2	**2**
	Northampton M.F.	1	...	...	...	1	...
	State generally	1	...	...	...	1	...
Lead	Northampton M.F.	8	**2**	...	...	8	**2**
Silver-Lead	Ashburton G.F.	...	**5**	...	...	...	**5**
Limestone	Cue D.	1	...	...	...	1	...
Coal	Collie River M.F.	253	**280**	...	...	253	**280**
Asbestos	Marble Bar D.	...	**7**	..	...	...	**7**
	Total—Other Minerals	873	**577**	1,003	**614**	1,876	**1,191**
	GRAND TOTAL	16,931	**15,707**	2,182	**1,559**	19,113	**17,266**

* Classified elsewhere as employed at mines.

Comparing the years 1907 and 1908, there has been a decrease of 1,847 men engaged in mining. This decrease is largely attributable to gold mining wherein the number of men engaged is less by 1,162 than in 1907; the men working reefs and lodes having decreased by 928 and alluvial by 234. In mining for minerals there was a decrease of 685, those working copper being less by 328 and tin by 389, other minerals 7. Coal shows an increase of 27, asbestos and silver lead 7 and 5 respectively.

TABLE 18.

Average Number of Men employed at Mines during 1908.

Mineral.	Above Ground.	Under Ground.	Total.	Percentage of total men employed.	Increase or decrease compared with 1907.
Asbestos	4	3	7	·04	+ 7
Tin	*548	66	614	3·76	− 389
Coal	76	204	280	1·72	+ 27
Copper	138	145	283	1·74	− 328
Gold	6,727	8,403	15,130	92·70	− 928
Lead	1	1	2	·01	− 6
Limestone	...	...	...	...	− 1
Silver-Lead	2	3	5	·03	+ 5
Total	7,496	8,825	16,321	100·00	− 1,613

*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."

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 a decrease in all instances excepting asbestos, coal, and silver lead mines.

TABLE 19.

Average Number of Men employed at Gold Mines during 1908, 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 1907.	Percentage of total men employed.	
					1907.	1908.
1. Kimberley	1	...	1	+ 1	...	·01
2. Pilbara	70	58	128	+ 20	·67	·84
3. West Pilbara	10	11	21	+ 10	·07	·14
4. Ashburton	...	...	...	...	...	...
5. Gascoyne	...	...	...	...	...	...
6. Peak Hill	73	52	125	+ 1	·77	·82
7. East Murchison	786	909	1,695	+ 111	9·86	11·20
8. Murchison	730	848	1,578	− 63	10·22	10·43
9. Yalgoo	15	14	29	− 56	·53	·19
10. Mt. Margaret	855	1,058	1,913	− 228	13·34	12·64
11. North Coolgardie	666	959	1,625	− 13	10·20	10·74
12. Broad Arrow	103	128	231	− 54	1·77	1·53
13. North-East Coolgardie	169	312	481	− 96	3·60	3·19
14. East Coolgardie	2,554	3,122	5,676	− 176	36·44	37·51
15. Coolgardie	343	557	900	− 278	7·33	5·95
16. Yilgarn	189	160	349	− 22	2·31	2·31
17. Dundas	134	179	313	− 6	1·99	2·07
18. Phillips River	29	36	65	− 15	·50	·43
State generally	...	...	...	− 64	·40	...
Total	6,727	8,403	15,130	− 928	100·00	100·00

The above Table shows that the number of men employed on gold mines, excluding alluvial workers, decreased to the extent of 928. The principal decreases are in the Coolgardie, East Coolgardie, and Mt. Margaret fields. The East Murchison field shows the largest increase.

TABLE 20.

Alluvial Gold Workers.

Goldfield.	1907.	1908.	Increase or decrease compared with 1907.
1. Kimberley	9	6	− 3
2. Pilbara	45	81	+ 36
3. West Pilbara	49	27	− 22
4. Ashburton	5	5	=
5. Gascoyne	...	...	...
6. Peak Hill	8	9	+ 1
7. East Murchison	194	104	− 90
8. Murchison	128	157	+ 29
9. Yalgoo	31	2	− 29
10. Mt. Margaret	134	113	− 21
11. North Coolgardie	104	97	− 7
12. Broad Arrow	74	73	− 1
13. North-East Coolgardie	103	91	− 12
14. East Coolgardie	166	98	− 68
15. Coolgardie	107	69	− 38
16. Yilgarn	4	...	− 4
17. Dundas	15	10	− 5
18. Phillips River	3	3	=
Total	1,179	945	− 234

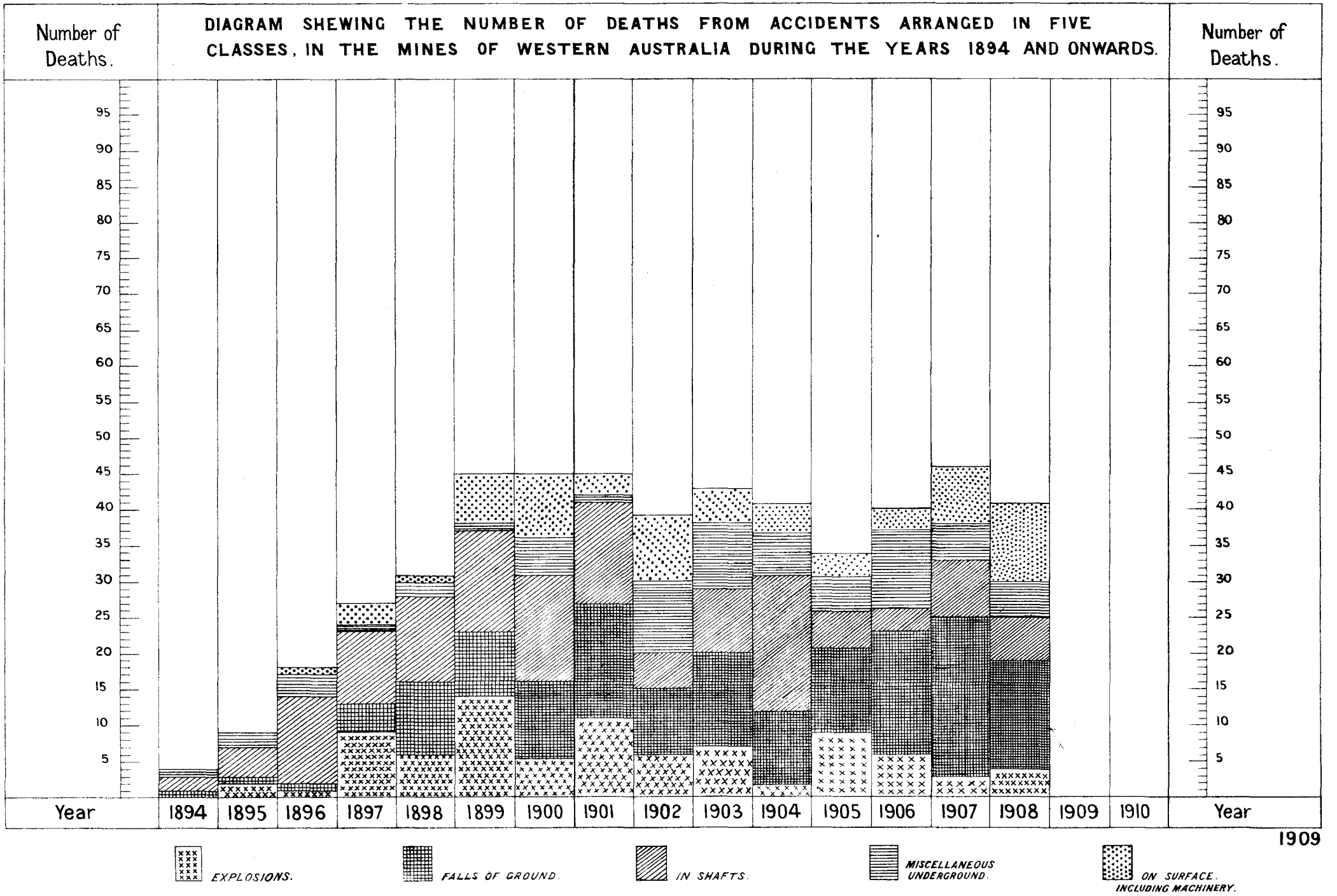
The number of alluvial gold workers decreased by 234, the only increases being in the Pilbara, Murchison, and Peak Hill goldfields. Murchison heads the list with 157, followed by Mt. Margaret with 113, East Murchison 104, East Coolgardie 98, North Coolgardie 97, North-East Coolgardie 91, and Pilbara 81.

TABLE 21.

Table containing Extracts from Awards delivered by the Court of Arbitration and Industrial Agreements made between Parties in Gold Mining Industrial Disputes, showing the Daily Wage, etc., provided for in each Award or Agreement in force on 31st January, 1909.

Locality in which Award or Agreement has effect.	Date of Award or Agreement.	Term.	Rock-drill men and Chuckmen in shafts.	Rock-drill men and Chuckmen in rises.	Rock-drill men and Chuckmen elsewhere.	Miners (Hammer and Drill men).	Miners (wet ground) extra allowance.		Bracemen and Platmen.	Skipmen.	Mullockers and Shovellers.	Truckers filling and trucking.	Truckers from Shoots.	Men working in Cyanide Vats, and Filter-press men.	Timbermen.	Surface Labourers.	Boiler Cleaners.	Horse-drivers (including looking after horses).	Drill and Tool Sharpeners.	Mechanics' Labourers.	Oilers and Greasers.	Riggers.	Firemen.	Pipe Fitters (under ground).	Pitmen.	Fitters, Turners, and Blacksmiths.	Patternmakers.	Engine-drivers.		Overtime.			Hours of work per week.	
							Per week.	Per shift.																				Surface winding Engines.	All other Engines.	Ordinary Day. Up to 4 hours.	Ordinary Day. After 4 hours.	Sunday.	Men on Surface (single shift).	Shiftmen above or 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.	s. d.	s. d.					
Black Range ...	17th May, 1907 ...	From 1st June 1907, to 31st May, 1910	...	...	...	15 0 14 0 13 4	...	1 3	13 6	...	12 0	12 0	12 0	13 10	15 0	11 8	14 0	12 8	14 4	...	...	...	...	...	...	15 0	...	...	...	...	...	48	47
Black Range ...	20th May, 1908 ...	From 20th May, 1908, to 31st May, 1910	15 4	14 10	14 2	...	...	1 3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	47
Black Range ...	14th Aug., 1908 ...	From 8th Aug., 1908, to 31st May, 1910	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15 8	15 0	1½	1½	...	47 & 48	...
*Cue-Nannine ...	17th Oct., 1904 ...	From 29th July, 1904, to 30th Jan., 1906 †	14 6	14 0	13 4	12 6	...	0 10	12 0	...	11 4	11 4	11 4	12 0	13 4	10 10	12 6	11 10	13 9	...	...	...	...	...	...	...	...	...	...	...	...	...	48	47
*Kalgoorlie ...	31st Aug., 1907 ...	From 31st Aug., 1907, to 30th June, 1909	14 4	13 10	13 4	11 8	...	...	11 8	...	11 0	11 0	11 0	...	13 4	10 0	...	...	...	10 6	...	...	...	...	...	...	...	...	...	...	...	...	48	47
* Do. ...	31st Aug., 1907 ...	From 31st Aug., 1907, to 30th June, 1909	...	...	...	...	...	...	...	...	...	...	...	11 8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	48	...
* Do. ...	31st Aug., 1907 ...	From 31st Aug., 1907, to 30th June, 1909	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11 8	...	...	...	...	...	...	...	...	...	48	...
* Do. ...	31st Aug., 1907 ...	From 31st Aug., 1907, to 30th June, 1909	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10 0 to 15 0	...	...	...	...	...	...	...	...	...	...	...	...	48	...
Kanowna	10th Nov., 1908 ...	From 16th Nov., 1908, to 16th Nov., 1911	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14 0	13 4	1¼	1½	...	47 & 48	...
Gindalbie ...	10th Nov., 1908 ...	From 16th Nov., 1908, to 16th Nov., 1911	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14 10	14 2	1¼	1½	...	47 & 48	...
Murchison—Cue, etc. ...	18th Dec., 1908 ...	From 1st Jan., 1909, to 1st Jan., 1910	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15 10 14 10	14 2	1¼	1½	...	47 & 48	...
Magnet	18th Dec., 1908 ...	From 1st Jan., 1909, to 1st Jan., 1910	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14 0	13 4	1¼	1½	...	47 & 48	...
North Coolgardie—(1.) Gwalia, Murrin Murrin	19th Jan., 1909 ...	From 1st Jan., 1909, to 1st Jan., 1910	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14 8	14 0	1½	1½	...	47 & 48	...
(2.) Leonora, Mt. Morgans, & Laverton	19th Jan., 1909 ...	From 1st Jan., 1909, to 1st Jan., 1910	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14 4	13 8	1¼	1½	...	47 & 48	...
North Coolgardie—(1.) Gwalia, Murrin Murrin	19th Jan., 1909 ...	From 15th Jan., 1909, to 1st Jan., 1910	15 0	14 6	14 0	12 4	...	1 8	12 4	14 0	11 6	11 6	11 6	12 4	14 0	11 0	12 6	12 0	13 4	12 0	...	...	...	...	...	...	...	...	...	...	...	...	48	47
(2.) Leonora, Mt. Morgans, & Laverton	19th Jan., 1909 ...	From 15th Jan., 1909, to 1st Jan., 1910	14 8	14 2	13 8	12 0	...	1 8	12 0	13 8	11 2	11 2	11 2	12 0	13 8	10 8	12 2	11 8	13 0	11 8	...	...	...	...	...	...	...	...	...	...	...	...	48	47
Peak Hill	6th Dec., 1906 ...	From 1st Oct., 1906, to 1st Oct., 1909	15 0	14 6	13 10	13 0	...	1 3	12 6	...	11 10	11 10	11 10	12 6	13 10	11 4	13 0	12 4	14 3	...	...	...	...	...	...	...	...	...	...	...	...	...	48	47
Wiluna	6th Dec., 1906 ...	From 1st Jan., 1907, to 1st Jan., 1910	15 6	15 0	14 4	13 6	...	1 3	13 0	13 0	12 4	12 4	12 4	13 0	14 4	11 10	13 6	12 10	14 9	...	...	...	...	...	...	...	...	...	...	...	...	...	48	47

* Industrial Agreement. † Continues in force until retired from


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
Year
1909
EXPLOSIONS.
FALLS OF GROUND.
IN SHAFTS.
MISCELLANEOUS UNDERGROUND.
ON SURFACE. INCLUDING MACHINERY.

PART V.—ACCIDENTS.

TABLE 22.

Men killed and injured in Mining Accidents during 1907 and 1908.

Goldfield.	Killed.		Injured.		Total Killed and Injured.	
	1907.	1908.	1907.	1908.	1907.	1908.
1. Kimberley	...	...	...	...	...	...
2. Pilbara	...	...	1	3	1	3
3. West Pilbara	...	2	2	...	2	2
4. Ashburton	...	...	...	...	...	...
5. Gascoyne	...	...	...	...	...	...
6. Peak Hill	...	...	2	...	2	...
7. East Murchison	5	5	30	14	35	19
8. Murchison	8	7	28	20	36	27
9. Yalgoo	...	...	...	...	...	...
10. Mt. Margaret	8	3	29	29	37	32
11. North Coolgardie	2	2	4	5	6	7
12. North-East Coolgardie ...	...	2	6	7	6	9
13. Broad Arrow	2	...	2	1	4	1
14. East Coolgardie	*13	15	246	272	*259	287
15. Coolgardie	1	2	12	7	13	9
16. Yilgarn	1	...	5	...	6	...
17. Dundas	1	2	7	2	8	4
18. Phillips River	1	...	...	4	1	4
19. Donnybrook	...	...	...	...	...	...
MINING DISTRICTS.						
Northampton	2	...	...	...	2	...
Yandanooka	...	...	...	...	...	...
Greenbushes	1	...	4	2	5	2
Collie	1	1	13	32	14	33
Total	*46	41	391	398	*437	439

*Now including a fatal accident in 1907 not discovered till 1908 after publication of 1907 Report.

During the year 1908 forty-one fatal accidents occurred as against 46 in 1907. In last year's report the number killed in 1907 was shown as 45, one fatal accident during that year not having been discovered until after the report was published. The number of men injured shows an increase of 7 over the preceding year. Full details as to accidents will be found in the report of the State Mining Engineer.

TABLE 23.

Deaths from Accidents at Mines during 1907 and 1908.

Kind of Mines.	1907.						1908.					
	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	...	1	1	...	5·58	3·95	...	1	1	...	4·90	3·57
Men employed ...	...	...	...	(74)	(179)	(253)	...	...	...	(76)	(204)	(280)
Gold Mines	8	*34	*42	1·12	3·80	2·62	11	29	40	1·43	3·45	2·41
Men employed ...	...	...	...	(7,113)	(8,945)	(16,058)	...	...	...	(7,672)	(8,403)	(16,075)
Other Mines	...	3	3	...	5·84	1·85	...	...	...	...	...	...
Men employed ...	...	...	...	(1,110)	(513)	(1,623)	...	...	...	(693)	(218)	(911)
Total number of men employed (Table 18)	...	...	...	8,297	9,637	17,934	...	...	...	...	...	...
Total number of men employed including alluvial workers (Table 17)	...	...	...	...	...	19,113	...	...	...	...	8,825	17,266
Total for all Mines excluding alluvial workers	8	*38	*46	0·96	3·94	2·56	...	...	...	8,441	...	...
Total for all mines including alluvial workers	...	...	...	...	...	†2·41	11	30	41	1·30	3·40	2·37

* Now including a fatal accident in 1907 not discovered till 1908 after publication of 1907 Report. † Including alluvial workers. The table for 1908 includes the alluvial workers who have hitherto been omitted in the corresponding tables in former reports.

With one exception all fatal accidents during the year occurred in gold mines. The death-rate per 1,000 men employed in gold mines was 2.41 as against 2.62 for the preceding year.

TABLE 24.

Deaths from Accidents in Gold Mines during 1908, and the Death Rate per 1,000 men employed, and per 1,000 tons of Gold Ore raised during 1907 and 1908 (Number of men taken as in Table 19, not including Alluvial Workers).

GOLDFIELD.	Number of Deaths. 1908.			Death rate per 1,000 Men employed. 1908.				Number of Deaths per 1,000 tons of Gold Ore raised.	
	Above Ground.	Under Ground.	Total.	Above Ground.	Under Ground.	Total.	1907. Total.	1908.	1907.
1. Kimberley	...	...	...	...	...	...	...	...	...
2. Pilbara	...	...	...	...	...	...	...	...	...
3. W. Pilbara	1	1	2	100·00	90·91	95·24	...	2·66	...
4. Ashburton	...	...	...	...	...	...	...	...	...
5. Gascoyne	...	...	...	...	...	...	...	...	...
6. Peak Hill	...	...	...	...	...	...	...	...	...
7. East Murchison	3	2	5	3·82	2·20	2·95	3·15	·01	·02
8. Murchison	1	6	7	1·37	7·08	4·44	4·87	·02	·025
9. Yalgoo	...	...	...	...	...	..	...	...	...
10. Mt. Margaret	...	3	3	...	2·84	1·57	3·73	·01	·02
11. North Coolgardie	1	1	2	1·50	1·04	1·23	1·22	·02	·01
12. North-East Coolgardie	...	2	2	...	6·41	4·16	...	·04	...
13. Broad Arrow	...	...	..	...	...	...	7·01	...	·05
14. East Coolgardie	5	10	15	1·96	3·20	2·64	2·26 *	·01	·01
15. Coolgardie	...	2	2	...	3·59	2·22	·84	·03	·01
16. Yilgarn	...	...	...	...	...	...	2·69	...	·02
17. Dundas	...	2	2	...	11·17	6·39	3·13	·05	·03
18. Phillips River	...	...	...	...	...	...	12·50	...	·27
19. Donnybrook	...	...	...	...	...	...	...	...	...
Totals and Averages	11	29	40	1·63	3·45	2·64	2·62 *	·013	·013

—	1907.		1908.		Comparison with 1907.	
	Fatal.	Serious.	Fatal.	Serious.	Fatal.	Serious.
1. Explosions	3	14	4	10	+ 1	— 4
2. Falls of Ground	22	64	15	59	— 7	— 5
3. In Shafts	8	28	6	22	— 2	— 6
4. Miscellaneous Underground	5 *	183	5	194	...	+ 11
5. Surface	8	102	11	113	+ 3	+ 11
Total	46 *	391	41	398	— 5	+ 7

* Now including an accident in 1907 not discovered until 1908 after publication of 1907 Report.

The number of deaths per 1,000 tons of gold ore raised is the same as the preceding year.

PART VI.—STATE AID TO MINING.

STATE BATTERIES.

The number of State Batteries remains the same as in 1907, viz. 29.

The Huntington plant at Yundamindera was removed to Greenbushes to be used as an addition to the Tin Dressing plant at the Bunbury End. A new plant was erected at Linden, and the plant formerly at Duketon removed to Black Range.

The number of cyanide plants in operation is 22, being one more than the previous year, and in addition there are slimes plants at Mulline, Niagara, and Norseman.

There are two Tin Dressing plants at Greenbushes.

From the inception of the Battery system to the end of 1908 gold and tin to the value of £2,747,425 have been recovered at the State plants; 600,910 tons of gold ore were treated and produced £2,359,706 worth of gold by amalgamation, £304,839 worth by cyanidation, and £28,350 worth from slimes; and 36,679 tons of tin ore produced tin to the value of £54,530. The tonnage of stone milled for the year ended 31st December, 1908, was 95,623 tons producing 89,875 fine ozs. of gold by milling. In 1907 the tonnage was 95,279 tons for 97,961 ozs. The revenue derived from all State plants including tin during 1908 was £76,765 9s. 5d., and the working expenditure £82,791 4s. 2d., which, after including £1,252 6s. 5d. for additions etc, paid from revenue, shows a loss of £7,278 1s. 2d. on the year's operations.

At the commencement of the year an uniform charge of 10s. per ton was instituted at gold ore plants, a reduction of nearly 2s. per ton on the average rates previously charged. This resulted in a loss in crushing charges receipts of £10,164 15s. 2d. as compared with the previous year, although the tonnage of gold ore treated was greater by 344 tons.

This loss of revenue has been partially met by a reduction in the costs of treatment to the extent of £5,815 7s. The loss on the year's operations was £5,772 4s. 7d. at gold plants and £253 10s. 2d. at tin plants, a total of £6,025 14s. 9d.

Administration expenses for the year total £4,370 16s. 1d. The capital expenditure on erection of plants to the end of 1908 was £251,084 10s. 5d., and of this amount £90,231 7s. 2d. was paid from Revenue, and £160,853 3s. 3d. from General Loan Fund. The working expenditure exceeds receipts by £17,050. The report of the Superintendent, who controls State Batteries, published as an appendix to this Report, contains full details as to the year's operations.

WATER SUPPLY.

The work of this Branch, which includes the survey for and construction of reservoirs for conservation of water, boring for water and minerals, sinking wells, clearing tracks, etc., has been continued during the year, and details of the work carried out will be found in the report of the Engineer for Mines Water Supply published as an appendix to this report. A short summary is as follows:—

17 water shafts sunk aggregating 1,000 feet.
31 bore wells aggregating 1,768 feet.
165 hand bores aggregating 9,692 feet.
18 diamond drill bores aggregating 5,446 feet.

Tanks have been constructed at Pingin, Eundynie, on the Kanowna-Gindalbie Road about 10½ miles from Kanowna, and the Rock Tank at Marvel Loch enlarged. Pumping plants have been installed at Jourdie Hills, and Widgiemoultha, and the plant in connection with the Leonora Water Supply increased. Pipe lines have been laid at Mt. Malcolm, Randall's, Jourdie Hills, and Meekatharra.

GEOLOGICAL SURVEY.

The staff was fully occupied during the year, and details of the work carried out will be found in the report of the Government Geologist appearing elsewhere.

Geological examinations were made of Youanme, Birrigrin, Errols, Barrambi, Gum Creek, and the country traversed by the Trans-Australian Railway.

A re-survey of Greenbushes was effected, and surveys made of Phillips River and the Irwin River Coal District.

Preliminary work in the direction of re-gauging the discharges from artesian bores was undertaken.

Reports were furnished on the following:—The lower levels of the Kalgoorlie mines; supposed new coal find at Collie, Lynton, and near the Serpentine; supposed discoveries of gold at Wagin and near Highbury; the phosphatic deposits at Christmas Island; iron deposits at Yampi Sound; wolfram find at Federal Downs, East Kimberley; the possibility of obtaining artesian water at Cookernup and Capel; proposed mining reserve on the Oakover estate and at Northampton. An officer was also despatched to report on the country traversed by the party surveying and opening up a stock route between Wiluna and Hall's Creek.

Numerous reports were furnished on the question of alienation of mineral lands; applications for assistance under the Mining Development Act; and applications to mine on private property.

Three Geological Bulletins were published during the year.

ASSISTANCE UNDER THE MINING DEVELOPMENT ACT, 1902.

The following statement shows the sums advanced during the year 1908 under the provisions of the Mining Development Act:—

	£ s. d.
Advances in aid of mining work and equipment of mines with machinery	8,445 16 5
Advances in aid of boring ..	1,038 3 7
Subsidies to provide crushing plants	2,076 5 0
Purchase of boring plants ..	1,596 9 0
Providing means of transport ..	2,001 17 2
	£15,158 11 2

In addition to the above, amounts totalling £1,338 6s. 11d. 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, drainage, timber tramways, and subsidies for development work done below the 100 feet level in small mines. Subsidies to the extent of £2,076 5s. were given to private crushing plants, the condition being that they crush for the public at fixed rates; in most cases conditions being imposed as to treating or purchasing tailings. The ore crushed at such plants during the year amounted to 23,206.23 tons.

The receipts under the Mining Development Act exclusive of interest payments amount to £2,098 15s. 11d., made up as follows:—

	£ s. d.
Refunds of advances ..	539 1 11
Sales of plant	1,559 14 0

Further particulars are given in the report of the State Mining Engineer.

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 during the year was 162 fine ozs., and for the preceding year 143 fine ozs., an increase of 19 fine ozs.

Nothing of note has transpired in this field, the position of which is much the same as in the preceding year.

BROAD ARROW GOLDFIELD.

The output of gold for the year from this field was 18,430 fine ozs., and for the preceding year 21,907 fine ozs., a decrease of 3,477 fine ozs. This decrease is attributable to the closing down of the Broad Arrow Consols in the Broad Arrow centre, and the New Slug Hill mine at Vettersburg.

The Claremont Gold Mine, Ltd., has been showing signs of improvement, and during the last quarter of the year considerably increased its output.

Two rich yields from the Siberia centre were reported during the year, viz.: 46 tons for 812 ozs. from Gold Mining Lease 1345w, held by Messrs. McRae and Correll, and 18 tons for 1,173 ozs. from Prospecting Area 251w, held by Messrs. Franca and Adams.

There are no indications to lead to a conclusion that there will be any marked progress in this field during the coming year.

COLLIE COALFIELD.

The output of coal during the year was 175,248 tons, and for the preceding year 142,373 tons, an increase of 32,875 tons.

This is a record year for the field, and the increased output is mainly attributable to the establishment of a bunkering trade at Bunbury and Fremantle.

It is anticipated, consequent on the favourable reports from many of the steamers and the increased facilities for loading vessels provided at Bunbury, that the bunkering trade will go on increasing.

There has been an increase in the area held under lease.

The railway has been extended to Narrogin, on the Great Southern line, and the advantages of this are already apparent in the way of increased settlement along the route.

The outlook for this field is most promising.

COOLGARDIE GOLDFIELD.

The output of gold during the year was 40,029 fine ozs., and for the preceding year 60,810 fine ozs., a decrease of 20,781 fine ozs. This decrease is largely accounted for by the falling off of the output from the Westralia East Extension mine at Bonnievale, Burbanks Birthday mine at Burbanks, and the New Bayley's Mines, Limited, at Coolgardie.

In the Lord Bobs district steady progress has been made. The Higginsville and Eundynie centres have been dull, but at Widgiemooltha an impetus has been given to prospecting by the advent of the railway, and many prospecting areas have been taken up.

In the Coolgardie district no notable developments have occurred, but prospecting has been steadily pursued. At Kunanalling and Jourdie Hills satisfactory progress has been made, and at the latter place a good deal of alluvial mining has been going on.

The outlook for this field is encouraging.

DONNYBROOK GOLDFIELD.

Owing to an entire absence of mining this Goldfield was abolished in March.

DUNDAS GOLDFIELD.

The output of gold during the year was 28,644 fine ozs., and for the preceding year 23,602 fine ozs., an increase of 5,042 fine ozs.

The field has shown decided progress and considerable outside attention has been given to mining propositions, several flotations having been effected. Completion of the railway early in 1909 will, it is anticipated, further improve matters.

The outlook for this field is most promising.

EAST COOLGARDIE GOLDFIELD.

The output of gold for the year was 890,773 fine ozs., and for the preceding year 937,239 fine ozs., a decrease of 46,466 fine ozs.

The year has been marked by exceptionally favourable developments in the deep levels of several of the principal mines on the Boulder Belt, notably in the Great Boulder at 2,200 feet, the Golden Horseshoe at 2,030 feet, the Great Boulder Main Reef at 1,900 feet, the Great Boulder Perseverance at 1,750 feet and 1,900 feet, the Ivanhoe at 1,820 feet, the Golden Links at 400 feet and 600 feet. Full details of the developments will be found in the report of the Inspector of Mines for this field.

At the north end of the field prospecting was consistently carried on and a few claims yielded payable gold. In the outside centres there have not been any developments worthy of note.

Early in the year the Bulong district of the North-East Coolgardie field was attached to this field, and the Mining Registrar's office closed, the records being transferred to Kalgoorlie.

Mining in the Bulong district is at a very low ebb, but one or two recent discoveries give hopes of a revival.

The outlook for this field is bright.

EAST MURCHISON GOLDFIELD.

The output of gold for the year was 144,792 fine ozs., and for the preceding year 119,207 fine ozs., an increase of 25,585 fine ozs.; 6.77 tons of copper ore, valued at £69, were also produced.

In the Lawlers district good progress has been made, particularly at Wiluna, the prospects of which are very bright.

In the Black Range district good progress has also been made; during the year the boundaries of the district were amended to take in the locality known as Youanme, about 60 miles south of Sandstone, and which was formerly within the North Coolgardie Goldfield. In this district there are many promising reefs, and good work has been done by several prospectors on their holdings, the result of which will be reaped when the State battery now in course of erection has been completed.

The outlook for the whole field is most promising, and the completion of the Mt. Magnet-Black Range railway now authorised should give it a great impetus.

GASCOYNE GOLDFIELD.

With the exception of a few dry-blowers at Bangemall, who are just making "tucker," nothing has been done on this field, and no mining titles have been registered nor has any gold been reported.

GREENBUSHES MINERAL FIELD.

The output of Black Tin for the year was 576.33 tons valued at £41,046, and for the preceding year 770 tons valued at £73,045, a decrease of 193.67 tons valued at £31,999.

The depression in mining, which has unfortunately prevailed, is principally due to the low price obtaining for tin and to many of the alluvial miners having temporarily turned their attention to the timber industry pending an improvement in prices.

The dredging plants have continued operations and absorbed a large number of workers. The initial difficulties having been overcome these dredges are now working well.

The sinking operations conducted on the South Cornwall mine to a depth of 200 feet in the hope of finding a payable lode were not successful, and the owners not having sufficient funds to continue, work was abandoned. Many hold the opinion that payable lode tin will eventually be discovered.

It is hoped and anticipated that the coming year will see an improvement in the prospects of the field.

KIMBERLEY GOLDFIELD.

The output of gold from this field was 150 fine ozs., and for the preceding year 337 fine ozs., a decrease of 187 fine ozs.

There was practically no improvement in the mining outlook of this field during the year. The Ruby Queen continued work up to June when a crushing of 130 tons for 59 fine ozs. was put through; this being unpayable, six months' exemption was applied for and granted.

Three prospecting areas were taken up, two for gold at Mt. Dockerell, and one for bismuth and silver at Grant's Creek, 40 miles north of Hall's Creek. The work done on the gold prospecting areas gave very encouraging results, but water having given out work had to be suspended. The supposed bismuth find proved to be carbonate of lead and the area was abandoned.

The expedition to Tanami, referred to in the last Annual Report, was carried out and encouraging prospects obtained, but owing to shortage of water an efficient test has been delayed, but the coming year will probably decide whether the place warrants the investment of capital in opening up the lodes said to exist there.

MT. MARGARET GOLDFIELD.

The output of gold for the year was 153,597 fine ozs., and for the preceding year 169,466 fine ozs., a decrease of 15,869 fine ozs.

Copper ore amounting to 4,404.10 tons valued at £20,221 was raised as against 5,144.37 tons valued at £58,914 for the preceding year, a decrease of 740.27 tons valued at £38,693.

The gold decrease is largely attributable to the suspension of operations at the Lancefield mine at Laverton which, however, is expected to recommence ere long.

The decrease in copper is mainly due to the closing down of the copper mines at Eulaminna.

In the Mt. Margaret district vigorous prospecting has been pursued, and the outlook is good.

The Mt. Morgans district has been quiet owing largely to the reduction in operations at the Westralia Mount Morgans mine, and the Eulaminna copper mines. Other properties have, however, been developing well and the results are encouraging. Towards the end of the year a local syndicate commenced boring operations with a view to endeavour to locate a payable lode and the Government are assisting them in their project.

The Mt. Malcolm District shows an increased production, largely attributable to the Leonora mines, which have been developing splendidly.

A local company has been formed at Leonora for the purpose of testing the country by a diamond drill, and operations will be commenced early in the coming year.

The outlook for this field is very promising.

MURCHISON GOLDFIELD.

The output for the year was 157,848 fine ozs., and for the preceding year 169,397 fine ozs., a decrease of 11,549 fine ozs.

No copper was produced, but in the previous year 31.71 tons valued at £274 were raised.

The decreased output of gold is largely attributable to the reduction at the Great Fingall mine at Day Dawn.

At Meekatharra and Yaloginda in the Nannine district the developments have been most satisfactory, and some excellent returns have been obtained.

The extension of the railway from Nannine to Meekatharra should do much towards promoting the development of these two promising centres. In most of the other centres of the Nannine district prospecting has been vigorously pursued.

In the Mt. Magnet district, the St. George mine at Mt. Magnet has erected an up-to-date plant and commenced operations, which have resulted in a great impetus to mining there. At the other centres things have remained much the same.

In the Cue district two finds in hitherto untouched country were reported, viz., Columbia, 10 miles east of Cue, and Sugarstone, five miles north of Barrambi. The prospects of each are promising.

A discovery of wolfram at about 20 miles northwest of Cuddingwarra was reported in October and a Reward Lease applied for. An official report stated that wolfram was showing in a quartz reef about 7ft. wide and apparently in payable quantities.

In the Cue centre the prospects are particularly bright but the others are mostly quiet. The Day Dawn district has been greatly affected by the reduction of operations on the Great Fingall mine, but in the outside centres prospecting is being vigorously pursued.

The outlook for this goldfield is most promising.

NORTHAMPTON AND YANDANOOKA MINERAL FIELDS.

Mining in these districts has been practically at a standstill consequent on the continued low prices ruling for base metals.

At Yandanooka 133.55 tons of copper ore valued at £1,482 were reported, but most of this was raised in previous years and not reported.

At Northampton 57 tons of lead ore were produced valued at £461, and for the preceding year 10 tons valued at £128, an increase of 47 tons valued at £333.

NORTH COOLGARDIE GOLDFIELD.

The gold output for the year was 91,252 fine ozs., and for the preceding year 86,791 fine ozs., an increase of 5,461 fine ozs.

No copper was reported, but in the preceding year 1.42 tons valued at £18 were raised.

The area of this field was reduced by the deletion of the Youanme district and its inclusion in the Black Range district of the East Murchison Goldfield.

In the Menzies district vigorous prospecting has been pursued with gratifying results.

The Mt. Ida and Yundaga centres both had a successful and promising year.

The Ularring centre has been very quiet and most of the large mines let on tribute. From the Cardinal lease at Ularring good returns have been obtained, and the Lady Gladys mine at Mulline has continued to put through satisfactory crushings.

In the Niagara district good work has been done, and the Desdemona centre has been opening up satisfactorily.

In the Yerilla district the various centres have been progressing steadily.

The outlook for this field is promising.

NORTH-EAST COOLGARDIE GOLDFIELD.

The gold output for the year was 27,073 fine ozs., and for the preceding year 35,130 fine ozs., a decrease of 8,057 fine ozs.

The area of this field was reduced by the deletion of the Bulong district and its inclusion in the East Coolgardie Goldfield.

In the Kanowna district steady prospecting has been pursued and some of the deserted centres are again being worked. There have not been any developments of note. At Kurnalpi and Mulgabbie matters have not improved.

There is nothing to justify the prediction of any marked progress in this field during the coming year.

PEAK HILL GOLDFIELD.

The gold output for the year was 7,980 fine ozs., and for the preceding year 8,111 fine ozs., a decrease of 131 fine ozs.

There is nothing of note to report from this field, which must naturally be retarded in its development owing to its remote locality.

The Peak Hill Goldfield, Ltd., continued operations during the year with encouraging results, and it is the Company's intention to carry out some special development work during the coming year. A small amount of prospecting is being pursued apart from the Company's operations.

PHILLIPS RIVER GOLDFIELD.

The output of gold for the year was 4,405 fine ozs., and for the preceding year 4,314 fine ozs., an increase of 91 fine ounces.

The production of copper was 2,015.71 tons valued at £9,233, and for the preceding year 10,414.57 tons valued at £57,273, a decrease of 8,398.86 tons valued at £48,040.

During the year the railway from Hopetoun to Ravensthorpe was practically completed, and it is proposed to construct sidings from the main line and the Mt. Cattlin mine to the smelter.

In the Ravensthorpe centre vigorous prospecting has been pursued with encouraging results.

At Kundip considerable work has been done and the developments give promise of increased activity.

The prospects in this field are considered very encouraging.

PILBARA GOLDFIELD.

The output of gold for the year was 6,966 fine ozs., and for the preceding year 10,043 fine ozs., a decrease of 3,077 fine ozs. As an amount of 5,228 fine ozs. had been understated for the period prior to 1907 the figures were included in the returns for that year so that in 1908 there was actually an increase of 2,151 fine ozs. over the actual production for 1907.

No copper ore was reported, that for the preceding year was 7.77 tons valued at £190.

There were 403.03 tons of Black tin raised valued at £30,636, and during the preceding year 853.69 tons valued at £85,603, a decrease of 450.66 tons, valued at £54,967.

MARBLE BAR DISTRICT.

In the immediate vicinity of Marble Bar matters have remained quiet.

At Warrawoona work has been continued with encouraging results.

Talga Talga has seen a fair amount of alluvial gold won including several slugs, two of which weighed 70 and 82 ozs. respectively.

At Bamboo Creek the "Bulletin" mine continued operations.

At Western Shaw and Tambourah alluvial mining was followed, but in the other centres little if anything has been done, everyone apparently waiting the construction of the Port Hedland-Marble Bar railway which has been authorised and which it is expected will be commenced early in the year.

Tin Mining.

At Wodgina a fine ore-dressing plant has just been erected on the Mt. Cassiterite mine, which it is hoped and expected will cause an increase in the output and consequent prosperity at this centre.

Copper.

Although rich deposits of this mineral exist over the greater part of the field, little, if any, work has been done consequent on the low market price ruling and the high cost of mining.

Asbestos.

The deposits at Tambourah have been actively worked, and it is understood to be the intention of the Company owning them to erect an extensive treatment plant. Forty tons, valued at £1,600, were reported. Another deposit was located near Wyman's Well, but very little work has so far been done.

NULLAGINE DISTRICT.

There has been an improvement at this centre during the year, and an increase in the area applied for as gold mning leases.

In February an important discovery was made at Eastern Creek, several rich reefs having been located. The prospectors are erecting a 10-head mill on their property and crushing operations should be commenced early in the year. Eight leases are being worked at this centre, and on each valuable stone has been found.

In the vicinity of Nullagine a good deal of dry-blowing has been going on. At Mosquito Creek development work has been pursued with promising results. At Middle Creek the "Barton" has been producing regularly and promises well.

The outlook for this field, particularly when the railway to Marble Bar is an accomplished fact, is most promising.

WEST PILBARA GOLDFIELD.

The output of gold for the year was 1,006 fine ozs., and for the preceding year 464 fine ozs., an increase of 542 fine ozs.

Copper ore to the extent of 1,486 tons valued at £17,691 was produced, and during the preceding year 3,365.50 tons valued at £63,548, a decrease of 1,879.50 tons valued at £45,857.

There is nothing to indicate the possibility of any marked improvement in the coming year.

WEST KIMBERLEY MAGISTERIAL DISTRICT.

In this district prospecting is being carried on in the region towards Plover Hill and on to the Leopold Ranges, but up to date nothing noteworthy has been found.

In August, 1907, five mineral leases comprising 240 acres were applied for at Koolan Island, Yampi Sound, near the entrance to King's Sound, about 100 miles from Derby, for the purpose of working some iron deposits there. During the year a geological examination of the deposits was made and the report was a highly favourable one. No work was done during 1908, but it is anticipated that active operations will be undertaken in the coming year.

A find of wolfram was reported from a locality 70 miles easterly from Derby and a Reward lease granted. A geological examination was made of the find and although the prospects were promising there was not sufficient work done to enable a definite conclusion to be arrived at. The facilities for mining in this remote locality are necessarily very limited, but it is hoped that vigorous prospecting will be pursued ere long.

YALGOO GOLDFIELD.

The output of gold for the year was 551 fine ozs., and for the preceding year 4,371 fine ozs., a decrease of 3,820 fine ozs.

9.50 tons of copper ore valued at £97 were produced as against 10 tons valued at £130 for the preceding year.

Mining throughout the field has been quiet. At Yuin operations have been resumed on the Royal Standard Leases, and a return to prosperity is anticipated. At Messenger's Patch increased activity is expected on the erection of the State Battery now contemplated. Other centres have been quiet, but the indications are that the coming year will be a more prosperous one than the past.

YILGARN GOLDFIELD.

The output for the year was 22,163 fine ozs., and for the preceding year 19,292 fine ozs., an increase of 2,871 fine ozs.

There has been an improvement in this field and the number of mines working shows an increase. Developments in several centres warrant a prediction that the coming year will see a marked improvement.

TABLE 25.

Value of Mining Machinery and Number of Stamps and other Mills erected on the 31st December, 1908, compared with the previous Year.

Goldfield.	District.	Value of Mining Machinery.		Batteries. Number of Stamps.		Mills.																	
						1907.										1908.									
		1907.	1908.	1907.	1908.	Prospecting.	Ball.	Krupp Ball.	Griffin.	Huntington.	Salford.	Tremain.	Flint.	Other Crushers.	Puddlers.	Prospecting.	Ball.	Krupp Ball.	Griffin.	Huntington.	Salford.	Tremain.	Flint.	Other Crushers.	Puddlers.
		£	£																						
1. Kimberley		7,125	6,412	50	50	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	..	...
2. Pilbara	Marble Bar	28,749	16,949	55	55	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Nullagine	17,900	10,200	40	40	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
3. West Pilbara		2,700	4,200	20	30	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
4. Ashburton		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5. Gascoyne		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6. Peak Hill		75,870	75,870	50	50	...	...	...	...	...	...	...	...	...	2	1	...	...	...	...	...	...	...	...	2
7. East Murchison	Lawlers	160,542	197,273	245	220	1	...	...	...	...	...	...	...	...	2	2	...	...	...	...	...	...	...	...	1
	Black Range	77,460	82,300	85	90	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...
8. Murchison	Cue	63,190	65,535	110	113	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Nannine	84,739	90,000	157	182	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	3
	Day Dawn	271,482	267,300	155	135	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Mt. Magnet	21,270	43,085	75	85	...	...	...	...	1	...	1	...	...	...	...	...	...	...	1	...	2	...	...	1
9. Yalgoo		23,890	24,750	90	90	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
10. Mt. Margaret	Mt. Morgans	213,552	200,990	160	172	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Mt. Malcolm	148,977	229,851	270	260	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	1	...	...	...
	Mt. Margaret	200,669	191,040	178	173	1	4	...	...	...	...	...	...	...	...	1	4	...	...	...	...	...	...	...	...
11. North Coolgardie	Menzies	72,731	66,001	161	153	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Ularring	59,797	61,240	75	75	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	2
	Niagara	74,237	78,008	105	105	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Yerilla	37,196	31,000	60	67	1	...	...	...	1	...	1	...	...	...	1	...	...	...	...	...	1	...	...	...
12. Broad Arrow		53,974	40,903	195	130	1	...	...	...	1	...	..	...	...	1	1	...	...	...	1	...	...	...	...	1
13. North-East Coolgardie	Kanowna	76,947	49,000	133	153	1	...	...	...	...	...	...	...	...	3	1	...	...	...	...	...	...	...	...	2
	Kurnalpi	1,395	1,330	5	5	1	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	1
14. East Coolgardie	East Coolgardie	1,721,125	1,741,400	695	715	...	...	38	28	4	...	...	23	...	21	...	...	40	28	3	...	...	23	...	18
	Bulong	24,205	5,500	55	25	...	...	...	...	2	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
15. Coolgardie	Coolgardie	134,588	131,724	299	274	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Kunanalling	27,050	15,250	95	85	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
16. Yilgarn		67,505	60,000	130	130	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
17. Dundas		63,077	51,300	120	120	...	...	...	..	...	1	...	...	1	...	...	...	...	...	...	1	...	...	1	...
18. Phillips River		49,519	26,370	40	40	1	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...
State generally		58,000	58,000	...	...	...	...	1	...	...	...	...	...	3	...	...	...	1	...	...	...	...	...	3	...
Total Gold-extracting Machinery		3,919,461	3,922,781	3,908	3,822	11	4	39	28	10	1	4	23	4	33	13	4	41	28	7	1	5	23	6	32
Total Machinery, other than Gold-extracting		102,487	156,018	5	5	...	...	...	...	...	...	...	...	5	12	...	...	...	...	3	...	...	...	...	13
TOTAL MINING MACHINERY		4,021,948	4,078,799	3,913	3,827	11	4	39	28	10	1	4	23	9	45	13	4	41	28	10	1	5	23	6	45

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."

No fresh legislation was enacted during the year, but an addition was made to the General Rules under Regulation 4 of "The Mines Regulation Act, 1906," and an amendment of Regulation 163 under "The Mining Act, 1904." An amendment of Regulation 14 and an additional Regulation 14a under "The Mines Regulation Act, 1906," were also gazetted, to take effect from the 1st January, 1909.

PART IX.—INSPECTION OF MACHINERY.

Operations under "The Inspection of Machinery Act" have been carried out as in previous years. The total boiler registrations now amount to 3,340 and machinery registrations to 2,532, showing increases of 87 and 90 respectively, when compared with totals for year ending December, 1907.

Two thousand one hundred and sixty-nine boiler inspections were made for which one thousand eight hundred and seventy-seven certificates were granted. One thousand four hundred and thirty-eight machinery groups were examined, and one thousand three hundred and seventy-three certificates issued. Machinery and boilers on 44 vessels licensed under "The Boat Licensing Act, 1878," and 26 sea-going vessels under "The Navigation Act, 1904," were surveyed by an officer attached to this Department. In attending to this division of the work under the Acts mentioned, the expense of providing an independent surveyor is obviated, whilst efficiency is maintained.

There have been 53 machinery accidents, six of which were fatal, as compared with 61 and four fatal for previous year.

Nineteen examinations for engine-drivers' certificates were held in the principal centres, and the following certificates have been granted:—

First-class Competency	34
Second-class Competency	45
Third-class Competency	63
First-class Service	—
Second-class Service	1
Third-class Service	1
Loco. and Traction Competency ..	16
Loco. and Traction Service	1
Traction Competency	3
Traction Service	1
Marine Competency	7
Interim Certificates	18
Copies of Certificates	15
Total	205

During the year a distance of 45,515 miles was travelled on inspection work, being 3,980 less than last year, which is accounted for by the Inspectorial staff being one less than in 1907.

PART X.—SCHOOL OF MINES.

In the past year, the fifth of the School, satisfactory progress has been made.

The number of individual students attending classes has increased and several of the advanced students have secured good appointments.

The attendance at classes has been well maintained, and the examination results show that much good work has been accomplished. The majority of students attending classes are engaged in outside employment and few are able to devote their whole time to study. There is, however, a tendency for a greater number of younger students to attend the school.

A complete course for mechanical and electrical engineering is now included in the syllabus.

The system of free assays for prospectors has been continued. A total of 495 assays and determinations was made.

The Museum established at the School has proved a great attraction, being a source of interest and study to many.

Full details of the work of the School will be found in the report of the Director published as an appendix to this report.

PART XI.—DEPARTMENTAL.

TABLE 26.

CORRESPONDENCE.

Letters, Telegrams, etc. despatched during 1908.

Branch.	Letters.	Telegrams.	Circulars and Advices.	*Statistics and Publications.	Total.
Analytical and Explosives	1,784	70	526	70	2,380
The Accountant	6,900	146	4,950	...	11,996
Correspondence	6,981	1,333	4,360	10,000	12,674
Geological Survey	1,195	95	...	3,094	1,290
Inspection of Machinery	6,371	330	56	50	6,757
Mines Water Supply	3,507	595	...	...	4,102
Registration	8,738	629	400	4,471	9,767
State Batteries	5,324	534	3,838	...	9,696
Statistical	199	200	700	4,800	1,099
Survey and Drafting	686	27	...	...	713
	41,685	3,959	14,830	22,485	60,474

*The figures in this column are not included in the totals column.

Inward Correspondence.

Branch.	1907.	1908.
Correspondence Registered.		
Correspondence	7,680	7,650
Analytical and Explosives	1,985	2,245
Geological Survey	1,550	1,422
Mines Water Supply	4,676	4,674
Machinery	...	8,409

By comparison with 1907, as appearing at page 32 of the Departmental Report for 1907, it will be seen that, with regard to letters, telegrams, etc., despatched, there is an increase of 3,858, against the decrease of 242 for the year 1907.

TABLE 27.

Surveys of Leases, Areas, etc., exclusive of Groups of Business and Residence Lots.

	1906.		1907.		1908.	
	No.	Area.	No.	Area.	No.	Area.
		acres.		acres.		acres.
Surveys on Eastern Goldfields ...	498	6,674	435	6,159	406	8,042
Surveys on Central Goldfields ...	334	4,408	344	4,840	278	3,655
Surveys on all other Fields	289	7,815	223	5,977	159	5,517
	1,121	18,897	1,002	16,976	843	17,214

TABLE 28.

Buiness and Residence Areas in Groups.

1906.		1907.		1908.	
No.	Cost.	No.	Cost.	No.	Cost.
	£ s. d.		£ s. d.		£ s. d.
668	669 6 7	455	539 0 2	122	123 16 0

Surveys of Roads, Connection, Traverses, etc.

	1906.			1907.			1908.		
			Cost.			Cost.			Cost.
	M.	c.	£ s. d.	M.	c.	£ s. d.	M.	c.	£ s. d.
Eastern Goldfields	58	52	229 14 6	34	77	51 11 2	51	43	285 18 7
Central Goldfields	102	60	507 7 0	17	14	57 4 8	46	11	188 8 10
Other Fields	3	16	6 19 2	21	68	81 2 9	10	31	53 2 0
	164	48	744 0 8	73	79	189 18 7	108	5	527 9 5

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

Department of Mines,
Perth, 31st March, 1909.

H. S. KING,
Under Secretary for Mines.

DIVISION II.

REPORT OF THE STATE MINING ENGINEER FOR THE YEAR 1908.

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

Office of the State Mining Engineer,
Mines Department, Perth, 7th April, 1909.

Sir,

For the information of the Hon. the Minister for Mines, I have the honour to submit the following report on the work of this office for the year 1908:—

Inspection of Mines under "The Mines Regulation Act, 1906," and "The Coal Mines Regulation Act, 1902."

During the year Inspector Beaumont resigned from the service and Inspector Cullingworth was transferred to the Malcolm District, but did not take up his duties there till 1909. Between Mr. Beaumont's leaving, 8th September, 1908, and the end of the year Mr. Greenard, Inspector of Mines at Menzies, undertook the work of the Malcolm district as well as his own. In December Mr. E. D. Cleland was appointed, temporarily, Relieving Inspector, and Inspector for the Greenbushes, Phillips River, and Northampton Fields. With the above exceptions, the stations and duties of the various Inspectors of Mines remain the same as in the previous year.

Reports have been received from the Inspectors of Mines for the year 1908, the substance of which is contained in the following excerpts:—

PILBARA AND WEST PILBARA GOLDFIELD.

The Acting Inspector of Mines, Mr. P. C. Riches, reports, on 28th January, 1909:—

"The past year has been a very quiet one, the fall in the price of tin and copper having had a most depressing influence on the district; a large number of men have left and are still leaving the various fields; this state of things will no doubt continue until a commencement is made with the construction of the Port Hedland-Marble Bar railway, when a revival should set in, and capital can be introduced into the district.

"During the year there have been two (2) fatal and three serious accidents. One of the fatal accidents was caused by a misfire and the other by battery machinery, while two of the serious ones were through falls of earth in shallow open cut alluvial claims at Talga, and the third was a machinery accident at Wodgina. By this you will notice that there has not been a single mining accident, that is, in the proper sense of the word.

"Early in the year an old Nor'-West prospector, M. Doherty, located a valuable gold find at Eastern Creek, about 14 miles from Mosquito Creek. Several 5oz. crushings have been put through at the State Battery at 20-Mile Sandy; a ten-stamp battery is being erected and is now nearing completion, so that this find should shortly be on the list of producers.

"During the year a new find of asbestos was made near Wyman's Well, about nine miles from Marble Bar; this property is now in the hands of Eastern speculators, and I believe it is intended to develop the property at an early date; surface indications point to a large body of ore being available.

"At *Talga Talga* several large slugs of gold were unearthed during the year, the two most notable ones being 82 and 76 ozs. respectively.

"Copper mining has been quiet, the principal producers being the Whim Well mine at Whim Creek and the Lady Evelyn mine at Croydon.

"*Moolyella.*—About eighty men are employed on this field, and they still continue to get a fair amount of tin; the tin lodes have been neglected so far, but with a suitable ore-dressing plant the lodes would be systematically worked with good results.

"*Tambourah.*—An active policy of development has been carried out on the asbestos leases belonging to the Pilbara Asbestos Co., Limited; at a depth the lodes look well, the fibre being of high value.

"At *Western Shaw* about 40 men have been working on an alluvial gold patch, and Thompson and party have been dollying a very rich leader.

"*Bamboo Creek.*—The only property that has been working is the Bulletin mine, over which a tribute is let; several payable crushings have been put through.

"*Whim Creek.*—At Whim Creek the Whim Well Copper mine has completed the tramway line from Balla Balla to the mine, and throughout the year has been shipping high-grade ore.

"*Croydon.*—The Lady Evelyn mine is the only one working at this centre during the year; some very rich parcels of copper ore have been despatched from the mine.

"*Mallina.*—The low price of antimony has necessitated the closing of the mines at this centre.

"*Pilbara.*—The usual number of alluvial gold miners have been working in and around this locality during the year. Doddridge and party located a rich leader on the old Broken Hill claim.

"*Warrawoona.*—Mining is very quiet at this centre; a tribute is being worked at the Klondyke Boulder, and this has every appearance of turning out well, this mine having always been a consistent one.

"*Wyman's Well.*—Gold mining is quiet at this centre, but it is hoped the asbestos lodes will cause a stir soon.

"*Nullagine and Mosquito Creek.*—About the usual amount of work is going on at the various claims, but early in the year Eastern Creek should be an important factor in the gold returns.

"*Wodgina.*—At the Mount Cassiterite mine an active policy of development has been carried out, a fine ore-dressing plant has been erected, and the coming year should show great activity on this field.

"The tantalite deposits have been neglected, but this is solely owing to the low price of the mineral.

"In this locality a man named Sifleet has located a very promising tin lode and has applied for a reward lease. The Bright Star mine at the Twenty-

Mile is also in the hands of Southern men who intend to commence work at once.

"Cooglegong.—There are about eighty men on this and the Old Shaw Tinfield, they all appear to be doing fairly well; tin lodes have been neglected.

"Roebourne.—Very little has been done on the copper mines in the vicinity of Roebourne, but at Weerianna the Porterminna Company have erected machinery and joined the list of gold producers.

"Prosecutions for breaches of "The Mines Regulation Act, 1906.—There have been no prosecutions during the year under review."

CENTRAL GOLDFIELDS.

The report of the Inspector of Mines, Mr. F. J. Lander, is dated 2nd February, 1909. He says:—

CUE DISTRICT.

"Light of Asia.—During the year this mine has commenced working below water level. Two very rich crushings have been taken out within the last four months, which prove that the chutes of ore that have been worked above water level are good below. The owner of this mine, Mr. Lloyd, has purchased from Mr. McIntyre the Queen of the May and is now working it in conjunction with the Light of Asia. The Light of Asia is a mine that, in my opinion, would pay for a much more extensive development, and would thus provide work for a larger number of men.

"During the year the Light of Asia group of mines have crushed 5,674 tons for 5,047.7ozs. valued at £4 per oz. In addition to the above 990 tons were crushed for the public for 775ozs. of gold.

"The Gem of Cue.—During the year this mine was purchased by Messrs. Chesson and Heydon from the prospectors. Several rich crushings have been taken out above water level, which have confirmed the faith of the purchasers in the property.

"The Princess Murchison.—This property is owned by a local syndicate and during the year under review they have done a lot of dead work. It is pleasant to record that during the last two months they have struck some very rich gold. The owners are very hopeful that now they have got over their greatest difficulties, in the near future the mine will be a regular dividend payer.

"The Lilly.—This is a mine that has lain idle for many years, but this year it has been taken up by Mr. John McIntyre, who has obtained from it 372 tons of ore valued at £4 3s. per ton. The main shaft is down 200ft. The reef averages two feet in width. A drive has been put in 80ft. in the bottom level.

"The Creme d'Or.—This mine is doing exceedingly well. The brothers Cairns and party have shown their confidence in the property by purchasing another fourth of the mine. During the year they have sunk the main shaft another 75ft., crosscut into the reef, and obtained good values. The reef is wider and better defined and the mine bids fair to be a regular dividend payer.

"Cue, like the majority of mining towns, has seen great changes, sometimes of success and then of depression. But never during the 6½ years that I have been on the Murchison has mining in Cue looked more prosperous than at the present time.

WEBB'S PATCH.

"The Hill End G.M.—Since May of this year this mine has paid off accumulated debts amounting to £1,400. The manager informs me that there are 2,000 tons of ore in sight, worth 15dwts. per ton. The reef in this mine is 4ft. wide and is dipping north at an angle of 57 degrees. There are 30 men employed and the monthly output is 250 tons. It is definitely settled by the directors to sink a main vertical shaft eight chains north of the present underlay shaft. This main shaft is expected to cut the reef 250 feet from the surface. A new cornish boiler and a concentrating table are to be installed and a cyanide plant is to be erected. There are 1,400 tons of sands waiting to be treated. The mine is looking well.

MT. MAGNET.

"Morning Star G.M.—It is pleasant to report that this mine has restarted after a lengthy period of exemption. Mr. Shallcross of Kalgoorlie has taken a working option on the mine. The mine is reported to be looking well.

"Lydeard St. Lawrence (north of the Morning Star).—This is a 10-acre lease held by T. B. Tazewell. A shaft 50 feet deep has been sunk on the lode. The formation is 4ft. wide and dips slightly to the west. Thirty-three tons have been crushed from this lode at the public battery which gave a return of 14dwts. 4grs. per ton over the plates and 3dwts. 14grs. in the sands. This is a new property which has been taken up during the year.

"Brownhill North.—This is a 12-acre lease and is held by Fiddler, Murray, and Kidney. Two shafts have been sunk on this property, one 84ft. deep and one 71ft. deep; both are connected. One thousand tons of ore have been crushed from this mine at the State battery for 482ozs. over the plates and 750ozs. in the sands.

"The Saturn.—This mine has been started again by a new party. It is a 12-acre lease and is held by J. Kidney and party. When I visited the mine a crosscut was being put in at the 100ft.-level.

"There is nothing fresh to report from the Invercauld, the Neptune, the Havelock, and the Jupiter. The owners of these properties are doing fairly well and are giving employment to quite a number of men.

"Cushie Doo.—When I last visited this mine there were 800 tons of ore lying on the surface which had been taken from an open cut 40ft. deep. The property is held by Sale Bros. This is looked upon by the people of Magnet as the most promising property in the place.

"The Old Britannia and the Kapai.—This property has been taken up by Manners and James of Mt. Magnet. There are three known parallel reefs on it. On the western reef a shaft has been sunk to a depth of 90ft., and a considerable amount of driving done at the 50ft.-level. The reef is 12ft. wide and is valued at 7dwts. per ton. The centre reef is 8ft. wide and is valued at 8dwts. per ton. This reef was passed through in the vertical shaft sunk on the western lode about water level. The eastern reef is 12ft. wide and is valued at 7dwts. per ton. An underlay shaft has been sunk on it for a depth of 50ft., and 50ft. of driving has been done at this level. A Tremain mill has been erected, but had not started working when I was last at the mine.

YALGOO DISTRICT.

Field's Find Road. Messenger's Patch.

"The Marloo.—This property of 12 acres in extent is held by Messenger and party. A vertical shaft has been sunk 50ft. The lode is 3ft. wide and is very rich in patches.

"*Mug's Blow.*—Held by Bowes and Bradley: has a shaft 30ft. deep with a crosscut 12ft. in length, where the reef was cut and found to be 5ft. in width carrying good values. A lot of work has been done on the surface and the men have been dollying and making from £4 to £7 a week per man.

"Messrs. Rodan, Warner, Parker, O'Malley, Pope, Hitchen, and Hampton have taken up properties in this district and are putting in some solid prospecting work.

"Moorehead has taken up a P.A. of 18 acres three miles south of the Golden Grove Hotel. The reef has been laid bare for 18 chains. It averages 5ft. in width and is gold-bearing throughout the whole length. Moorehead values the reef at 10dwts. per ton. It is running N. and S. and dipping E. at an angle of 50 degrees.

"Field's Find Road is the most promising undeveloped centre in my district.

"The Marloo, Iron Duke, and Moorhead's P.A. are the most promising properties south of Cue.

TUCKANARRA.

"*The Nemesis.*—This lease is the property of Lawrence and McInnes. It consists of five acres. The main shaft is down 250ft. All the ore above the 200 ft. level has been worked out. This mine has been very consistent in its gold returns, never crushing below 2ozs. per ton, and often as high as 4ozs. The bottom level is proving equally as good as any of the other levels.

"*Boyd's Reward.*—This mine has been under exemption for more than a year, but I am pleased to report that new machinery is being erected to cope with the heavy inflow of water and ere long the mine will be again in full swing.

STAKE WELL.

"*Koh-I-Noor South.*—During the year a new ten-head battery has been erected and the surface machinery re-arranged with the addition of new poppet legs. The Golden Pole Co. has had a working option over this mine. A lot of solid work has been done during the year 1908. The owners are anticipating with great confidence a good future for this mine.

"*The Kohinoor* is being worked by two men who are getting out regular crushings. The mine is paying very well.

NANNINE.

"There is nothing new to report about the mines in Nannine. A lot of good prospecting is going on and the public battery is kept constantly working.

BURNAKURA.

"*The New Alliance.*—This mine has milled 2,676 tons during the past year for a return of 1,396.93ozs. The average number of men employed is 25. This mine is greatly handicapped on account of the great quantity of water, about 300,000 gallons daily, that has to be pumped. The No. 1 level has been driven 140ft. and the No. 2 level 165ft., sinking and rising 185ft. with 250ft. of cross-cutting.

"*The Federal City.*—This mine is working away as usual; 4,041 tons of stone from the mine having been treated and 96 tons for the public. The 4,041 tons gave a total return of 1,904ozs. 14dwts. The drives have been extended 393 feet during the year. The prospects of this mine are fair.

"*The Old Alliance* is still being worked by tributers.

QUINN'S.

"*The Phoenix.*—This mine has crushed 677 tons during the year for 658ozs. 12dwts. over the plates. The gold is valued at £3 13s. 3d. per oz. A new shaft has been sunk to a depth of 60ft., and the 80ft. level in the old shaft has been extended 63ft. This mine is most consistent both for width of the reef and for average values. There are 6,000 tons of sands lying on the surface worth about 4dwts. per ton. In my opinion the future of this mine is assured.

"*The Barrambie Ranges G.M.*—During the last 9 months 627ft. of driving, 48ft. crosscutting and 124 ft. sinking and rising have been accomplished. The total tonnage of ore milled was 4,546 tons for 3,025 ozs. of bullion by amalgamation and 561ozs. by cyaniding. The chief work done during the period has been in opening up the No. 2 (200ft.) level. Between this and the No. 1 level the lode is faulted, but has been picked up, and the north drive which has reached 361ft., from shaft is now entering the shoot of stone from which good returns were won in the higher level. From the quartz in this end the latest assay was 20ozs. for a width of seven inches. The quartz is heavily mineralised with both pyrites and galena. The water supply, which has been the occasion of some trouble in the past, is now ample for all requirements. The Barrambie South mine has been under exemption.

"*The Sugarstone Lease* is situated about six miles west of the Barrambie Ranges. This is a new property, which has been taken up by C. Jameson and party. In sinking the main shaft 45 tons of ore were taken out and crushed, giving a return of 22dwts. per ton over the plates, and 4dwts. in the sands. The reef is 2ft. wide running N. and S., and dipping W. at an angle of 70 degrees. The main shaft is 50 feet deep, and a drive was put in south for 35 feet. The reef is wider underfoot than in any other part. The chute of gold on the surface is 135 feet long.

GUM CREEK.

"*The Hilda No.* 1.—A considerable amount of prospecting is being done on this lease by a Perth syndicate. Ore, valued at 15dwts. per ton, has been discovered and a parcel of 23 tons has been crushed for 15dwts. over the plates and 8dwts. in the sands. There has not been enough work done to form any correct opinion as to the value of the property.

"Another lease 8 miles W. of Gum Creek has been taken up by John Fairy. The reef is 3ft. wide and is worth about an ounce per ton, 22 tons have been crushed recently at the Nannine public battery with a return of 22dwts. per ton.

YALLOWGINDAT.

"*The Karangahake.*—Since the mine was taken over by the Company about 1,700 feet of development work have been done. The greater part of this work has been done at the No. 1 level, at which five large ore bodies have been intersected. These bodies have all been proved to be payable and vary in length from 70ft. to 150ft. and from 6ft. to 20ft. in width.

"At the 200ft.-level one of the large ore bodies has been intersected and proved payable. No driving has been done on the lode, but the work of developing the level is about to be started, and will be pushed on with as speedily as possible.

"Machinery and buildings have been erected as follows:—

"Complete head gear on main shaft, winding engine, horizontal engine, vertical boiler, Cornish type

boiler, ten-head mill, office, store, smelting house, blacksmith's shop, and change room.

"The manager informs me that an extra Cornish boiler, rock breaker, air compressor, cyanide plant, and electric lighting plant will be installed at an early date.

"The battery started crushing about the beginning of October and since then 1,582 tons have been milled, most of which has been taken from development work, and from which 952 ounces of gold were obtained, valued at £3,808.

"The total quantity of sands untreated is about 1,000 tons valued at 18s. per ton.

"The Gibraltar.—This property consists of 30 acres and is situated south of and adjoining the Karangahake. I am of opinion that the same lode passes through both properties. Six shafts have been sunk on this property and a lot of crosscutting and driving done. The ore body is a large formation and is valued at from 4 to 8 dwts. per ton.

"The prospectors on this lease are hard-working, intelligent, men. They have done a lot of hard and useful work and are confident that success will eventually crown their efforts.

"The Batavia.—The owner of this property has sunk his new main shaft 100ft. and is now driving a crosscut out towards the reef, which should be cut in another 20ft. The last crushing of 61 tons from this mine was taken from the south shaft, which was sunk on the underlay, which gave a return of 17dwts. over the plates. The reef on this property which is 14ft. in width has been tested for a length of over 500ft. showing values of from 19 to 30dwts. per ton.

"The Batavia South.—A shaft has been sunk to a depth of 105ft. It is opened out at this level and a parcel of 40 tons put through the public battery gave a return of 15dwts. per ton.

"The Revenue.—A new pumping plant has been installed at this mine and a new winding engine erected. During the time this work was being done the water was allowed to rise in the shaft. At the present time the mine is under exemption.

"In and around Yallowgindat there is now a population of about 200. A great deal of useful prospecting work is being done. MacIntosh and party alone in a few weeks obtained no less than 1,454ozs. of gold from a lease known as the Black Jack.

"The Kelpie has struck specimen stone at the 50ft. level.

"The North Revenue is also looking very well. Mr. Duncan Henderson put through a parcel of 12½ tons for over 3ozs. to the ton. Mining at this centre is looking very healthy indeed.

"Oozulem Bird.—This lease is situated at the 12-Mile, Meekatharra Road. It is about 4 miles S. of Yallowgindat. The main shaft has been sunk 60ft. to water level. A drive has been put in north 60ft. and south 70ft. at this level. The reef is 8ft. wide, but only 2ft. of this has been worked. 208 tons have been crushed from these 2ft. of the reef for a return of 225ozs. of fine gold. The 6ft. of quartz which are left average about 6dwts. per ton, and will not pay for carting. This it is anticipated will pay to be taken out when a public battery is erected at Yallowgindat.

MEEKATHARRA.

"The Fenian.—The following development work has been done on the mine during the past 12 months: Main shaft sunk 111ft., winzes sunk 435ft., rises 129 ft., driving 780ft., and crosscutting 82ft. A ten-head mill, a complete cyanide plant, tailings pump, and a new boiler have been erected during the past 12 months. 1,292 tons of ore were crushed at the Government battery for 2,603ozs. of gold. They have crushed at their own mill 1,593 tons for a yield of 2,235ozs. 6dwts. of gold. They have also cyanided 860 tons for a yield of 128ozs. of gold. This mine is looking better and more promising than ever before.

"Ingliston Consols Extended.—During the year 1908 the main shaft has been sunk 40ft. making a total depth of 254ft. A plat has been cut at 244ft. in good ore, a parcel of 388 tons taken therefrom yielding 419ozs. 4dwts. A drive has been put in S. at this level for a distance of 215ft. and is now close to the Fenian boundary, where there is a rich leader 8 inches wide carrying good values. At this level 90 ft. S. of the shaft there is a shoot of ore 15 inches wide valued at 3ozs. per ton. This level has been driven north 143ft. on good values all the way. It has yet to be driven 150ft. to reach the rich shoot known to exist in the upper workings and from which handsome returns were obtained in the early history of this mine. The total quantity of stone crushed in 1908 was 916 tons for a yield by amalgamation of 1,747ozs. The average value of the sands was 6dwts. The total sinking, including winzes, was 205ft., crosscutting 180ft., and driving 418ft.

"During the year the following were erected:—A Cornish boiler 26ft. x 6½ft., winding engine, 10in. x 15in., with drums 4ft. 3in. in diameter, and new poppet legs, office, change-room, and smith's shop.

"A five-head stamp mill and engine complete are being erected at the present time. This mine occupies the best position of any mine on Paddy's Flat, because the shoots of ore that are now known to exist in the Marmont and the Fenian are dipping north into this property.

"The Ingliston Extended.—During the year the Company has treated 18,832 short tons for a yield of 6,336 fine ozs., valued at £26,934. The average number of men employed is 100. The following development work has been done, driving 641ft., crosscutting 716ft., rising 377ft., and sinking 506ft.

"The Ingliston South Extended.—This property joins the Ingliston Consols on the N.E. corner. A large lode formation runs from the north shaft on the Consols right through this block to the Ingliston Extended G.M. A reef running with this lode formation was worked at a shallow level worth 26dwts. per ton. This property will probably be very valuable at a depth because all the shoots of gold in the mines south of this property are dipping north and that rapidly. It is held by Coombes, Smith, and Wallace. They are all practical men and know the value of their property.

"The Commodore.—This mine is held by a local syndicate, and consists of 18 acres. During the year 1908 a main shaft 6ft. 6in. x 3ft. 5in. in the clear was sunk 240 feet, 140ft. of driving was done north of the main shaft. 86 tons of ore have been crushed at the State battery for a return of 318ozs. The prospects of this mine are certainly good.

"The Macquarrie and The Macquarrie North.—The former consists of 12 acres and the latter 15 acres. The main shaft is 6½ft. x 3½ft. in the clear and 115ft. deep. During the year 2,503 tons have been crushed at the State battery for a return of over 10 dwts. per ton. The formation averages 15ft. in width. It is a N. and S. lode and is almost vertical. The shoot of ore is 400ft. long. The mine is held by

a local syndicate and at the present time is under offer to an English Company.

GARDEN GULLY.

"*Garden Gully South, The Sabbath Lease.*—This is a 24-acre block held by Phillip and party. One shaft has been sunk 70ft. to water level. A crosscut was put in at this point for 30ft., and cut a reef 2ft. wide with a large formation on the W. wall of the reef. Both the reef and the formation carry gold. The reef is payable.

"There is also another reef W. of the shaft 2ft. in width. This reef is also payable.

"*Jasper Star.*—This lease is ¼ of a mile W. of The Sabbath lease, held by Boyd and party. It consists of 18 acres. One reef has been sunk 53 feet to water level. The reef was cut at the end of a 25 ft. crosscut. It is 2ft. in width but not payable.

"Another shaft about 60ft. N. of the above has been sunk 15ft. and 20ft. of driving have been done. The reef is 18in. wide and very rich. Thirty pounds of stone gave a yield of 5ozs. 18dwts. of gold.

"*P.A.* held by T. Bridge and party consists of 18 acres. It is about a mile N.E. of the Sabbath. A shaft has been sunk 20ft. and a drive put in N. and S. The reef is 2½ft. thick and very rich. It is running N. and S. and dipping W. at an angle of 60 degrees. This is the area where a small quantity of fresh water was found. All the other shafts sunk at this centre have struck salt water.

"*Garden Gully North P.A.* of 18 acres, held by Wilson, Gurney, and Warnes, is situated about ¾-mile N.E. of Garden Gully pumping station. There are three strong reefs on this property one of which is pure quartz about 14ft. wide running N. and S. and dipping W. 60 degrees. It is showing gold along the line of reef for 80ft. There are two other ironstone reefs parallel to the line of quartz, one of which is 7ft. wide and showing good gold. The other is showing gold, but very little work has been done on it.

PEAK HILL.

"*Peak Hill G.M.*—For the year the Company treated 58,276 tons for a return of 7,935ozs. of fine gold. The development for the year totalled 5,186ft. The company made a loss on the year's work, but during the last four months a small profit was made each month. The company has employed an average number of 100 men during the year.

"In conclusion, the Murchison field as regards mining can look forward with great confidence. The Field's Find Road, Yallowgindat, and N. and S. Garden Gully at the present time offer good inducements to the prospector.

ACCIDENTS.

"During the year 7 fatal, 20 serious, and 91 minor accidents were reported."

EAST MURCHISON GOLDFIELD.

The Inspector of Mines, Mr. H. Colbran, reports, on 26th January, 1909:—

"The work for the year 1908 consisted of 255 mine inspections, 3,485 miles of travelling, one complete mine sampling, seven reports in response to requisitions for Government assistance, three attendances at inquests, two prosecutions, four investigations into complaints, six examinations of applicants for certificates of exemption under Section 31, Subsection 4 of "The Mines Regulation Act of 1906," and ordinary office correspondence.

"There has been a general improvement in the district during the past year, and not taking into account the increased tonnage and yield from the Sandstone district the remaining centres show an increase over 1907 of 34,932 tons and of 10,495ozs. of gold. In addition there has been an important new find during the year. This is about 40 miles N.E. of Kathleen Valley and about 50 miles N. of Darlot. The find is that of two exceptionally promising looking quartz reefs in schist country. The first one "Kirkpatrick's," had at the time of my visit, November 20th, a vertical shaft down to water level (33ft.) and about 50ft. of driving done. The reef runs almost true N. and S. and is practically vertical. The second reef, "Cameron's," is on the western side of the first and practically parallel to it. On it are sunk two vertical shafts each 30ft. deep and about 30ft. of driving had been done on the date of my visit. On this reef gold could be got anywhere on the outcrop for a length of 30 chains. The reef is large, strong, and of great length and at the time of my visit impressed me as the most promising looking property, to the extent to which it had been prospected, I had ever seen. I therefore look upon the discovery of these reefs as a very important one and one which gives promise of leading to another centre of mining activity in the near future

"*Lawlers.*—In addition to the regular operations of the Waroonga and Vivien mines, several smaller properties are being constantly worked by small parties of prospectors.

"*Sandstone and District.*—The mines of this district are almost without exception looking better now than they did 12 months ago. Whereas the Oroya Black Range, Black Range Mining Co., and Havilah were, 12 months ago, the only mines in the Sandstone district carrying their own reduction plants, the Pelerin at Birrigrin now has its own battery, the Montague Boulder is erecting a battery and it is expected that the Sandstone Development Co. will shortly follow suit. The new State battery is also running at Sandstone and if sufficient water can be tapped it is probable that the Kohinoor will also erect its own mill. There is about to be a slimes plant erected on the Black Range Mining Coy's. property also.

"The Havilah is making good progress with a new main shaft which it intends sinking 400ft. before crosscutting for the reef. The Bull Oak has also commenced a new main shaft to prove the reef at depth. The Marley North continues to regularly turn out parcels of high-grade pay ore.

"At *Youanme* a State battery is expected to be in operation by about Easter and the fall of its stamps is eagerly looked forward to, as there is not only a large tonnage of ore at grass, but also a larger tonnage already blocked out and available for cheap excavation. The most largely developed properties to date are Miller's G.M.L. 910M, Bowen's G.M.L. 903M, and Duggan and Flyn's G.M.L. 886. The deepest work has been done on Millers', where two inclined shafts have each been put down 94 feet on the lode and levels have been driven from these shafts at depths of 50ft., and 90ft. respectively. A large amount of prospecting is still going on at this centre and several very promising looking reefs are being opened up.

"*At Wiluna* the Gwalia Consolidated continues to open up in a highly satisfactory manner, and I be-

lieve the erection of a slimes plant on the property is anticipated. The Bulletin is running a 5-head battery and during the year several properties have been vigorously developed by parties holding options, and much attention has been paid to this promising mining centre.

"*At Darlot* the Zangbar company have sunk a new main inclined shaft on the reef and have opened out from it at 175 and 300 feet respectively. The Monte Christo still gets out periodical crushings; the Amazon crush about 30 tons per month, and the Ballangarry is being worked by a party of tributers. The British King is, I believe, to be taken up again and further work is to be done on the St. George.

At Mt. Stirling a crushing taken from the bottom level of the Stirling mine has yielded a handsome return.

"*Accidents.*—During the year there have been 32 accidents reported to me, five fatal, 14 serious, and 13 minor. One of the fatal accidents was the result of a want of compliance with the provisions of the Mines Regulation Act on the part of two men, both of whom were prosecuted and fined. The remaining accidents were the result of unforeseen circumstances, and were thus unavoidable.

"*General Remarks.*—Generally speaking, the provisions of the Mines Regulation Act of 1906 are well complied with throughout the district, and it is only in the smaller properties in the prospecting stage where great uncertainty as to ultimate remuneration for labour spent exists, and where the prospectors' only capital is their labour and food supply, that I meet with slackness in such compliance and in such cases I feel that a little latitude is rightly extended."

MT. MARGARET GOLDFIELD.

Mr. W. F. Greenard, Inspector of Mines, reports on 7th May, 1909:—

"I took charge of this goldfield upon the retirement of Mr. Inspector Beaumont in July, 1908, since when I maintained a systematic and routine inspection of all mines until handed over to Mr. Inspector Cullingworth in January, 1909.

"The accident return for the year 1908 has been forwarded to you together with reports of inquiries held into all accidents. These inquiries were of a searching nature; everything in connection with an accident was investigated fully, with the view to elucidate the cause for any accident, and to see that the Mines Regulation Act, 1906, had been complied with.

"In no case was a mine manager notified of an inspection. The method adopted was to proceed to a mine and inspect it straightaway.

Aliens.—The Sons of Gwalia, the Lancefield, and the Orion mines are the principal employers of foreigners. The Sons of Gwalia employ about 20 per cent., the Lancefield and the Orion mines at Niagara 30 per cent.; this is the average over a number of months.

"I went thoroughly into the language test and every man examined was able to comply with the requirements of the Mines Regulation Act in connection with the signals, storage of dynamite, firing and the necessary precautions to be taken by any man working in a mine to warn others of impending danger.

"The reason that most of these people can comply with the law is that classes are held nightly in their camps in which its requirements are fully explained.

"*Stoping.*—The filling of stopes in the Sons of Gwalia and the Westralia Mt. Morgans has been carried out faithfully and well, thereby making these mines much safer than previously.

"The Lancefield was shut down the last few months of the year.

"The Orion mine is working with 'pillars' and the stopes are safe.

"The withdrawals of pillars by the tributers at the Cosmopolitan had to be stopped.

"The ventilation, sanitation, and temperature of all working places in every mine have been carefully investigated. The storage of dynamite above and below has received special attention.

"Penthouses have been provided in all shafts where hauling is done from other levels in the shaft, when sinking is in operation.

"The system in vogue for shaft sinking requires, in my opinion, to be placed on a more satisfactory basis. A number of shaft sinkers (contractors generally) desire to sink in the centre compartments, others the end. Some will use a 'monkey,' others say they are afraid to. The use of ladders also where machines are being used, requires to be put upon a more satisfactory footing.

"The use of safety cages and hooks, also safety braces, the cutting of ropes and re-shoeing every six months or oftener, have been strictly enforced.

"All complaints received as to any contravention of the Act have received immediate attention, and defects have been remedied when complaints were found correct.

"Strenuous efforts have been put forth to make the work of every miner as safe as possible and to guard his health by every means.

MINING.

"The development of the Sons of Gwalia has been all that could be desired by the shareholders, the opening up of large reserves near the Gwalia South Co's. boundary has renewed the life of the mine for many years and has ensured the stability of the district. The work done to open up the Gwalia South reflects great credit on Mr. Eades, the manager, whose ore discoveries practically gave the Sons of Gwalia an indication where to look for the large reserves they now have.

"The Tower Hill mine has been at a standstill. This mine with several others in the immediate vicinity of Leonora, contains large low-grade ore deposits, and there is every reason to think that with improved machinery great mines could be opened up.

"The Leonora Main Reef and several other mines situated to the north of Leonora are practically at a standstill.

"At Doyle's Well, the British King and the Leta Gold mines and several small prospecting centres are being worked for fair returns. The Leta is equipped with a five-stamp mill, which is driven with a producer gas engine which has so far given excellent results.

"At Malcolm, the North Star G.M. Co. and the Gem mine together with one or two smaller claims, are being worked for payable results. The North Star Co., so far, have not done much development work, but they have proved that there remains a fair tonnage of payable ore left by the old company above the 400-ft. level. The Gem mine will eventually solve all its difficulties and prove a good mine.

"The Pig Well district, where Kelly and Penny's mine and the Gambier Lass are situated, is a promis-

ing locality. Throughout this district there are a number of good prospecting propositions which require energetic development.

"At Murrin Murrin, Hill's proprietary mine continues to be worked for payable results; this is an important mining proposition and if owned by a company and energetically worked would become a large mine. The developments at 100 ft. and 200 ft. are extremely promising, the ore formation is from 6 to 7 feet wide and wider in places. The mine is equipped with a ten-stamp mill, winding engine, and a complete plant for its development.

"The Alex Junior shaft has been sunk another 100 ft., making 300ft. This is an interesting little mining property which promises to repay its owners for their faith in opening up another lift.

"There are several mining properties here that have been insufficiently developed; with further capital to give them a fair trial good results may be reasonably expected.

"At Morgans, the Westralia Mt. Morgans mine has continued to be worked during the year. It is reported that further capital has been subscribed to thoroughly open up this important mine. When you think of the large ore formation in this mine, together with the immense quantity of gold won for the little work done, there is every reason to think with good development the mine will again take its place as a large gold producer. There are also a number of mines being developed in the immediate vicinity of Mt. Morgans and Mt. Margaret that are of a promising nature.

"Laverton has been depressed in consequence of the shutting down of the Lancefield at the latter end of the year. With the renewal of work at Lancefield together with the present outlook from several mining propositions near Laverton things should considerably improve.

"Burtville continues to turn out a lot of gold. This is a very fine line of auriferous country right out to Mt. Weld, a distance of 16 or 17 miles. I must admit the mines at Burtville are not being developed with that energy that one would expect when you consider the gold won. There are a number of promising claims in this locality."

NORTH COOLGARDIE GOLDFIELD.

Mr. W. F. Greenard, Inspector of Mines, reports on May 1st, 1909:—

"I have the honour to submit my annual report on the administration of "The Mines Regulation Act, 1906," on the Menzies and Ularring districts in the North Coolgardie Goldfield, together with the Mulgarrie, Gordon, Gindalbie, Kalpini, Kurnalpi, and Mulgabbie districts of the North-East Coolgardie Goldfield.

"A systematic and continuous inspection has been maintained throughout the year 1908 of all the mines situated in the above areas.

"A strenuous enforcement of the provisions of the Act for the safety of every man employed on and in mines has been carried out. The accidents during the year are two (2) fatal and five (5) serious, and several minor accidents that do not call for any special mention.

"The fatal accident to J. Ryan at the Golden Pole, Davyhurst, was due to an explosion of dynamite; he was engaged firing out ten (10) holes in a face in a stope. After an exhaustive inquiry before a Coroner and jury, the evidence was conclusive that Ryan took a chance with a short piece of fuse that had been cut by a previous shot. No regulations will stop accidents of this nature.

"The five serious accidents were fully inquired into; they were inseparable from mining and the Mines Regulation Act was complied with.

"There are no foreigners employed for wages in any of the mines on these areas. There is one (1) Italian named "Tony" working for himself in Menzies who speaks the language fluently, and who has been a resident of Australasia for upwards of 20 years. There is also an American negro who speaks correct English, working his own mine at Paddington. There are a few others of various nationalities who comply with the requirements of the Mines Regulation Act, 1906.

"During the year statements have been made that notices are sent previous to an inspection; this in my case I emphatically deny. In no case during 12 years have I ever notified a mine manager when I intended inspecting his mine. The whole of the mines under my administration I know from beginning to end. When I intend to inspect a mine I go straight and do the work I have in hand. If the mining manager is there all the better, if not, I get the underground manager; if he is not available, then any leading man.

"The talk of preparing a mine for an inspector's visit is really too absurd. An inspector has the plan of workings of the mine in his mind's eye, and should be able to know every hole and corner. The withdrawing of men from dangerous ground is also a very risky proceeding, as when an inspector has completed his inspection all ground that is not working and which cannot be examined must be filled, timbered, and made secure before work again starts. This is written in the mine book. Should an accident occur in any of these condemned places the mine manager's position would be a serious one.

"The filling of stopes has been strictly enforced, or the leaving of pillars of solid ground, so that every working place is safe for men employed.

"The storage of dynamite above and below ground, together with detonators and the burning speed of fuse are carefully inspected and proper precautions insisted on.

"The cutting and re-shoeing of ropes every six months or oftener is carried out on every mine, and the lubricating, with hot castor-oil only, gives good results.

"In the sinking of the new main shaft to 1,000ft. on the Menzies Consolidated Mine, Woolgar, the large wire strands of an 1⅛ inch diameter rope broke during tipping of the bucket, the six small wire strands inside the large remained intact. This rope had a breaking strain of 65 tons and after the large wire strands had given out, I am of opinion the small wires gave a factor of safety of over 10. The material in the rope was good. This shows the advantage of having a large factor of safety, which always gives you timely warning, which happened in this case.

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

"Special attention is given to ventilation, sanitation, and temperature of all underground workings.

"Any complaints received during the year from mine managers, secretaries of unions, and the individual miner have received prompt attention and due care taken not to divulge from whence the information was received.

"Proper travelling ladderways have been insisted on in all mines.

"Drains have been made to carry off any surface water that may arise from any sudden storms which would be likely to flood the mines. Safety-braces have also been fixed in all mines where safety hooks are necessary; this renders an accident due to over-winding by an engine-driver almost impossible.

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

MINING.

"The Menzies Consolidated Mine, Woolgar, have completed their new main shaft to a depth of 1,000ft., and are now opening out with levels at the 900 and 1,000 feet. This new shaft should materially reduce the working costs. This mine has treated 1,600 to 1,700 tons of ore per month during the year and employed upwards of 100 men.

"There are several small prospecting propositions near Woolgar that have given highly payable returns during the year.

"The Menzies mines, The Florence, The Crusoe, The Lady Sherry, The Queensland Menzies, and the Warrior have continued to work during the year for payable returns, and the future outlook is no worse than it was last year.

"The Dreadnought and the Dreadnought South are slowly developing their properties. Development work requires to be pushed on more vigorously.

"There is a large number of prospectors working small mines from which excellent returns have been obtained during the year. No large accumulations of money have taken place to permit big development work to be undertaken.

"Mulline is depressed. The Lady Gladys continues to work with a reduced number of men in the oxidised zone. At the Shamrock and the Cardinal some rich stone has been discovered during the year. At Hydeville, Robb, Hyde, and party, and Taylor and party continue to work out payable crushings from a small leader.

"The Riverina South is being worked for payable returns and the owners propose to test the mine with a new shaft to a depth of 300ft.

"Mulwarrie is depressed. Wilkinson continues to work the Main Reef mine. Cadby and party are working the old Killaloe and Cassidy and party recently struck some rich stone on their P.A.

"Mining at Davyhurst is far from satisfactory. The Golden Pole, Waihi, and Homeward are on tribute, and no development work is being done. The owners of the Waihi should have developed their mine at the 280ft. level.

"The Callion is being worked by the Callion G.M. Co., who are busy erecting a battery which the Department are assisting from the 'Development Vote.'

"Several parties are working the old abandoned mines and several nice prospects have been obtained but it remains for the battery to prove whether they are payable or not.

"Siberia.—France and Adams, owners of the Siberia Consols, had a phenomenal crushing from a schist formation obtained from a depth of about 30 ft. This area is situated on a worked out alluvial patch. From about 5 tons or less 1,357ozs. 8dwts. of gold were obtained. So far, this is only a patch, but where there is one, others are likely to be discovered.

"The Palmerston North, The Invincible, The Missouri, Christy's Reward, Christy's Golden Mine, The Cave mine, and several prospecting areas are being worked by three or four men each and small crushings of good values have been obtained during the year. Energetic development is necessary to place these properties in a definite position.

"At Ora Banda the Gimblet and the Gimblet South are lode formations of low-grade ore. A large tonnage has been crushed from them, but the costs of carting and treatment are heavy; still they are very promising propositions. There are a number of smaller claims in this locality which have returned fair wages to their owners.

"Bardoc is depressed. Three or four parties are prospecting and some good values might be discovered at any time.

"Broad Arrow.—The Golden Arrow has been worked one shift per day during the year and payable ore obtained; about 20 men have been employed on the property continually through the year.

"There are a number of small prospecting ventures in the immediate vicinity of Broad Arrow, which give fair wages to their owners.

"The Paddington Consols mine is being worked by tributers for payable returns. The main shaft in the early part of the year had to be stoped and timbered in accordance with my instructions, which were carried out to my satisfaction. Still it will be necessary to watch this shaft carefully, as should the tributers work the ground too near, a collapse might take place at any time. The present underground manager and the owners understand the position and conditions under which they are allowed to work the shaft.

"The Mt. Corlac and Minnie Palmer mines are being worked in a small way. A little alluvial is also being won from the deep leads, but I do not think in sufficient quantity to be payable.

"At Vettersburg two parties are prospecting the old company's abandoned leases and they have obtained one or two crushings of payable stone.

"The Baden Powell has been shut down and the outlook in this locality is far from promising.

"At Goongarrie, Capt. Grenfell and Gardiner are working the Boddington mine and have had a good payable crushing from a small tonnage.

"There are several looking for alluvial, but generally things are depressed.

"Comet Vale.—The Sand Queen has opened up at the 150ft. a considerable quantity of highly payable stone. The future of this property is highly promising. A good ten-stamp mill has been erected and there appears no reason why this property should not pay dividends almost from the start.

"The Gladsome mine continues to develop satisfactorily. This mine is equipped with ten-stamp mill, winding engine, and air compressor, and the outlook for this property is extremely promising.

"The Happy Jack is another property at Comet Vale that has a promising future. There are also several prospecting shows of a promising nature.

"Mulgarrie has been reopened during the year after lying abandoned for two or three years.

"The Lady Pratt, formerly Hit or Miss, lease has been worked by McKenna and party and they have discovered some very rich stone. I believe they have obtained over 200ozs.

"Messrs. Kelly, Jenkins, and Sullivan representing a Kanowna syndicate, have equipped the old water shaft of the "Hit or Miss" with a winding engine and tanks and have done a considerable amount of work. Gold has been found in two or three places, but not so rich as the usual patches were in this mine, but any day they may strike a leader that will pay

them well for all their work; they richly deserve it for the heavy work done to unwater the mine.

"The Gordon district is again being reopened. The General Gordon mine has been renamed the Sirdar, and has been equipped with ten-stamp mill, winding engine, poppet heads, and boilers; crushing is in full swing; an undoubted good effort under the management of Mr. Oliver Thompson to re-establish this once promising mine is being made.

"The Lady Eva, another promising mine, is being pumped out with the view of sampling on which, if satisfactory, a ten-stamp mill is proposed to be erected.

"Gindalbie.—The Melton mine has been sunk another 100ft. during the year, making a total depth of 700ft. High values were obtained, but the shoots were short, but notwithstanding insufficient development has been done on this bottom level to prove the mine. With further driving both north and south I am sure payable ore would be located. The mine has been recently shut down for the want of funds.

"The Eclipse is equipped with a five-head battery and winding engine. Messrs. Harrop and party are making an effort to prove this property; results so far are promising.

"The United, owned by Crisp and party, has been equipped with a five-stamp mill, engine and boiler, and good development work has been done down to the 180ft. level. The mill runs eight hours per day, which gives this promising mine a chance to be developed.

"There are several other prospecting propositions at Gindalbie of a promising nature.

"The shutting down of the State battery at Kalpini and the threatened removal has stopped further prospecting.

"Messrs. Cummings and Murphy are still raising stone from the North Camelia; they have 50 or 60 tons raised.

"At Kurnalpi two or three parties have done well from Slater's Gully deep lead, making up to and over 200ozs. per claim.

"Corbert has been working a small quartz vein in very hard diabase formation, which has paid him well. Of course, to open up a hard formation of this type it requires a considerable amount of capital, still, being situated in the immediate vicinity from where so large a quantity of alluvial gold has been won, it opens up vistas of prospective riches which might at any day make Kurnalpi a great goldfield.

"Cable and Kelly during the early part of the year located some rich stone about half-a-mile N.E. of Corbert's; they recently crushed two tons of picked stone for a return of 15ozs. per ton, tailings assay 6ozs. Total value £84 per ton. This stone had to be carted 30 miles to be crushed and the tailings have now to be carted some 70 miles to be finally treated. This proposition is a large iron gossan formation evidently an extension of the formation of Corbert's in an altered form. There is a quantity of low-grade material surrounding the rich ore. Careful prospecting is required as we may in the proposition have the key to where some of the rich alluvial was shed from.

"Mulgabbie continues to be worked by the same parties, viz.: Killbeg, Clancy, and party, Blake, Phillips and Robb, Thompson and Cable and Kelly, who are under exemption for a period. Killbeg and Clancy are on nice specimen stone showing large quantities of telluride and free gold at 120ft. vertical.

"Blake, Robb and Phillips have also won a quantity of rich ore during the year from 140ft. vertical, and propose going to the 200ft. to look for more.

"Cable and Kelly will have to sink to get further values, as up from the 90ft. has been disappointing.

"Mulgabbie is an interesting formation, and I am inclined to think it will turn out to be a large mining field.

"From recent work the idea of there only being leaders is being disproved and eventually I think it will turn out to be a large formation. Should payable gold be found in some of the material now being worked (it carries a little) some very large mines may be discovered.

"Pinjin is considerably depressed. The gold in several claims as sunk on has disappeared, giving place to low values. Of course, this cannot be foreseen; it is only the pick and shovel that can prove whether values live in depth or not. Pingin formations are subjected to a lot of faulting, therefore I think when the values are again looked for in the right direction they will be re-discovered as they usually are in formations of this structure, but it must be admitted shoots carrying values are short in Pinjin.

"The Anglo-Saxon have opened another 120ft. of their flat reef from their 170ft. shaft; the reef is from 2 to 3 feet wide. This flat shoot of values has been worked on the dip for 600 to 700 feet. Although knocked about by faulting in several places, the owners have always been able to locate it. The values are from 25 to 30 dwts. This should give the State battery several thousand tons to operate on.

"The Anglo-Saxon North is being worked by McIntyre and Howe and they have 70 or 80 tons to crush immediately the battery starts. McIntyre and Howe claim to have located the Anglo-Saxon flat shoot in their deep shaft and are only stopped from working by an inflow of water.

"Potts and Coulsons are developing their mine at the north end of the Pinjin auriferous line; they are raising from 120ft. in a small leader some 2oz. stone. This mine has a large formation of low-grade ore. The length of the values is not fully defined, but were they situated near the battery it would never be idle for want of crushing material, but carting charges are high for a five-mile distance.

"There is a considerable amount of ore to be crushed yet at Pinjin. The weak feature is that a large number of prospectors have left the field this year.

"Edjudina is also suffering from a depression. It must be candidly admitted that developments below water are not too promising.

"The Senate has decided not to sink any deeper, notwithstanding that the 100ft. below water now worked out has been highly payable, paying the six shareholders nearly £10 per week per man for upwards of two years.

"The Neta is at a standstill. The Genevieve is being worked by Alderson and Glover, and some good stone has been located in the oxidised zone near the Neta boundary carrying 30 to 35 dwts. values.

"The Gawler, which is a local syndicate, expended just £5,000 on sinking and equipping; developments are of a disappointing nature at 200ft. on the line of reef. I have advised rising to find the values coming down from the 100ft. level, which were good, and it is just possible the driving at the 200ft. level may be off the right line. The Mines Department subsidised this work to the amount of £750, which undoubtedly looked a sound mining venture.

"Near the old Edjudina reef, Windsor and party recently struck some good stone on the surface. The reef is small but promising. There are two or three

parties trying along the line of reef with varying prospects.

"Young and party gave the Crow's Nest mine a further trial below water during the year without success and work has now stopped.

"Yarri is also depressed and very little work is going on, there being six tributers in the Wallaby Central, seven on the Wallaby North, two on the Wallaby and five on the Yarri South mine. Gibbit and Selboone are working south of Edjudina station on small prospects. Sparkes is working a small leader near the battery and obtaining good values.

"The Wallaby reef is a large one carrying low-grade values. The material forming the reef is easy to crush, and with cheaper crushing charges, it could be more fully developed.

"Yilgangie is deserted, although there are several auriferous formations carrying low values worth a further trial.

"Mt. Ida has continued to return good high-grade crushings from a number of small mines.

"The Meteor has been equipped with a 5-stamp mill winding engine and boilers and the main shaft sunk to a depth of 200ft. This property is now under option for a large figure to Mr. F. C. Ross, who is busy developing the property before closing for the purchase.

"The Unexpected is being gradually developed below water with satisfactory results; some high values having been located, the lode has now been opened at 160ft.

"The Unexpected South shaft has been sunk to a depth of 250ft. where good values have been found. There is not a large supply of water. The mine is equipped with one of Thomas and Lamont's patent winders, driven by a Crossley oil engine, which gives good satisfaction. Still the pawl is a source of danger, and I think will have to be entirely done away with and a pillar or post brake substituted. If these winders are likely to come into general use this matter will have to be thrashed out and finally settled.

"The Forrest Belle, The Rose, and several other smaller claims are opening up well, the future of Mt. Ida is decidedly promising."

EAST COOLGARDIE GOLDFIELD.

Mr. J. O. Hudson, Inspector of Mines, has forwarded a report dated 27th February, 1909, as follows:

MINE INSPECTIONS.

"The mines have been regularly inspected during the year, and I am pleased to record that there has been no friction. In cases where defects were noted and pointed out the different managements have shown a keen desire to have them speedily remedied.

ROPES AND CAGES.

"There have been regular inspections and tests of ropes and cages made. On most of the mines competent men are engaged for this work and the system is proving beneficial.

EXPLOSIVES.

"The quality of the explosives used on the mines, generally, has been good, but I regret to say that towards the end of the year there has been an increase in the number of men affected by fumes. The matter is being closely investigated and I trust a remedy will be shortly found.

"There have been several cases of premature explosions during the year, the causes for which were attributed to running fuse. These were very pronounced during two months of the year. Every case of fuse used on the mines is tested and where the burning rate does not comply with the Regulations the fuse is not put into use. Even with all the care taken it is found that at times the fuse will run irregularly.

"Regulation 13 of the Act is having a very desired effect on the manufacturers of fuse who are now becoming conversant with the fact that rigid precautions are being taken here to ensure, as far as possible, that a regular running fuse only may be used on the mines.

SMALL HOISTS.

"In most of the mines winzing is being carried out by the aid of small air hoists, and these are proving very satisfactory and, so far, no accidents have occurred through their use. Owing to their use, considerably more winzing has been done and less high rising.

ACCIDENTS.

"The following table shows the number of accidents that occurred on the various mines for the year and the percentage of accidents to the number of men employed on such mines.

"I attach also a summary showing the monthly returns of accidents for the year.

Summary of Mining Accidents for East Coolgardie Goldfield for Year ending 31st December, 1908.

Mine.	Average number of men employed yearly.	Accidents.				Approximate percentage of fatal accidents to number of men employed.	Approximate percentage of serious accidents to number of men employed.	Approximate percentage of minor accidents to number of men employed.
		Fatal.	Serious.	Minor.	Total.			
Associated	436	2	23	39	64	·46	5·27	8·94
Associated Northern	137	...	2	5	7	Nil	1·46	3·65
Boulder Deep Levels	14	...	1	...	1	Nil	7·14	Nil
Great Boulder Perseverance	509	1	31	67	99	·19	6·09	13·16
Great Boulder Proprietary ...	675	2	64	83	149	·29	9·48	12·29
Golden Horseshoe	853	4	32	26	62	·47	3·75	3·05
Great Boulder Main Reef ...	40	...	...	5	5	Nil	Nil	12·50
Golden Ridge	98	...	2	1	3	Nil	2·04	1·02
Golden Links	92	...	1	1	2	Nil	1·08	1·08
Hainault	225	...	11	27	38	Nil	4·88	12·00
Hannan's North...	5	...	1	...	1	Nil	20·00	Nil
Hannan's Reward	62	...	...	1	1	Nil	Nil	1·61
Ivanhoe	615	1	33	82	116	·16	5·36	13·33
Kalgurli	423	1	10	19	30	·23	2·36	4·49
Kalgoorlie Amalgamated ...	54	...	1	2	3	Nil	1·85	3·70
Lily	3	...	1	...	1	Nil	33·33	Nil
Lakeside Battery	4	...	1	...	1	Nil	25·00	Nil
Lake View Consols	317	1	9	19	29	·31	2·84	6·00
North Kalgurli	55	...	...	1	1	Nil	Nil	1·80
Oroya Brown Hill	309	1	18	41	60	·32	5·82	13·27
South Kalgurli	228	...	4	15	19	Nil	1·76	6·58
Total	5,154	13	245	434	692	·25	4·75	8·42

Summary of Mining Accidents in East Coolgardie Goldfield for Year ending 31st December, 1908.

Month.	Explosives.			Falls of Ground.			In Shafts.			Miscellaneous Underground.			Surface.			Total.			Grand Total.	No. of persons involved.
	Fatal.	Serious.	Minor.	Fatal.	Serious.	Minor.	Fatal.	Serious.	Minor.	Fatal.	Serious.	Minor.	Fatal.	Serious.	Minor.	Fatal.	Serious.	Minor.		
January ...	1	...	...	...	2	2	...	...	...	...	7	14	1	4	7	2	13	23	38	41
February ...	...	...	...	...	2	8	...	...	1	2	20	27	...	5	8	2	27	44	73	74
March... ...	...	1	...	...	3	2	...	...	...	1	9	23	...	4	7	1	17	32	50	50
April	...	1	...	...	2	4	...	1	...	...	12	20	...	4	13	...	20	37	57	57
May	...	...	...	...	3	2	...	1	...	...	14	28	...	4	13	...	22	43	65	65
June	...	...	...	...	...	1	1	1	...	...	13	21	1	5	15	2	19	37	58	58
July	1	...	...	2	3	2	...	...	...	...	19	23	...	5	6	3	27	31	61	61
August ...	...	...	...	...	4	2	1	...	...	...	16	21	...	7	5	1	27	28	56	56
September ...	...	...	...	...	3	2	...	...	1	...	9	25	1	3	11	1	15	39	55	56
October ...	...	...	1	...	1	5	...	...	1	...	13	27	...	3	11	...	17	45	62	62
November ...	...	1	...	...	2	2	...	2	3	...	7	31	...	7	8	...	19	44	63	63
December ...	...	...	...	...	3	2	1	1	...	...	14	17	...	4	12	1	21	31	53	54
	2	3	1	2	28	34	3	6	6	3	153	277	3	55	116	13	245	434	692	698

(NOTE.—*The above tables do not altogether agree with the classification of the accidents finally adopted by the State Mining Engineer, and given hereafter in Table on page 51, which also includes machinery accidents.*)

Developmental work for the year.

"The underground developments during the past year have been of the greatest importance. In most of the larger mines the developments at the lower levels have shown great improvement, not only in values per ton but also in width of ore bodies.

"The Great Boulder Proprietary mine shaft still leads in being the deepest on the field, its present depth being 2,394 feet.

"The most important new developments were the finding of a new lode on the western boundary of the Chaffers mine and the finding of a new lode on the northern end of the field adjoining Craiggie's alluvial claim.

"A good idea of the more important developmental work done on some of the larger mines during the year may be had from the following:—

Great Boulder Proprietary G.M.

Depth of main shaft—2,394 feet.
Depth of Edwards' shaft—2,376 feet.
Depth of Hamilton's shaft—1,872 feet.

Developments.

Shaft sinking for 1908—435 feet.
Driving—3,376 feet.
Crosscutting—376 feet.
Rising—176 feet.
Winzing—1,482 feet.
Diamond drilling—1,271 feet.

"During the year the electrical signalling apparatus was installed in the main and Edwards' shafts. A full description of the appliance was published in last annual report. This method of signalling is proving most effective and is giving every satisfaction.

"A new vertical winding engine is in course of erection at Edwards' shaft. It is a twin compound engine capable of winding from a depth of 4,000 feet. In connection with this plant, two large Babcock and Wilcox boilers have been erected, also a large condensing and cooling tower.

"New additions to the mine plant are—a Ball mill and an Edwards' duplex furnace.

"At the 2,200 feet level the lode has been driven on for a total length of 1,000 feet. The manager states that the ore averages 33dwts. per ton. The 2,350ft. level has been driven on for a distance of 400 feet; the average values given by the manager being 10½ dwts. The ore bodies at these levels more than maintain their widths at the higher levels.

Golden Horseshoe G.M.

Depth of main shaft—1,699 feet.
Depth of No. 2 shaft—632 feet.
Depth of No. 3 shaft—2,030 feet.

Developments.

Shaft sinking—48 feet.
Driving—2,555 feet.
Crosscutting—2,350 feet.
Rising—112 feet.
Winzing—1,396 feet.

"This company has taken over the Ivanhoe South Extended leases, which adjoin the Horseshoe lease on the west. The previous holders had sunk a shaft to a depth of 2,030 feet. A very important development is reported by the management while crosscutting from this shaft to the main workings, and the following particulars have been supplied with regard to it:—

"At 500 feet north and 580 feet west of the main shaft, cut a lode one foot wide assaying 10dwts. per ton. At 430 north and 530 west of main shaft lode is five feet wide, value 13dwts. At 225 north and 417 west of main shaft lode is three feet wide, value 13 dwts. At 225 north and 248 west of main shaft lode is four feet wide, value 4dwts.

"A new change house has been erected during the year and the following additions have been made to the plant:—One 1,000 h.p. Ingersoll Rand Air Compressor; one 500 k.w. Turbo Generator, Transformer Switchboard, etc.

Ivanhoe G.M.

Depth of main shaft—2,126 feet.

Developments.

Shaft sinking during 1908—202 feet.
Driving during 1908—3,088 feet.
Crosscutting during 1908—927 feet.
Rising during 1908—382 feet.
Winzing during 1908—1,274 feet.

"The most important development was the cutting of the east lode at the 1,820 feet level. The manage-

ment reported the lode to be 44 inches wide with an assay value of forty-six shillings and threepence per ton.

Lake View Consols G.M.

Depth of main shaft—1,945 feet.

Developments.

Shaft sinking during 1908—nil.
Crosscutting during 1908—643 feet.
Winzing during 1908—1,001 feet.
Rising during 1908—375 feet.
Driving during 1908—1,249 feet.

"The principal development during the year was the sinking of winzes below the 1,900 feet level, in which indications go to show that values are improving at depth. The location of the ore bodies in the lower levels was also achieved by this means.

"A vacuum filter slimes plant has been installed to re-treat the residues and is proving very satisfactory. It deals with 9,000 tons per month.

South Kalgurli G.M.

Depth of main shaft—1,520 feet.
Depth of Morty's shaft—1,200 feet.

Developments.

Shaft sinking during 1908—1,520 feet.
Driving during 1908—2,532 feet.
Crosscutting during 1908—1,473 feet.
Rising during 1908—306 feet.
Winzing during 1908—635 feet.

"A large amount of developmental work is being carried out from Morty's shaft, and there appears every probability of great improvements in the mine's prospects.

"The following new machinery has been installed during the year:—One No. 8 Ball mill; two Merton furnaces; a first motion winding engine at the main shaft.

Hainault G.M.

Depth of shaft—1,014 feet.

Developments for 1908.

Shaft sinking—83 feet.
Driving—1,793 feet.
Rising—813 feet.
Winzing—273 feet.

"There are no developments of note to record for the year. It is the intention of the Company to explore the ground east of the main shaft. This ground is practically unexplored and there is every probability of new payable discoveries being made.

Associated Northern G.M.

Depth of main shaft—1,045 feet.

Developments during 1908.

Shaft sinking—*nil.*
Driving—728 feet.
Crosscutting—1,063 feet.
Winzing and Rising—907 feet.

"There are no new developments to report, but the prospecting done on the western portion of the lease is of a very important character.

Associated G.M.

Depth of Judd's shaft—1,857 feet.
Depth of Tetley's shaft—1,423 feet.

Developments during 1908.

Shaft sinking—*nil.*
Driving—3,942 feet.
Crosscutting—2,130 feet.
Rising and Winzing—1,893 feet.

"New machinery added during 1908:—One Duplex Edwards' furnace; two Krupp Ball mills; one Green's economiser; one central surface condenser.

"A new development in a lode on the eastern side of the main workings was discovered and has been developed to a depth of 200 feet. The ore shows for 170 feet in length and averages 15 feet in width.

"A new lode was located at No. 15 level, about 60 feet from the Great Boulder Perseverance boundary.

"Both lodes give every promise of being highly payable.

Devon Consols G.M.

"This lease has been acquired by a local syndicate, and is now known as the Kalgoorlie North End Development Co.

"It is intended to sink the main shaft to a depth of 450 feet. The present depth of the shaft is 242 feet and the property gave the original holders very good returns. It is to be hoped that as good prospects may be encountered by the present holders.

Oroya Brownhill G.M.

Depths of main shafts—
Brownhill lease—600 feet.
Oroya North lease—1,085 feet.
Oroya South lease—1,532 feet.
Iron King lease—520 feet.
Central Boulder lease—430 feet.

Developments during 1908.

Oroya Brownhill G.M.—
Shaft sinking—*nil.*
Driving—1,460 feet.
Rising—620 feet.
Winzing—186 feet.
Crosscutting—233 feet.

Central Boulder G.M.—
Shaft sinking—*nil.*
Driving—267 feet.
Rising—137 feet.
Winzing—27 feet.
Crosscutting—490 feet.

"A vacuum filter plant has been installed on the Oroya Brownhill mine capable of treating 20,000 tons monthly.

"The residues are being sluiced to a tailings area situated along the border of the Boorara Road.

Great Boulder Perseverance G.M.

Depth of main shaft—1,922 feet.
Depth of No. 6 shaft—1,310 feet.

Developments during 1908—
Shaft sinking—294 feet.
Driving—3,507 feet.
Crosscutting—2,129 feet.
Rising and Winzing—1,364 feet.

"It is intended to sink No. 6 shaft to a lower depth. This shaft has been connected with the main shaft at surface by an overhead tramway, the ore being transported by means of an endless rope. The two shafts are now used for raising ore, thus relieving a large amount of pressure off the main shaft engine.

"The principal development during the year was the discovery at the 1,750 feet level of a large low-grade body of ore containing a rich shoot. This ore body has been met with in the crosscut at the 1,900 feet level, and the development is likely to prove a very promising one.

Golden Links G.M.

Depth of Croesus shaft—514 feet.
Depth of Eclipse shaft—623 feet.

Developments during 1908—
Shaft sinking—226 feet.
Driving—913 feet.
Crosscutting—212 feet.
Rising—304 feet.
Winzing—268 feet.

"The developments in this mine are of a most important character. A large sulphide body containing telluride was discovered at the 400 and 500 feet levels of the Croesus lease. A good length and width of ore was exposed and stoping is being carried out. The output is over 3,000 tons per month and the ore is being treated at the Lake View Consols Mine battery. Winzes have been carried below the 500 feet level, and the lode driven on at the 600 feet for a considerable distance.

"The workings have been connected with the Eclipse shaft at 500 feet. The Eclipse shaft has been carried to 600 feet and driving is now in progress at that level.

"A new Ingersoll Rand ten drill compressor has been added to the mine plant.

Kalgurli G.M.

Depth of main shaft—1,612 feet.

Developments during 1808—
Shaft sinking—148 feet.
Driving—1,643 feet.
Crosscutting—952 feet.
Rising—569 feet.
Winzing—282 feet.

"During the year the developments on this mine have been of a satisfactory nature.

"A new departure has been made in the manner of treating the residues, they being sluiced from the mine to a tailings area two miles distant.

"The various great widths of ore bodies being stoped on this mine are interesting, as the following figures will show:—

	Maximum length.	Maximum width.
100ft. level—Main stope ..	115ft.	140ft.
540ft. level—West stope ..	200ft.	59ft.
East stope ..	195ft.	16ft.
640ft. level—West stope ..	210ft.	68ft.
W. stope No. 2	108ft.	35ft.
East stope ..	136ft.	10ft.
700ft. level—West stope ..	210ft.	90ft.
750ft. level—East stope ..	110ft.	25ft.
1,000ft. level—East stope ..	110ft.	63ft.
West No. 1 stope ..	180ft.	12ft.
West No. 2 stope ..	120ft.	17ft.
West No. 3 stope ..	120ft.	35ft.
1,150ft. level—West lode, North stope	100ft.	45ft.
1,150ft. level—West lode, South stope	150ft.	28ft.
1,150ft. level—East stope ..	70ft.	55ft.
1,250ft. level—West lode, North stope	150ft.	10ft.
1,250ft. level—West lode, South stope	130ft.	16ft.
1,350ft. level—West lode, North stope	184ft.	13ft.
1,350ft. level—West lode, South stope	190ft.	35ft.

1,450ft. level—Western ore body not developed yet, but width at one point proved to 20ft.

Hannan's Reward G.M.

"This mine continues to treat low-grade ore from the 200ft. level and open cut. The values have been about nine shillings and ninepence per ton during the year.

"An extension of the lode has been found on the southern boundary and is being worked by a party of tributers. The values reported show that the ore treated is worth about fifteen shillings and sixpence per ton.

North Kalgurli G.M.

"This mine is worked solely by tributers. The battery and mine are let to one party who sub-tribute and treat the ore raised. There are about ten parties of sub-tributers at work on the mine and are treating the low-grade oxidised ore by open cuts.

"It is the intention of the owning company to erect an additional 10 head of stamps, making the battery one of 30 head.

Great Boulder Main Reefs G.M.

Depth of main shaft—2,088 feet.

Developments during 1908—
Shaft sinking—Main shaft—289 feet.
do. Prospecting shaft—90 feet.
Driving—250 feet.
Crosscutting—211 feet.
Rising—38 feet.
Winzing—67 feet.

"The main shaft is being carried down to 2,300 feet, the lowest level is at 2,000 feet. A lode has been met in the shaft from 1,900 feet and has given encouraging prospects.

"This development work is of great interest, as the lodes in the higher levels are greatly disturbed and it will be the means of determining if the lode continues in a southerly direction.

A.W.A. United G.M.

"Developments for 1908—
Driving—929 feet.
Crosscutting—882 feet.
Rising—870 feet.
Winzing—132 feet.
Shaft sinking—118 feet.

"The following plant has been erected during the year:—One first motion winding engine; one 6-drill Rand air compressor, and one Galloway Lancashire boiler.

"This mine is owned by Thornett Brothers, and the development for the year shows what is practicable by private enterprise. The leases were originally held by an English company who abandoned the ground.

"The present owners have erected a ten-head battery, cyanide plant, and winding plant, and have been crushing steadily for about five years. They had a very limited capital to start with, and the output from the mine has had to pay for all that has been put on the mine as well as the cost of development.

"The returns for 1908 were—15,349 tons of ore treated for £11,155 19s. 8d. in value.

Chaffers G.M.

"Developments for 1908—
Shaft sinking by the Company—169 feet.
Shaft sinking by tributers—346 feet.
Driving by tributers—438 feet.
Crosscutting by tributers—130 feet.
Rising by tributers—50 feet.
Winzing by tributers—20 feet.

"Early in the year the mine was let on tribute. The tributers discovered a new lode near the western boundary and the discovery was made when a post to

carry an electric power cable was being placed in position.

"Three tribute parties have been employed on the lode, which has been opened up for a distance of 400 feet. They have treated 9,745 tons for an average value of 16½dwts. per ton. The lode is payable in places for over 20 feet in width.

"The Company are about to sink a new main shaft to a depth of 200 feet, at which depth they intend opening out to prospect the lode.

Hannan's Star G.M.

"A new lode has been discovered on the north-western portion of the lease which appears to be a continuation of the new lode found on Chaffers mine.

"A prospecting shaft was sunk and three lodes were discovered in close proximity to each other. Driving has been carried on north and south showing ore of a payable nature.

Boulder Deep Levels.

"A new lode is being worked in the Bonanza shaft on this mine. Four parties of tributers are engaged and satisfactory results are being obtained.

Reefer's Eureka G.M.

"This lease is situated on the extreme northern end of the Belt workings, and has been acquired by a local syndicate, who are installing a ten-head battery.

Hidden Secret West G.M.

"A new lode has been discovered on the eastern boundary of this mine below 80 feet. It is a large well-defined body and as far as developed appears to be payable. A lode above the 80 feet level is being worked by the A.W.A. United owners.

Golden Ridge G.M.

Main shaft depth—519 feet.

Developments for 1908—
Shaft sinking—94 feet.
Driving—1,327 feet.
Crosscutting—464 feet.
Rising—1,053 feet.
Winzing—495 feet.

"This mine continues to give satisfactory returns, and pay regular dividends.

"The Golden Ridge lease was abandoned by this company, and the ground has been taken up by another company who are now erecting a ten-head battery upon it.

"There are several small parties prospecting in this vicinity (Boorara), but nothing as yet of importance has resulted from their work.

"At the latter end of 1907 an alluvial rush occurred along the Broad Arrow Road. A considerable amount of work was done, but outside the prospectors' claim (Craiggie and party) nothing payable was discovered.

"Craiggie and party have treated 609 tons for a return of 1,142.73 fine ozs. They have sunk a shaft 100 feet and have discovered a lode about 30 feet wide carrying low values.

"Hartigan and party, holders of G.M. lease 4345E, adjoin Craiggie and party on the south. They have a shaft down to a depth of 160 feet and have discovered a lode which is being driven on at the 80 and 130 feet levels. The lode is a large low-grade body, of which 392 tons have been treated for a return of 55 fine ozs.

"Lomassey and party are the holders of G.M. lease 4347E adjoining Craiggie and party on the north. They have discovered a lode which has been worked at the 40, 80, and 150 feet levels. The lode is of a very promising character. Their returns for 1908 were 441 tons for 126.55 fine ozs.

Prosecutions under "The Mines Regulation Act, 1906."

"There were six prosecutions under the Act for various breaches during the year, in two of which verdicts were given for the Department and four against.

Mines Water Trust.

"I attach a list of the mines connected with the Mines Water Trust showing the quantity of Scheme water consumed by each for the year, and which totals 339,410,300 gallons."

Consumption of Water by the undermentioned mines during the 12 months ended 31st December, 1908.

Associated		25,814,000	gallons.
Associated Northern		8,330,500	„
Golden Horseshoe		52,330,500	„
Great Boulder Perseverance		31,489,000	„
Great Boulder Proprietary		48,282,500	„
Hainault		13,768,500	„
Ivanhoe		38,340,500	„
Kalgurli		19,986,400	„
Lake View Consols		31,590,500	„
Oroya Brownhill		26,285,300	„
South Kalgurli		16,732,000	„
Great Boulder Main Reef		2,115,500	„
Hannans Star		36,500	„
Boulder Deep Levels		233,200	„
		315,371,000	„
Sluicing Water—			
Kalgurli	4,514,600		
Lake View Consols	1,556,800		
Great Boulder	17,175,000		
Oroya Brownhill	792,900	24,039,300	„
		339,410,300	„

NORTH-EAST COOLGARDIE GOLDFIELD.

Mr. W. M. Deeble, Inspector of Mines, has forwarded a report dated 23rd February, 1909, as follows:—

"As I have been out of the State during part of the year and Inspector Hudson has been here the whole time, he is reporting on Kalgoorlie, and I principally on the Kanowna, Bulong, Randalls, and Mt. Monger districts.

"Speaking generally of these districts, there is very little alteration in their prospects.

"Although good returns were obtained in different places which promised to open up well at first, in no case have they developed into good mines; but while these patches are to be struck, the prospector is led on to hope he will strike something more continuous eventually.

KANOWNA DISTRICT.

"This district has not developed anything new during the year, but it continues to employ a fair number of miners, mostly working for themselves on small shows which give high returns per ton. In looking over the monthly returns it can be seen that the aver-

age returns per ton are very high, but this high average is brought up by the number of small leaders that are being worked, which must necessarily be high to pay wages. The two main mines are the White Feather Main Reef and the North White Feather Gold Mines; the latter being the more consistent producer and employing the larger number of miners on wages. This mine has produced 23,342 tons for a return of 10,896ozs. during the year. Lately this Company has secured the lease north and adjoining their property, which has been worked by small parties. Should they succeed in getting the same yields per ton, the company being in a better position to crush and handle the ore generally, they will have brighter prospects for the coming year. The White Feather Main Reefs has been worked by tributers who have crushed during the year 4,562 tons yielding 2,284.4ozs. The leaders in the mine are erratic in their course, but the country rock is easily worked, and with winding and crushing power available, material of a lower grade can be more successfully dealt with than in most of the other parts of the district. To the north of the town of Kanowna are a number of small shows, chief of which are Gentle Polly, Kintore, Monte Christo, Kanowna, and Madam Melba. The same characteristics are observable in the whole of them. These are in a small hill of porphyry which seems to be about from 300 to 400 yards in width. Outside of this width, shafts have been sunk which show diorite country, but I could not learn of any leaders extending into the diorite on either side. There are a number of leaders worked one under the other as far as the deepest workings, and it is probable that more would be cut if the shafts were sunk deeper. These shows are worked by small parties of miners and are highly payable.

BULONG AND RANDALL'S DISTRICT.

"Very little progress has been made in these districts for a considerable time. During the year a number of small mines have ceased operations, but a number of others have started, so there is really very little difference in the prospects generally. One of the most promising mines in Bulong is the Bulong and Bulls-eye, which is being worked by a party of miners who are showing their confidence in the mine by erecting a mill to be driven by a gas engine. Very little work has been done below the 100ft. level where the reef will average 5ft. wide. A number of miners are working around this place and getting a living, but there is nothing particular to notice in their workings.

"At Randalls, mining has been quiet during the past twelve months. On my last visit there were only six parties of miners working, the Santa Claus G.M. being temporarily shut down.

MT. MONGER DISTRICT.

"This district is usually spoken of as being very patchy on account of the shoots of gold in the ore meeting with breaks in the reefs, and as the shoots are usually not picked up again close to the fault it is thought they terminate there, but in my opinion there has not been sufficient done to prove this to be correct. The main mine in the district is the Black Oak G.M., in which the deepest shaft is 200ft. The manager tells me that the reef will average 10dwts. per ton, but as the ore has to be brought to Kalgoorlie to be treated, it is picked to bring it up to 15dwts. per ton. About ten miles in a south-westerly direction is the Cutter's Luck G.M. The owners are working on three leaders which have given 68.30ozs. from 53 tons, which is very promising for a new find. There is a large area of country around on which very little prospecting has been done. At Hogan's Find, about seven miles from Monger, there is a large area of alluvial ground, a lot of which has been worked. In one alluvial patch of workings, a reef was worked which gave some rich dollying stone. The gold seems to have made on the intersection of the reef and cross leaders, but was not followed up to prove if this were so.

PROTECTING SHAFTS AND OPEN CUTS AT SURFACE.

"During the year, complaints have been made in reference to open cuts not being sufficiently fenced, and unworked shafts not covered closely. On investigation, I find this is a much more difficult question to deal with than it first appears to be. On several mines I have seen abandoned shafts covered securely and on the next visit found the timber covering had been removed, and where the persons taking the timber could not pull it up have cut it up. In one case where a wire netting had been put around an open cut to keep children from going too near, someone had pulled the netting down. The difficulty is to make the persons doing this damage realise the seriousness of the position.

WINDING MACHINES.

"During the year I have noticed that some of the winding machines are getting down to their limit, and if it is intended to sink much deeper, which the bright prospects in the deeper levels in a number of mines warrant, by the high values shown, it will be necessary to replace some of the engines by more powerful ones. When this is done I consider the engine-drivers' responsibility should be considered and the possibility of an overwind or exceeding a pre-determined speed lessened. In the Mining Exhibition held in London, an overwinding device was shown at work which prevented the cage or skip being hauled to the wheels on the poppet head. The 'Visor' not only prevents overwinding but also from exceeding a pre-determined speed. I saw a winding engine with the 'Visor' attached at work. The engine-driver turned on steam and walked away from the engine; when the cage reached the top the 'Visor' cut off steam and put on the brakes. I was told a number of these were in use in the North of England. A number of engineering firms are advertising 'Visors' for regulating the speed of winding engines at different stages of their wind and to prevent overwinding. With the increasing depth of the mines here, this is a matter that should receive serious consideration so as not to allow the possibility of an engine-driver suddenly becoming incapable of handling the engine being the cause of, possibly, the destruction of two cage loads of men.

CRIB PLACES.

"I find it a difficult matter to get the men to put waste food and paper into the receptacles provided. Although I believe the majority of the miners are clean in their habits, a large number of men will not take the slightest trouble to put waste into the proper places. All the mines have special men to clean up these places, but without the co-operation of the miners it will not be possible to keep the crib places in satisfactory condition, as it is not practicable to clean up these places after each crib time.

SANITARY.

"The sanitary arrangements underground are in fair order, especially when we consider the limited

space available in the deeper levels, where very little work has been done, yet with this disadvantage they will compare favourably with surface arrangements.

FIRST AID.

"In a mining centre like Kalgoorlie, I think it is essential that all miners should have a certain amount of training in First Aid. The miner's vocation is recognised and known as one of the most dangerous, and yet nothing like the same efforts are being made in Australia as in England to induce tradesmen to learn to give First Aid. In the annual report of St. John Ambulance Association, West Australian Centre, I noticed that during the year 1908 ending September 30th, 185 passed the First Aid. Out of this number only 17 were from the Goldfields (Lawlers 7, Menzies 10). Whilst in England on long service leave during the year, I visited the head office of the Grand Priory of the Order of the Hospital of St. John of Jerusalem in England, and was surprised to learn from their reports what practical work is being done. As one connected with mines, work in connection with them naturally appealed to me most. It is reported that the Ambulance Leagues in the mining districts are making good progress. It is said that over 6,000 men having First Aid Certificates are working in the mines in the Midland district, and last year 77 or 78 classes were held and 1,800 men were trained. The estimated number of miners in the Durham district with certificates is 3,500. In a competition promoted by the Yorkshire Mines Inspection District Ambulance League, for a challenge shield, 135 teams entered. I was pleased to learn that the mine owners were assisting to keep the classes going to enable the men to get the necessary teaching. In Cumberland there is a Local Centre, chiefly officered by the Mines Inspectors, each colliery contributing to the cost pro rata of its employees. It is becoming recognised that in every trade it is necessary that everyone should have some knowledge of modes of rendering first aid to the injured; briefly I may state it is reported that on and after April, 1908, every candidate for the grade of master or mate in the Mercantile Marine is required to produce a certificate of First Aid to the injured. Some very interesting figures were published in England about the Japan Red Cross Society. The membership is said to be 1,414,125. One out of every 20 Japanese males and one out of every 430 women are connected with the organisation. The property of the Society is said to be valued at £1,500,000. During the late war, the Society is said to have spent £500,000. They have 5,000 trained men and women ready for duty at short notice. Taking it from a national point of view, every man is better by being trained in First Aid, and every effort should be made to induce the employees in Kalgoorlie and the other mining centres to go through the course.

ACCIDENTS.

"During the year 16 accidents were reported, 2 fatal, 7 serious, and 7 minor."

COOLGARDIE, YILGARN, AND DUNDAS GOLDFIELDS.

Mr. J. Crabb, Inspector of Mines, has reported under date 11th December, as follows:—

COOLGARDIE GOLDFIELD.

"During the period under review mining on the Coolgardie Goldfield has, generally speaking, been a little dull. A pleasing feature, however, is the satisfactory manner some of our principal mines are opening up at depth.

COOLGARDIE DISTRICT.

"In the early part of the year great hopes were entertained that a marked revival in mining was about to take place in the above mentioned district, but I am sorry to say that so far these hopes have not been fully borne out. However, good progress has been made, and mines that were a few years ago considered of little or no value are now being constantly worked, and give good promise of becoming highly payable properties. A considerable amount of tributing has been done on New Bayley's mine, with very satisfactory results. Apart from the tributing work the company has been engaged in sinking a new main vertical shaft, and I am given to understand that it will be sunk to a depth of 400ft. before opening out.

"At the Queen's Cross mine a fair amount of work has also been done by tributers in the big open cuts and other shallow workings, but apparently results have not been very satisfactory, as latterly very little mining of importance has been done.

"The King's Cross mine is now being worked on tribute, and as very little trouble is expected with water, it is intended to confine operations to the bottom levels. Splendid results have been obtained from this mine from time to time, and it appears to be the general opinion that it is well worthy of being opened up at a greater depth.

"A considerable amount of development work has been done at the Richmond mine, and good stone has been opened up in the bottom level (270ft.). A parcel of 48 tons recently treated at the State Battery gave a return of 1oz. 17dwt. per ton over the plates. Owing to the very encouraging results obtained from the developments at the bottom level it has been decided to sink the shaft another 100ft., and instal a hoisting engine.

"It has been reported that there is a likelihood of the King Solomon being taken over by a company. Very little has been done on this mine apart from the cyaniding of a large quantity of tailings.

"Results from the Garden Gully have not been very encouraging, and after spending £1,500, during the latter part of the year, the owners made application for exemption to allow of time to raise more capital to carry on development work.

"On the Coolgardie Enterprise a considerable amount of work has been carried out by a local syndicate on a fine looking lode, but up to the present the ore has been proved to be only worth a few dwts. per ton. The lode is well defined, and it is generally thought that it will live to a considerable depth, and that it is well worthy of being prospected.

"The main shaft at the Coolgardie Redemption has been sunk to a depth of 302ft., and a 9in. Cornish pump installed. The main lode is reported to have been struck in a crosscut at 300ft. level, but owing to a large inflow of water which followed the cutting of the ore body development work at this point had to be discontinued for a time. The assistance given to this company under the Mines Development Act has been found to be of considerable benefit.

"Good progress has been made at Tindal's mine. A ten-stamp mill of 1,250lb., a 15in. x 9in. Blake crusher, Marshall-Heine water tube boiler designed for a working pressure of 150lb. per square inch, and a battery engine have been installed. The battery engine is a first-class machine of the very latest design. The

valve gear is of the Corliss type. The whole of the plant was made by Messrs. Fraser & Chalmers, and it is anticipated that for economical running it will surpass anything of its size yet installed in Australia. It is intended to increase the number of stamps to 40 within the next twelve months or so.

"At Griffiths' mine operations have been carried on principally by tributers, who have met with fairly satisfactory results.

"At the 300ft. level in the Undaunted mine the vein has been opened up for a length of 200ft., and it is estimated that it averages 4ft. in width. Assays of the ore from samples taken about 8ft. apart for the whole length of the drive have gone to show (leaving out one rather high result) that it is worth about 6½ dwt. per ton. Three parcels amounting to 200 tons, treated at the State Battery, gave the following returns over plates:—No. 1 parcel, 50 tons, taken within 50ft. of crosscut north, gave a return of 5dwt. per ton; No. 2 parcel of 50 tons, taken from within 50ft. of crosscut south, gave a return of 3dwt. per ton; No. 3 parcel of 100 tons, gave a return of 3dwt. 22grs. per ton. It is estimated that the sands are worth 2dwt. 5gr. per ton. Mining and treatment, it is reckoned, can be done for 16s. 9d. per ton, and that a good profit can be made from the ore in sight.

"A fair amount of work has been done on the Excelsior mine, and of late ore reckoned to be worth 1oz. per ton has been stoped from about the No. 1 level.

"Good progress has been made on the Burbanks Main Lode. The lode has now been proved to a depth of 635ft., and it is said to be highly payable at this point. Apparently the value of the vein is improving as depth is attained, as results show that the lower 300ft. is a distinct improvement upon the 300ft. above. Mr. W. Nicholas (director) states that 35ft. below the 600ft. level the lode is 7ft. in width and is richer than anything yet discovered in the Burbanks district. In view of the improved prospects of the mine, and in order to put in additional machinery to keep pace with the growth of the mine, it has been decided to raise an extra £10,000 for working capital by the creation of 5,000 shares of 4s. each. For the year ending June 30th, accounts show a net profit of £9,679, from which a 10 per cent. dividend, absorbing £3,000, has to be taken off, leaving £6,679 to be carried forward. Although the average yield per ton as compared with last year shows a decrease, the total output of gold shows an increase, thereby causing only a comparatively small decrease in the profit for the year.

"At Burbanks Birthday mine some very rich parcels have been obtained by tributers from various parts of the mine. One parcel of 81 tons treated for Messrs. Higgs and party, gave a return of 766ozs., and another treated for McRostic and party gave a return of 201ozs. from 143 tons.

"The Lady Robinson (which is being leased by Mr. H. Michaelis and party) is being well prospected in the upper levels. Several very good crushings have been obtained from these workings, and it seems to be the general opinion that the mine is well worthy of being further prospected at depth.

"The Cheapside, which is now held under option by the Waihi Company, are carrying on developments at the bottom level (240ft.), and I am given to understand these developments are proving very satisfactory. A parcel of 151 tons treated at the Burbanks Main Lode in October last gave a return of 95ozs. 17dwts. over the plates.

"Good returns are still being obtained from the Lord Bobs mine. The whole of the ore is now being obtained within a hundred feet or so of the surface. During the last year or so £15,440 have been divided between the 16 shareholders.

"At the Westralia and East Extension mine, a considerable amount of work has been done by tribute parties, but, generally speaking, results do not appear to have been very satisfactory. In December 784 tons of ore were treated for a return of 347.54ozs.; slimes, 1,429 tons for 137.77ozs.; sands, 124 tons for 6.9ozs.

"The Vale of Coolgardie is being worked by a party of tributers, who are obtaining very good results, their last crushing of 730 tons gave a return of 400ozs.

Higginsville.—The Red Hill Westralia is now being worked by a party of tributers. For the month of December, 37 tons were treated for Cresswell for 12ozs.; for Bodycott, 300 tons for 44ozs.; for Warberton, 36 tons for 27.20ozs.; for McMullen, 41 tons for 41.60ozs. The ten-head mill that was purchased by the Hidden Secret North some time ago will shortly be erected. The delay in erecting this plant has been caused through not being able to obtain a sufficient supply of water. As public crushings will be undertaken here, it is the general opinion that it will do a considerable amount of good in assisting some of the other shows that are situated near the property.

"At Widgiemooltha good results still continue to be obtained from the Flinders mine which is owned by G. Sweeney. The last crushing of 6 tons gave a return of 62.52ozs.; sands, 50 tons for 46.50ozs.

"Kingswood and party, who are working on the same line as the Flinders, crushed 6 tons for a return of 31ozs.

"Eames and Jones still continue to obtain fair results from the Yorkshire Lass. A parcel of 50 tons treated at the State Battery in December gave a return of 16oz., and from 1 ton of concentrates 3.35ozs. were obtained.

"Humphries and party, who have been working the old Imperial mine, are mining some very fair stone from the large lode formation which trends in a northerly direction through their property. The principal bulk of the ore is being obtained from a large opencut. The last parcel of 59 tons treated at the State Battery gave a return of 9dwts. per ton. The lode is reckoned to average 66ft. in width.

Kunanalling District.

"The Star of Fremantle has for some time been held under option by a syndicate who have been carrying on development work in the bottom levels, and it is expected that the property will be taken over in the early part of this year. The mine is equipped with a ten-stamp mill and cyanide plant, and it appears to be the opinion of a great many that there is a very fair future for the property.

"Messrs. Ware and party (owners of the Blue Bell) are kept constantly employed dealing with their own and public stone with their five-head mill. They recently put through a parcel of 67 tons for 55ozs., and treated 400 tons of sands for 104ozs. 8dwts.

"Very good developments have taken place on the Shamrock mine during the year, and lode has been proved to live down below the No. 2 level. It was thought at one time that it had cut out but apparently it was only a slight break which made it appear so. To the south of the Shamrock a great deal of prospecting has been done lately, and it appears that Sutherland and party, Bewick and party, and Davis

and party have struck the continuation of the Shamrock lode. Sutherland and party, who struck the ore at a depth of about 80ft., estimate it to be worth about 30dwts. per ton.

"Bewick and Rodgers, who have a P.A. adjoining Sutherland's, are sinking an incline on lode formation, but at the time of my visit very little values were being obtained. The incline was down 20ft. in the formation, and it is intended to sink it to a depth of 70ft. before driving on it. Adjoining the south end of Bewick's area Davis and party have struck a vein which they estimated to be worth 30dwts. per ton. At the time I saw it so little had been done it was impossible to even form an idea of its importance, but as the prospectors informed me that they could pick up floaters carrying a little gold for a fair distance along its course, it is of course quite probable that a fairly long length of highly payable ore will be opened up. The width so far as one could judge would be about 18in.

"The Hopeful, which adjoins the Shamrock on the north, is being worked at the 175ft. level. A crushing of 28½ tons taken from this level recently gave a return of 3ozs. per ton.

"There has been no mining of importance done on the Premier mine during the year, but I have been given to understand that there is a likelihood of it being taken over by a syndicate, whose intention it is to try and locate the lode which has been faulted. From what I can learn a reverse fault has taken place; if such is the case there should be little difficulty in locating the lode, provided the throw is not great.

"Mr. J. Doyle, who now owns the London G.M., intends to erect a five-head mill on the property. This mine has been opened up to a depth of 300ft., and levels opened up at 160ft., 100ft., and 60ft. Mr. Doyle estimates that there are several thousands of tons of ore in sight which can be made highly payable with a treatment plant on the ground.

"Messrs. Hooley and Morris have erected a Huntington mill on machinery area 20S, with which they intend to treat the alluvial and cement formation. The ground which they are going to work is estimated to contain 20,000 tons of material and to be worth about 2dwts. per ton.

"The Carbine mine still continues to open up well at the 400ft. level. Scarcity of water is still a great drawback to the property, but it is thought this will be overcome shortly, as it is expected a good supply will be cut in the next lift of 100ft. which is now being sunk. During the year additional machinery has been installed. It is the general opinion that the mine never looked better, and that its future prospects are particularly bright. It has been reported that the Carbine South have struck the Carbine lode at a depth of 400ft., and that it is carrying very good values.

"At the Jourdie Hills good progress is being made at the Jourdie Enterprise mine. The erection of a five-head mill which was commenced in the latter part of the year is expected to be completed and running in the early part of February next. A considerable amount of development work has been done, and it is estimated that there is a large quantity of highly payable ore in sight.

"A rock-drilling plant is being installed on the Derry's Own, and it is expected to be running in the early part of next month. The last parcel of stone from this mine, amounting to 56 tons, treated at Taylor and Sons' battery, gave a return of 20.05ozs. over the plates. The tributers at the Pride of Jourdie are reported to be doing very well, a parcel of 64 tons treated in December gave a return of 84ozs. over plates, and one of 66 tons, 53ozs. 15dwts. The principal work has been carried out in the stopes between Nos. 1 and 2 levels.

THE DUNDAS GOLDFIELD.

"A marked improvement has taken place in mining about Norseman, and so far developments and indications show that the principal veins continue to a considerable depth, and that they also maintain their size and values fairly well. The output has materially increased and the future prospects of the field are fairly bright.

"The Break o' Day, which has been idle for some time, was recently floated. The capital is £25,000, in a hundred thousand shares, of which 25,000 went to the vendors and the balance to the public. It will now no doubt get thoroughly prospected, and it is thought by many that there are very good prospects of it being made a payable property.

"Some very good values are reported to have been opened up at the bottom level of the Lady Miller, but as it is reckoned to be rather refractory to treat with present methods it has been thought advisable to adopt some other.

"Some very rich strikes have been made at the Veni Vidi Vici, which adjoins the Lady Miller. In the latter part of December 328ozs. were dollied, and during the latter part of the year over £2,000 worth of gold has been obtained. According to report there appears to be no sign of the chute cutting out.

"Splendid results are still being obtained at the Viking No. 1. The last crushing of 450 tons gave a return of 1,200ozs. There is another parcel of 400 tons at grass which is reckoned to be equal in value to the above mentioned. The vein is opening up well at depth.

"A parcel of 36½ tons recently treated from the Priscilla gave a return of 104ozs. 13dwts. over plates.

"The Oversight is said to be opening up well in the bottom workings. At the time of my recent visit to the mine there were about 300 tons at grass, estimated to be worth about 2ozs. per ton.

"Steady progress has been made at the Cumberland, and the prospects of the mine are said to be better now than for a considerable time. The country rock is becoming less hard in the bottom level (828ft.) than in the upper workings, which is considered to be more favourable to the continuation of the vein in depth. A fair volume of water was struck in a winze sunk on vein at No. 5 level, and preparations have been made at No. 7 level to cope with a large quantity. A fine compressor manufactured by Thompson & Co., Castlemaine, has been installed. It is considered capable of supplying sufficient air for 17 3½in. drills, or a capacity of 1,700 cubic feet of free air per minute. It is of the horizontal cross compound type, and is of the most modern design in every detail.

"The Mararoa is said to be developing well at depth, and all indications point to it having a very prosperous future. Five heavy stamps have been added, and as these will be brought into operation at an early date the output will of course be materially increased. A great deal of development has been done, including the putting in order of the south incline. At the bottom levels work was a short time ago suspended pending the sinking of the incline to a level with the bottom workings that have been opened

up from a winze. The vein is said to range from 10ft. to 30ft. in width in the lower levels and carries good payable values.

"The North Mararoa mine, which was recently floated, has been unwatered, and developments that are taking place at the bottom level are being anxiously watched.

"The Northern Star is said to be developing well at the 200ft. level. A hoisting plant, consisting of a vertical boiler and engine, has been installed, and drives are now being put in north and south on the vein at the 200ft. level. An option has been taken over the mine by an Adelaide company, and I understand that there are fair prospects of it being taken over.

"Good developments have taken place on the Acme, and the results obtained from a parcel of stone treated at the State battery, which gave a return of 9dwts. 19grs. over plates, is considered to be highly satisfactory. The assay value of sands was 5dwts. per ton. The property is situated on the Mt. Barker line of reef, which can be traced along the surface for considerably over a mile in length.

"The New Moon has been opened up to a depth of 300ft., and drives extended north and south of the main incline about 60ft. The vein is said to be looking well at the bottom level, and there is every indication of it continuing in depth. A parcel of 125 tons, treated some little time ago at the State battery, gave a return of 15dwts. over the plates.

"Rich patches still continue to be obtained from the Valkyrie (owned by Messrs. Baird and Evans). The last amounted to 124ozs. This was struck at the 200ft. level.

"A great deal of stone has been broken out from different parts of the Princess Royal, and treated with fairly satisfactory results. Various blocks of stone have also been sampled, and the manager, Mr. Butefisch, is of opinion many can be profitably mined. Mr. Butefisch is of opinion that the Princess Royal is placed at a great disadvantage through having to use water from the mine that is not suitable for the treatment of sands and slimes, and that it is really essential for fresh water to be supplied to enable the ore to be economically dealt with.

THE YILGARN GOLDFIELD.

"Mining on this field during the period under review has been a little dull. Some new discoveries have been made at Koolyannobing, Golden Valley, and around about the Victoria, however, which give very good promise.

"At Koolyanobbing a shaft has been sunk to a depth of about 80ft. on the St. Clare No. 2 lease, and it is said the reef, which averages nearly 2ft. in width, is worth about 1oz. per ton.

"The vein opened up at Golden Valley during the latter part of the year is said to be looking well. The parcel of 15 tons mentioned in my report dated 9th December on this property, gave a return of 2ozs. 4dwts. over plates. There is a big tract of promising looking country about Golden Valley that has not yet been thoroughly prospected.

"Very good progress has been made at Fraser's mine. For the month of December 658 tons milled gave a return of 395ozs. 3dwts. over plates; 850 tons of sands were treated for 93ozs. 14dwts. A great deal of tributing has been done with fairly satisfactory results.

"At the Greenmount, mining has been confined to the oxidised zone. During the month of December 884 tons were treated for a return of 13s. 10d. per ton over plates; and 777 tons of sands gave a yield of 7s. 5d. per ton. Total yield, 346ozs. 8dwts.

"At the Transvaal mine a little ore is being mined from near the surface. There is a fine body of ore on this property but I am given to understand it is too refractory to be treated by ordinary amalgamation and cyanide.

"A little work is now being done at Hope's Hill by J. Higgins and party. A parcel of 16 tons recently treated gave a return of 6ozs. 16dwts.

"A considerable amount of crushing has been done for the public at Jacoletti. For the month of December 505 tons were milled for the public for a return of 429ozs. 15dwts., the following being the parcels treated:—Lady Agnes, 77 tons for 17ozs. 9dwts.; Fimiston Syndicate, 61 tons for 48ozs. 6dwts.; Marvel Loch North, 58 tons for 125ozs. 5dwts.; Marvel Loch Co., 149 tons for 158ozs. 3dwts.; Mountain King, 160 tons for 83ozs.

"Good developments are taking place at the Never Never mine. During my visit in November I was given to understand that values worth 1oz. per ton were being obtained from the bottom level.

"A large lode formation is being opened up about a quarter of a mile east of the Never Never, by Jorgenson and party. It is supposed to be the continuation of the Never Never lode. A shaft has been sunk on it to a depth of 50ft., and a crosscut put in the lode for a distance of 40ft. The ore exposed in this crosscut is reckoned to be worth 15dwt. per ton. A parcel of 54 tons recently treated at the Never Never gave a return of 53ozs. 11dwts. 21grs.

"Good progress has been made at Spring Hill mine. At the time of a recent visit very good ore was being obtained in one of the stopes just above No. 1 level. For the month of December, 403 tons were treated for a return of 103ozs. 15dwts. by amalgamation, and 402 tons of sands for a return of 41ozs.

Mines Regulation Act.

"During the period under review the Mines Regulation Act has been fairly well adhered to by both employers and employees.

Accidents.

"Twelve accidents occurred during the year, two of which caused the death of four men; the others were of a serious nature. I have fully reported on these accidents to your office as they occurred.

Ventilation.

"I have paid very careful attention to the ventilation of mines, and it is very pleasing for me to report that all of the principal mines are well ventilated. In the early part of the year the ventilation in some of the mines was defective, but by having airways constructed and the various air-currents properly regulated by means of air-doors, etc., these defects were soon overcome.

Height of Stopes.

"Generally speaking, the heights of stopes have not exceeded 10ft. Where carried at a greater height than this suitable provisions for safety were insisted on. In many cases it is, apparently, being recognised that it is far more satisfactory, both from a safe and economical point, to keep filling up to within about 9ft. of the back of stope, than to go much beyond this height,

ROPES.

"Very careful attention has been paid to ropes, and I have found it necessary to condemn seven that were used for hoisting purposes. It is becoming recognised by users that far better results can be obtained with the Lang lay than with the ordinary lay.

SUNDAY LABOUR.

"Several applications were made for Sunday labour, but owing to not being satisfied that the employment of labour was necessary to avoid the risk of damage to the underground workings or loss of time in the subsequent working of the mines I could only grant one permit."

COLLIE COALFIELD.

The Annual Report of the Inspector of Mines, Mr. T. D. Briggs, dated 16th January, 1909, says:—

"The output of coal was 175,247 tons, the largest on record and an increase on the previous year of 32,874 tons. This substantial increase was largely due to the development of the trade with steamships for bunker coal.

"The total number of men employed on the field averaged rather less than the previous year, but the production of coal per man employed has further increased from 563 tons in 1907 to 613 tons per man for 1908. The increased tonnage per man is no doubt due to the fact that coal cutting machines are now installed at all the mines and also to the fact that fewer men being employed has resulted in more shifts per man being worked.

"One fatal accident occurred to a horse wheeler at the Cardiff colliery, the deceased being crushed between a skip he was wheeling and a prop. There were 52 non-fatal accidents, 32 of these were classed as serious and 20 as minor.

"There were two prosecutions under the Coal Mines Regulation Act, both for infringement of General Rule 12 (c.)

"Five permits to employ labour on a Sunday have been granted, three to the Proprietary Company and one each to the Co-operative and Cardiff.

"During the latter part of the year a company called the Westralian Coal Mining Company was formed to acquire and work six leases situated on the west end of the field. A tunnel has been driven about 50 yards which should soon strike the seam of coal which has been proved to exist in the vicinity."

GREENBUSHES MINERAL FIELD AND PHILLIPS RIVER GOLDFIELD.

Mr. S. Cullingworth, Inspector of Mines, reports, on 28th November, 1908:—

GREENBUSHES.

"Several influences have been at work during the year which have acted adversely on this field.

"The fall in the price of tin has made all the difference between profit and loss on many of the claims and leases, and in consequence they have been idle for the greater part of the year. Other claims and leases have passed into the hands of companies, whose operations for one cause or another have not always been successful.

"Chief amongst these is the South Cornwall, a locally-formed company, assisted by a Government subsidy, whose operations were carefully watched not only by the local shareholders and residents, but by mining men from other districts. The stoppage of this work before anything had been conclusively proved one way or the other, has had a disastrous effect upon the field. It has destroyed the confidence of investors in lode mining here, it has shaken the faith of the most optimistic of the residents themselves, and for the time has practically brought all deep mining to a standstill. This is all the more to be regretted as the lease remains practically as unproved as it was before this company commenced work. At the north end of the field a large area is held by sluicing companies which are putting through large quantities of gravel, whilst at the south end some of the lode claims are working at shallow depths but the number of men employed has decreased considerably as compared with 1907. In June of last year the Government statistics show 336 men employed above ground, 216 underground, whilst in addition 40 men are classed as diggers, making a total of 592 men. In September of 1907 the total number of men employed was 468. This number had further decreased in September of this year to 294 men, employed on all classes of tin mining work, a decrease of 50 per cent. The production of black tin has also decreased, but not in the same ratio, as the following figures taken from the Government statistics show:—Production of tin 1907 (six months January to June inclusive), 25.49 tons lode tin; 369.11 tons stream tin, a total of 394.60 tons. Production of tin 1908 (six months, January to June inclusive), 5.75 tons lode tin; 304.69 tons stream tin, a total of 310.44 tons. Whilst from July to September, 1907, inclusive, 206.7 tons were produced, and from July to September, 1908, inclusive, 141.05 tons. This shows a total for nine months, January to September, 1907, of 601.30 tons, and for the same period of 1908 451.49 tons. And whereas in 1907 the output of tin was made up of numerous small parcels, in this year two companies or two combinations produce 50 per cent. of the total amount, chiefly from sluicing. Comparatively large areas are being operated by these companies, whose operations do not require the services of so many men in relation to the area as in the old days of small claims.

"*The Greenbushes Development Company.*—This company now has three sluicing plants working. The principle employed is the same in each case, *i.e.*, the ground is broken down by water forced through nozzles, the broken wash washed into a race and pumped up to tables where the tin oxide is caught, the tailings washing away over the end of the boxes to the tailings dump.

"The original plant erected on New Zealand Gully, consisting of boiler, engine, and pumps, was mounted on a barge, which had to be floated up towards the face from time to time. The later plants are not mounted in this manner, but the engines are mounted on boilers of the portable or semi-portable type which, with their necessary pumps, can be moved up as required. On the occasion of my last visit the New Zealand Gully dredge was operating on a fine face of sand and wash fully 25 to 30 feet in depth, and at that time about 150 to 200 feet in width. There appears to be a large tonnage ahead for this plant to treat. No. 2 plant was working on what was known as Bishop Gibney's ground, most of which had been previously worked by small parties—I understand the results were satisfactory. No. 3 plant was erected on Rattray's Gully, where also there appears to be a good depth of sand and wash to put through. During

September last this company obtained 12.25 tons black tin.

"Nickel Kramer.—This mine has lately been equipped with a sluicing plant similar to the light type mentioned above. Work had not started at the time, but there appears to be a good depth and extent of gravel, which it is stated carries tin. The returns for September, 1908, show a production of 4.75 tons of black tin from this lease.

"The Spring Gully dredge is under the same management, the returns show that during September, 1908, 8.50 tons black tin were obtained.

"There are about twenty small parties working in various parts of the field, chiefly sand sluicing, or working the wash and clay down to some 15 or 20 feet from the surface by means of open cuts.

"Very little underground work was going on at the time of my visit, but it is expected more attention will be paid to the lodes, and more underground work for alluvial tin will be carried on during the dry weather. There appears to be very little prospecting further afield.

"Accidents.—Seven accidents were reported during the year of which five were minor and two serious.

PHILLIPS RIVER GOLDFIELD.

"During the past twelve months this field has experienced a decided check chiefly owing to the high realisation charges and to the lack of any means of dealing with low-grade ores, which require concentrating to bring them into a marketable condition. Within the last three months the Phillips River Gold and Copper Company has altered the tariff, so that there is now an advantage to the seller which, taking the average of the parcels purchased, amounts to a difference in favour of the seller of 19s. 10d. per ton. Spot cash is now paid for all parcels upon agreement of assays, there being no deduction of 25 per cent. held over as formerly. Eleven parcels were picked out of the books of the company, and the manager kindly had copies of the actual account sales made out, with pro forma account sales showing what the same parcels would have realised under the old tariff. No smelting charge is now made, but certain amounts of copper and gold are deducted.

"The following example will show the difference between the two tariffs:—

"New tariff actual account sales. Net weight, ore 23 tons. .6453; agreed assay, 6.5 per cent. copper and 1.325ozs. gold.

"Copper paid for 0.5 per cent. Gold paid for 1.125ozs. per ton. Total amount paid, £112 6s. 4d.

"Under the old tariff with copper at the same price the parcel would have realised £83 3s. 7d., from which a deduction of 25 per cent. would have been held over for three months.

"The company hope to improve this tariff when railway communication is available to their works.

"I understand the Phillips River Company has ordered a concentrating plant, which they intend erecting at the smelting works. With a loop line connecting the works to the main line and cheap transit this should prove of great benefit not only to themselves but to the district generally; cheap carriage with as little handling as possible is, however, a necessity.

"Smelting.—After being idle for twelve months the water-jacket furnace has been blown in again, and is treating about 100 tons of ore per day. This average the management expect to keep up, and to this end stoping is to be commenced at the Elverdton without delay, and in addition to the alterations already mentioned in the tariff special terms are being offered for heavy sulphides carrying high percentages of iron and low copper values.

"Negotiations are also in progress, I understand, for the purchase of gold-bearing tailings from the batteries at Kundip, but the successful handling of this product is doubtless contingent upon the railway connection to the works being completed.

"Parcels of ore are coming in to the smelter from 'The Flag,' 'The Harbour View,' 'The Hillsborough,' and 'Christmas Gift' at Kundip, and from various parties at Ravensthorpe. The Cattlin should also be in a position to turn out large quantities of ore, but the management do not intend to send in big parcels until the concentrator is erected.

"The converter is completed and the product will be sent away as blister copper in future.

"Railway.—The rails are laid through to Ravensthorpe but the line is not yet handed over by the contractors, and there is no rail connection to the smelter. This latter is a most important piece of work for the cheap handling of the lower grade ore upon which the future of the field really depends.

"Developments.—The developments in those mines which have attained any depth are encouraging and should be regarded satisfactorily by those interested.

"Mt. Cattlin.—The main shaft has reached a depth of 400 feet. A level driven at this depth has been extended 413 feet west. The two known shoots of ore have been driven through and are apparently coming together, there being very little blank ground between them. The drive is being pushed on in new ground in lode formation. The size of the lode driven through cannot be given, as it has not been sufficiently proved; the full width is not exposed by the drive. The east drive has been extended 62 feet to intersect No. 4 shoot. The payable ore exposed by this level totals about 230 feet. 300 feet level has reached a total length of 350 feet; there is about the same length of payable ore as in the lower level. A certain amount of stripping has been done on this level, and at this point the lode has been proved to be over 20 feet in width. It will not, however, average this width, but varies considerably and is expected to average from 8 to 9 feet. Altogether the developments have exposed a considerable tonnage of ore, much of which occurs in the form of dense sulphides of copper and iron, which can be hand picked, and the remainder will be suitable for concentration.

"Elverdton.—The main shaft has been sunk to 369 feet. A level is being driven at 350 feet and has reached a total length of 420 feet. The greater part of this is driven on the lode which carries high-grade chalcopyrite throughout occurring in veins and patches. The face of the drive is still in ore. The lode at this level appears to have been thrown out of its proper course, but in the face it is apparently assuming its usual north and south strike. Here the lode formation is of considerable width; a large proportion of the ore can be hand-picked. The 250 feet level is driven on the lode for about 500 feet and the 130 feet level for 390 feet, ore occurs as chalcopyrite in streaks, veins, and patches as in the lower level. So far as can be ascertained at present the development work on the north side of the main shaft has shown the lode to carry a high percentage of ore per fathom. a large proportion of which can be cleanly picked. and the remainder concentrated. Clean samples of chalcopyrite from this mine carry, I am informed, as high as 25 per cent. copper and about 2dwts. of gold

per ton. The following returns of ore treated during the past three months have been sent in:—

	Tons.	Metallic Copper. tons.	Gold. ozs.
August ..	125.9	10.97	3.78
October ..	93.71	10.12	4.69

"The Flag Gold and Copper Mines, Kundip.—The main shaft has been sunk to 200 feet. At this level a drive has been put in on the lode for 146 feet west and 108 feet east. The lode is about 4 feet wide and is stated to carry good values both in gold and copper throughout, the figures given me by the manager being 7.1 per cent. copper and 8dwts. gold per ton.

"Iron Cap Lode.—The shaft has been sunk to 130 feet and the shoot proved for 90 feet in length, average width about 4 feet, and the average value, according to the battery returns, is well over 1oz. per ton. The following parcels have been sent to the smelter from this mine during September and October of this year:—

Date.	Tons.	Per cent. of Copper.	Gold.
12-9-08 ..	23.9 ..	23.15 ..	1.04
28-9-08 ..	23.5 ..	21.45 ..	1.04
28-9-08 ..	23.6 ..	6.50 ..	1.32
6-10-08 ..	37.7 ..	8.15 ..	1.27
6.10-08 ..	13.11 ..	22.5 ..	0.82
26-10-08 ..	39.90 ..	8.00 ..	1.62

and the following parcels have been treated at the battery on the mine during October and November to date of my visit:—

	Tons.	Gold bullion. ozs.	dwts.
October 10, 1908 ..	53 ..	63 ..	15
October 28, 1908 ..	90 ..	106 ..	17
November 11 ..	127 ..	134 ..	11

These results are from the plates of the battery; the tailings, which have not been treated, carry, I am informed, high values.

"The Harbour View.—This property is at present worked by tributers. South shaft—150 feet level. South stope. Here the tributers are working a fine stope of ore fully 20 feet wide carrying a good percentage of high-grade oxidised copper ore. About 100 feet north and at a depth of 40 feet a footwall vein of the same lode is being worked. The vein is from 18 inches to two feet wide and contains good grade ore. On other portions of the lease parties of men are working quartz and ironstone veins carrying gold. It seems a pity a vigorous policy of systematic development could not be carried out, as the property appears to be well worth it.

"The Hillsborough.—The lens or bulge of ore on which the underlay shaft was originally sunk is being stoped up from the 100-feet level. At present the stope is about 60 feet long by about 20 feet wide at the widest point. Good grade oxidised ore is being obtained.

"The lens appears to taper out gradually at each end, but I am informed another shoot is known to exist at the north-eastern end some 100 feet from the underlay shaft above-mentioned; this I did not see. The ore contains good gold values and further prospecting should be undertaken. The following returns have been sent in for the last three months, during which period only ore containing high gold values and low in copper has been treated:—

	Gold. tons.	Gold. fine ozs.	Copper Ore. tons.	Metallic Copper. tons.
August ..		66.72 ..	30.83 ..	.05
		52.05 ..	24.21 ..	.02
	141.75	97.47 ..	— ..	—
October ..		86.95 ..	36.02 ..	.55

"Two Boys.—The ten-head battery has not been worked to its full capacity owing to shortness of water. The owners of the property have gone to considerable expense to obtain an adequate supply by laying a line of pipes and establishing a pumping station on the Medic lease. The water supply, which was supposed to be ample, soon gave out however, and sufficient rain had not fallen to put water into their dam at the battery.

"The lode underlies at a very flat angle and has been worked to a depth of about 150 feet vertical. So far no signs of copper have appeared in the ore which seems to be quite of a free milling nature. The vein is not large, averaging about 24 inches, but as the country rock is decomposed and comparatively soft, the stone should be cheaply broken. From the returns sent in the stone averages over 13dwts. gold per ton from the plates, the tailings not being treated.

"The following are the returns sent in for the past three months:—

	Tons.	Gold, Fine ozs.
August ..	150.0 ..	83.55
September	160.0 ..	110.48
October ..	130.0 ..	73.43

"The Gem.—Work is proceeding from the 150-feet level of this mine. The lode and country maintain their usual characteristics, as described in previous reports, and which are similar to those in the Two Boys.

"The following table gives the returns for the past three months, and shows that ore of average grade is being broken:—

	Tons.	Gold, Fine ozs.
August ..	220.0 ..	113.23
October ..	560.0 ..	227.13

"These returns are from the plates of the battery, the sands not being treated.

"The *Mt. Benson* and *The Marion Martin* are manned by tributers who are working from small prospecting shafts at shallow depths.

"The Ballarat, the *Christmas Gift,* and several other leases are being worked, but not nearly so vigorously as could be wished, or as their prospects warrant, and it is to be hoped with the improved conditions which will soon obtain developments will be carried out more extensively by the various lease holders."

MINING ACCIDENTS.

I send you herewith tabulated statements of the mining accidents for the year ended 31st December, 1908, for the customary tables Nos. 22, 23, and 24 of your annual report, with totals of the previous year for comparison. The fatal accidents are also shown graphically in the diagram herewith, to be used in illustration of the tables. One more fatal accident has had to be added to the figures for 1907 given in last year's report, as a fatal accident in that year was not discovered till after last year's report had been published.

Table 22 shows that 41 persons were killed and 397 injured by mining accidents during 1908, as

against 46 killed and 391 injured in 1907. It also gives the distribution of the accidents among the various gold and mineral fields. The diagram shows graphically the totals of fatal accidents year by year since 1894, and that since 1899 there has been little difference in the total mortality from mining accidents. In table 23 the number of deaths from accidents per 1,000 persons employed in mines is shown for the different sorts of mines, for 1907 and 1908. The extra accident in 1907 discovered since last year's report here again slightly alters the figures therein given for 1907. As explained in last year's report, the alluvial miners have now been included in the total number of men engaged in mining, in making up this table, the total number of men for 1908 being taken as 17,266 in accordance with your table 17. On this basis the death rate for all mines in the State for the last five years has been as follows:—

	1904.	1905.	1906.	1907.	1908.
Total fatal accidents	42	34	40	46	41
Total number of men engaged in mining ..	19,615	19,342	19,429	19,113	17,266
Rate per 1,000 men	2.14	1.76	2.06	2.41	2.37

Table No. 24 gives a summary for 1908 of the fatal accidents above and below ground in gold mines alone, with rates per 1,000 men employed, and per 1,000 tons of ore raised, with corresponding figures for 1907 for comparison. In this instance the numbers of men employed are taken from your table 19, and do not include alluvial gold workers, as these could not be credited with any portion of the recorded output of ore.

Hereunder is a general table showing both fatal and serious accidents during 1908, classified according to the gold or mineral field in which they occurred, and also according to the nature of the accidents. The totals for 1907 (amended as above explained) for each class of accident are also given for comparison :—

Goldfield.	Explosions.		Falls of Ground.		In Shafts.		Miscellaneous Underground.		Surface.		Machinery.		Total.	
	Fatal.	Serious.	Fatal.	Serious.	Fatal.	Serious.	Fatal.	Serious.	Fatal.	Serious.	Fatal.	Serious.	Fatal.	Serious.
1. East Coolgardie	2	5	3	38	3	10	2	143	3	55	2	21	15	272
2. Mt. Margaret	...	1	2	2	1	5	...	10	...	7	...	4	3	29
3. Murchison	...	...	5	8	...	1	1	7	...	3	1	1	7	20
4. East Murchison	...	1	...	2	1	1	1	3	1	4	2	3	5	14
5. Coolgardie	...	...	2	1	...	3*	...	1	...	1	...	1	2	7
6. Yilgarn	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7. North Coolgardie	1	...	...	...	...	...	...	2	...	3	1	...	2	5
8. North-East Coolgardie	...	...	1	2	1	...	...	3	...	1	...	1	2	7
9. Broad Arrow	...	...	...	1	...	...	...	...	...	...	...	...	...	1
10. Dundas	...	...	2	...	...	1	...	...	...	1	...	...	2	2
11. Pilbara	...	...	...	2	...	...	...	...	...	...	...	1	...	3
12. Peak Hill	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13. Yalgoo	...	...	...	...	...	...	...	...	...	...	...	...	...	...
14. Phillips River	...	3	...	...	...	...	...	1	...	...	...	...	...	4
15. Collie	...	...	...	3	...	...	1	24	...	5	...	...	1	32
16. Greenbushes	...	...	...	...	...	1	...	...	...	1	...	...	...	2
17. Northampton	...	...	...	...	...	...	...	...	...	...	...	...	...	...
18. West Pilbara	1	...	...	...	...	...	...	...	...	...	1	...	2	...
Total 1908	4	10	15	59	6	22	5	194	4	81	7	32	41	398
Total 1907	3	14	22	64	8	28	*5	183	4	62	4	40	*46	391

* Now including one fatal accident in 1907 not discovered till 1908 after publication of 1907 Report.

(The "machinery" accidents in the above table might as well have been included in the "surface" class, but are kept separate as being such as come under "The Inspection of Machinery Act, 1904," as well as "The Mines Regulation Act, 1906." They are usually dealt with by the Inspectors of Machinery. Only such, however, are included in the table as have occasioned injuries serious enough to debar the sufferer from following his ordinary occupation for fourteen days, the usual period adopted for determining the seriousness or otherwise of accidents under the Mines Regulation Act, notwithstanding that the Inspection of Machinery Act defines "serious bodily injury" as such " as is likely to incapacitate the sufferer from work for at least 48 hours.")

A large number of slight accidents have also been reported to the Inspectors of Mines which have proved not to be serious enough to keep the injured person from returning to work for fourteen days. Such minor accidents have not been tabulated.

Fatal Accidents.—The following are brief particulars of the fatal accidents:—

Explosions.—Four persons were killed during 1908 by explosions. In the first case two men working in the Associated mine, Boulder, were tamping a charge of explosives with paper tamping, when an explosion took place, supposed to be due to the tamping-stick having struck the detonator. One of the men was killed and the other seriously injured. The accident was clearly due to the men's own action, and no blame could be attached to any other persons.

The second fatal accident with explosives took place at Whim Well Copper mine, when an Italian miner fired two shots and was returning to light a third charge when it exploded and killed him. The deceased's reasons for not lighting the third fuse

so that it would fire the charge a little after the first two, and for returning to the face immediately after the first two shots, are quite unknown. The third fuse was probably accidentally fired by the explosion of one of the other charges. No blame was attachable to any other person.

The third fatal explosion occurred at the Golden Pole mine, Davyhurst. Ten holes had been charged and four of them fired without throwing their burdens. Two men recharged the four holes and fired them, but only three exploded, and on returning it was found that the fourth hole had been partly cut out by the explosion of one of the others, leaving some of the charge unexploded in it. This hole was re-primed and fired with four more holes, when one of the charges exploded prematurely, killing one of the men, but fortunately not both. The fuse in use was of good quality, and the most likely theory of the cause of the explosion appears to be that the fuse of one of the previously charged holes, which had been coiled up and put into the mouth of the hole for protection, had come out and been cut short by one of the first round of explosions. The accident shows the necessity for checking the lengths of available fuse in all instances before firing, or for marking the outer ends so that it can be at once seen, on returning to complete the firing of a round, that the whole of the fuse in each hole is still intact.

The fourth fatal accident from explosions occurred in the Associated mine at Kalgoorlie. Two men were firing charged holes in a rise and had fired some and returned and recharged two butts of holes. One fired five charges while the other man started to go the magazine for another fuse. A premature explosion occurred almost as soon as the second man had reached the level. Though knowing that there were still four lighted holes to go off he very bravely went back to try to rescue his mate, but could not find him, and had just time to get away again himself before the other charges exploded. The first man was killed outright. No satisfactory explanation has been found for the premature explosion. An extraordinary feature of this case was that according to the evidence given at the Coroner's inquest there appear to have been several separate mishaps, not necessarily connected with each other or with the accident, viz.:—(1.) One unfired fuse was found to have been cut by the previous explosions and reduced to 3 feet 6 inches in length. (2.) One hole appears to have exploded out of its turn, without throwing its burden. One witness believed this hole to be the one that had caused the accident: if it were so, which cannot be proved, the case might be one due to the cutting short of the fuse by a previous shot, as in the above Golden Pole accident. (3) In one hole the fuse after the accident was found to have burned completely without igniting the charge. It is clear that the accident could have no connection with incidents (1) and (3). Another theory is that the butts which were re-charged were still too hot, and that one of these hot holes may have caused the premature explosion. There is no possible means of deciding with certainty what was the cause.

Falls of Ground.—During 1908 there were 15 men killed by falls of ground in mines, in 13 accidents, there being two falls which resulted in the death of two persons each time. Careful inquiry was made into all these cases both by the Inspectors of Mines and by Coroners' inquests, and in no case could any blame be attached to any person other than the deceased themselves. There were some instances in which it appeared that the deceased had taken undue risks through thoughtlessness or carelessness, but in the majority of cases no one could be blamed at all for the accidents, which were unpreventable mishaps of a sort inseparable from the miner's occupation through its very nature. The Coroners' juries—of practical miners—rarely had any suggestions to make as to precautions which could be taken to prevent similar occurrences in future. The following cases present features making them worth special mention:—

Two men were killed in Burbanks Birthday G.M. near Coolgardie, while employed in some old stopes working them over again. This is a dangerous sort of work, involving removal of the old filling. Some stulls gave way, allowing the ground to run and bury the men. They were tributers, and practically their own masters as to the way they conducted their operations. Both were experienced miners.

Two men were killed by a fall of ground in the Scandinavian mine, Dundas Goldfield, while sinking an inclined shaft, through neglecting to secure the back with timber. The deceased were their own masters, working in a prospecting venture.

A fatal accident in the Ivanhoe mine, Boulder, whereby a man was killed by a falling rock, was attributed by the Inspector of Mines to want of sufficient care being taken by the deceased and his mates in examining the ground after firing.

Another fatal accident at Boulder, in the Great Boulder Perseverance mine, resulted from a fall of cemented sand in a sand-pass which the deceased was clearing by firing a charge of explosives. The work was, in the opinion of the Inspector of Mines, carried out with all reasonable care. The fall knocked deceased down a pass and thereby caused his death.

A succession of fatal accidents occurred in the St. George mine at Mt. Magnet during 1908, of which three were due to falls of ground. A special report on these accidents was made, and is appended to this report (Appendix No. 1.)

In Shafts.—There were six fatal accidents registered as having occurred in shafts during 1908, which caused the death of five men and one boy. In the latter case the boy was a child who had been allowed to play round the mouth of a prospecting shaft in which work was in progress, and who fell down it. It was not a mining accident in the restricted sense of being such as occur to persons engaged in mining pursuits. Quite a similar accident might happen in a household well, quite unconnected with mining. A somewhat similar accident during the year, wherein a woman under the influence of liquor climbed over the logging of an abandoned prospecting shaft and threw herself down it, with fatal results, has not been registered as a mining accident, any more than another case of suicide in which a man hanged himself in the lower part of a shaft which was not being worked. It is not reasonable to charge such fatalities as these two suicides against the miner's occupation, though both happened in shafts, but the case of the child killed is included, as his death was a direct consequence of the mining work. It should not, however, be included in calculating the rate of persons killed to the number of men engaged in mining.

The following are particulars of the truly mining accidents occurring "in shafts" in 1908:—

(1.) Deceased was engaged sinking in the main shaft of the Karridale G.M., Burtville, and a bucket of rock was being sent up. Something fell down the shaft, most probably a stone from the bucket, on to his head and inflicted fatal injuries. There was no proof of any person being blameworthy, but the men sinking should have been more careful to stand clear under the pent house when the bucket was being pulled up.

(2.) Deceased was working at the 2,350 feet level in Edwards' shaft of the Great Boulder Proprietary mine, Boulder, closing up the timbering from a lower new section to the older timbering and filling mullock behind the timbers. Mullock was being sent down from a bin across the two winding compartments of the shaft about 90 feet higher up, the pumping compartment being used for lowering the mullock by a kibble. Something fell on the man's head and killed him, but it is not known exactly what struck him or how it came to fall. There was good shelter for the men under the bins in the two winding compartments while the kibble was going up and down.

(3.) A platman in the Oroya-Brownhill mine, Boulder, went down to No. 7 level in the cage to bring up two men who were there. Owing to a breakage of a pump there were three feet of water on the plat, and the platman, in order to keep out of the water, had perched himself as high as he could up in the cage with his back against one side of it and his feet against the other. The two men then got into the cage with some tools, and rang the signal to hoist. Soon after they started the lights went out, and after that the two men heard a moan and felt a bump, and found that the platman was gone from the cage. It seems probable that in trying to get down he must have been caught by one of the frame sets and pulled out of the cage. In this case gates had been fixed on the cage as an experiment, but were not shut, their compulsory use not having been enforced. Had they been in use the accident could not have occurred.

(4.) A miner fell down the shaft of the Kalgurli G.M., Boulder, from the No. 10 level. There was a passageway across one end of the shaft, and the deceased is supposed to have mistaken one of the winding compartments for this. To get into the shaft he had to open the protecting gate, and there is no apparent explanation of how he came to make such a mistake.

(5.) A man was killed in an underground inclined shaft in the Black Range G.M., at Sandstone. Desiring to go down the winze during crib-time he asked the engine-driver in charge of the winch to lower him, but the driver refused. Deceased then got one of his mates, who had driven winches in Victora, to lower him, and this was safely done, but when pulling him up again the skip and man were overwound and pulled against the pulley. The man was badly injured, and died while being conveyed to the Hospital. The accident was greatly deceased's own fault, but for the breaches of the Mines Regulation Act in which they participated the man who raised him and the engine-driver were prosecuted and fined.

Miscellaneous Underground.—Recorded under this heading there were five fatal accidents in 1908, causing the death of five men:—

(1.) A man at the Cardiff Colliery, Collie, who was driving a horse drawing a rake of skips was found killed lying between the skips and a prop. He is supposed to have been accidentally jammed between them while reaching backwards for his cap, which was found in his hand. No one was in any way blamable but himself.

(2) and (3.) Two accidents happened one after the other in a winze in the Golden Horseshoe mine, at Boulder. The first came about by a man slipping from the chain ladder by which he was descending the winze. He fell to the bottom and was killed. The ladder was in good order, and the fall was an unfortunate mishap for which no one could be blamed. In order to recover the fallen man another man got upon a boatswain's chair and was about to be lowered, when the ropes of the chair broke through being mildewed and rotten, and he also fell to the bottom of the winze and was killed. The chair was one which had been kept in the mine for a long time by a contract party without the knowledge of the management, and was found after the accident to be in a very bad condition. The man responsible for using it was prosecuted, but the Bench took the view that he may have made an error of judgment in thinking it safe, and dismissed the case.

(4.) A man in the Great Fingall mine, Day Dawn, was lifting a heavy cap-piece with the aid of a gin-pole, when it slipped and fell with him, causing fatal injuries. He himself was the only person in any way responsible for the accident. The Coroner's Jury recorded their opinion "that guy ropes should be used on all derrick poles when hoisting timber," but it would not always be practicable to do this.

(5.) An Italian miner at the Vivien G.M., Lawlers, was found suffocated in a sandpass, where he had got buried under sand. It was not ascertainable with certainty how he came to be in the pass, but there seemed no need for him to have run any risk. The exact circumstances of the accident could not be deduced from the evidence available after the body was found. The man was by himself when it happened.

Surface, other than Machinery.—Three fatal accidents, which caused the death of four men, were recorded in 1908 in connection with surface operations on mines, not including those due to machinery in motion:—

(1.) One man was killed at the Lake View Consols mine, Boulder, through being buried under a fall of dirt in a slimes dump. Deceased and another man were cutting a face to allow drays to be backed in for filling, and the ground fell very suddenly. There seemed no reason for blaming any person for the way the work was being conducted.

(2.) A fatal accident occurred at the Bellevue mine, Sir Samuel, through a man falling through a rotten sheet of iron on the roof of a building down on to the driving wheel of a Fouché Condenser. There was no necessity for him to go on the roof at all. The Coroner's jury brought in a verdict of accidental death with no blame attachable to anyone, but thought notices should be put up warning employees not to go on the roof. This seems a recommendation of rather doubtful advisability, as if it were carried out it would similarly be the duty of mining companies to put up notices all over their property warning employees against all sorts of foolish acts which they might conceivably take it into their heads to perform. Men must use common sense to protect themselves.

(3.) A very serious and awful accident occurred at the Golden Horseshoe mine, Boulder, whereby two men were struck dead in a moment by electric

shock, through the jib of a crane which they were working becoming foul of an electric power cable of high voltage. The Company was prosecuted for negligence under Section 57 of "The Mines Regulation Act, 1906," since the end of 1908, and a fine of £25 and costs was inflicted. There had been great want of proper care in installing the cables so close to the sweep of the jib of the crane.

Surface—Machinery in Motion.—Seven men lost their lives during 1908 while attending to moving machinery on mines:—

(1.) In the absence of the engine-driver an engine at the Great Boulder Proprietary mine, Boulder, began to race, probably owing to the driving belt coming off, and the fly-wheel flew in pieces, causing fatal injuries to one man and somewhat serious hurts to another. The man who was killed was a millhand who had run to the engine to try to stop it. The engine-driver had removed the governor belt, and was guilty of negligence in leaving his engine unattended with the governor out of action. He was prosecuted and fined.

(2.) A man was killed in the mill of the Hainault G.M., Boulder, through becoming entangled, in some unknown manner, in revolving shafting. The shafting and gearing were well protected, and there was no evidence to show how he came to be caught. He had been assisting two other men to take off a broken belt, and when last seen was sitting on a platform alongside the top pulley waiting for the other two men to repair the belt and pass it up to him. There seemed no reason to blame any person for the accident.

(3.) In the mill of the Bellevue mine, Sir Samuel, a man who was assisting to take off a belt was killed by being pulled round the shafting. The belt in some way was allowed to fall upon the shaft and became wrapped round it, and the deceased was caught in a loop of it and dragged round. No inquest was held in this instance, the Coroner considering one unnecessary. The accident seems to have been due to the bad practice of attempting to repair belts without stopping or greatly slowing down the machinery in the immediate vicinity.

(4.) While starting the producer-gas mill engine at the Roebourne Copper and Gold mine, West Pilbara G.F., for the first time, before all the belts had been properly protected, a fatal accident occurred through a man getting caught by the driving belt. The accident seems to have been quite unpreventable by any exercise of care and foresight, and no one was to blame.

(5.) A second fatal accident in the Bellevue mine, Sir Samuel, was probably caused by the deceased trying to lever off a belt by means of a wooden pole while the mill machinery was in full motion; but no one saw it happen. The deceased was found dead, with the belt lying on him, and had probably been carried round the pulley. The Coroner's jury found no blame attributable to any person.

(6.) At the Cosmopolitan mine, Kookynie, a man was killed while oiling bearings on the shafting driving a pump. His clothes appear to have been caught and his body carried round and round the shafting. The Coroner's Jury found no one at all to blame.

(7.) A very similar accident to (6) above caused the death of a man at the St. George mine, at Magnet. He was taking off a belt from a pulley on a shaft driving an elevator, and was wearing a loose oilskin overcoat on account of the weather being wet. This loose garment got caught by the shafting and the man was dragged round it and killed.

A review of the fatal accidents during the year shows that they were mostly mishaps of a character which could not be prevented by exercise of greater care on the part of the management or by more frequent supervision by the Inspectors of Mines. It will be seen, however, that the men themselves showed in several instances a good deal of thoughtlessness and want of ordinary prudence, and that there were at least two cases where there was some culpable negligence.

Fatal Accident in 1907 previously unrecorded.—The fatal accident during 1907, which as above mentioned was not recorded in the returns for that year, was one that would be classified in the "Miscellaneous" group. It was not known about till 22nd December, 1908, when the remains of a man were found in an ore-pass in the Oroya South Gold mine, Boulder. Inquiry led to the conclusion that the remains were those of a man who disappeared on or about the 5th August, 1907. He left the camp of a friend after midnight, on a dark night following a rainy day, and was never seen again. His way led past an open cut, and he must have either fallen into it and then down a pass at the bottom of it, or for some reason have gone into the open cut and fallen down the pass. The open cut was fenced at the time with three old wire ropes. It was afterwards filled with ore as a reserve stock, and remained full for some time, and it was not till this ore was being drawn off through the pass that the body of the deceased was discovered. The excavation appears to have been reasonably well protected, and there was no apparent likelihood of any sober person getting into it. This accident was due to mining operations and has therefore been recorded as a mining accident, but the deceased was not employed on the mine where it took place. The inclusion of such accidents as this, and the previously mentioned one in 1908 to a child, swells the figure of fatal mining accidents per person engaged in mining unfairly, as these were not persons engaged in mining. Such cases would preferably be deducted before making up the rates per 1,000 men engaged, but as it has been the custom to include all accidents in mines in the past, these have also been included this year. It seems to me, however, that this practice might well be reconsidered and amended.

Serious Accidents.—In my annual report for 1906 it was explained in the first two paragraphs under this heading that among the accidents classed as "serious" there are a very large number which did not result in any serious permanent injuries to the sufferers, but were still sufficient to keep them for more than 14 days from following their usual occupation. Of 272 "serious" accidents recorded in 1908 in the East Coolgardie district, only about 22 were cases of breakage of the larger bones, permanent serious injury to eyes or limbs, or injuries likely to have lasting disabling effects. The remainder, though often very painful, were of a much less formidable character, being such as broken, cut, and crushed fingers, scalds, and burns, jarred hands, poisoned cuts, strains and wrenches, shocks to the system, smaller dislocations, cuts, and bruises. The ratio between really severe accidents and less serious ones was very similar also in the other goldfields.

Explosions.—Ten persons were hurt during the year by explosions, one of the cases being an explosion which took place when pouring molten zinc into

the concaves of a rock breaker. This was due to steam, not to the use of explosives as were all the other accidents. Two men were injured by premature explosions, and three from delaying too long after firing their fuses. Another was hurt by an explosion while drilling in an old hole, and two through proper warning not being given when shots were fired, all these cases showing breaches of the General Rules under "The Mines Regulation Act, 1906."

Falls of Ground.—59 men were injured during 1908 more or less seriously by falls of ground. Fifteen of these cases were accidents to men engaged in taking down loose ground after firing, a class of work which is absolutely unavoidable in mining, and which is obviously attended with more than ordinary risk. In three instances the men were to blame for carelessness in working under known bad ground, and in another case a man was hurt through taking no care to ascertain the state of the back before going under bad ground. The Inspectors of Mines have had cause to think in a few cases that all reasonable care was not exercised by the men, but for the most part the mishaps have been from no fault on anyone's part, and not preventable by ordinary skill and foresight.

In Shafts.—There were 22 persons hurt in shafts from various mishaps during the year. Nine were injured by falls of stones, timber, and other materials down the shafts, two by themselves falling down shafts, and seven by accidents connected with the working of cages, buckets, kibbles, and skips. One man was struck by a descending cage while removing a light from a shaft, another by striking his hand against the side of the shaft while tightening the bar of his drilling machine. Two men fell from stages in shafts, one by slipping off a stage and the other through the stage giving way with him.

Miscellaneous Underground.—No less than 194 miscellaneous accidents were recorded during the year. In 60 of these cases the injuries were received while handling and loading trucks, through fingers, hands, and bodies being jammed against shoots or other trucks, toes and feet being run over, bodies struck by upsetting of trucks, men slipping and straining themselves while trucking or while lifting derailed trucks or material into trucks, hands being hurt by big stones moving in the trucks, and so on, the injuries being mostly wrenches, sprains, bruises, small fractures, and cuts. In 24 cases the men were hurt by loose stones and rocks falling and rolling, as in runs of ore and mullock while shovelling or on rills and in ore-shoots. Nineteen men were hurt while handling rock drills and coal cutting machines, and four by the breaking down of stages erected for boring. Falls from stages and ladders, in the stopes, and in passes caused injuries to 19 men, and five were hurt by tools and pieces of machinery falling upon them. Flying splinters of stone and steel injured 13 men, and six were hurt handling timber. The remaining cases were from very various causes, cuts from sharp stones, jarring of hands, blows from tools, and so on.

Surface (including Machinery).—There were 81 persons hurt on surface from various causes other than moving machinery, and 32 through machinery in motion. Of these seven men were scalded by hot water or steam and five hurt by burns. Twenty-three men sustained injuries from falls caused by missing their footing, slipping, and overbalancing. Seventeen were hurt handling trucks, by being jammed or struck by them, by their upsetting, and by straining themselves in handling them. Flying splinters injured four men, and one got a jarred hand. Falls of timber and pieces of machinery while being handled accounted for 10 cases of injury. Two men were injured by a run of sand while shovelling. Thirty-two cases were injuries sustained from machinery in motion, handling belts in motion, machine tools, and so on.

The great majority of the accidents recorded as serious were purely accidental mishaps of a nature inseparable from the miner's occupation, and which cannot be expected to be greatly lessened in number by any amount of legislative regulations or inspection. They may happen to the most careful and prudent man as well as to the most careless. The cases in which the Inspectors of Mines have found reason to blame any person are very few, though there are a good many cases where it is fairly plain that there has been much carelessness and thoughtlessness. It is not very common for any accident to be plainly the result of contravention of any of the mining rules and regulations. The cases in which it has been thought necessary to take legal proceedings are mentioned in the next paragraph.

Prosecutions.—During the year 16 persons were prosecuted for breaches of the Mines Regulation Acts. A manager at Mt. Malcolm was fined 10s. and costs 4s. for not being the holder of a 1st Class Certificate while in charge of winding machinery, and for employing an uncertificated engine-driver. An engine-driver and a miner at Black Range were each fined £1 and costs £2, the latter for winding men without an engine-driver's certificate, and the former for ceasing to have effective supervision of his engine without being relieved by a competent man. A fatal accident occurred through their negligence. In the Collie Coalfield two miners were prosecuted, one for careless handling of explosives, who was fined 20s. and costs 4s., the second for keeping gunpowder in the mine contrary to General Rule 12 (c), "Coal Mines Regulation Act, 1902," who was fined £1 and costs 8s. In the Greenbushes field there was one prosecution involving four persons for neglect to properly examine a rope before using it on their mine: a very serious accident was the consequence. They were fined £1 each and costs £2 7s. In the East Coolgardie field there were four prosecutions, involving six persons. An engine-driver was fined £2 10s. and costs £12 12s. for negligence in taking off a governer belt and leaving same off engine. A miner, platman, and manager were proceeded against for riding and allowing men to ride with tools, but this case was dismissed, the magistrate holding that there was no proof of contravention of the Act by any person. A case against a miner for negligence and causing injury to another person was dismissed for want of sufficient proof. A miner was fined £2 and costs 2s. for careless handling of explosives

Sunday Labour in Mines.

Under "The Mines Regulation Act, 1906," "The Sunday Labour in Mines Act, 1899," became incorporated with the former, and enforcement of its requirements became a duty of the Inspectors of Mines. There have been very few complaints during 1908 about work being carried on on Sundays, and the provisions of the Act relating to this matter seem to be very well observed. Permits have in several cases been given to allow Sunday work in cases of especial necessity, but every effort has been made to reduce such work to a minimum.

Accidents to Winding Machinery.

Under Regulation 11 under "The Mines Regulation Act, 1906," it is now necessary for mine owners to report to the Inspectors of Mines all accidents to the winding machinery, whether such have caused injury to persons or not. Eight such accidents unattended with injury to persons were reported during 1908 in addition to those above recorded in which persons were hurt, five being in the East Coolgardie, two in the Murchison, and one in the Coolgardie Goldfields. Seven of the accidents were cases of overwinding, and one was due to a misunderstanding as to signals. The winding machinery sustained various injuries, such as pulley wheel flanges broken, rope drawn about 2in. through shoe, thimble of detaching hook broken and rivets sheared, disc brake rocker shaft bent and depth indicator gear damaged. In one or two cases no damage resulted.

NEW REGULATIONS.

"Hung Up" Passes.—In consequence of accidents in 1907 through the dangerous practice of men entering passes and shoots underground which have become blocked or "hung up," the following new Regulation was gazetted on 7th February, 1908, to take effect from 1st March, 1908, viz.:—

Regulation 4.

39. No person shall enter any shoot or pass underground in which ore, rock, mullock, or sand has become jammed or hung up, for the purpose of examining or freeing the said pass or shoot, unless all other practicable means have been previously taken of causing the ore, rock, mullock, or sand to run or become free. Before any person enters such shoot or pass, the fact of its being necessary to do so shall be reported to the Manager or to the person for the time being in charge of the underground mining work, and the work of freeing the said shoot or pass shall be done under his instructions. Every case of any person having to enter such shoot or pass shall be reported to the Manager and entered in the Record Book.

This regulation is a tentative effort to meet a serious difficulty that occurs not infrequently in mining work, and is designed to ensure that the very dangerous work to which it relates shall only be undertaken when every other practicable means have failed, and then under the direct instructions of the manager of the mine or his underground deputy, so that they may take full responsibility. The view has been taken that it is not practicable to forbid the practice absolutely, and that the best course is to restrict it as far as possible, by fixing full responsibility for the method of carrying it out upon the mine officials.

Holman Hoists.—Some difficulty having arisen in some of the larger mines in regard to the manager of the mine personally examining the persons allowed to operate Holman Hoists, Regulation 14 has been amended, to date from 1st January, 1909, by inserting in clause 1 thereof the words "or some competent person appointed by him in writing for the purpose" after the words "Manager of the mine."

Exemption of Engine-drivers from having Certificates.—As there have been many applications from owners of small mines who find difficulty in keeping certificated engine-drivers, for exemption under Subsection (4) of Section 31 of "The Mines Regulation Act, 1906," from the provisions of Subsection (1), Clause (b) of the said section and of Section 53 of "The Inspection of Machinery Act, 1904," it was decided to issue the following Regulations to govern such applications, to take effect from 1st January, 1909, viz.:—

14a. Regulations relating to the issue of Exemptions under Subsection (4) of Section 31.

Application to be made in writing.

1. Every application for exemption under Subsection (4) of Section 31 of "The Mines Regulation Act, 1906," shall be made in writing in the form appended hereto, by the applicant personally, to the Inspector of Mines of the district in which the machinery is situated for the driving of which exemption is desired.

Particulars to be given by applicants.

2. The application shall state the name in full and address of the applicant, the length of his experience with machinery and the nature of such experience, the length of time during which he has had experience in working the particular machinery in respect of which the exemption is desired, and shall give a full description of such last-mentioned machinery.

Fee payable.

3. Each application shall be accompanied with a fee of ten shillings, which shall be due and payable by the applicant for a certificate of exemption. Should the application be refused, the fee will be returned to the applicant.

Conditions upon which certificates are issued.

4. Every certificate of exemption issued by the Minister is subject to revocation at his discretion should he become convinced that the person to whom it was granted is incapable or in any way unsuitable to have such granted to him, or that there has been a breach of any of the conditions on which the exemption was granted, or that in the circumstances the employment of a certificated engine-driver is necessary.

The Mines Regulation Act, 1906.
Section 31, Subsection 4.
Application for Certificate of Exemption.

(*Place*).....
(*Date*).....

To the Inspector of Mines,

.....

I (*name of applicant in full*).....
.....of....., in the State of Western Australia, hereby make application to be exempted from the operation of paragraph (*b*) of Subsection 1 of Section 31 of "The Mines Regulation Act, 1906," or of Section 53 of "The Inspection of Machinery Act, 1904," in respect of taking or having charge of the machinery specified hereunder on the (*name of the mine*).....mine, on .....(*number of lease, P.A., or other mining tenement on which the machinery is situated*) in the.....(*name of goldfield or mineral field*).....Goldfield or Mineral Field (*strike out whichever term is inapplicable*), and I submit the following information and particulars of the case, as required by the Regulations, viz.:—

Duration and nature of applicant's experience in working machinery generally	.....
Duration and nature of applicant's experience in working the particular machinery in respect of which exemption is applied for	.....
Full description of all the machinery in respect of which exemption is applied for	.....

And I enclose herewith the sum of ten shillings, being the fee required to be deposited with my application,

and I attach hereunder a statement from the owner of the machinery that in the circumstances of the case it is impracticable to employ a certificated engine-driver in charge of it.

Signature of Applicant.....

———

Statement by owner of the Machinery or his Agent.

I (*name in full*), ...
of (*address*).....in the State of Western Australia, hereby declare that it is impracticable to employ a certificated engine-driver to have charge of the machinery referred to in the foregoing application of (*name of applicant*).....
on the (*name of mine*).....at (*mining centre*)....., for the following reasons, viz.:— .....

Signature of Owner.....

"Bulling" Fitchered Holes.—During the year much attention was given to the question of suppressing the practice, which proved to be very common, of "bulling" drill holes which had "fitchered," that is of firing a small charge of explosive in holes in which the drills could not proceed without jamming. Two accidents, not very serious, resulted during the year from slight explosions which took place after boring was resumed in holes where such charges had been fired. The practice is a contravention of General Rule (3), Clause (p), under Section 32 of "The Mines Regulation Act, 1906." Full inquiry showed that the principal objection to forbidding the practice in question was on the part of the workmen themselves, who considered that they could not carry on their work in some hard ground without it. Numerous means had been tried of avoiding it, including partly plugging up and reboring the holes, and using "star" bits, but in many cases hole after hole would be lost by the drills "fitchering" unless "bulling" were allowed. It was found that there was great force in this objection, but it was not considered advisable to repeal the above clause of the General Rule. The Inspectors of Mines will, however, not prosecute for breach of it when quite satisfied that the use of explosives has been only resorted to after all other means have failed, and that every precaution has been taken to ascertain that no explosive was left unfired in the hole before resuming boring.

Electrical Installations.—As there have been several accidents due to the increasing use of electricity in mines, inquiries have been made as to the best steps to be taken to ensure better protection to persons employed. This matter has been carried over into the present year, and a draft of proposed Regulations is expected soon to be submitted for discussion.

Accidents with Running Machinery.—New Regulations have also been departmentally discussed during 1908, and are expected to be put forward shortly, to try to prevent the accidents, which have been far too numerous, resulting from men having to work close to rapidly running machinery, especially when removing, putting on, and repairing belts.

THE MINING DEVELOPMENT ACT, 1902.

Appended to this report (Appendix No. 2) are particulars of the advances made during the year 1908 under the provisions of "The Mining Development Act, 1902," and under the more general vote for the Development of Mining. I have to repeat the recommendation made in last year's report that this Act should be reconsidered and amended, and that guiding principles be clearly laid down as to the sort of applications for assistance that should receive consideration and the terms on which State aid can be made available. The working of the Act hitherto has been by no means the success hoped for when it was introduced.

VISITS TO MINING CENTRES.

During 1908 there were 79 days spent by myself in travelling through various mining districts for the purpose of reporting on the progress of mining in the centres visited and, incidentally, for a good deal of general departmental business. The following reports have been prepared and published as official Bulletins, during 1908:—

Report on the Northampton Mineral Field.
Report on the Kanowna Mines;
Report on the Mines of the Yilgarn Goldfield;

and since the beginning of 1909 there have been also published, as results of work done in 1908—

Report on the Waverley or Siberia District; and
Report on the Progress of Mining in the Districts between Leonora and Wiluna.

A report on the Deposit of Cave Guano at Jingemia, near Watheroo, which has not been issued in Bulletin form, is appended to this report (Appendix No. 3).

I also append a report on the Broad Arrow district and question of establishing a public battery there from Mr. E. D. Cleland, Relieving Inspector of Mines (Appendix No. 4).

I have, etc.,

A. MONTGOMERY, M.A., F.G.S.,
State Mining Engineer.

APPENDIX No. 1.

Accidents in St. George Mine, Mount Magnet.

The Under Secretary for Mines.

As desired by the Hon. the Minister for Mines, I last week attended the coroner's inquest at Cue on the fatal accident to Thomas Bray, and visited the St. George mine at Mt. Magnet in order to make investigation into the occurrence of the numerous accidents which have happened in this mine during last year.

The accidents reported in accordance with Section 26 of "The Mines Regulation Act, 1906," were as follows:—

(1.) On 23rd June, 1908, Richard Renfree had his wrist broken by getting it jammed between a passing truck and the side of the crosscut in which he was standing. According to his own statement "there was plenty of room for me to stand on the side of the crosscut without touching the truck. It was an accident for which no one can be blamed." With this view of the case I quite concur.

(2.) On 25th June, 1908, Amadeo Sarte received injuries which resulted in his death, on 5th July, 1908, through being entangled in moving machinery at the St. George battery. He was wearing a loose oil-coat at the time and this was caught by the revolving shaft of the elevator or by a pulley upon it, causing the man to be carried round the shafting and fatally injured. He was taking the driving belt off the elevator when the accident happened, at five minutes to 4 p.m. The shaft would then be well lighted, being uncovered and in full daylight. In his statement, before his death, to Mr. Thomas, J.P., Sarte said he had "often done the same work before," and "did not think it was dangerous." The accident was investigated and reported on by Mr. Jones, Inspector of Machinery, and by Mr. S. J. DeLany, of Mt. Magnet, who had been appointed to do so under Section 27 of "The Mines Regulation Act, 1906," and was also inquired into by a Coroner's jury. The jury found that the injuries were accidentally received and that no blame was attachable to anyone. The Inspector of Machinery thought that the shaft should have been protected by a guard-rail.

After seeing the place where this accident happened it seemed to me that it should be considered purely a misadventure, due to the deceased's own imprudence in working about moving machinery while wearing a loose overcoat. It would be possible to further protect the shaft by boxing it in, but with ordinary and reasonable care on the part of the men employed about the machinery I could see no necessity for insisting on this precaution.

(3.) On 22nd July, 1908, Wm. Finch was killed and C. B. Webb injured by a fall of rock while they were barring down ground loosened by blasting. The previous shift had fired, and left a note in the plat that the loose ground had not been worked down. This was read to the deceased before he started work. He and others set to work to take down the loosened rock, and after trying at it for about ten minutes the deceased went right under it and struck it heavily upwards with a bar, when a heavy fall took place and killed him, at the same time hurting Webb, though not very seriously. The three men present with Finch at the time have all made statements to the Acting Inspector of Mines in which all seem to concur in regarding the ground as fairly safe to work. Thomas Gilbert stated "I consider the ground is safe working" . . . "I do not attach any blame to anyone for the accident occurring." Geo. Dawson said "I don't consider the ground dangerous to work," and Cyril Webb "I considered the ground reasonably safe."

The accident was reported upon by Mr. S. J. DeLany, of Mt. Magnet, in the absence of the Inspector of Mines. His report states that the "mass of ore was within easy reach of any miner working it, and the opening caused by the explosives was in such a position that a miner had no need to be under the ground, as to work the ground out properly he would of necessity require to stand quite clear of the loosened ground. The fact of deceased's going under to sound the ground occasioned the accident, but this action on his part was quite unnecessary. The stope had been mullocked up to within working distance of the back" . . . . "The Underground workings of the mine generally are in excellent order and evidently every care is taken by Mr. Harris for its safe working. I cannot see any evidence of carelessness having caused this accident."

In this case there seems nobody in the least to blame but the deceased man himself, and the accident was one which might happen in any mine.

(4.) On 11th August, 1908, Wm. T. Roberts was killed by a fall of rock. The shift boss, Lewis Leonard, having noticed some baulked ground over No. 2 crosscut in the footwall drive told a man called Robert Allen who was working there not to work under it, and then himself erected a stage

and started to bar the loose ground down, the underground manager, Mr. Harris, assisting by holding a light for him. The deceased and two other men, Allen and Schmidt, were told to stand back and did so, but at the last moment Roberts must have run in, unnoticed by the other men, to get his shovel, for he was suddenly seen to appear right under the loose ground just as it fell upon him.

This accident was inquired into by Mr. Lander, Inspector of Mines, who reports that in his opinion "the underground manager and the shift boss took every reasonable precaution in warning the men and looking after their safety. It is most regrettable that Roberts should have risked his life by rushing into danger evidently to get his shovel."

In this instance it is quite clear that the accident was entirely due to the deceased's own rashness in venturing under ground that was being purposely pulled down. Such an accident is in no way due to the system of working followed in the mine, and no blame is attachable to any person but the deceased himself.

(5.) On December 9th, 1908, Thomas Bray received injuries which resulted in his death on 13th December. He was working close to surface in an open cut and was standing on a bench of ground trying to bar down a projecting rock from the top edge of the excavation. Mr. Doolette, manager, and Mr. Harris, underground manager, were standing close by, looking on. Bray worked at the rock for about half an hour trying to get it down, and then gave up doing so, and started with Mr. Harris to take a sample of the ore from the face below the rock. While doing so the rock came away suddenly and rolled over Bray carrying him down the cut towards a pass but did not knock him into the pass as he had a rope round his thigh as a safeguard. He sustained severe internal injuries from which he died four days later. The accident was reported upon by Mr. S. J. DeLany, who found no fault with the method of working or with any person, and was further investigated by a coroner's jury, who returned a verdict of accidental death, with no blame attachable to any person.

After seeing the place and hearing the evidence at the Coroner's inquest I can come to no other conclusion than that this accident was a misadventure that could not have been prevented by any exercise of reasonable skill or foresight, and quite concur that no person was in any way blamable for it.

(6.) Two minor accidents have also been reported from this mine; one on 4th September, 1908, whereby R. Haynes had his chin hurt by being struck on it while engaged with machinery, and another on 12th October, 1908, by which two men, Harris and McGlenchy, were slightly injured while handling a piece of timber. These were simple accidental mishaps of little importance, and of no significance as regards the system of working pursued in the mine.

I have been informed by Mr. Clarke, Secretary of the Mt. Magnet Miners' Union of Workers, that from June 27th, 1908, to January 16th, 1909, his union has paid £50 10s. in accident pay to its members for accidents in the St. George mine, not inclusive of further sums paid or payable by the Cue branch. In addition to the foregoing cases he states that the following persons had received injuries:—

C. Jones—crushed foot.
P. Miller—burst finger.
R. Allen—cuts and abrasions.
D. Piarra—bruised foot.
Fred. Ridley—gashed head.
M. Perret—bruised foot.
R. Wellington—gashed head.
P. J. Browne—burns from gas explosion.
G. Miller—burns from gas explosion.

Except for the case of R. Wellington, who had been off work about four weeks, none of these accidents had caused a fortnight's disablement from work and consequently they were not reported as "serious" accidents. From what I could learn from Mr. Clarke they were all accidental mishaps in no way reflecting upon the system of working or on the care exercised by the management.

On the 21st inst. I went all through the St. George mine, accompanied by Inspector Cleland. The workings are above the 100ft. and 50ft. levels, the stopes from the latter communicating with several large open cut workings from the surface. The methods of working adopted were those in customary use in most similar mines in the State, and quite in accordance with approved practice. The stopes were all well mullocked up at the time of my visit and the roof secured by plentiful use of heavy props and head boards. All proper care appeared to be exercised by the management and workmen to keep the workings in the safest practicable condition.

There is great difficulty in working the ground systematically on account of the irregular nature of the ore-body, the values being very erratically distributed through a huge mass of broken up lode matter. They have to be followed wherever they lead, and the workings are therefore very liable to take unexpected shapes, and to upset all anticipations as to the position of ore-passes, width of stopes, and so on. The system of working any given place has therefore to be determined more by the requirements of the moment than by a previously laid out plan. The practice is, however, to keep all stopes well filled with mullock as close up to the backs as possible. Personally it seems to me that it would be preferable to have pigstyes more used than they are in this mine, instead of props and headboards, but much weight must be given to the contention of the management that they have adopted the latter style of support as the more economical and convenient one for this mine after trying both. None of the accidents that have been referred to are in any way referable to the system of working, and the management can reasonably claim that their methods have been proved suitable for the mine by absence of accidents resulting therefrom.

Both Mr. Clarke, Secretary of the Mt. Magnet Miners' Union, and Mr. Watson of the Cue Union, seemed satisfied when I was discussing matters with them that the fatal accidents above described could

only be regarded as unlucky misadventures which might happen in any mine no matter how carefully managed and regulated. My inquiries did not elicit any complaints as to the general state of the mine except from one man, who stated that on one occasion a stope had been worked very high and wide without support. He stated that for fifty feet in length the stope was sixty feet in height and sixty feet wide, having been worked by shooting down the back and then working upwards on top of the broken ore. I could not recognise any part of the mine as answering to this description, and am convinced that it was greatly exaggerated. Even if in the main correct the description would indicate a system of working somewhat similar to the shrinkage stoping method followed in the Great Fingall mine, which is a very safe one so far as the men breaking the ore are concerned. When the ore has been removed and the stope stands as a large empty cavern before being filled with mullock, it may or may not be dangerous according to the nature of the walls and roof. I should not consider it an advisable system to be used in the oxidised portions of the St. George lode, and if it has been used in the past it has since been given up and a safer method adopted. In any case it had nothing to do with the accidents into which I was inquiring.

After carefully examining all the evidence I could get as to these accidents, the only conclusion which could be come to was that the mine had been very unfortunate in having an extraordinary run of bad luck. When the circumstances of each individual case are inquired into, it is obvious that they were in no way the fault of the methods of working or due to any carelessness or inefficiency of the management, and that they could not have been prevented by any system of inspection no matter how rigorous.

A. MONTGOMERY, M.A., F.G.S.,
State Mining Engineer.

Perth, 2nd February, 1909.

APPENDIX No. 2.

Advances under "The Mining Development Act, 1902," and Mining Development Vote.

(*a.*) *Pioneer Mining and Prospecting.*

(1.) *Chadwick's Reward, G.M.L.* 641, *Yilgarn.*—Progress of operations on this mine was reported in annual reports of 1905 and 1906. Nothing further was done, and during 1908 the amount of loan and interest outstanding, £110 3s. 5d., was written off as irrecoverable.

(2.) *All Nations, G.M.L.* 166L, *Nullagine.*—Since last annual report the advances and accrued interest, amounting to £195 3s. 1d., have been written off as irrecoverable.

(3.) *Garibaldi, G.M.L.* 736, *Yilgarn.*—Particulars of advance in 1907 report. During 1908 a further sum of £2 14s. had to be paid. The owners being unable to continue work the machinery on this lease was then sold for £40 under the Department's mortgage; the balance of the advances and accrued interest, amounting to £106 13s. 10d. were then written off.

(4.) *M.L.* 482, *Greenbushes.*—The earlier history of this advance was given in last year's report. In May, 1908, the prospector, Mr. Thomas Ellias, found himself unable to continue the tunnel and abandoned the enterprise. The further sum of £46 7s. 7d. was advanced during 1908. The total amount advanced, amounting with interest to £245 17s. 11d., was then authorised to be written off.

(5.) *The Just-in-Time G.M. Co., N.L., G.M.L.* 1783T, *Mt. Morgans.*—Particulars of this advance were given in annual report for 1907. The Company having gone into liquidation, the machinery and mine were put up for sale, and eventually a tender of £400 was accepted, but after payment of all charges on the mine and the liquidator's costs the balance was only £38 1s. 5d. The remainder of the outstanding advances and interest, amounting to £1,011 19s. 9d., was then authorised to be written off.

(6.) *The Kalgurli Syndicate, G.M.L.* 1223W, *Paddington.*—The dealings with this Company were closed during 1908 by writing off the outstanding balance of £239 19s. 11d. as a bad debt. The sale of plant, etc., realised £86 12s. 2d.

(7.) *The Mt. Ida Battery Lease, G.M.L.* 36U, *Mt. Ida.*—The history of the advances in this case to Messrs. Milling and Dolan was given in annual report for 1905. Since then £3 were realised by sale of chattels, and the outstanding loan, amounting with unpaid interest to £310 6s. 2d., was written off in 1908.

(8.) *The Whale, G.M.L.* 169G, *Niagara.*—Since 1907 report the owner of this mine, Mr. John McGillen, received further advances of £10 2s. 6d., but eventually found himself unable to carry on operations, and the property was sold under the mortgage, realising £47. The outstanding balance of £129 18s. 3d. was written off during 1908.

(9.) *The Providence, M.L.* 13Z, *Goongarrie.*—Since last year's report, which stated that the Company owning this lease had gone into liquidation, the machinery has been sold, realising £123 15s. 8d., and the balance of the loan and interest, £22 5s. 7d., has been written off.

(10.) *Pride, G.M.L.* 312P, *Peak Hill.*—Since last year's report the advances in this case, amounting with interest to £25 11s. 3d., have been written off.

(11.) *Seddon or Lady Doris Syndicate, P.A.* 292Z, *Mt. Ida.*—Particulars of this case were given in last year's report. Since then Messrs. Silverthorne and Adair have paid £70 for the machinery, and the balance of the loan with accrued interest, amounting in all to £136 14s. 9d., has been written off.

(12.) *Pakeha, G.M.L.* 1221W, *Broad Arrow.*—Previous history of this case was given in annual report for 1905. During 1908 the sum of £13 11s. 7d. was realised by sale of the chattels, and the balance of loan and accrued interest, £149 15s. 5d., was authorised to be written off.

(13.) *Great Northern, G.M.L.* 4175E, *Kalgoorlie.*—Annual report for 1906 gave particulars of this advance. During 1908, it having been found impossible to realise anything by sale of the mine, the advances and interest amounting to £203 5s., were written off.

(14.) *The Oversight, G.M.L.* 957Y, *Bulong.*—(*See* 1907 report.) The mine has been worked on tribute during 1908 and interest paid on the loan with a fair amount of regularity. The date of repayment has been extended to May 9th, 1909. At the end of the year the amount outstanding, with interest, was £843 0s. 4d.

(15.) *The Sunbeam, G.M.L.* 1121X, *Kanowna.*—(*See* 1907 report.) During 1908 further instalments of the advance were paid amounting to £24 13s. Work during the year had rather poor results, and the borrowers were unable to pay back any of the loan. At the end of the year the total amount outstanding, with accrued interest, was £1,006 19s. 4d.

(16.) *The Eclipse, G.M.L.* 1047X, *Gindalbie.*—(See 1907 report.) During 1908 the shaft was deepened 58 feet and further instalments of the advance were paid, amounting to £195 12s. 10d., the total advanced, with interest, amounting at end of 1908 to £459 12s.

(17.) *The Menzies Prospecting and Development Company, No-Liability, Menzies.*—(See 1907 report.) During 1908 Cabinet approved of the sum of £594 0s. 11d., being balance of loan with accrued interest, being written off as a bad debt.

(18.) *Rollo's Reward Gold Mining Company, Kanowna.*—(See 1907 report.) No further work was done during 1908, and it became necessary for the Department to foreclose under the mortgage. At the end of the year the amount of outstanding loan and interest was £307 3s. 2d.

(19.) *The Malcolm Prospecting Company, N.L., Mt. Malcolm.*—(See 1907 report.) During 1908 the Company installed a 15-drill air compressor and receiver, and cooling plant, costing £800, and at the end of the year the amount owing to the Department with interest added was £1,656 18s. 6d., an amount of £41 3s. 6d. having been repaid by the Company as part payment of interest due.

(20.) *Mt. Chester, M.L.* 250, *Ravensthorpe.*—(See 1907 report.) No further work was done during 1908 and at the end of the year the amount advanced with accrued interest was £194 17s. 10d.

(21.) *Bayley's Sulphide Lode, G.M.L.* 4230, *Coolgardie.*—(See 1907 report.) The lease was forfeited, and on 18th February, 1909, an amount of £162 6s. 3d. written off as a bad debt.

(22.) *Westralia Tasmania, G.M.L.* 1665T, *and Mt. Noungel, G.M.L.* 1745T, *Erlistoun.*—(See 1907 report.) Work on the mine was continued during 1908 but no repayments of the advance were received. At the end of the year the amount of the outstanding loan and interest was £314 12s. 3d.

(23.) *Carbine South Syndicate, Ltd., G.M.L.* 758S, *Kunanalling.*—Since 1907 report little progress has been effected. A further instalment of £30 was paid on account of the advances promised, and at the end of 1908 these and accrued interest amounted to £411 16s.

(24.) *Trenton G.M. Co., N.L., G.M.Ls.* 388D, 399D *and* 400D, *Day Dawn.*—Since 1907 report this Company has been wound up, a tender of £520 being accepted for the machinery, plant, buildings, etc., of which £400 were paid to the Department by the Liquidator in reduction of the Company's debt. At the end of the year the amount outstanding, with interest, was £1,050 15s. 1d.

(25.) *The Coolgardie Prospecting, Development, and Mining Company, N.L., Coolgardie.*—Since 1907 report further advances of £510 8s. 10d. have been made for mining work during 1908, making the total loan with interest at the end of the year £921 14s. 7d.

(26.) *The Emily, G.M.L.* 1510, *Day Dawn.*—Since 1907 report the shaft has been sunk to the 182ft. level when it was found the plant was inadequate to cope with the water and an application was put in for a further loan of £750 for purchase and erection of a boiler and pump, the Company stating they were prepared to raise £500 for development, and after that sum was expended would continue to make further calls on shareholders. The Inspector of Mines reported upon this application, but nothing further was done in the matter as the Company advised they were negotiating the sale of their lease. At the end of the year the amount outstanding with interest was £394 13s. 9d.

(27.) *The Greenbushes Prospecting and Mining Company, Ltd., Greenbushes, South Cornwall, M.L.* 300.—During 1908 further advances amounting to £479 8s. 8d. were paid in addition to those in 1907, and at the end of the year the total amount advanced with accrued interest was £1,113 16s. 10d. The shaft was sunk to a depth of 200 feet and a crosscut driven towards the lode without cutting it. Funds having given out the Company then ceased operations.

(28.) *The North End Mines, Ltd., Kalgoorlie.*—Since 1907 report advances have been made during 1908 amounting to £188, and at the end of the year the total outstanding principal and interest was £459 10s. 3d. The shaft was sunk 247 feet, after which the Company obtained exemption and suspended operations.

(29.) *The Kingdom Come, M.L.* 112, *Northampton.*—Since last year's report very little has been done on this mine owing to the low price of lead and the necessity for erection of concentrating plant, and at the end of 1908 the amount of loan and accrued interest due was £205 2s. 10d.

(30.) *The Jupiter, G.M.L.* 771M, *Mt. Magnet.*—In March, 1908, the Minister approved of a loan of £400 to Messrs. Anderson Bros., for the purchase and erection of pumping machinery to unwater their mine. During the year an oil engine and double acting pump were erected and the Mining Inspector having reported that the machinery was in good order the loan was paid, but the applicants found the water much heavier than they expected and in December they had to purchase more machinery to cope with the water. The total amount outstanding with interest at the end of the year was £402.

(31.) *The Mindeloo, G.M.L.* 1518, *Mindoolah.*—Application having been made by the owner of this lease for a loan to assist him in sinking a shaft to 210 feet, advances were approved up to £300 at the rate of £1 for £1 expended by the borrower but not to exceed fixed rates per foot. The shaft proved difficult and expensive to sink below the water level. During the year it went down 128 feet or 60 feet below the water level, and a level was opened at 118 feet. Instalments of the advance were paid to the amount of £97 10s.

(32.) *The Mulga Queen, G.M.L.* 1517T, *Duketon.*—A loan of £750 was granted in February, 1908, to the owners of this mine for the purpose of sinking the main underlay shaft a further depth of 210 feet to reach it at a point where values had been obtained in a bore hole, one of the conditions of the loan being that the battery on the mine should be open for public crushing at specified rates. Security was taken by first mortgage and bill of sale over the whole of the mine and plant. In June, 1908, work had to be suspended owing to a strong flow of water and the reef being very poor and much broken up. The owners were unable to sell the mine and the Department had to foreclose. Tenders for the purchase of the mine were invited, closing 11th January, 1909. The total of the advances made, without accrued interest, was £445 19s. 8d.

(33.) *The Coolgardie Redemption G.M. Company, G.M.Ls.* 3918 *and* 4052, *Coolgardie.*—Advances up to £750 were approved at the rate of £1 for £1 to assist this Company in purchasing pumping machinery and installing it on their mine. The plant was duly installed, and sinking of the main shaft gone on with. The whole of the authorised loan of £750 was expended during 1908.

(34.) *The Dreadnought South, G.M.L.* 5334Z, *Menzies.*—Advances up to £300 were authorised at the rate of £1 for £1 to enable the owners of the mine to sink their shaft 100 feet below the 100ft. level. During the year the work was completed, the advances to the applicants amounting to £208 14s. 11d.

(35.) *The Wheal May Lead Mine, Northampton.*—The reopening of this old mine having been undertaken by Messrs. Darling & Goss, a loan of £300 was authorised to assist them in putting steam machinery on it and to sink a main shaft, security being taken over the mine and plant. After erecting the plant and sinking the shaft a short distance the work came to a standstill for a time, but has been resumed since the beginning of 1909. The advances made during 1908 amounted to £229 9s.

(36.) *The Jourdie Enterprise G.M. Syndicate; G.M.Ls.* 786S *and* 773S, *Jourdie Hills.*—A loan of £1,000 was approved to this Company to assist them in purchase and erection of a 10-head battery and winding plant. In November the machinery was all erected and set to work. During 1908 the payments on account of the loan amounted to £500.

(37.) *The Kanowna Prospecting Company, Ltd., Kanowna.*—For the purpose of prospecting ground round Kanowna this Company was formed with a capital of £2,400, in 400 shares of £6 each, and was promised State assistance at the rate of 30s. for each 20s. spent from the Company's own funds on approved work. The first place tried was P.A. 301X, where former prospecting had given promising returns. A shaft had been sunk 140 feet and some crosscutting and driving done. The Company extended the level, but results obtained were not encouraging and work was then transferred to G.M.L. 1234 X. Work on this also was unsuccessful, and operations were then transferred to P.A. 323X. Work was still in progress at the end of 1908. The advances made by the Government during 1908 were £166 6s. 3d.

(38.) *The Randwick, G.M.L.* 978C, *Mt. Malcolm.*—A loan of £500 was approved for the purpose of purchasing and erecting a boiler on this mine, conditionally on the owner crushing for the public on State battery terms and giving security by mortgage over the mine and plant. During 1908 there was a change of ownership of the mine, but the new owner took over the boiler then lying at Mt. Malcolm railway station, and the loan was increased to £560 on condition that certain repairs and additions were effected to the battery machinery. In October the battery was ready to crush for the public, but owing to insufficient capital the mine work was practically suspended. The amounts paid in 1908 on account of the loan were £552 9s. 5d.

(39.) *The Chamberlain, M.L.* 149, *Wodgina.*—About the end of 1907 a loan of £100 was authorised to assist the Chamberlain Syndicate in extending their tunnel at Wodgina, then in 102 feet, at the rate of £1 for £1 but not to exceed 20s. per foot. Work was carried on without much success, and payments of £72 2s. 7d. were made during 1908 on account of the loan.

(40.) *The Lubra, G.M.L.* 669G, *Niagara.*—Advances at the rate of £1 for £1 were approved to the extent of £150 towards providing an oil-engine and winch and sinking a shaft to a depth of 200 feet on this mine. The plant was duly erected and the shaft sunk, but in October the mine owners, finding themselves unable to carry on work profitably, sold their mine and plant to other persons, who wished to transfer the machinery to another lease. The total amount of the loan, £150, was advanced during 1908, and at the end of the year there was accrued interest amounting to £4 6s. 6d. outstanding.

(41.) *The Mystery, P.A.* 157, *Yalgoo.*—A loan of £300 was authorised for the purpose of assisting at the rate of £1 for £1 in the purchase and erection of steam-winding plant and a battery on the old Mystery mine at Yalgoo. This proved a very unsatisfactory deal, the borrowers showing themselves quite unable to carry out the operations they had agreed to effect. Towards the end of the year such machinery as had been taken to the Mystery was allowed to be transferred to the Emerald mine at Yalgoo, where it has since been erected and put to work. The battery is agreed to be open for public crushing at reasonable rates. The advances during 1908 amounted to £339 7s. 9d., it having been found unavoidable to exceed the sum originally intended to be granted.

(42.) *Hooley and Morris, P.A.* 159S, *Kintore.*—A loan of £175 was granted to assist in the purchase and erection of a Huntington mill. This was duly completed and started work on 1st December, 1908. Payments on account of the loan during 1908 amounted to £75 15s. 9d.

(43.) *The Lady Agnes, G.M.L.* 910Y, *Randell's.*—In July, 1908, a loan of £480 was authorised to the owners of this mine to assist them in the purchase and erection of a battery and other plant on their mine, security being taken over the plant and mine, and the borrowers binding themselves to pay 15 per cent. of all gold won in reduction of the loan. The machinery was procured and carted to Randell's from Bulong,

but the site chosen was found to be unsuitable and erection was suspended. The borrowers then took a lease of the Randell's State battery. The amount of advances made during 1908 was £434 0s. 9d.

(44.) *The Kanowna Low Grade, G.M.L.* 1194X, *Kanowna.*—Towards the end of 1907 application was made for a loan in aid of erection of a battery to treat the very low grade material left in the Moonlight Lead at Kanowna, extensive tests having shown an average value of 8s. a ton recoverable, which would be payable. Advances of £500 (afterwards increased to £750) were approved, and the battery was erected and set to work. Very good work was done, costs amounting to a total of only 4s. 9d. per ton, inclusive of all mining and milling costs. The actual recovery, however, was only 3s. 2d. a ton and the enterprise failed after a good trial. The battery had to be sold under the mortgage, realising £650, or, after all expenses had been paid, a net sum of £594 16s. 3d. The total advances made amounted to £678 18s. 3d.

(b.) Assistance in erecting batteries and treatment plant to be used for crushing for the public.

(45.) *The Lady Isobel, P.A.* 203Z, *Menzies.*—Particulars of this advance were given in my annual report for 1906. During 1907 the venture proved very unfortunate, the owners of the plant being unable to make a living, much less any repayment. The sums advanced with accrued interest, amounting to £158 19s. 7d., were written off in 1908.

(46.) *The Gladsome, G.M.L.* 590N, *Gum Creek.*—Annual report of 1906 contained an account of the advances made in this case. During 1907 the district was almost entirely idle as concerned mining, and eventually the owners were allowed to remove their plant to Wiluna. The moneys advanced, amounting with accrued interest to £351 14s. 2d., were written off in 1908.

(47.) *The Little Doris, G.M.L.* 771T, *Erlistoun.*—The syndicate to whom advances of £500 had been made in 1905 for the purpose of putting the Little Doris battery in order having failed to pay any portion of principal or interest, the plant was sold to Mr. A. N. Doyle for £200, to be removed to the King of Creation mine. The balance of the loan and interest due, £356 3s., was written off in 1908.

(48.) *The Spring Hill, G.M.L.* 721, *Parker's Range.*—(see 1907 report.) At the end of 1908 the amount of loan outstanding, with accrued interest, was £876 10s. 5d.

(49.) *The Orabanda, G.M.L.* 1288W, *Waverley.*—(See 1907 report.) During 1908 the owners of this lease paid back a sum of £387 5s. 11d., the total outstanding at the end of the year was £8 3s. 6d.

(50.) *The Condor United G.M. Syndicate, G.M.L.* 339, *Mt. Sir Samuel.*—Since 1907 report the Condor battery was reported upon by the Inspector of Mines as being unsuitable for purchase as a State mill. The second mortgagees then gave notice of their intention to sell the plant, and paid the Department a sum of £150 16s. in repayment of the advances made, together with £12 4s. 3d. interest accrued. A sum of 16s. was debited to the loan account during 1908.

(51.) *The Hidden Secret North, G.M.L.* 4253, *Eundynie.*—A loan of £750 was authorised to this Company at the rate of £1 for £1 towards purchase, cartage, and erection of a battery, which was to be open for public crushing at prescribed rates, and later on the amount was increased to £1,000. Much delay was caused by failure of the Company to succeed in getting a water supply. During 1908 instalments of the advance equal to £740 18s. 2d. were paid to the Company.

(52.) *Edward Hodder, Machinery Area* 64, *Randell's.*—Previous particulars relating to loan of £150 in this case are given in the annual report of 1904. During 1908 a sum of £98 0s. 8d. was expended in transferring the machinery obtained under the mortgage to the Mines Water Supply store at Coolgardie, and £75 were realised by sale of portions of it. The amount of the loan, expenses, and accrued interest outstanding at end of 1908 was £197 1s. 6d.

(53.) *The Roebourne Copper and Gold Mines, W.A. Ltd., G.M.L.* 135, *Roebourne.*—A sum of £1,000 was lent to this Company at the rate of £1 for £1 expended by themselves in purchase and erection of a 10-head battery driven by a suction-gas-producer plant. The battery was duly erected and set to work, and the whole of the loan was paid over to the Company during 1908.

(c.) Miscellaneous Advances.

(54.) *Collie Coal Briquettes. Jas. Coady's Experiments.*—In order to assist Mr. Jas. Coady in experiments on a working scale in manufacture of briquettes from Collie slack coal and "blackboy" or "grass tree" gum, advances were in 1907 authorised to be made at the rate of £1 for £1 on his own expenditure, and a total sum of £80 2s. 1d. was advanced. The briquettes made were of useful quality, but not altogether satisfactory, being bulky through insufficient density. After making a trial parcel of two tons, which were tested by the Railway Department by a locomotive trial with a rather unfavourable report, Mr. Coady gave up further manufacture. The advances with interest, amounting to £82 3s. 2d., were written off during 1908.

(55.) *Collie Coal Briquettes. Jas. H. Shekleton's Experiments.*—To assist Mr. J. H. Shekleton in experiments on briquetting Collie coal, a sum of £30 was authorised to be advanced, to be expended in making a trial parcel of 10 tons of briquettes. Difficulty was experienced in getting the materials for the binder locally, and eventually they had to be sent for from Europe. The sum of £17 19s. 10d. was disbursed on account of the loan during 1908.

(d.) Boring.

(56.) *Purchase of Boring Plants and parts.*—The expenditure for 1908 on purchase and maintenance of the diamond drills and other boring plant was £1,596 9s.

(57.) *Boring.*—Six parties, as shown in schedule hereunder, were assisted during the year in boring, mostly with diamond drills, the total expenditure being £1,038 3s. 7d.

(e.) Subsidies to Batteries.

(58.) Hereunder is a schedule showing the tonnage crushed, rate of subsidy, and amount of subsidy paid to various batteries throughout the State which have in consequence undertaken to crush for the public at rates and on terms fixed by the Minister for Mines. 23,206.23 tons of ore were crushed for the public under these agreements, and the total subsidy paid was £2,076 5s., or at the average rate of 1s. 9½d. per ton.

(f.) Providing means of transport for miners and prospectors.

(59.) Under this heading the expenditure for 1908 was £2,001 17s. 2d. including purchase and mainten-

ance of prospecting outfits and care of Government camels.

(*g.*) *Development work in mines.*

(60.) The sums paid during 1908 to various prospecting parties to encourage them to sink below water level and to do development work by making them an allowance on ore from such work crushed at a State battery amounted to £361 13s. 9d.

(*h.*) *Miscellaneous expenditure on development of mining.*

(61.) *Carting ore long distances.*—The allowances made to various parties to assist them in taking trial parcels of ore to be crushed at State batteries amounted to £589 15s. 3d. for 1908.

(62.) *Other miscellaneous expenditure.*—The schedules hereunder show further expenditure, totalling £386 17s. 11d. on sundry public facilities for the development of mining.

Schedules herewith.

Hereunder attached are schedules showing the total expenditure for 1908 on mining development by way of loans, subsidies, and grants-in-aid, amounting to £16,496 18s. 1d., and also showing the refunds which have been made during the same period on account of such loans, £539 1s. 11d.; from sale of securities realised upon, £1,559 14s., and from miscellaneous sources £1,043 14s. 10d. A list is also attached of the advances which have been written off as irrecoverable during 1908, amounting to £3,836 14s. 3d.

A. MONTGOMERY, M.A., F.G.S.,
State Mining Engineer.

SUMMARY OF EXPENDITURE ON MINING DEVELOPMENT, FROM 1ST JANUARY TO 31ST DECEMBER, 1908.

——	Mining Centre.	Amount.	Total.
		£ s. d.	£ s. d.
A.—*Advances in aid of Mining Work.*			
Jupiter G.M.L.	Mt. Magnet	400 0 0	
Mindeloo G.M.L.	Mindoolah	97 10 0	
Carbine South G.M. Syndicate	Kunanalling	30 0 0	
Mulga Queen G.M. Syndicate	Duketon	445 19 8	
Coolgardie Prospecting and Development Co.	Coolgardie	510 8 10	
Coolgardie Redemption G.M. Co.	Coolgardie	750 0 0	
Garibaldi G.M.L.	Parker's Range	2 14 0	
Dreadnought South G.M. Syndicate	Menzies	208 14 11	
Thomas, Elias	Greenbushes	46 7 7	
Wheal May Lead Mine	Northampton	229 9 0	
Greenbushes Prospecting and Mining Co.	Greenbushes	479 8 8	
Hooley & Morris	Kintore	75 15 9	
Jourdie Enterprise G.M. Syndicate	Jourdie Hills	500 0 0	
Kanowna Prospecting Co.	Kanowna	166 6 3	
The Whale G.M.	Niagara	10 2 6	
North End G.M., Ltd.	Kalgoorlie	188 0 0	
The Sunbeam G.M.	Kanowna	24 13 0	
The Eclipse G.M.	Gindalbie	195 12 10	
The Randwick G.M.	Randwick	552 9 5	
The Chamberlain M.L.	Wodgina	72 2 7	
The Lubra G.M.L.	Niagara	150 0 0	
The Mystery G.M.L.	Yalgoo	339 7 9	
The Lady Agnes G.M.L.	Randells	434 0 9	
The Kanowna Low Grades G.M.	Kanowna	678 18 3	
			6,588 1 9
B.—*Advances in aid of Erection of Batteries to be used for Public Crushing.*			
The Hidden Secret North G.M.	Eundynie	740 18 2	
Edward Hodder	Randells	98 0 8	
The Condor United Syndicate	Mt. Sir Samuel	0 16 0	
The Roebourne Copper and Gold Mines of W.A., Ltd.	Roebourne	1,000 0 0	
			1,839 14 10
C.—*Miscellaneous Advances.*			
J. H. Shekleton's briquettes	Collie	17 19 10	
			17 19 10
D.—*Boring.*			
Purchase of Boring Plants and parts		1,596 9 0	
Murchison Associated	Day Dawn	53 0 0	
Chesson & Heydon	Cue	51 0 0	
A. A. Wilson	Collie	50 0 0	
Bevan & Clarke	Malcolm	39 4 0	
East Fingall G.M.	Day Dawn	164 12 9	
Mt. Morgan's Syndicate	Mt. Morgan's	680 6 10	
			2,634 12 7
	Tons. / Rate.		
E.—*Subsidies to Batteries.*			
Jacoletti Gold Mines	4568 / 1s. 6d.	342 12 0	
Donan, J.	267 / 1s. 6d.	20 0 6	
Poole, Henry	1584 / 2s.	158 8 0	
Malcolm Mines	294·75 / 1s.	14 14 9	
Malcolm Mines	577·50 / 1s. 6d.	43 6 3	
Spencer & Thompson	1720 / 2s.	171 19 10	
Friedman & Johnson	5373 / 1s. 6d.	402 19 6	
Friedman & Johnson	140 / 1s.	7 0 0	
Spencer, A. A.	1163·50 / 2s.	116 7 0	
Williams, J. M. D.	969·25 / 1s. 6d.	72 13 10	
Smith & Langford	663 / 2s.	66 6 0	

SUMMARY OF EXPENDITURE ON MINING DEVELOPMENT, ETC.—*continued.*

——	Mining Centre.		Amount.	Total.
	Tons.	Rate.	£ s. d.	£ s. d.
E.—*Subsidies to Batteries*—continued.				
Dallison Bros.	1264·25	2s.	126 8 6	
Potosi G.M. Co.	197	2s.	19 14 0	
Potosi G.M. Co.	274	3s.	41 2 0	
Potosi G.M. Co.	42	5s.	10 10 0	
Spicer, J.	585	1s. 6d.	43 17 6	
Bryant, J. J.	21	2s.	2 2 0	
Pauley & McCoy	55	2s.	5 10 0	
Red Hill G.M. Co.	488	1s. 6d.	36 12 0	
Atkins, F.	680·50	5s.	170 2 6	
Evans, R.	275	1s.	13 15 0	
Davies, J.	604·50	1s. 6d.	45 6 9	
Taylor & Sons	278·50	1s. 6d.	20 17 9	
Coolgardie Prospecting Co.	50	1s. 6d.	3 15 0	
Carswell & Co.	223	1s. 6d.	16 14 6	
Cooper, W. H.	142·98	5s.	35 14 10	
Bull, D.	25·50	5s.	6 7 6	
Lang, G. C.	324	1s. 6d.	24 6 0	
Chequeedden, H. J. S.	117	1s. 6d.	8 15 6	
DeBernales, C.	63	2s.	6 6 0	
DeBernales, C.	176	2s. 6d.	22 0 0	
	23206·23			2,076 5 0
F.—*Providing means of transport for Mines*				2,001 17 2
G.—*Development Work in Mines*				361 13 9
H.—*Miscellaneous Development Expenditure*				
Carting Ore long distances			589 15 3	
Miscellaneous			386 17 11	
				976 13 2
	Total			16,496 18 1
Refunds of Loans under Mining Development Act, 1902.				
The Eclipse G.M.L.	Gindalbie		1 0 0	
The Orabanda G.M.	Waverley		387 5 11	
The Condor United Syndicate	Mt. Sir Samuel		150 16 0	
				539 1 11
Amounts recovered from Sale of Securities taken under Mining Development Act, 1902.				
Bevan, Smith, Connolly & Connolly			29 1 1	
Dellavedora and party			40 0 0	
Doyle, Dwyer & Brown			15 3 4	
Hodder, Edward			75 0 0	
Just-in-Time G.M. Co.			49 13 5	
Kalgurli G.M. Syndicate			86 12 2	
McGillen, John			47 0 0	
Providence Copper Mining Co.			123 15 8	
Trenton G.M. Co.			400 0 0	
Wilson & Moxon			5 0 0	
Young, G. F.			594 16 3	
Menzies Prospecting and Development Co.			7 0 6	
Speed, Spoors, and party			13 11 7	
Robinson & Wishart			70 0 0	
Milling & Dolan			3 0 0	
				1,559 14 0
Miscellaneous Refunds on Mining Development.				
Cost of Diamonds used in drilling			975 17 1	
Means of transport for prospectors			52 14 3	
Loan to Mt. Magnet Municipal Council			15 3 6	
				1,043 14 10
Total				£3,142 10 9

APPENDIX No. 3.

Report on a Guano Deposit near Watheroo.

The Under Secretary for Mines.

Office of the State Mining Engineer,
Perth, W.A., 21st February, 1908.

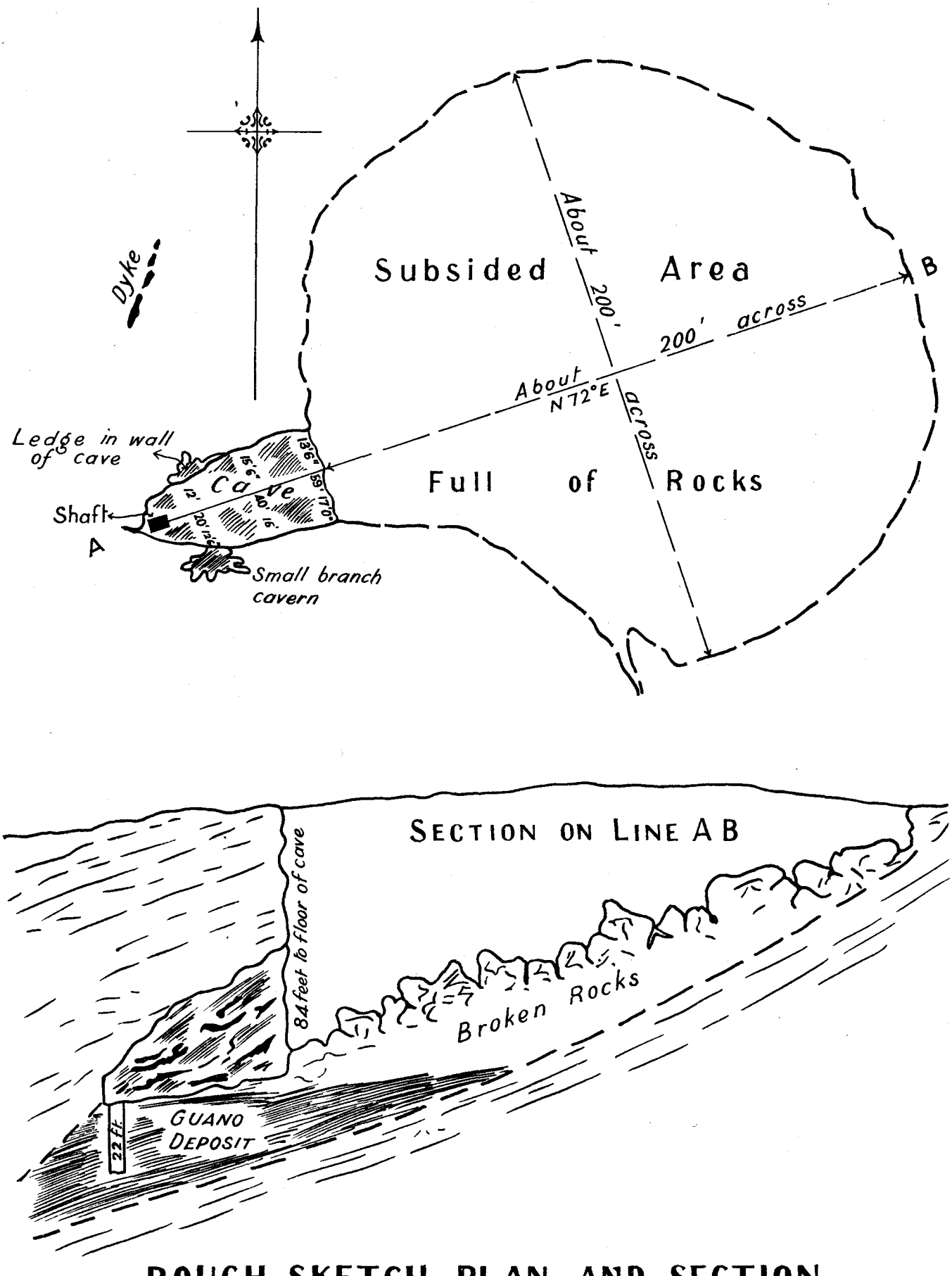
I have the honour to report that on 21st January last, as arranged, I made a visit to the Jingemia Cave, near Watheroo, in company with Mr. Bonner, who has applied for the ground as P.A. No. 141H under the Mining Act, and has also, I understand from him, secured it and some adjoining country as a conditional purchase under the Lands Act, with the object of working a deposit of guano and alleged phosphate rock which he has discovered in the cave.

The Jingemia cave is about four miles in a direct line N.W. from Watheroo Railway station on the Midland Railway, or five miles by a rough country road, and is on the top of a range of gently sloping low hills rising perhaps 200 feet or more above the lower country to the westward. The tops of these hills are composed of quartzite and metamorphic sandstone, a belt of which runs here for some miles in a N.N.W. and S.S.E. direction across the country. On this same belt another P.A. 140H has been applied for by Mr. Bonner, at the "Bishop's Hole" or "Devil's Hole," some four miles S.S.E. from Jingemia. The quartzite beds strike about N.N.W. and S.S.E. and dip to W.S.W. at a low angle. To the east of them the country is granite, which seems to underlie the quartzites at a shallow depth. Several large and strong dykes of dark igneous rock traverse both the granite and the quartzite, one making its appearance through the quartzite on the west side of the big hole at Jingemia. My visit was too short to admit of more than the most cursory examination of the country outside the deposit to which special attention was given, but it seemed to me to be of frequent occurrence that in the neighbourhood of these intrusive dykes the sandstones were much more thoroughly converted into quartzites than elsewhere, as if they had been subjected to very intense hydrothermal or pneumatolytic action probably as a consequence of the intrusion of the igneous dykes. In parts these quartzites very closely resemble portions of the jasper and quartzite "bars" so often seen in the goldfields of this State, such as the "Marble Bar" on the Coongan River in the Pilbara Goldfield, but are without the laminated structure usually so characteristic of these. Where the metamorphism is not so intense the rock is mostly a hard metamorphic sandstone, approaching quartzite, intersected by numerous strong clean-cut joints which cause it to break up readily into irregularly polyhedral lumps often, to a casual glance, closely resembling artificially cut stone.

The Jingemia deposit has been already well described by the Assistant Government Geologist, Mr. H.P. Woodward, F.G.S., in a report dated 29th October, 1907, with the main portions of which I quite concur. He points out that the quartzites are very similar, lithologically, to the series which form the Leopold Range in the Kimberley District, but from their position thinks they most probably belong to the early mesozoic period. The geological age is in this instance of much importance from an economic point of view, as rocks of mesozoic age are decidedly more favourable for the occurrence of phosphatic deposits than those of great antiquity. The quartzites of the Leopold Range in the north of this State, and those of the Stirling Range and Mt. Barren in the south, are generally taken to be of older palaeozoic age, and if the formation at Jingemia is even approximately contemporaneous with these—as its lithological appearance would lead us to expect—it would be much less likely to carry phosphatic deposits than if it were mesozoic. In the absence of direct evidence of the age it is impossible to come to any decided conclusion on this point, but at present I am hardly prepared to follow Mr. Woodward in adopting mesozoic as the most probable age, and am of opinion that the formation is more likely to be older palaeozoic. The intense metamorphism, the penetration by the igneous dykes—which elsewhere in the Darling Range seem to be usually of great antiquity—and the clean-cut jointing in several different directions, all seem to me to point to an ancient date of formation. So far as I am aware none of the known post-Devonian sedimentary rock formations of this State exhibit very clean and marked jointing, or show evidence of having been subjected to the great orogenic stresses necessary to produce such jointing.

At the top of the hill at Jingemia we come suddenly upon a large hole in the ground, roughly circular in shape, and about 200 feet in diameter. On the west side the walls of this hole are perpendicular cliffs, up to 84 feet in height, but from the foot of these the bottom rises to the eastward nearly to surface. The whole of the bottom of the hole is occupied by huge fallen masses of quarzite, tumbled irregularly. On the Lands map the hole is described as an "extinct volcano, 70 feet deep," having evidently been taken to be a volcanic crater, to which it bears some general resemblance. The explanation given by Mr. Woodward is, however, without doubt the true one, namely that the hole has been caused by the giving away or "crowning in" of the roof of a cavern, which must have been of large size to allow of so great a subsidence of the surface.

On the west side of the hole there is still portion of the cavern to be seen. It is 59 feet long and about 30 feet wide, and the floor dips a little towards the



ROUGH SKETCH PLAN AND SECTION

JINGEMIA GUANO CAVE

40 35 30 25 20 15 10 5 0 40 80

Scale of Feet

W.S.W. Along the south side is seen one of the large joints which form the vertical walls of the subsided area outside the mouth of the cave, and a fissure in continuation of this is visible in the west end. There appears to have been a slight amount of faulting along this fissure, the limestone layer on the north side being several feet higher than on the south side of the cave. The lowest bed of the strata seen in the cave is a very impure crystalline limestone, containing much silica, and it is pretty clear that it is to removal of this soluble rock by solution that the cave owes its origin. Surface waters have been able to get down along the joints and fault and have dissolved out the limestone. Very probably other deeper caves exist further along the fault fissure until the permanent water level is reached.

The rough ledges and cavities in the sides of the caves have afforded shelter for generations of bats and birds, and the lowest ones for native animals. On most of the high protected ledges therefore there are deposits of guano, often containing bones of bats, and along the floor there are large accumulations of this material mixed with bones of animals, fragments of wood, and much dust and debris from the walls of the cave. On some of the higher ledges the guano has hardened and solidified to a hard brown deposit, from which much of the organic matter has been removed by decomposition, leaving a somewhat phosphatic residue. In crevices in a small branch cave on the south side of the main one there is also a good deal of dark brown to black pitchy-looking substance extracted by percolating waters from the masses of organic material above. From the same cause some of the limestone also may have become more or less altered to a phosphate rock, as samples of this are said to have been obtained, but so far as I could see this action must have been very local, and the limestone is as a rule very poorly charged with phosphoric acid.

On the floor of the cave the thickness of guano deposit is considerable. A shaft has been sunk at the inner end of the cave for a depth of 22 feet through fine powdery guano deposit, and Mr. Bonner tells me that a long iron bar was pushed down 12 feet in the bottom of this shaft without striking the rocky floor of the cave. At this point there would therefore appear to be quite 34 feet in thickness of the deposit. How deep it is elsewhere in the cave had not been ascertained at the time of my visit, nor had any attempt been made to find if it continued under the fallen rocks outside the mouth of the cavern. In all probability the floor of the outer part of the cavern which has fallen in was at one time covered with guano just as the remaining part is, and very probably therefore there is a good deal of valuable material buried under the fallen rocks. It is also possible that the cave runs a good deal deeper into the ground than we can see at present, and may contain considerable deposits which are not now visible.

The area of the cavern floor, which at present is seen to be composed of guano, is about 160 square yards, but as the shape and depth of the rock bottom of the cavern are quite unknown it is not possible to calculate with any accuracy on the quantity of manure that is likely to be obtainable. 500 tons seem likely to be a low estimate, and there might easily be 1,000 tons without counting on what is buried under heavy fallen rocks. The deposit is very easily accessible, as the guano could be bagged in the cave and hoisted to the top of the cliff by a whip or winch without any serious difficulty or expense.

The following samples were taken by me and forwarded for analysis to the Government Mineralogist and Assayer at the Geological Survey Laboratory:—

No. 1 (Geological Survey No. 234C), igneous intrusive rock from dyke penetrating quartzites a short distance west of subsided area.

No. 2 (Geological Survey No. 235C), Sample of guano from lowest 15 feet, sides of shaft in cave.

No. 3 (Geological Survey No. 236C), sample of top 3ft. of guano deposit, at shaft.

No. 4 (Geological Survey No. 237C), sample of black gummy-looking deposit from small side caves.

No. 5 (Geological Survey No. 238C), sample of hard liver-coloured deposit, found in small quantities in side caves and in cavities in the sides of the main cavern, high up.

No. 6 (Geological Survey No. 239C), sample of limestone from layer in north side near floor of cave.

No. 7 (Geological Survey No. 240C), sample of yellow pulverulent guano deposit about 10ft. above floor of main cavern on floor or ledge of small branch cavern.

No. 8 (Geological Survey No. 241C), sample across floor of cave just inside mouth, where small shallow trench had been cut across deposit. Contains numerous small stones which could be separated by screening.

The results of analysis reported by the Analyst were:—

No.	Private Mark or Description.	Result of Analysis.			
		Phosphoric Oxide %.	Nitrogen %.	Potash %.	Approx. Value per ton.
234	No. 1.—Intrusive rock S.W. of Big Hole ..	0·76	*Nil*	..	*Nil*
235	No. 2.—Guano 15ft. in small shaft	3·35	0·26	..	15s.
236	No. 3.—Guano top 3ft. of cave deposit ..	2·67	1·30	0·68	32s.
237	No. 4.—Gummy deposit in crevices	0·40	2·59	5·52	72s.
238	No. 5.—Hard deposit in high side caves ..	7·41	10·06	..	172s.
239	No. 6.—Impure limestone	Minute trace.	*Nil*	..	*Nil*
240	No. 7.—Guano, side cave 10ft. above main floor	1·24	0·84	..	16s.
241	No. 8.—Guano across trench	0·96	1·02	..	18s.

The approximate values are calculated on the basis of P_2O_5, 3s. 6d. per unit; N, 14s. 6d. per unit; K_2O, 6s. per unit.

The potash was only determined in one of the guanos, as it is only present to a small extent in this material. Being however mainly soluble in water it is concentrated in sample No 4, which is the dried rain water extract of the guano beds. A complete analysis of a substance exactly similar to sample No. 4 collected at the Wilgi Mia was published in the Geological Survey Report for 1905, page 21.

For convenience of comparison I also quote previous analysis made by the Government Mineralogist and Assayer, which he has been good enough to forward:—

No. Loc.	3913B, Bottom of cave, Jingemia.	3914B, 6ft. below bottom, Jingemia.	3915B, Small, branch cave, Jingemia.	3916B, Deposit on ledges, Jingemia.	3931B, Bishop's Hole, Watheroo.	3932B, Bishop's Hole, Watheroo.	24C, Bottom of 20ft. shaft, Jingemia.	25C, Eastern cave, Jingemia.	26C, Western cave, Jingemia.
Moisture ..	4·54	2·70	8·05	1·62	9·78	5·50	2·27	6·05	3·46
Organic Matter ..	19·45	3·16	54·20	82·24	31·86	13·73	4·12	33·75	6·72
Insol. Mineral Matter	65·20	88·56	10·68	5·44	25·50	53·54	38·17	40·51	63·79
Soluble Mineral Matter	10·81	5·58	27·07	10·70	32·86	27·23	55·44	19·69	26·03
Total ..	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00	100·00
Total P_2O_5 ..	2·58	1·24	8·73	5·48	12·96	9·83	8·45	3·79	2·38
Total N. ..	1·78	0·43	11·21	23·88	6·21	1·25	0·16	3·10	0·52
Approx. value per ton	s. d. 34 0	s. d. 10 0	s. d. 193 0	s. d. 365 0	s. d. 135 0	s. d. 52 0	s. d. 32 0	s. d. 58 0	s. d. 15 0

From the analysis it is seen that there is very great variation in the quality of the guano. The best samples are all from small special deposits, of which there is no large quantity, and must be neglected in estimating the average value of the bulk. The following analyses may fairly be considered tests of the main bulk of the deposit:—

Geological Survey No.	Approximate value.
3913B.	34s.
3914B.	10s.
24C.	32s.
235C.	15s.
236C.	32s.
240C.	16s.
241C.	18s.
Average ..	22s.

Sample 234C., the dyke rock, is of no consequence as a manure, but is high, for a rock, in phosphoric acid. There is no necessary connection between this fact however and the existence of the guano deposit, and no inference as to probability of the existence of rock phosphates in the neighbourhood can legitimately be drawn from it.

Sample 239C. is of the limestone layer by the solution of which the cave has been formed. It is practically free from phosphoric acid, but was tested in view of the possibility of phosphate rock having been formed by reaction of solutions percolating through the guano upon the limestone. It is quite possible that a little phosphate rock will be found under the guano bed formed in this way, but I think it very improbable that it will be in commercial quantities.

It will be seen therefore that the deposit is of generally low value as a manure and that it is comparatively limited in extent, though there is enough of it to be very useful to farmers and orchard owners within a short distance of it by rail.

Owing to failure of local transport arrangements I was unable to visit the "Bishop's" or "Devil's" Hole, mentioned in Mr. Woodward's report. It is evidently another cavity due to a cave in the limestone underlying the quartzites, but from its inaccessibility to any animals other than bats it seems unlikely that it can contain any very large guano deposits. Two analyses of material from it are quoted above.

It should be noted that these, geologically, extremely recent deposits of bat guano can have nothing whatever to do with deposits of rock phosphate in the limestone beds seen in the caves, except in so far as the latter may have been altered by phosphatic solutions emanating from the guano. It would be a very extraordinary coincidence if rock phosphates of ancient origin were found alongside the modern deposits. This is very obvious, but seems advisable to be mentioned in view of erroneous ideas that appear to prevail in some quarters as to the existence at Jingemia of beds of true rock phosphate.

A rough sketch plan and section, more or less diagrammatic, is attached to this report to illustrate the Jingemia occurrence.

I have, etc.,

A. MONTGOMERY,

State Mining Engineer.

APPENDIX No. 4.

Public Battery at Broad Arrow.

The State Mining Engineer, Department of Mines, Western Australia.

Public Battery at Broad Arrow.—Acting on your instructions to visit a portion of the Broad Arrow Goldfield to ascertain, as nearly as possible, the prospect for an ore supply for a public battery, I left Perth on 11th December, 1908, for that field and returned on 21st December.

The mayor of the town of Broad Arrow (Mr. W. Collins) gave me every assistance in getting about the district, etc.

The number of mines visited was 22. Of these I was enabled to inspect and sample eleven either underground where possible, or in surface workings where descent was not possible. In the underground workings a full inspection was generally impracticable owing to the original crosscuts, drives, winzes, and lower levels of shafts having been used for subsequent storing of waste rock. Twelve of the mines were working with an aggregate number of 29 men.

Samples.—From places selected in certain of the mines sixty-five samples were taken, and I attach a schedule hereto showing the mine, locality in the workings sampled, and assay value.

Mine Groups.—The accompanying plan shows the position of various mines that would be within a convenient distance of a battery assumed to be placed on the Duke mine.

Within a radius of three miles southerly are the Walhalla, Borealis, Aurora, Lord Wolsley, and Swan, with the Talbot (late Reisen's Reward), Allen's, the Tara, and St. George in the vicinity of the town.

To the eastward, within a three miles radius, is the Pride of the Arrow, Federation, Thousand Lease, Patilla, Queen of Beauty, Golden Gem, and others.

To the northward, the North Duke (once known as St. Patrick), Golden Crown, Blue Bell, Blue Peter, Finlander, and others.

To west and north west the South Star, Union, Yellow Jacket, Eldorado, Railway Venture, Bulletin, Surbiton, etc., the last named being just beyond the three mile radius.

To the west and south-west lie the Dixie, Barrier, and Gladiator at about six miles distant, and the Credo group at about the same distance.

The Lady Bountiful group contains mines at present carting parcels of ore to Broad Arrow—nine miles—and railing to Kalgoorlie for treatment. Owing to the value of the concentrates and sands these mines will send ore only to those reduction plants that are able to treat all residues.

From several of the mines above mentioned it is stated that parcels of rich ore have been mined in past times; that the then cost of cartage and crushing made further working unprofitable, on the lower grade ore more particularly; but that working would be resumed if a battery was established near by.

Cost of crushing.—One of the grounds for the application for the erection of a battery is the reduction of cost that would follow, and the possibility of dealing with low grade ore, and complete treatment of residues. At present time the cost of crushing at the Paddington batteries is quoted as follows:—

	s.	d.
Cartage to Paddington, per load ..	5	0
Crushing	10	0
or	15	0

as against crushing on the Duke lease at following costs:—

	s.	d.
Cartage up to three miles	2	6
Crushing	10	0
per ton	12	6

or a difference of 2s. 6d. per ton in favour of the mine owner. In the case of the Duke mine and others near by the saving to be effected is estimated at 5s. per ton.

The ore despatched from the King Edward leases in the Lady Bountiful group costs 23s. 6d. per ton treated at Kalgoorlie—including cartage to Broad Arrow, freight to Kalgoorlie, unloading and carting to reduction works, and treatment. But in order to secure this and neighbouring mines as customers at a battery erected at Broad Arrow, plant would have to be provided capable of dealing with sands, slimes, and concentrates, as, owing to the mineralised ore, each of these carries values.

Mines inspected.

The Duke mine is situated about 2½ miles north of the town of Broad Arrow, and is at present being worked by Arthur A. Probert and mate.

A three compartment vertical shaft, well timbered, is in good order down to 120ft. level; below this the ladder way is reported to have been carried away by a fall of machinery in past times. The total depth of shaft is stated as between 300ft. and 400ft.

On the 120ft. level the lode has been developed by a series of drives, crosscuts, and winzes. The main west crosscut measures 82ft. from the shaft to a point where blocked by an ore shoot, etc. The country passed through is highly decomposed, and the portion representing the ore channel contains numerous veins of quartz ranging in thickness from a thread up to several feet. No well defined wall is visible on the eastern side of the lode. Taking the occurrence of quartz veins as a guide, the width of the lode exposed at this point would be about 40 feet.

At the time of my visit the claim holders had sunk a winze to a depth of 10ft. at a point about 77ft. west of shaft and 20ft. south of the line of crosscut. From this winze, and from a small stope overhead, a parcel of 35 tons of ore was crushed and cleaned up during the period of my visit to the field. The quantity of ore taken from the stope was estimated at 15 tons. The yield by battery amalgamation was at the rate of 8dwts. 11grs. bullion per ton. I sampled the bottom of this winze for a width of 84 inches, of which all but 12 inches in centre was solid quartz. On assay this sample (No. 15 in schedule) yielded 4dwts. 22grs. of gold per ton.

Nearer the shaft and just south of main west crosscut a winze has a depth of about 20ft. and a width of ore at bottom of 60 inches. Of this sample No. 16 shows an assay value of 3dwts. 20grs. gold per ton.

The prospector's shaft lies to nor'-west of main shaft. This is open to a depth of 40ft. At this level a drive has been extended northerly for 65ft. and southerly 52ft., at which point it connects with a large chamber that has been stoped out.

The drives are in lode but as no crosscuts have been made the width of the formation is not exposed. I sampled the drives across the back at 10ft. intervals for an average width of 38 inches, commencing at face of north drive and proceeding southerly to edge of chamber, for a continuous distance of 117ft. In the eleven samples taken (Nos. 46 to 57, both inclusive) the highest values were 5dwt. 11grs. and 9dwts. gold per ton, and the average assay value for total length equalled 1dwt. 20grs. Closer prospecting and sampling would doubtless discover veins and patches of considerably higher value, though the present workers state that they have never met stone worth dollying. The gold occurs in thin flakes, and finely peppered over the faces of the rock. The chamber referred to has been excavated to average dimensions of 17ft. by 20ft. and connects with the crosscut at 120ft. level and with the surface. There is no sign that the eastern and western limits of the lode have been reached.

In addition to this large chamber there are numerous smaller stopes where the richer portions of the lode have been mined from time to time. The ground is tough and strong and, as long as it keeps dry, will stand securely.

The ore body is apparently a large lens-shaped mass, but at the time I was not able to determine its length or width.

I advised Probert and his mate to continue sinking their winze from the 120ft. level and to keep track of the chute of gold they had met with.

The Duke North, about one mile from the Duke, is not at present being worked. It was at one time known as the St. Patrick. It is stated that some rich yields were obtained from stone mined from the outcrop, and from near the surface in the early days.

Several shafts have been sunk along the line of reef and I inspected the most southerly of these as being an incline following the reef. It has a depth of 58ft. with a dip of about 45deg. to the east, but showing a tendency to become steeper in depth.

At 26ft. from surface a level has been driven south on the reef for 28ft. but samples taken from the face (Nos. 4 and 5) and at 18ft. in from the shaft (No. 6) yielded very low values.

At the bottom level (58ft.) the reef has been driven on south for 48ft. on a magnetic bearing of 150deg., and to the northward for 14ft. The reef consists of ironstained quartz of an average width of 18 inches, with a soft lode formation on the hanging wall.

I sampled the south drive across the back at six points (Nos. 7 to 12, both inclusive), and the assay value is low. In the north drive the face shows 20 inches of ironstone and quartz on the eastern side and 20 inches of white quartz on western side, and the appearance was favourable to further prospecting being done. Samples from the face (Nos. 13 and 14), however, showed no value.

Lord Wolsley.—In this claim a number of irregular workings have been carried down on a series of quartz veins to a depth equal to 15ft. vertical. The veins have a nearly east and west strike limited on both sides by parallel dykes of quartzite lying 150ft. to 160ft. apart. The veins dip northerly at about 30 deg. and occur one below the other, but I did not find that any working had determined the number of them.

Good values are reported to have been obtained at various points, and the most recent crushing, amounting to 30 tons, yielded at the rate of 5dwts. 12grs. per ton. A sample (No. 1) broken from the quartz left standing in the working whence the crushing was taken yielded on assay 2dwts. 1gr. gold per ton.

Other Mines in the group round the Duke, *e.g.,* the Finlander, Walhalla, Boreális, Aurora, Swan, etc., no examination was then possible, nor of the Golden Gem, Queen of Beauty, Federation, etc., in the group lying easterly of the Duke.

Allen's Mine is close to the town. Circumstances prevented me visiting the underground workings. I was informed, however, that for some time past the owners have been getting good results from a series of small veins, but that a quantity of lode material estimated to carry from 4dwts. to 5dwts. gold per ton could not be touched, as it would not pay to cart to Paddington. It is claimed that with a battery in the near neighbourhood this low grade ore would be profitably treated in conjunction with that of higher grade.

The Tara Claim adjoins Allen's on the south, and is held as a G.M. Lease of 12 acres by Messrs. McInnes and Erickson. Of this mine I was able to make an inspection.

A vertical shaft has been sunk to a depth of 145ft. At the 100ft. level the lode has been prospected for a distance of 40ft. by a drive to the north. The formation carries veins of quartz ranging from an inch or less, up to 18 inches wide. These veins strike in an east and west direction and dip north at an angle of about 30deg. while through them runs a vertical vein in a north-south direction. The lode is said to have been proved 25ft. wide by crosscutting. As this crosscut was filled I was unable to sample the width. Apparently no defined walls have been met with, and the width of ore has been determined by tests of value. From a quantity of broken lode matter in the north drive, samples Nos. 2 and 3 were taken and assayed 1dwt. 2grs. and 20grs. per ton respectively. A crushing from this drive is stated to have yielded nearly 4dwts. per ton by battery treatment. The south drive at this level has been extended 50ft. on similar lode matter.

At the 125ft. level a stope has been carried up on the quartz veins for an inclined height of 60ft. from shaft and for a width of 30ft. along the strike. The largest of the series of veins is about eight inches in thickness, and smaller ones are numerous.

No crushing has yet been put through by the present holders, but one is being broken out and is estimated to be worth 2ozs. per ton.

It is stated that from the 50ft. level a crushing of 40 tons yielded at the rate of 20dwts. per ton and one of 40 tons from 100ft. level yielded 5dwts. per ton.

With a battery on the Duke lease the owners of the Tara anticipate that ore of 5dwts. per ton would allow them a fair margin of profit.

The Talbot Mine is a G.M.L. of six acres held by Messrs. Downing Bros., and originally was known as Reison's Reward. Here, as in the Tara and other adjacent mines, a series of small rich quartz veins contained in lode formation, and dipping northwards at about 30deg., are being worked. The veins are patchy in value, and the apparently low grade material is either left standing, or, if broken down in mining the veins, is thrown on one side. Between wall and wall the lode is about 48 inches thick, and is estimated to be worth up to 8dwts. per ton.

From lode material left standing at the 45ft. level as low grade I took samples (Nos. 64 and 65) from two different places and for widths of 48 inches. The former yielded on assay 2dwts. 13grs. and the latter 7ozs. 11dwts. 2grs. gold per ton. In the last sample it is evident that a patch of gold had been met with, and that the high value is accidental.

The owners state that 45 tons of ore from full width of lode yielded 7dwts. per ton, that a second parcel of 42 tons yielded 5dwts. 12grs. per ton, and a third (tonnage not given) yielded 12dwts. per ton. It is estimated that from 200 to 300 tons of second class ore have been broken and used for stope filling, but that this could be withdrawn and crushed at a profit if a battery was situated near the mine.

Of the ore sent for treatment to Paddington, a recent crushing of 37 tons yielded slightly over 3ozs. 14dwts. per ton, and another parcel of 38 tons yielded 2ozs. 10dwts. per ton.

Flynn's Lease adjoins the Talbot on the south. In character the deposit is similar to the Talbot. The gold-bearing quartz veins have a thickness of about six inches, and are being mined to an inclined depth of about 60ft. from surface for a length of about 50ft. on line of reef. Several parcels of ore, aggregating 100 tons are stated to have yielded 140ozs. by battery treatment.

The lode formation associated with the quartz veins is valued up to 7dwts. per ton.

The St. George Mine lies N.W. of the Talbot and has been opened by a vertical and an incline shaft and connected by a drive on the reef at 100ft. vertical from the surface. The reef has been tested at a lower depth by means of a winze from the 100ft. level, but I did not go down. No work is at present being done.

At the 100ft. level a strong quartz reef is exposed between the two shafts. The drive has been carried north of the crosscut from vertical shaft, but has been filled with waste rock. Above this level a stope has been carried up 12ft. to 15ft. on the course of the reef and on the lode formation on the western side. The hanging wall is not defined, and the rock is considerably decomposed. Support is given by stulls and head boards, but some of the latter show signs of crushing. Filling would be required to further work this stope, and it would be necessary to put up a rise to the surface.

The north end of the stope has a width of 15ft. and has been sampled (Nos. 58, 59, 60), in sections of 60 inches each. The western section yielded 1dwt. 20grs. per ton, centre 2dwt. 10grs., and eastern side 6grs. only, or an average value for the full width of 1dwt. 12grs. gold per ton. From the south end of the stope on eastern side a sample (No. 61) taken over a width of 48 inches, yielded 18dwts. 18grs. gold per ton. This lode is worthy of further and systematic development.

Samples (Nos. 62 and 63) taken from a crosscut west off bottom of incline shaft and from near surface in same shaft yielded less than 1dwt. per ton.

The South Star Mine lies about 1½ miles northwest of the Duke. It is not at present being worked. Access to the old workings was not possible, but judging from the stope openings appearing at surface a quantity of ore has been extracted.

From the stope ends visible at surface in the south workings and from stope ends in more northerly workings exposed to 15ft. from surface, sample No. 17 was cut for a width of 36 inches of quartz and yielded 13grs. gold per ton. No. 18 from a width of 48 inches yielded 6grs. gold per ton, No. 19 from a width of 60 inches quartz yielded 1dwt. 2grs. per ton, and No. 20 from width of 84 inches quartz yielded 1dwt. 6grs.

The Surbiton and other mines in neighbourhood were visited, but owing to lack of means of descending were not inspected.

The Bulletin Mine lies about three miles N.W. of the Duke. It consists of a large lode of decomposed country having a width of 40ft. to 50ft. and about one-third of a mile in length, running in a N.W. and S.E. direction and dipping easterly. The lode contains numerous veins of quartz ranging in size from threads to 12 inches or greater, in width. The strike of the quartz veins is almost at right angles to the course of the lode, and they assume a nearly vertical position. The quartz is ironstained. On the western side of the lode are broken ironstone hills and mounds. On the eastern side a good deal of alluvial mining has been carried on and, it is stated, with good individual results. The locality is known as the Six-Mile, from Broad Arrow.

The surface of the lode is honey-combed with holes and prospecting shafts, and trenches. During the rainy months when water has collected puddling has been carried on. No work is at present being done.

A trench immediately north of the main shaft was sampled (No. 21) at the time of my visit and yielded on assay 3dwts. per ton. The main shaft is open to a depth of about 50ft. below which it has been filled in.

At the 33ft. level a drive has been put in 10ft. to southward, showing quartz veins up to six inches wide and lode. This drive was sampled for a width of 48 inches in two places, one (No. 22) quartz only and (No. 23) lode formation; both yielded on assay traces only.

A crosscut off the east end of the shaft has been partly filled up, leaving only 12ft. open to examination. From this crosscut a drive has been extended northward 32ft. and off this short crosscuts have been cut at intervals.

Samples from face of drive and from each crosscut (Nos. 25-29) yielded low values on assay. The main east crosscut sampled in 4ft. sections yielded 4dwts. 22grs. per ton in the section from the shaft inwards. A drive opened to the south but had been filled up.

At a point approximately 250ft. north from main shaft a prospecting shaft has been sunk to 20ft. From

this samples Nos. 33, 34, and 35 were obtained and yielded from traces up to 1dwt. 2grs.

The Dixie Mine is situated at about six miles from the Duke and has been fairly opened up. The main shaft workings are at present comprised in a 5-acre lease held by J. W. Renwick and party. During 1908 two parcels of stone have been treated at Paddington, one of 19 tons for a yield of 4dwts. 12grs. over the plates and 5dwts. in the tailings, and the second 41 tons for a yield of over 30dwts. per ton saved, and sands assaying 6dwts. 18grs., slimes 8dwts. 18grs., and 17cwt. of concentrates, 14dwts. 4grs. per ton.

An inspection of the 33ft. level west showed a large reef that had been driven on for about 140ft., of which considerable quantities had been left standing. Five samples (Nos. 37 to 41) taken at intervals showed this to be low grade.

At surface samples (Nos. 42 and 43) from dumps of second class ore yielded from 1dwt. 2grs. to 4dwt. 9grs. gold per ton. The gold in this mine occurs in patches, and sampling cannot be depended upon for average values.

The Barrier Mine adjoins the Dixie on the north, and the Gladiator mines lie to the south. Both these leases have strong reefs and some good patches of stone are reported to have been met with in past times. Owing to the late hour of the day I did not make an inspection.

The Lady Bountiful Mine is situated at about nine miles S.W. of the Duke mine, and is at present held as a prospecting area by Thos. Oliver. It is estimated that the mine could supply several thousand tons of 5dwt. to 6dwt. ore. Working is about to be resumed and as there is a battery on the ground it is probable that it will be utilised.

The King Edward Mine, G.M. Lease No. 1177W, 12 acres, is owned by Messrs. Newton and Dunston. It is in close proximity to the Lady Bountiful, but apparently not on the same line of reef.

An incline shaft has been sunk to 190ft. on a series of small quartz veins that have a strike approximately N. and S. and dip to the west at an angle of about 30deg. The enclosing country is diorite.

The ore channel has an average width of about 20 inches, of which six inches yield ore of high value, and the remainder is not sufficiently high to pay for transport to Kalgoorlie, where the ore from this mine is treated. The vein has been stoped to about 120ft. in depth by a length of about 400ft. along the line of reef.

The owners state that a recent crushing yielded over 2ozs. per ton by amalgamation, the sands and slimes yielded 23dwts. 12grs. per ton, and the concentrates 4ozs. per ton. The ore is fairly well mineralised, and it is owing to the necessity of having the residues treated that it is sent to Kalgoorlie. The cost of this is given as follows:—

	£	s.	d.
Cartage to Broad Arrow ..	0	9	0
Rail to Kalgoorlie	0	3	0
Unloading and carting to battery	0	1	6
Treatment	0	10	0
	£1	3	6

From a heap of second-class ore on surface a "grab" sample (No. 36) gave an assay value of 2dwts. 10grs.

The King Edward North, G.M.L. No. 1182W., adjoins the King Edward. It contains 12 acres and is held by Godfrey and party. No work was going on at the time of my visit, but a crushing of 50 tons had just been completed and had yielded 2ozs. 3dwts. per ton by amalgamation, with sands assaying 18dwts., slimes 8dwts. 2grs., and concentrates (640lbs.) 5ozs. per ton.

The vein characteristics are similar to those of the King Edward.

Prospecting Area No. 213, 18 acres, held by H. J. Carr, is northerly of the King Edward mines. Recently some good prospects in coarse free gold have been met in a lode striking W.S.W. and dipping N.W. This has been traced for about 150ft. in length on surface, and at one point has been sunk upon to a depth of 10ft. and a width of 24 inches, but it is thought that the full width has not yet been ascertained.

The ore from the three last named mines would necessarily be sent to a battery possessed of plant capable of treating sand, slimes, and concentrates, or where these would be purchased on assay value.

The Oriental Mine, a P.A. held by H. J. Lester, is situated about five miles east of the Duke mine on the old wood tramline. Two or more reefs appear to have been worked. They occur in granite with a strike about E.N.E. and dip northerly at an angle of 44deg. Several shafts have been sunk both on the incline of the reef and vertically. The vein now being worked is from four inches to nine inches in thickness. A sample (No. 44) taken from the heap of ore broken from this vein and lying at surface yielded 9dwts. 19grs. gold per ton. A sample (No. 45) from a heap on one of the other shafts assayed 17grs. gold per ton. The present cost of getting this ore carted and treated is stated as 20s. per ton.

Summary.

The perusal of the foregoing report shows that at the present time there are no bodies of ore developed ready for mining and treatment. It was not probable, however, that the contrary was to be expected as the present mine owners are not in a position to develop ore that cannot at once be profitably treated.

With the nearest customs batteries at Paddington, only the highest grade of ore can be handled. Consequently the present system of working is that known as "picking the eyes out" of a mine. And it is seen, in more than one instance, ore is left standing or, if mined, is thrown to one side which, under more favourable circumstances for treatment and in conjunction with the higher grade ore, would be worked to a profit.

This practice of picking out only the richest portions of the veins is not favourable to the future of the district. It means that only the least possible development is undertaken and the inevitable result must be that the mines become quickly exhausted. On the other hand, if the profitable treatment of lower grades of ore can be brought about, further exploration becomes possible and the chances of developing additional chutes of ore are greatly increased.

The portion of the Broad Arrow Goldfield to which this report specially refers has not been thoroughly tested. Companies possessed of sufficient capital for carrying out systematic exploration and development have not been attracted to this field, or the very few that have elected to try it appear to have lost heart at an early stage in their operations and to have moved to districts where prospects apparently were brighter.

Many of the leases that are now idle were opened in past years when costs were considerably in excess of those that now obtain, and for that reason closed down. But it is more than probable that many of these properties would again be worked if a treatment plant was to be established in the neighbourhood.

My previous knowledge of the district and my recent inspection of it incline me to believe that the erection of a 5 or 10 head battery is justified, and this not so much from the point of view of a profitable business undertaking from the outset, as from the belief that such plant would enable considerable quantities of low grade ore to be profitably dealt with; that many mines now idle would be re-worked; that by reason of this it is very probable that new discoveries of value may be forthcoming; and that the result of the renewal of energy in this district may quite possibly be of considerable importance to the mining industry of this State.

In the event of the erection of a battery being decided upon I would advise that it should be erected upon the Duke mine. The site, as shown in the accompanying map, is central; the supply of salt water from the mine is said to be ample; and the ground is well adapted for battery purposes.

In addition to these advantages there is the great possibility that the Duke mine alone will be able to furnish large supplies of profitable ore.

(Sgd.) E. DAVENPORT CLELAND,
Inspector of Mines.

11th January, 1909.

STATE BATTERY, BROAD ARROW GOLDFIELD.

Memo. of Samples taken December, 1908.

No. of Sample.	Name of Mine.	Width sampled.	Assay Value.	Locality in Mine where sampled.
		Inches.	oz. dwts. grs.	
1	Lord Wolsley	Along reef	0 2 1	About 15ft. from surface, whence 30 tons yielded 5½ dwts. per ton. Quartz vein 24in.
2–3	Tara Lease	Grab from broken ore in mine	0 1 2 0 0 20	100ft. level North, 28ft. lode formation with quartz veins 1in. to 18in., said to have been proved to width of 25ft. Crosscut filled up.
4	Duke North	24	*Nil*	South incline shaft 26ft. level, 28ft. South. Hanging wall formation.
5	Do.	24	Trace	South incline shaft quartz reef on footwall.
6	Do.	40	0 0 7	South incline shaft back of drive at 18ft. from shaft.
7	Do.	15	Trace	South incline shaft 58ft. level, South 48ft. Face at 48ft.
8	Do.	12	*Nil*	Face at Crosscut West at 39ft. from shaft.
9	Do.	30	0 2 9	Face at back of drive at 30ft. from shaft.
10	Do.	36	0 2 13	Face at back of drive at 13ft. from shaft.
11	Do.	48	Trace	Face at back across South end of shaft.
12	Do.	48	*Nil*	Face at back East Crosscut off bottom of shaft.
13	Do.	20	*Nil*	Face at 58ft. level, North 14ft. East half of face ironstone and quartz.
14	Do.	20	Trace	Face at West half of face, quartz only.
15	Duke	84	0 4 22	Main shaft, 120ft. level, winze about 20ft. South of M.W. Crosscut at about 77ft. from shaft 10ft. below level, quartz.
16	Do.	60	0 3 20	Main shaft 120ft. level, winze approximately 20ft. deep, below level of N.W. Crosscut at approximately 46ft. West of shaft. Quartz. Additional samples *see* Nos. 46 to 57 both inclusive.
17	South Star	36	0 0 13	Stope opening at surface. North face. Quartz.
18	Do.	48	0 0 6	Stope opening at surface. Second face further North.
19	Do.	60	0 1 2	Stope opening at surface, second North face at 15ft. from surface. Quartz.
20	Do.	84	0 1 6	Stope opening at surface, second South face at 15ft. from surface. Quartz.
21	Bulletin	—	0 3 0	Side of trench South of M shaft. Surface.
22	Do.	48	Trace	Main shaft 33ft. level. South drive. Quartz vein, 6in.
23	Do.	48	,,	Main shaft 33ft. level, South drive lode. No quartz.
24	Do.	84	0 1 2	Main shaft 33ft. level across north side of shaft.
25	Do.	36	0 1 15	Main shaft 33ft. level North drive, face at 32ft. Lode and quartz veins.
26	Do.	42	*Nil*	Main shaft 33ft. level North drive W. Crosscut at 20ft. Lode and quartz veins.
27	Do.	48	0 2 4	Main shaft 33ft. level North drive E. Crosscut at 20ft. Lode and quartz veins.
28	Do.	36	0 0 6	Main shaft 33ft. level. North drive W. Crosscut at 9ft. Lode and quartz veins.
29	Do.	40	*Nil*	Main shaft 33ft. level. North drive E. Crosscut at 9ft. Lode and quartz veins.
30	Do.	48	Trace	Main shaft 33ft. level. N. drive E. Crosscut off end of shaft 12ft. to 8ft.
31	Do.	48	,,	Main shaft 33ft. level. N. drive E. Crosscut off end of shaft 8ft. to 4ft.
32	Do.	48	0 4 22	Main shaft 33ft. level. N. drive E. Crosscut off end of shaft 4ft. to 0ft.
33	Do.	60	Trace	Incline shaft approximately 250ft. N.W. of main shaft 20ft. deep. Lode and quartz veins.
34	Do.	132	0 1 2	Incline shaft at 10ft. depth. Lode and quartz veins.
35	Do.	12	Trace	Incline shaft at 10ft. depth. Quartz veins.

STATE BATTERY, BROAD ARROW GOLDFIELD—*continued.*

Memo. of Samples taken December, 1908—*continued.*

No. of Sample.	Name of Mine.	Width sampled.	Assay Value.	Locality in Mine where sampled.
		Inches.	ozs. dwts. grs.	
36	King Edward	..	0 2 10	Dump of second grade ore at surface.
37	Dixie	..	0 0 17	Main shaft 33ft. level. North. Grab from broken ore 100ft. W. of shaft.
38	Do.	78	0 1 2	Main shaft, 33ft. level ; first half W. Crosscut 70ft. W. of shaft.
39	Do.	78	0 0 13	Main shaft 33ft. Second half W. Crosscut 70ft. W. of shaft.
40	Do.	78	0 0 19	Main shaft 33ft. Back of drive at 40ft. W. of shaft.
41	Do.	36	0 0 8	Main shaft 33ft. Back of drive at 14ft. W. of shaft.
42	Do.	..	0 1 2	Dump of second class ore at surface from 70ft. and 80ft. levels ; 400 to 500 tons (approximately).
43	Do.	..	0 4 9	
44	Oriental	..	0 9 19	Dump at shaft near camp; small quartz vein in granite.
45	Do.	..	0 0 17	Dump at water shaft.
46	Duke	42	Trace	Prospecting shaft 40ft. level North 65ft. Face at 65ft.
47	Do.	42	,,	Prospecting shaft 40ft. level North 65ft. Back at 55ft.
48	Do.	36	0 9 0	Prospecting shaft 40ft level. Back at 45ft.
49	Do.	30	Trace	Prospecting shaft 40ft. level. Back at 35ft.
50	Do.	30	0 2 17	Prospecting shaft 40ft. level. Back at 25ft.
51	Do.	40	0 1 15	Prospecting shaft 40ft. level. Back at 15ft.
52	Do.	48	Trace	Prospecting shaft 40ft. level. Back at 7ft. from shaft.
53	Do.	24	0 0 20	Prospecting shaft 40ft. level S., 10ft. shaft.
54	Do.	36	0 1 2	Prospecting shaft 40ft. level S., 20ft. shaft.
55	Do.	48	0 1 8	Prospecting shaft 40ft. level S., 30ft. shaft.
56	Do.	36	0 5 11	Prospecting shaft 40ft. level S.. 40ft. shaft.
57	Do.	48	0 0 6	Prospecting shaft 40ft. level S., 52ft. shaft.
58	St. George G.M. ..	60	0 1 20	Incline shaft 100ft. level North. N. end of stope, H. wall.
59	Do.	60	0 2 10	Incline shaft 100ft. level North. N. end of stope, H. wall centre.
60	Do.	60	0 0 6	Incline shaft 100ft. level North. N. end of stope, H. footwall.
61	Do.	48	0 18 18	Incline shaft 100ft. level, S. end of stope (footwall).
62	Do.	60	0 0 20	Incline shaft 100ft. W. Crosscut off shaft.
63	Do.	48	0 0 6	Incline shaft 100ft. North end of vert. part 12ft. from surface.
64	Talbot	48	0 2 13	Main shaft 45ft. level North-West side of stope.
65	Do.	48	7 11 2	Main shaft 45ft. level North-East side of stope lower down.

REPORT OF THE BOARD OF EXAMINERS FOR COLLIERY MANAGERS' AND UNDER-MANAGERS' CERTIFICATES UNDER "THE COAL MINES REGULATION ACT, 1902."

To the Under Secretary for Mines, Perth,

Office of the State Mining Engineer,
Department of Mines,
Perth, 21st April, 1909.

Sir,

We have the honour to forward to you, for the information of the Hon. the Minister for Mines, the following report of the above Board for the year 1908.

The Board held two meetings during the year, 22nd April and 30th October.

No applications for examination were received in response to the March or September advertisements.

Owing to the absence from Perth of Mr. Gibb Maitland, through being in London, representing the State at the Franco-British Exhibition, Mr. Harry P. Woodward, F.G.S., the Acting Government Geologist, took Mr. Maitland's place on the Board at the October meeting, and as Mr. Woodward was also absent from Perth in April the position was filled at the meeting in that month by Mr. Edward S. Simpson, B.E., F.C.S., who was temporarily acting as Government Geologist in Perth.

On the 27th July, 1908, the Scottish Collieries Company notified that Mr. John McGeachie had taken over the management of their collieries, and on the 7th August an application for a First Class Certificate of Service, accompanied by New South Wales Manager's Certificate of Service, testimonials and statutory declaration, was received from Mr. McGeachie ; the papers were carefully perused by each member of the Board, and received consideration at the meeting on the 30th October, and it was resolved that a First Class Certificate of Service be granted to Mr. McGeachie. He was immediately advised of the decision, and asked to remit the further fee necessary, when certificate would issue. No reply was received to the Board's letter, and on the 13th November one of the proprietors of the Company called on the Chairman of the Board and stated that Mr. McGeachie's appointment to the management of the Company's properties had been cancelled. Mr. McGeachie did not further communicate with the Board, and no certificate has been issued to him.

Application was made on the 24th September, 1908, by David Woodcock for a Second Class Certificate of Service, accompanied by testimonials and British authorising certificates, and it was considered by the Board at the meeting on the 30th October. It was decided to postpone further consideration of the application for the time being, the Secretary in the meantime to write to the Inspector of Mines of the Yorkshire district, England, to ascertain the duties of a "Deputy" in the pit where Mr. Woodcock had worked, one of the papers he submitted showing that he had been employed in that capacity in a pit in Yorkshire, also to write to the Manager of the Glass Houghton & Castleford Collieries, Limited, Yorkshire, asking what were the duties performed by Mr. Woodcock during the time he was in their employment, one of the testimonials submitted with the application stating that he served in various capacities in the employment of these collieries. Mr. Briggs, one of the members of the Board, also promised to interview Mr. Woodcock, in Collie, with a view to obtaining from him a declaration concerning the duties he had performed at the collieries he had worked at in England. The Board will again go fully into this application at its meeting in April, 1909.

With reference to the First Class Certificate of Service as a Mine Manager issued on the 5th March, 1903, and cancellation of the same in the Executive Council on the 26th June, 1907, referred to in our report last year, further correspondence took place during 1908, and this was read at the October meeting of the Board; it was decided that no further action in the matter be taken at the present.

In connection with the matter of the particulars required from applicants for certificates, the Board resolved, at its meeting on the 30th October, "that in future all applicants must supply independent evidence as to character and the particulars required in Section 24, Clause (2), of the Act, and length and nature of previous service."

We have, etc.,

A. MONTGOMERY, M.A., F.G.S.,
State Mining Engineer,
Chairman.

A. GIBB MAITLAND,
Government Geologist,
Member.

T. D. BRIGGS,
Inspector of Mines, Collie,
Member.

JAMES H. DURES,
Department of Mines, Perth,
Secretary.

DIVISION III.

REPORT OF THE SUPERINTENDENT OF STATE BATTERIES FOR THE YEAR 1908.

The Under Secretary for Mines.

Sir,

I have the honour to submit for the information of the Hon. the Minister for Mines the following report on the State Batteries for the year ending 31st December, 1908:—

The total amount crushed at all State Batteries since inception is 600,910.04 tons, yielding by amalgamation 645,753.1 ounces of gold, valued at £2,359,706.85, or 78/6.45 per ton; and by cyanidation 81,920.45 fine ounces of gold, valued at £333,190.41, or 11/1.07 per ton, making a total of 727,673.56 ounces, valued at £2,692,897.26, or £4 9s. 7.52d. per ton milled. This is the amount actually recovered, and does not include a considerable amount of gold carried away in the tailings at mills previous to the introduction of cyanide plants.

During the year under review twenty-nine (29) mills (omitting the Greenbushes Tin Plants) crushed 1817 separate parcels of ore, in all 95,597.75 tons, of an average value of 1oz. 3dwts. 12grs., or £4 14s. per ton, £1 1s. 3.61d. of this being absorbed in treatment charges, viz., 9s. 3.61d. milling and 12s. for cyaniding, and to cover loss in residues, leaving a net return to prospectors or customers of £3 12s. 8.39d. per ton, equal to £347,497 14s. 7d.

The out-right purchase of all tailings, whether sands or slimes, was introduced at the beginning of the year, and has resulted in a cash distribution to prospectors of £36,641, as against £25,630 paid out for the year 1907.

Another change made at the commencement of the year was the uniform charge of 10s. per ton for crushing, which was a reduction of nearly 2s. on the average rates charged during the previous year, resulting in favour of customers of no less than £10,164 15s. 2d., which one would naturally think the prospectors would appreciate, and in some districts they did. In others, where the average grade of the ore is comparatively low, it was not of so much importance and consequent advantage to them as under the old sliding scale they rarely paid more than the 10s. which was the minimum. That the 10s. rate has, however, been a boon to the prospectors generally, is shown by the annual figures which exhibit a loss to the Department for the year of £6,025 14s. 9d., and although this is a large sum to lose it does not nearly represent the full amount of the reduction made, as, with the tonnage crushed for the year, the amount received for charges is as stated above, £10,164 15s. 2d. less than if treated at the average rates of the preceding year. This loss of revenue has been partially met by the cost of treatment having been reduced to the extent of £5,815 7s. as the following statement shows:—

Comparative Statement.

Revenue.

	1907. Tons.	1907. Receipts per ton.	1908. Tons.	1908. Receipts per ton.		Per ton.
Milling	95,280	11s. 2.68d.	95,623	9s. 3.61d.	Decrease	1s. 11.07d.
Cyaniding	63,778	9s. 2.81d.	62,272	8s. 11.06d.	do.	3.75d.

Decrease 1s. 11.07d. on 95,625 tons	£9,191 15	2
Do. 3.75d. on 62,272 tons	973 0	0
	£10,164 15	2

Expenditure.

	1907. Tons.	1907. Cost per ton.	1908. Tons.	1908. Cost per ton.		per ton.
Milling	95,280	13s. 0.66d.	95,623	12s. 1.99d.	Decrease	10.74d.
Cyaniding	63,778	7s. 2.77d.	62,272	6s. 4.75d.	do.	9.97d.
Slimes	8,220	8s. 7.63d.	5,818	12s. 0.19d.	Increase	3s. 5.28d.

	£	s.	d.
Decrease in Milling 95,623 tons at 10.74d. per ton	4,279	2	6
Decrease in Cyaniding 62,272 tons at 9.97d. per ton	2,536	17	7
	£6,816	0	1
Increase in treatment of 5,818 tons Slimes at 3s. 5.28d. per ton	1,000	13	1
Total Decrease in Cost 1908	£5,815	7	0

The above figures include £7,421 9s. 1d. for repairs and renewals, equal to 1s. 7.37d. per ton crushed, also all Head Office expenses.

The costs for both milling and cyaniding for the year are the lowest on record for the State mills. The districts which have done remarkably well in this direction are Menzies, Pig Well, Mulwarrie, Yarrie, Burtville, and Nannine.

Inspector Howe reports on the work of the various mills as follows:—

"After having carefully studied the work done at the various plants, allowing for the variation in tonnages, local conditions, and the different classes of plants, I consider the results at Menzies, Yarri, Pig Well, Mulwarrie, Burtville, and Nannine are the most satisfactory. Under specially favourable conditions Manager Williamson at Menzies has done excellent work, and he deserves credit for the splendid result.

At *Yarri*, on a vastly decreased tonnage, Manager Moyes has done exceptionally good work, and his results are probably the most meritorious on the list. His plant occupies second place on combined results, whilst his combined tonnages were less than half of those at Menzies.

Pig Well occupies fourth place on the combined cost list. This is undoubtedly a good performance on the part of Manager Morris.

Mulwarrie occupies a good position, more especially considering the unavoidably expensive cyanide treatment.

Burtville has done good work, and had it not been for the shortage of water and consequent extra heavy expense during the last quarter, Manager Cale would have been higher on the list. The cyanide costs were very good.

Nannine for a 5-head mill has done satisfactory work, and has beaten several 10-head plants with good tonnages.

The above-mentioned six mills have provided the most satisfactory results.

Leonora occupies third place on the list of combined costs, but on a slightly increased tonnage the cyanide costs have increased beyond reason, viz., 1s. 8d. per ton. Milling costs also went up 1s. 6d. per ton.

Meekatharra should have done better work, and although a great improvement was shown during the latter part of the year the result is not satisfactory for the tonnage.

Coolgardie has done fairly good work in cyaniding, but on a decreased tonnage the cost of milling has increased 1s. 8d. per ton. The power plant has been overhauled and the expense put into working costs.

Black Range.—Under adverse conditions the old plant held its own fairly well. The returns from the new plant during the current year should be highly satisfactory.

Boogardie still maintains high milling costs, although they show a reduction of 7d. per ton, and this includes heavy expenses incurred in overhauling the power plant. The cyanide costs were reduced 2s. 7d. a ton, and occupy second position on the list, which is good.

Niagara cyanide returns are satisfactory, since the cost has been kept down to last year's standard on a decrease in tonnage of nearly 50 per cent. Milling costs have gone up on a greatly decreased tonnage.

Darlot has shown a decrease in costs all round, especially in milling, where the reduction amounts to 4s. 7d. per ton. The year's work has been very satisfactory.

Norseman returns show reductions in both departments, owing to the great increase in tonnage. The plant was overhauled in the early part of the year.

Pinjin cyanide costs show a slight decrease and are quite satisfactory. Milling costs show a reduction of 4s. 11d. per ton, which is considerable. The mill is an expensive one to run, being so unfavourably situated.

Mulline milling costs show a reduction of 3s. per ton, and the cyanide costs a reduction of 3s. 3d. per ton. These results are very good on a decreased tonnage.

Wiluna returns show that the cost of mill treatment remains about the same as last year. Cyanide operations were only commenced at the end of November.

Lennonville.—Very little work done, owing to the boiler being condemned, milling costs high. Cyanide costs show a reduction of 1s. per ton.

At *Siberia, Sandy Creek, Devon,* and *Laverton,* conditions have been too unfavourable to get satisfactory costs for the year's operations.

Milling only.

At *Mt. Ida* and *Yerilla,* tonnages have been small and costs high.

Linden crushed 1,296 tons with the 2-head mill, but the costs are very high, owing to the small duty the mill is capable of.

At *Kalpini, Ravelstone,* and *Widgiemooltha,* special arrangements were made for the working of the plants, each place showing a loss.

The *Tuckanarra* plant was leased."

GREENBUSHES TIN PLANTS.—These plants have not been kept sufficiently supplied with crushing material to show low costs. At the North End plant only 1,210 tons were treated, at a cost of 7s. 6.13d. per ton, whilst the revenue was only 4s. 7.36d. At Bunbury End, where the Huntingdon mill has been added to the stamp battery, 4,303 tons were treated at a cost of 3s. 6.83d. per ton, whilst the revenue collected from the prospectors only averaged 3s. 2.47d. per ton. At the two plants a loss of £253 10s. 2d. has been made.

At Nannine the gas producer plant is doing good work. For some time it was run with Collie coal and continued to work smoothly, but the long distance from the coast makes coal too expensive for gas production. Locally burnt mulga charcoal is now in use and is reported by the manager to be much superior to coal, as it can be used without the tar extractor, the coke scrubbers and sawdust filters being ample to collect any tarry matter from charcoal gases, and I should in future recommend the installation of this power for small plants, especially in places where water must be condensed for boiler purposes.

At Linden a two-head mill driven by an oil-engine has been erected during the year and has crushed 1,299.5 tons of stone for a yield of 1,667 ounces of gold, whilst the tailings have been stacked, and as sufficient has accumulated to justify the erection of a small cyanide plant it has been decided to treat them.

Prospectors at Linden have only been charged the same rate for crushing as obtains at the larger plants, although the cost of operating these small plants is heavy and the Department suffers the loss, yet it may prove cheaper to lose on the small tonnage than to erect a larger and more expensive plant before the district is proved permanent. With a view to reduc-

ing the cost of treatment automatic feeders have recently been added to this plant, and the prospectors will in future be required to deliver their stone to the hoppers. These mills are more suitable for small prospecting mines where the owners can operate them in conjunction with their other work. For customs mills the necessary staff is a heavy charge on the small tonnage.

A general overhaul of the battery engines and rearrangement of the power plants has been commenced, the costs being defrayed from revenue. Good results by way of economy in fuel consumption have already been shown, but the greater benefit to be derived from this work will be more apparent when the whole of it is completed.

The most important work carried out for the year has been the dismantling of the Duketon plant and re-erection at Black Range. This mill is now equipped with stone breaker, conveyor belt, ore bins, self feeders, and a complete new cyanide plant; an improved deep well pump has also been added to it. Acetylene gas plant and new manager's quarters have been provided. The whole comprises the best arranged plant under the control of the Department. It was completed at the end of December and low costs are anticipated for the future.

The principal other work undertaken has been the improving of the mills in existence, as follows:—

At *Coolgardie* a new Gates rock breaker, Robins conveyor, ore bins and self feeders have been installed, and a start has been made with the new cyanide plant with bottom discharge doors, etc., and when completed this plant should show some very low costs.

Menzies and *Meekatharra* have each been supplied with new and improved cyanide plants.

At *Pig Well* a new Thompson's surface condenser has been installed, and the engine and boiler have been housed.

At *Norseman* a Thompson's surface condenser has been installed, and the plant thoroughly overhauled.

At *Darlot* a new power-driven deep well pump has been installed, and a boiler built in.

Mulline has been supplied with a new deep well pump and new pump for filling filter press.

At *Wiluna* a new Frenier pump has been installed, and manager's residence built.

Niagara has been supplied with a new Frenier pump.

Yerilla.—Condenser plant and portable boiler and engine from Yundamindera installed.

At *Linden* a new two-head mill complete has been installed.

At *Siberia* the water shaft has been deepened and the supply improved.

Greenbushes Tin Plant.—Huntingdon mill removed from Yundamindera and erected at Bunbury End.

Other important improvements will be recommended during next year, as to crush the stone cheaply automatic feeders, ore bins, and stone breakers must be added to those plants that promised fair supplies of stone. That the State mills can crush cheaply when supplied with sufficient stone has been demonstrated during the past year at Menzies, where, without automatic gear, the average cost of crushing was only 6s. 7.19d. per ton, although there were no less than 258 separate parcels, each, of course, necessitating a stoppage for cleaning up. On the other hand, we have to keep mills open where there is comparatively little stone to crush, and to raise steam in boilers that have been unused for weeks; in many places a second steam plant to pump water from a distant well has to be set in motion, and only a few shifts run. In these places it is impossible to get low costs, and unfortunately in most of them the plants are the worst in use by the Department and the small tonnage will not justify any further outlay to improve them. At the same time they are situated in districts with some promise, and should they become producers of sufficient stone to keep the plant busy, no doubt the Department will put them in better order. In the meantime, if they are kept open a loss must ensue, and even if closed the cost of a caretaker and other small charges amounts to a heavy item, with no revenue from it.

The extension of the battery system to its present important status has brought with it responsibilities much beyond the intentions of the Department when the scheme was first inaugurated. The few mills originally erected were designed to meet the requirements of new districts in which private enterprise did not readily provide the necessary machinery for dealing with prospectors' small supplies of stone. It was, however, not anticipated that these plants should become the recognised and permanent treatment plants for all time, the hope being that when a district had sufficiently developed to supply large quantities either the mines that developed under the assistance of these Government mills would equip their properties with treatment plants, and even if not raising sufficient ore to keep them going full time, they would offer good enough terms to crush for other small holdings, and relieve the Department of the responsibility in that particular district, allowing its efforts to pass on to some other promising but undeveloped locality; but the State battery charges were so low, and the satisfaction given to prospectors so general, that the anticipated privately owned mills did not eventuate, and the Department was then forced to continue to carry on their plants for the treatment of all stone, raised by the energetic prospectors. Many districts owe prosperity, and, in some cases, their existence, to these mills.

Meekatharra, Black Range, and Wiluna, may be mentioned as three thriving places built up almost solely by, and still relying on, the State battery system for crushing facilities. Many other districts are kept alive and several of them, although not at present flourishing, have very promising futures. In such districts as are only prospective the plants are run at a loss, as the Hon. the Minister for Mines has decided that the same crushing charges only shall be charged at these mills as at the more fortunate and prosperous ones, and it is impossible to crush profitably at the rates charged unless sufficient tonnage is supplied to keep the plants going approximately full time.

Up to the present every effort has been made to make the system self supporting by making such charges as will on an average cover working expenses, but the ever varying supplies in different districts make it difficult to fix such a uniform rate as will prove satisfactory, for when one district for a year or so becomes busy and enables low costs to be shown, the prospectors immediately agitate for a reduction of charges to the actual cost at that particular mill, which if granted, would have the effect of bringing the revenue down to a minimum.

Another important change which has taken place since the introduction of these Government mills is the great advances made in methods of gold extraction. The early batteries were erected without cyanide plants, and as valuable tailings accumulated arrangements were made by the Department for the treatment

of the sands by cyaniding, for which purpose small vats for leaching were added to several of the mills, the prospectors being paid on the actual extraction obtained, less cost of treatment. Then the outright purchase of the sands by the Department was offered and left optional with the prospectors, some electing to sell, others deciding to await treatment and receive actual extraction. This led to a considerable amount of difficulty, as the sands of different owners would be under treatment in the same vats, and at times a portion of the vat contents would be that purchased outright by the Department. During this period the slimes were allowed to run to waste and for some time were considered of no value, but the introduction of the filter-press for the treatment of slimes made them a valuable asset, and they now have to be taken into account and dealt with, so that the whole of the treatment of tailings has become of equally as much importance as crushing the stone. For this reason the whole of the cyanide plants require remodelling, and where sufficient slimes have accumulated some method of treating these must be adopted.

During the past year some of the cyanide plants have been improved and brought up to date, whilst others have been marked for better plants as the old vats become worn out.

It will be seen that the Department is now called upon not only to fulfil the original purpose of opening up new fields, but also providing cheap and efficient treatment plants in established districts.

I have, etc.,

(Sgd.) J. DUNSTAN,
Superintendent of State Batteries.

31st March, 1909.

YEARLY OUTPUT.

Milling.

	Tons.	Ozs.
Up to 1901 (3 years) ..	68,791	77,533
Year 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
	600,910	645,753

Cyaniding.

	Tons.
Up to 1902	29,255
Year 1903	32,369
„ 1904	42,559
„ 1905	54,420
„ 1906	60,422
„ 1907	63,778
„ 1908	62,081
	344,884

Slimes.

	Tons.
Up to 1904	691
Year 1905	7,028
„ 1906	4,737
„ 1907	8,220
„ 1908	5,818
	26,494

FORM 1.—*Expenditure from "Consolidated Revenue Vote," and "Loan Funds" on Erection of State Batteries for Year ending* 31st *December,* 1908, *and Totals since Inception.*

Batteries, etc.	From Revenue. £ s. d.	From Loan. £ s. d.	Total. £ s. d.
Pig Well Condenser and Engine House		139 2 2	139 2 2
Mount Margaret Battery, Erection		356 0 11	356 0 11
Linden Battery, Erection		1,444 14 8	1,444 14 8
Meekatharra Cyanide Plant No. 2		1,491 4 3	1,491 4 3
Black Range—Dismantling, Removing, and Re-erecting, Duketon		5,092 14 7	5,092 14 7
Norseman Condenser		155 1 0	155 1 0
Wiluna—Manager's Quarters		238 9 2	238 9 2
Greenbushes, Bunbury End—Dismantling and Removing, Yundamindera		192 9 0	192 9 0
Coolgardie—Remodelling Battery		1,009 4 2	1,009 4 2
Leonora—Dismantling, Kalpini		70 1 10	70 1 10
Desdemona Battery, Erection		687 14 0	687 14 0
Yerilla Condenser		247 11 5	247 11 5
Mount Ida Water Supply, Boring		218 9 6	218 9 6
Wiluna Cyanide Plant		326 18 2	326 18 2
Pig Well Condenser and Engine House		42 1 4	42 1 4
Menzies Cyanide Plant		1,183 12 10	1,183 12 10
Callion Water Supply		201 3 3	201 3 3
Widgiemooltha Water Supply		331 13 8	331 13 8
Youanme Battery, Erection		115 6 10	115 6 10
Boogardie Cyanide Plant		325 12 3	325 12 3
Coolgardie Cyanide Plant		211 13 9	211 13 9
		£14,080 18 9	£14,080 18 9
By Cr. Wiluna Condenser		25 13 3	25 13 3
Erection of State Batteries.		14,055 5 6	14,055 5 6
Expenditure to 31st December, 1907	90,231 7 2		
Loan Expenditure to 31st December, 1907		146,797 17 9	237,029 4 11
Gross Totals	£90,231 7 2	£160,853 3 3	£251,084 10 5

FORM 2.—*Return showing the Number of Tons crushed, Gold Yield, Average Value per ton, and Total Value for Year ending 31st December,* 1908.

Battery.	Tons Crushed.	Gold Yield.	Average per ton in shillings.	Total Value.
		ozs.		£
Black Range	6,827.50	7,574.22	79.87	27,267.19
Boogardie ..	6,893.00	3,126.87	32.66	11,256.73
Burtville ..	3,425.50	6,820.63	143.36	24,554.26
Coolgardie ..	4,973.00	2,947.82	42.67	10,612.15
Darlot ..	3,147.00	1,879.87	43.00	6,767.53
Devon (Leased)	480.50	533.58	79.95	1,920.88
Kalpini ..	1,618.00	622.77	27.71	2,241.97
Laverton ..	356.00	416.48	84.23	1,499.32
Lennonville ..	1,591.00	870.70	39.40	3,134.50
Leonora ..	3,894.50	2,380.83	44.01	8,570.98
Linden ..	1,296.50	1,667.05	92.58	6,001.38
Meekatharra	7,923.90	11,018.15	100.11	39,665.34
Menzies ..	10,431.00	8,258.13	57.00	29,729.26
Mount Ida ..	2,683.00	5,055.15	135.65	18,198.54
Mulline ..	3,546.00	4,467.15	90.70	16,081.74
Mulwarrie ..	2,924.50	1,991.45	49.02	7,169.22
Nannine ..	3,025.00	1,792.07	42.65	6.451.44
Niagara ..	3,798.00	2,506.22	47.51	9,022.39
Norseman ..	5,755.50	6,932.00	86.71	24,955.17
Pig Well ..	3,309.00	2,831.37	61.60	10,192.93
Pinjin ..	2,740.50	2,234.58	58.70	8,044.48
Sandy Creek	800.25	2,031.47	182.77	7,313.28
Siberia ..	1,459.00	2,003.40	98.86	7,212.24
Wiluna ..	4,436.50	3,115.50	50.56	11,215.80
Yarri ..	3,911.00	2,595.79	47.78	9,344.84
Yerilla ..	984.00	588.10	43.03	2,117.16
Ravelstone ..	600.00	483.73	58.04	1,741.41
Tuckanarra ..	1,862.00	2,737.55	105.85	9,855.18
Widgemooltha	932.00	392.45	30.31	1,412.82
Totals	95,623.65	89,875.08	67.67	323,550.13

Tin Plants.	Black Tin. Tons.	Yield tons.
Greenbushes North End ..	1,210	15.54
Greenbushes Bunbury End ..	4,303	51.99
Total	5,513	67.53

FORM 2A.—*Return showing Number of Tons of Sands and Slimes treated, Yield therefrom, and Value for Year ending 31st December,* 1908.

Plant.	Tons treated.	Yield. Fine ozs.	Value. £
Black Range	4,182	873.95	3,712.33
Boogardie	5,974	1,267.29	5,383.89
Burtville	2,807.25	899.65	3,821.43
Coolgardie	3,533	374.42	1,590.55
Darlot	4,060	310.63	1,319.74
Devon	261.5	120.44	511.64
Duketon	142.5	10.16	43.14
Laverton	131	13.26	56.34
Lennonville	2,420	277.25	1,177.87
Leonora	2,715	515.33	2,189.16
Meekatharra	7,560	1,554.22	6,602.26
Menzies	5,428	1,670.85	7,098.02
Mulline	2,161	573.61	2,436.76
Mulwarrie	2,508	329.28	1,398.83
Nannine	1,616	157.83	670.58
Niagara	2,715	526.37	2,236.20
Norseman	5,117.5	1,074.56	4,563.60
Pig Well	2,012	414.09	1,759.50
Pinjin	1,745	183.85	780.96
Sandy Creek	736.25	295.50	1,255.18
Siberia	971.5	187.22	795.51
Wiluna	75	12.76	54.20
Yarri	3,209	309.87	1,316.51
Yerilla	..	..	..
	62,080.50	11,952.39	50,774.20
Mulline Slimes ..	3,563.75	761.67	3,236.01
Niagara Slimes ..	2,254	474.03	2,013.79
	67,898.25	13,188.09	56,024.00
Sands under treatment end December, 1908	560		
	68,458.25	13,188.09	56,024.00

FORM 3.—*Return showing the Number of Tons crushed, Gold Yield, Average per ton, and Value since Inception, to 31st December, 1908.*

Battery.	Tons crushed.	Gold Yield.	Average gold per ton.	Value £
		ozs.	ozs.	
Black Range	31,778.65	37,255.43	1.17	134,315.43
Boogardie	31,612.75	15,047.39	.47	55,564.81
Burtville	19,515.50	47,593.37	2.43	172,641.95
Coolgardie	29,912.50	27,950.18	.93	100,677.87
Darlot	23,529.25	31,602.74	1.34	117,198.65
Devon (Leased)	480.50	533.58	1.11	1,920.88
Kalpini	3,463.50	1,950.35	.56	7,021.27
Laverton	9,052.75	8,830.88	.97	32,962.91
Lennonville	28,249.34	32,952.75	1.16	123,686.65
Leonora	35,626.00	28,473.45	.79	106,084.75
Linden	1,296.50	1,667.05	1.28	6,001.38
Meekatharra	41,602.50	59,533.77	1.43	217,001.53
Menzies	28,709.25	27,756.83	.96	99,771.99
Mt. Ida	24,680.40	35,178.81	1.42	129,945.91
Mulline	58,629.20	74,478.50	1.27	267,302.74
Mulwarrie	22,702.90	24,351.66	1.07	90,922.67
Nannine	4,933.85	2,752.82	.55	9,910.14
Niagara	39,579.50	35,489.32	.89	129,949.33
Norseman	34,969.70	38,722.44	1.17	142,583.24
Pig Well	11,171.50	9,902.93	.88	35,650.53
Pinjin	9,705.15	8,512.47	.87	30,644.47
Sandy Creek	4,660.40	10,273.33	2.20	37,083.96
Siberia	5,580.50	4,047.28	.72	14,495.58
Wiluna	20,647.75	15,916.75	.77	57,445.48
Yarri	21,363.00	13,035.61	.61	46,928.03
Yerilla	5,458.00	4,829.70	.88	17,384.85
Ravelstone	9,309.55	8,538.50	.91	31,909.84
Tuckanarra	13,002.35	17,720.24	1.36	65,416.59
Widgemooltha	5,092.00	2,183.60	.42	8,122.01
Randall's	3,133.20	1,279.29	.40	4,578.99
Batteries closed	21,462.10	17,392.09	.81	64,582.42
	600,910.04	645,753.11	1.07	£2,359,706.85

Tin Plants.	Black Tin. Tons.	Yield tons.
Greenbushes—		
Bunbury End ..	23,370.50	431.963
North End ..	13,309.00	142.487
Total ..	36,679.50	574.450

FORM 3A.—*Return showing the Number of Tons of Sands and Slimes treated, Yield and Value since Inception, to 31st December,* 1908.

Plant.	Tons treated.	Yield, ozs.	Value. £
Black Range	17,540	5,751.52	24,144.59
Boogardie	23,050	6,154.27	25,610.25
Burtville	10,661.75	4,010.12	16,616.78
Coolgardie	15,569	2,918.53	12,110.65
Darlot	21,104	2,502.18	10,206.36
Duketon	2,083.50	250.51	1,025.77
Devon	261.50	120.44	511.64
Laverton	7,772	828.86	3,324.98
Lennonville	24,309	6,592.43	26,653.23
Leonora	22,242	5,051.95	20,687.80
Meekatharra	21,960	4,541.15	18,672.51
Menzies	18,916.50	5,015.35	20,858.21
Mt. Ida	3,570	357.97	1,423.64
Mulline	34,231	9,545.44	38,325.90
Mulwarrie	18,989	3,496.35	14,211.59
Nannine	2,624	288.76	1,226.84
Niagara	22,639	4,017.40	16,485.03
Norseman	25,978.50	5,282.28	21,679.56
Pig Well	7,819	1,634.45	6,823.87
Pinjin	6,901	757.41	3,192.70
Randall's	791	56.05	224.80
Sandy Creek	3,467.75	1,349.76	5,600.12
Siberia	2,518.50	402.49	1,710.72
Wiluna	75	12.76	54.20
Yarri	18,340	1,473.49	5,995.43
Yerilla	3,023	409.21	1,737.98
Plants dismantled	8,448	1,373.08	5,724.43
	344,884	74,194.21	304,839.58
Mulline Slimes	16,019.75	5,454.63	18,701.48
Niagara Slimes	3,375	639.46	2,716.89
Norseman Slimes	7,099	1,632.15	6,932.46
	371,377.75	81,920.45	333,190.41

FORM 4.—*State Batteries, Tin, Cyanide, and Slimes Plants. Costs per ton for Year ending 31st December, 1908.*

Plant.	Tons Crushed.	Milling and Tin. Wages.	Repairs and Maintenance.	Total.
		s. d.	s. d.	s. d.
Black Range	6,827·5	5 11·62	4 5·35	10 4·97
Boogardie	6,893	4 2·52	7 9·43	11 11·95
Burtville	3,425·5	5 4·73	6 3·53	11 8·26
Coolgardie	4,973	4 9·62	6 2·38	11 0·00
Darlot	3,147	4 9·15	6 7·37	11 4·52
Devon	480·5	13 9·09	10 5·18	24 2·27
Kalpini	1,618	1 7·13	3 8·16	5 3·29
Laverton	356	22 3·60	8 8·99	31 0·59
Lennonville	1,591	7 1·14	11 0·42	18 1·56
Leonora	3,894·5	4 5·63	3 7·33	8 0·96
Linden	1,296·5	15 5·29	18 0·47	33 5·76
Meekatharra	7,923·9	4 0·84	6 2·49	10 3·33
Menzies	10,431	3 6·51	3 0·68	6 7·19
Mount Ida	2,683	8 1·96	6 1·59	14 3·55
Mulline	3,546	5 9·92	7 3·58	13 1·50
Mulwarrie	2,924·5	5 3·94	3 9·28	9 1·22
Nannine	3,025	7 8·09	5 3·43	12 11·52
Niagara	3,798	5 3·82	6 3·06	11 6·88
Norseman	5,755	5 10·74	6 9·51	12 8·25
Pig Well	3,309	5 6·71	4 7·16	10 1·87
Pinjin	2,740·5	7 7·68	6 6·98	14 2·66
Sandy Creek	800·25	16 9·97	20 5·94	37 3·91
Siberia	1,459	9 4·40	6 6·14	15 10·54
Wiluna	4,436·5	6 8·75	6 7·90	13 4·65
Yarri	3,911	4 8·34	4 6·38	9 2·72
Yerilla	984	15 8·79	9 10·70	25 7·49
Tin Plants.				
Greenbushes (Bunbury end)	4,303	2 0·62	1 6·21	3 6·83
Greenbushes (North end)	1,210	5 3·95	2 2·18	7 6·13

Plant.	Tons Treated.	Cyaniding and Slimes. Wages.	Repairs and Maintenance.	Total.
		s. d.	s. d.	s. d.
Black Range	4,062	3 8·74	2 2·34	5 11·08
Boogardie	5,832	2 9·91	1 10·42	4 8·33
Burtville	2,837·25	2 11·18	2 0·68	4 11·86
Coolgardie	3,387	3 3·30	1 11·23	5 2·53
Darlot	4,060	4 0·04	1 10·46	5 10 50
Devon	261·5	5 7·07	5 10·46	11 5·53
Laverton	131	5 0·46	2 0·31	7 0·77
Lennonville	2,420	3 5·75	1 11·18	5 4·93
Leonora	2,715	4 8·00	2 3·72	6 11·72
Meekatharra	7,680	3 6·06	2 3·04	5 9·10
Menzies	5,442	2 2·37	2 11·17	5 1·54
Mulline	2,161	3 10·31	4 5·00	8 3·31
Mulwarrie	2,475	4 2·49	2 9·20	6 11·69
Nannine	1,616	3 3·65	1 11·60	5 3·25
Niagara	2,715	3 4·06	1 10·86	5 2·92
Norseman	5,165·5	3 1·88	3 0·32	6 2·20
Pig Well	2,012	3 6·33	1 11·43	5 5·76
Pinjin	2,032	3 2·19	1 10·79	5 0·98
Sandy Creek	758·5	11 4·63	9 11·25	21 3·88
Siberia	696·5	5 0·52	4 7·77	9 8·29
Wiluna	604	5 3·06	2 11·58	8 2·64
Yarri	3,209	2 5·12	1 5·85	3 10·97
Slimes Plants.				
Mulline	3,563·75	5 4·45	8 0·72	13 5·17
Niagara	2,254	6 5·46	3 5·78	9 11·24

State Batteries—Working Account for Year ending 31st December, 1908.

Goldfield.	Milling. Plant.	Tonnage.	Expenditure. £ s. d.	Revenue. £ s. d.	Profit. £ s. d.	Loss. £ s. d.	Cyaniding. Plant.	Tonnage.	Expenditure. £ s. d.	Revenue. £ s. d.	Profit. £ s. d.	Loss. £ s. d.
East Murchison	Black Range	6,827·5	3,555 2 4	3,339 19 9	...	215 2 7	Black Range ...	4,062·0	1,203 3 6	1,972 12 7	769 9 1	
Murchison ...	Boogardie	6,893·00	4,134 10 6	3,249 3 6	...	885 7 0	Boogardie	5,832·0	1,368 17 5	2,468 7 10	1,099 10 5	
Mt. Margaret	Burtville	3,425·5	2,001 19 11	1,678 3 6	...	323 16 5	Burtville	2,837·25	707 14 0	1,426 8 5	718 14 5	
Coolgardie ...	Coolgardie	4,973·00	2,735 4 11	2,209 16 5	...	525 8 6	Coolgardie	3,387·0	882 10 0	1,334 2 7	451 12 7	
East Murchison	Darlot	3,147·00	1,790 3 0	1,490 12 1	...	299 10 11	Darlot	4,060·0	1,192 14 8	1,303 10 8	110 16 0	
Mt. Margaret	Devon	480·5	581 3 2	244 0 0	...	337 3 2	Devon	261·5	149 17 3	128 10 3	...	21 7 0
	Duketon	...	13 8 5	...	...	13 8 5	Duketon	...	...	54 11 9	54 11 9	
N.E. Coolgardie	Kalpini	1,618·00	426 14 5	396 14 3	...	30 0 2						
Mt. Margaret ...	Laverton	356·00	552 13 8	184 5 0	...	368 8 8	Laverton	131·0	46 5 5	42 15 0	...	3 10 5
Murchison ...	Lennonville	1,591·00	1,442 5 5	693 7 0	...	748 18 5	Lennonville ...	2,420·0	654 14 9	868 12 11	213 18 2	
Mt. Margaret	Leonora	3,894·5	1,573 9 9	1,483 2 5	...	90 7 4	Leonora	2,715·0	947 7 8	1,384 10 4	437 2 8	
	Linden	1,296·5	2,170 7 1	641 10 6	...	1,528 16 7						
Murchison ...	Meekatharra	7,923·9	4,072 1 6	3,659 13 3	...	412 8 3	Meekatharra ...	7,680·0	2,211 12 3	3,671 1 11	1,459 9 8	
N. Coolgardie ...	Menzies	10,431·00	3,442 0 5	4,758 15 2	1,316 14 9	...	Menzies	5,442·0	1,395 9 11	2,456 2 10	1,060 12 11	
Do. ...	Mount Ida	2,683·00	1,917 17 9	1,346 0 11	...	571 16 10						
Do. ...	Mulline	3,546·00	2,327 1 10	1,757 12 0	...	569 9 10	Mulline	2,161·0	894 5 1	1,409 0 11	514 15 10	
Do. ...	Mulwarrie	2,924·5	1,330 19 8	1,327 1 4	...	3 18 4	Mulwarrie	2,475·0	863 1 3	1,199 15 1	336 13 10	
Murchison ...	Nannine	3,025·00	1,960 4 4	1,482 1 9	...	478 2 7	Nannine	1,616·0	425 18 4	570 19 6	145 1 2	
N. Coolgardie ...	Niagara	3,798·00	2,197 16 9	1,858 3 11	...	339 12 10	Niagara	2,715·0	711 17 6	1,366 17 8	655 0 2	
Dundas ...	Norseman	5,755·5	3,651 5 4	2,866 13 3	...	784 12 1	Norseman	5,165·5	1,597 0 6	2,310 6 5	713 5 11	
Mt. Margaret ...	Pig Well	3,309·00	1,680 8 0	1,654 0 0	...	26 8 0	Pig Well	2,012·0	551 6 1	949 10 7	398 4 6	
N. Coolgardie ...	Pinjin	2,740·5	1,948 15 9	1,318 11 6	...	630 4 3	Pinjin	2,032·0	516 10 0	693 1 10	176 11 10	
Coolgardie ...	Randall's	...	29 8 3	...	...	29 8 3						
Pilbara ...	Sandy Creek	800·25	1,493 10 11	712 9 6	...	781 1 5	Sandy Creek ...	758·5	808 14 2	348 7 1	...	460 7 1
Coolgardie ...	Siberia	1,459·00	1,158 6 5	680 6 0	...	478 0 5	Siberia	696·5	337 10 3	455 0 3	117 10 0	
East Murchison	Wiluna	4,436·5	2,969 15 3	2,157 1 1	...	812 14 2	Wiluna	604·0	248 4 11	302 0 0	53 15 1	
N. Coolgardie ...	Yarri	3,911·00	1,804 5 6	2,126 18 8	322 13 2	...	Yarri	3,209·0	628 0 9	1,024 9 4	396 8 7	
Do. ...	Yerilla	984·00	1,260 14 6	457 19 9	...	802 14 9						
Do. ...	Yundamindera	...	36 16 6	11 16 6	...	25 0 0	Yundamindera ...	...	...	39 13 3	39 13 3	
Murchison ...	Tuckanarra	1,862·00	...	105 7 1	105 7 1	...						
Peak Hill ...	Ravelstone	600·00	618 16 11	333 6 8	...	285 10 3						
Yilgarn ...	Southern Cross	...	...	19 15 0	19 15 0	...						
Coolgardie ...	Widgiemooltha	932·00	464 13 4	225 16 9	...	238 16 7						
	Greenbushes, Bunbury End	4,303·00	767 19 4	689 14 9	...	78 4 7	Mulline Slimes ...	3,563·75	2,393 5 9	2,423 13 8	30 7 11	
	Greenbushes, North End	1,210·00	454 8 7	279 3 0	...	175 5 7	Niagara do. ...	2,254·0	1,119 17 3	1,122 4 6	2 7 3	
	Head Office	...	2,286 7 11	...	...	2,286 7 11	Head Office ...	...	1,321 14 6	...	...	1,321 14 6
	Inspection	...	511 2 7	...	...	511 2 7	Inspection	...	251 11 1	...	...	251 11 1
		101,136·65	59,361 19 11	45,439 2 3	1,764 10 0	15,687 7 8		68,090·0	23,429 4 3	31,326 7 2	9,955 13 0	2,058 10 1

State Batteries and Tin Plants—Statement of Receipts and Expenditure for Year 1908.

Locality of Plant.	MILLING.													
	No. of Stamps.	Tonnage.	Management.	Wages.	Stores.	Total Working Expenditure.	Per Ton.	Repairs and Renewals.	Sundries.	Gross Expenditure.	Per ton.	Revenue.	Per Ton.
			£ s. d.	£ s. d.	£ s. d.	£ s. d.	s. d.	£ s. d.	£ s. d.	£ s. d.	s. d.	£ s. d.	s. d.
Black Range	11	6,827·5	279 6 9	1,758 2 1	1,192 9 6	3,229 18 4	9 5·53	299 2 4	26 1 8	3,555 2 4	10 4·97	3,339 19 9	9 9·40
Boogardie	10	6,893	90 0 0	1,361 2 4	2,005 9 2	3,456 11 6	10 0·35	652 11 3	25 7 9	4,134 10 6	11 11·95	3,249 3 6	9 5·13
Burtville	10	3,425·5	135 0 0	788 19 6	670 6 1	1,594 5 7	9 3·70	369 15 6	37 18 10	2,001 19 11	11 8·26	1,678 3 6	9 9·57
Coolgardie	10	4,973	296 3 1	897 16 5	1,213 5 9	2,407 5 3	9 8·17	306 9 10	21 9 10	2,735 4 11	11 0·00	2,209 16 5	8 10·64
Darlot	10	3,147	143 19 0	605 8 9	705 0 2	1,454 7 11	9 2·91	306 1 11	29 13 2	1,790 3 0	11 4·52	1,490 12 1	9 5·67
Duketon	...	...	...	...	12 3 5	12 3 5	...	...	1 5 0	13 8 5	...	...	...
Devon	5	480·5	28 0 8	302 10 0	179 6 5	509 17 1	21 2·66	48 19 8	22 6 5	581 3 2	24 2·27	244 0 0	10 1·87
Kalpini	10	1,618	...	129 0 0	285 11 4	414 11 4	5 1·49	8 9 10	3 13 3	426 14 5	5 3·29	396 14 3	4 10·84
Laverton	10	356	84 0 0	312 19 0	82 17 11	479 16 11	26 11·49	14 12 8	58 4 1	552 13 8	31 0·59	184 5 0	10 4·21
Lennonville	10	1,591	199 14 4	364 13 8	547 1 11	1,111 9 11	13 11·66	305 14 6	25 1 0	1,442 5 5	18 1·56	693 7 0	8 8·59
Leonora	10	3,894·5	181 10 0	688 16 3	582 11 2	1,452 17 5	7 5·55	86 18 8	33 13 8	1,573 9 9	8 0·96	1,483 2 5	7 7·39
Linden	2	1,296·5	156 3 7	844 14 9	750 5 0	1,751 3 4	27 0·16	331 5 0	87 18 9	2,170 7 1	33 5·76	641 10 6	9 10·75
Meekatharra	10	7,923·9	262 7 0	1,350 5 9	2,054 15 2	3,667 7 11	9 3·07	379 15 2	24 18 5	4,072 1 6	10 3·33	3,659 13 3	9 2·84
Menzies	10	10,431	235 6 4	1,612 10 5	1,412 14 3	3,260 11 0	6 3·02	164 3 6	17 5 11	3,442 0 5	6 7·19	4,758 15 2	9 1·49
Mount Ida	10	2,683	312 0 0	783 2 1	511 0 8	1,606 2 9	11 11·67	274 8 3	37 6 9	1,917 17 9	14 3·55	1,346 0 11	10 0·40
Mulline	20	3,546	136 5 0	896 16 7	769 6 9	1,802 8 4	10 1·99	498 4 4	26 9 2	2,327 1 10	13 1·50	1,757 12 0	9 10·95
Mulwarrie	10	2,924·5	126 7 2	652 18 2	378 10 4	1,157 15 8	7 11·01	127 16 2	45 7 10	1,330 19 8	9 1·22	1,327 1 4	9 0·90
Nannine	5	3,025	228 6 5	932 14 9	522 4 2	1,683 5 4	11 1·54	255 18 6	21 0 6	1,960 4 4	12 11·52	1,482 1 9	9 9·58
Niagara	10	3,798	235 13 4	774 7 1	690 2 6	1,700 2 11	8 11·43	425 15 9	71 18 1	2,197 16 9	11 6·88	1,858 3 11	9 9·42
Norseman	10	5,755·5	250 0 0	1,446 9 8	1,629 7 2	3,325 16 10	11 6·68	269 6 6	56 2 0	3,651 5 4	12 8·25	2,866 13 3	9 11·53
Pig Well	10	3,309	263 8 7	656 7 2	435 13 11	1,355 9 8	8 2·31	289 5 3	35 13 1	1,680 8 0	10 1·87	1,654 0 0	10 0·00
Pinjin	5	2,740·5	217 17 1	829 1 3	685 14 1	1,732 12 5	12 7·73	190 6 4	25 17 0	1,948 15 9	14 2·66	1,318 11 6	9 7·47
Randall's	10	...	...	12 10 0	...	12 10 0	...	11 2 4	5 15 11	29 8 3	...	...	...
Sandy Creek	10	800·25	250 6 0	423 3 9	440 8 11	1,113 18 8	27 10·06	305 6 6	74 5 9	1,493 10 11	37 3·91	712 9 6	17 9·66
Siberia	5	1,459	208 11 10	474 14 5	331 16 8	1,015 2 11	13 10·98	136 11 2	6 12 4	1,158 6 5	15 10·54	680 6 0	9 3·90
Wiluna	10	4,436·5	330 17 5	1,161 16 9	1,056 14 10	2,549 9 0	11 5·91	327 8 11	92 17 4	2,969 15 3	13 4·65	2,157 1 1	9 8·69
Yarri	10	3,911	235 17 6	682 3 8	585 6 6	1,503 7 8	7 8·25	264 5 8	36 12 2	1,804 5 6	9 2·72	2,126 18 8	10 10·52
Yerilla	5	984	275 13 4	498 7 4	300 2 3	1,074 2 11	21 9·98	174 1 5	12 10 2	1,260 14 6	25 7·49	457 19 9	9 3·70
Yundamindera ...	...	...	...	26 0 0	...	26 0 0	...	...	10 16 6	36 16 6	...	11 16 6	...
Totals	...	92,229·65	5,162 14 5	21,267 11 7	20,030 6 0	46,460 12 0	10 0·92	6,823 16 11	974 2 4	54,258 11 3	11 9·19	43,785 19 0	9 5·92
Tuckanarra	10	1,862	...	...	...	...	...	...	...	...	...	105 7 1	...
Ravelstone	10	600	...	...	...	...	...	...	...	618 16 11	...	333 6 8	...
Widgiemooltha ...	10	932	...	...	...	...	...	...	...	464 13 4	...	225 16 9	...
Southern Cross ...	...	...	...	...	...	...	...	...	...	...	...	19 15 0	...
Head Office	...	...	...	...	...	...	...	...	...	2,286 7 11	...	...	...
Inspection	...	...	...	...	...	...	...	...	...	511 2 7	...	...	...
Totals	...	95,623·65	...	...	...	...	...	...	...	58,139 12 0	...	44,470 4 6	...
TIN PLANTS.													
Greenbushes, B. End	...	4,303	180 0 0	261 7 3	204 1 5	645 8 8	2 11·99	91 11 9	30 18 11	767 19 4	3 6·83	689 14 9	3 2·47
Do. N. End	...	1,210	246 6 0	76 2 0	80 2 11	402 10 11	6 7·84	42 14 9	9 2 11	454 8 7	7 6·13	279 3 0	4 7·36
Gross Totals ...	...	101,136·65	...	...	...	...	...	...	...	59,361 19 11	...	45,439 2 3	...

Cyanide and Slimes Plants.—Statement of Receipts and Expenditure for Year 1908.

Locality of Plant.	CYANIDE AND SLIMES.												
	Tonnage.	Management.	Wages.	Assays.	Stores.	Total Working Expenditure.	Per Ton.	Repairs.	Sundries.	Gross Expenditure.	Per Ton.	Receipts.	Per Ton.
		£ 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 ...	4,062	172 18 4	424 15 0	220 18 2	293 14 1	1,112 5 7	5 5·71	25 10 2	65 7 9	1,203 3 6	5 11·08	1,972 12 7	9 8·55
Boogardie ...	5,832	90 0 0	633 10 3	185 0 0	388 10 3	1,297 0 6	4 5·37	17 6 11	54 10 0	1,368 17 5	4 8·33	2,468 7 10	8 5·58
Burtville	2,837·25	110 0 0	305 16 8	51 2 4	150 6 5	617 5 5	4 4·21	24 7 3	66 1 4	707 14 0	4 11·86	1,426 8 5	10 0·65
Coolgardie ...	3,387	176 0 3	378 14 0	58 9 10	226 4 1	839 8 2	4 11·48	14 15 8	28 6 2	882 10 0	5 2·53	1,334 2 7	7 10·53
Darlot	4,060	204 1 0	603 6 3	91 17 2	231 11 1	1,130 15 6	5 6·84	21 15 3	40 3 11	1,192 14 8	5 10·50	1,303 10 8	6 5·05
Devon	261·5	29 0 0	42 15 0	24 14 9	20 7 3	116 17 0	8 11·24	9 14 10	23 5 5	149 17 3	11 5·53	128 10 3	9 9·93
Duketon	...	...	...	...	...	...	...	...	...	...	...	54 11 9	...
Laverton	131	7 0 0	15 3 4	10 16 8	6 18 6	39 18 6	6 1·14	...	6 6 11	46 5 5	7 0·77	42 15 0	6 6·32
Lennonville ...	2,420	67 4 6	274 9 4	128 13 8	151 14 8	622 2 2	5 1·69	11 2 4	21 10 3	654 14 9	5 4·93	868 12 11	7 2·13
Leonora	2,715	171 0 0	382 1 11	132 14 11	202 19 9	888 16 7	6 6·57	25 0 10	33 10 3	947 7 8	6 11·72	1,384 10 4	10 2·38
Meekatharra ...	7,680	210 19 4	1,135 0 4	65 17 10	643 14 7	2,055 12 1	5 4·23	60 11 8	95 8 6	2,211 12 3	5 9·10	3,671 1 11	9 6·72
Menzies	5,442	124 13 8	446 3 8	107 11 7	601 3 5	1,279 12 4	4 8·43	36 19 7	78 18 0	1,395 9 11	5 1·54	2,456 2 10	9 0·31
Mulline	2,161	75 10 0	249 19 7	216 15 9	286 13 10	828 19 2	7 8·06	10 6 2	54 19 9	894 5 1	8 3·31	1,409 0 11	13 0·49
Mulwarrie ...	2,475	110 10 10	405 3 4	84 9 2	208 15 2	808 18 6	6 6·39	14 7 6	39 15 3	863 1 3	6 11·69	1,199 15 1	9 8·34
Nannine	1,616	108 1 7	158 17 9	35 19 6	105 4 8	408 3 6	5 0·62	...	17 14 10	425 18 4	5 3·25	570 19 6	7 0·79
Niagara	2,715	175 5 0	182 7 3	125 4 10	146 14 8	629 11 9	4 7·65	40 11 2	41 14 7	711 17 6	5 2·92	1,366 17 8	10 0·82
Norseman	5,165·5	212 16 8	482 7 7	278 7 3	488 7 3	1,461 18 9	5 7·92	34 1 0	101 0 9	1,597 0 6	6 2·20	2,310 6 5	8 11·34
Pig Well	2,012	117 7 3	230 9 8	27 9 1	126 2 3	501 8 3	4 11·81	22 15 10	27 2 0	551 6 1	5 5·76	949 10 7	9 5·26
Pinjin	2,032	135 18 11	187 10 2	30 12 11	125 6 9	479 8 9	4 8·62	20 7 6	16 13 9	516 10 0	5 0·98	693 1 10	6 9·86
Sandy Creek ...	758·5	152 4 0	237 15 6	102 9 6	103 4 3	595 13 3	15 8·47	146 5 1	66 15 10	808 14 2	21 3·88	348 7 1	9 2·22
Siberia	696·5	79 8 2	83 11 9	32 17 9	107 3 6	303 1 2	8 8·42	23 10 3	10 18 10	337 10 3	9 8·29	455 0 3	13 0·78
Wiluna	604	25 12 7	133 1 4	4 7 2	62 16 1	225 17 2	7 5·74	19 18 10	2 8 11	248 4 11	8 2·64	302 0 0	10 0·00
Yarri	3,209	90 10 0	255 5 0	91 6 9	130 9 4	567 11 1	3 6·44	18 4 4	42 5 4	628 0 9	3 10·97	1,024 9 4	6 4·61
Yundamindera ...	...	...	...	...	...	...	...	...	...	...	...	39 13 3	...
Cyanide Totals ...	62,272·25	2,646 2 1	7,248 4 8	2,107 16 7	4,808 1 10	16,810 5 2	5 4·78	597 12 2	934 18 4	18,342 15 8	5 10·69	27,780 9 0	8 11·06
Slimes Plants.													
Mulline	3,563·75	75 0 0	756 13 1	125 9 2	1,073 5 5	2,030 7 8	11 4·73	329 19 6	32 18 7	2,393 5 9	13 5·17	2,423 13 8	13 7·22
Niagara	2,254	149 5 0	517 2 5	88 5 10	318 9 1	1,073 2 4	9 6·26	31 12 6	15 2 5	1,119 17 3	9 11·24	1,122 4 6	9 11·49
Cyanide and Slimes Totals	68,090	2,870 7 1	8,522 0 2	2,321 11 7	6,199 16 4	19,913 15 2	5 10·19	959 4 2	982 19 4	21,855 18 8	6 5·03	31,326 7 2	9 2·42
Head Office ...	...	...	...	...	...	...	...	...	...	1,321 14 6	...	...	...
Inspection ...	...	...	...	...	..	...	...	...	...	251 11 1	...	...	...
GROSS TOTALS ...	68,090	...	...	...	...	...	...	...	...	23,429 4 3	...	31,326 7 2	...

WESTERN AUSTRALIA.

STATE BATTERIES, CYANIDE, SLIMES, AND TIN PLANTS.

Profit and Loss Account for Twelve Months ending 31st December, 1908.

	£ s. d.	£ s. d.		£ s. d.	£ s. d.
To Expenditure			By Revenue—		
As per attached Statement—			As per attached Statement—		
Batteries and Tin Plants..	59,361 19 11		Battery and Tin:		
Cyanide and Slimes Plants	23,429 4 3		Crushing charges ..	45,439 2 3	
		82,791 4 2	Cyaniding and Slimes charges	31,326 7 2	
					76,765 9 5
			By loss on Working Expenses, carried down		6,025 14 9
		£82,791 4 2			£82,791 4 2
To loss brought down from Working Expenses		6,025 14 9	By net loss on Year's Operations		7,278 1 2
To additions and equipment (paid from Revenue)		1,252 6 5			
		£7,278 1 2			£7,278 1 2

Return showing number of Parcels treated, tons crushed, etc., at State Batteries during 1908.

Name of Battery.	No. of Parcels.	Tons.	Yield by Amalgamation.	Gross Contents of tailings.	Total Contents.	Average per ton.	Value per ton at 80s. per oz.
			ozs. dwts. grs.	ozs. dwts. grs.	ozs. dwts. grs.	dwts. grs.	£ s. d.
Black Range	92	6,827½	7,574 4 8	1,637 4 6	9,211 8 14	27 2	5 8 4
Boogardie	101	6,893	3,126 17 9	2,190 3 13	5,317 0 22	15 22	3 3 8
Burtville	81	3,425½	6,820 12 18	1,224 5 4	8,044 17 22	46 23	9 7 10
Coolgardie	152	4,973	2,948 10 0	609 13 2	3,558 3 2	14 7	2 17 2
Darlot	31	3,147	1,879 17 12	300 17 1	2,180 14 13	13 20	2 15 4
Devon	14	480½	533 11 21	178 5 2	711 16 23	29 15	5 18 6
Laverton	16	356	416 9 18	58 6 23	474 16 17	26 17	5 6 10
Lennonville	57	1,591	870 14 0	238 13 10	1,109 7 10	13 23	2 14 10
Leonora	66	3,894½	2,380 16 8	1,067 1 9	3,447 17 17	17 17	3 10 10
Meekatharra	69	7,924	11,018 3 0	1,833 13 23	12,851 16 23	32 11	6 9 10
Menzies	258	10,431	8,258 3 0	3,915 6 4	12,173 9 4	23 9	4 13 6
Mulline	70	3,546	4,467 3 0	1,066 11 0	5,533 14 0	31 5	6 4 10
Mulwarrie	83	2,924½	1,991 9 0	505 6 6	2,496 15 6	17 2	3 8 4
Nannine	49	3,025	1,792 1 14	488 1 0	2,280 2 14	15 2	3 0 4
Niagara	108	3,798	2,506 4 12	780 13 17	3,286 18 5	17 7	3 9 2
Norseman	116	5,755½	6,932 0 0	2,409 3 12	9,341 3 12	32 11	6 9 10
Pigwell	53	3,309	2,831 7 12	795 15 22	3,627 3 10	21 22	4 7 8
Pinjin	32	2,740½	2,234 12 0	412 14 11	2,647 6 11	19 11	3 17 10
20 Mile Sandy	27	800½	2,031 9 11	433 6 6	2,464 15 17	60 2	12 0 4
Siberia	27	1,459	2,003 8 0	396 19 13	2,400 7 13	32 22	6 11 8
Wiluna	60	4,436½	3,115 10 0	1,288 0 13	4,403 10 13	19 20	3 19 4
Yarri	67	3,911	2,695 16 0	428 7 2	3,124 3 2	16 0	3 4 0
Yerilla	10	984	588 2 0	168 2 11	756 4 11	15 9	3 1 6
Kalpini	10	1,618	622 15 12	..	622 15 12	7 16	1 10 8
Linden	31	1,296½	1,667 1 0	..	1,667 1 0	25 17	5 2 10
Mt. Ida	41	2,683	5,055 3 0	..	5,055 3 0	37 17	7 10 10
Ravelstone	27	600	483 14 21	..	483 14 21	16 3	3 4 6
Tuckanarra	39	1,862	2,737 11 0	..	2,737 11 0	29 10	5 17 8
Widgiemooltha ..	30	932	392 9 0	..	392 9 0	8 10	1 13 8
	1,817	95,623¾	..	..	112,402 9 2	23 12	£4 14 0

DIVISION IV.

REPORT OF THE ENGINEER FOR MINES WATER SUPPLY.

To the Under Secretary for Mines.

Sir,—For the information of the Hon. the Minister for Mines I have the honour to submit my annual report for the year 1908.

The work, as in previous years, includes the surveys for, and construction of, reservoirs for conservation of water; boring for water and for minerals; sinking wells; improvements to soaks and lagoons; clearing tracks and roads; examination of Water Rights; maintenance of existing works and water stations; collection of revenue from sales of water; investigating and reporting on requests and petitions from public bodies relating to water supply, on or about the Mineral Belts of the State.

The attached statements show as briefly as possible the principal works done; but no impression is conveyed of the strain on officers to get works scattered over great areas carried out in a creditable manner and at a low cost.

Revenue for the year amounted to £14,074, and expenditure, upkeep, and maintenance, £13,499. This is the first year we have been able to make revenue cover upkeep. Considering the reductions made in charges for water, the number of stations free to the public but included in above upkeep, this item may be noted as very satisfactory.

Boring.—The summary of hand plant boring hereunder shows a greater number of holes, but a lesser aggregate depth than the previous year.

Bores numbered 165; total feet 9,692; average cost per foot, including the four Districts, 8s. 6d.

This cost, though higher than the previous year, is quite satisfactory; the increased average cost is accounted for by a larger proportion of boring in Pilbara at 12s. per foot—a fair cost for that district—as against 6s. 3d. per foot on Eastern Fields.

It should be noted that this Department is frequently called on to search for domestic or battery water in localities where private enterprise has failed to find supplies. A great deal of good work has been done in this direction. Batteries have followed after water was found, and townships have grown about the batteries. In some cases the "new find" proves a failure and the place is deserted; in other cases the "new find," with a Government bore close by, prospers, and as the place becomes an important centre the old bore is forgotten—either on account of the mines having found water or the Department having constructed larger water supply works.

This is but a poor attempt at pointing out the importance of boring in relation to the mining industry.

It must be understood that in cases where domestic water is required and no subterranean fresh water exists, conservation is resorted to—mentioned further on.

During the year two diamond drill "H" plants were borrowed from the Department by companies on the following conditions:—The Department found complete plant, men, and carbons. The borrower paid for carbons used and also all wages except the Foreman's.

The object of boring was to find gold-bearing lodes on certain mining leases. For particulars of boring see items 49, 50, 51, hereunder. Though the rock (diorite) in item 49 is intensely hard, and in parts jointy, no accident occurred.

Considering the high market value of carbons (£14 10s. to £17 per carat) and the intensely hard rock pierced, the cost per foot, £1 12s., is very satisfactory.

Items 50 and 51.—The rock was fair boring; the wear on carbons not so great as in 49, and the progress quicker—therefore the cost per foot worked out at 13s. 4d. and 9s. 4d. No. 2 plant (item 51) is still at work at Mt. Morgans.

Water Shafts and Bore Wells.—During the year 17 water shafts were sunk, aggregate depth 1,000ft. Also bore wells for new mining camps and in new country for prospectors; total 31, and measure about 1,768ft. These bore wells are easily constructed, and with reasonable care in using them, the upkeep should not be expensive. The experience of this Department is that very often the equipment of water stations is damaged by teamsters, the travelling public, or by prospectors, and this remark applies more to bore wells than to other water stations.

Bore wells cost little to construct after water is found, and though there is always the risk of someone injuring the lifting appliances or choking the hole, the Department takes the risk with the object of keeping down construction expenditure till a larger and perhaps more reliable water supply is justified.

Stock Routes (items 73 to 76).—During the year only minor improvements and repairs were attended to on the various Northern Stock Routes. At the close of the year money was made available for improving the Stock Route from Leonora to Wiluna and Peak Hill. The improvements will consist of making the water stations good for mobs of 600 head of cattle along that portion between Leonora and Wiluna, and for mobs of 400 on Peak Hill-De Grey length. Details of this work will appear in 1909 report.

The construction of Wiluna-Sturt Creek Stock Route is in progress, and I estimate this work will be completed about the end of 1909 or early in 1910.

Miscellaneous Works (see items 77 to 100).—From the many useful works in this list the following may be noticed:—

Leonora Water Supply.—The scheme as estimated on without additions was completed in December, 1907, and described in report of that year.

From the date of completion to October, 1908 (11 months) the Hon. Minister for Mines acted as a Water Board, and the Board was administered by

the Engineer for Mines Water Supply. During this period everything ran smoothly, water sales steadily increased, and several additions to works were made and paid for out of revenue (see items 84, 91).

Under instructions from the Hon. Minister for Mines a local Board was formed and the works were transferred to that Board 1st October, 1908. The profit (£1,100) made under the management of the Engineer for Mines Water Supply was also transferred to the new Board—see Balance Sheet and Auditor's report.

Items 89 and 95 are worth attention.

Conservation of Water.—Four small tanks were constructed (items 101 to 104). Much might be written on the value of the lining used in these tanks, also on the advantage of roofed versus unroofed tanks in hot climates where small and irregular rains occur.

Next year I hope to publish data on "lining and roofing of tanks," with much interesting information *re* "evaporation and absorption." This data has been collected over a period of ten years. During those years ten lined reservoirs have been constructed, and it may easily be proved that by using the asphalt compo. £100,000 or more has been saved to the Government.

Loan of Boring Plants.—In addition to loan of diamond drill plants mentioned above, 19 hand plants were loaned on very easy terms.

Water stations leased	43
Caretakers employed	13
Pumpers	10

Number of Water Stations on our list, 1,150.

Number of Water Stations maintained during the year, 490.

Average number of men employed, 150.

Correspondence.

	Inward.	Outward.
Letters	4,048 ..	3,507
Wires	626 ..	595

The Staff has worked well, but we have been short handed at times. Temporary draftsmen in this office have at last been replaced by staff men.

I have, etc.,

P. V. O'BRIEN,
Engineer for Mines Water Supply.

MINES DEPARTMENT.

WATER SUPPLY BRANCH.

ANNUAL REPORT, 1908.

WORKS COMPLETED, UNDERTAKEN, AND INITIATED.

BORING.

Item.	Boring for Water.	Locality.	General Description.	Remarks.
		Eastern Goldfields.		
1	For Battery purposes	Mt. Ida	8 bores, totalling 784ft. ..	Good supply of fresh water No. 8 bore, fair supply several others
2	Domestic supply	Desdemona (Armidale) ..	7 bores, totalling 851ft. ..	Work in progress.
3	For State Battery purposes	Widgiemooltha	2 bores, totalling 52ft. ..	Fair supply of salt water in No. 2 bore, same selected as well site
4	For Battery Purposes	Speakman's (Callion)	10 bores, totalling 983ft. ..	Supply in bore 2A, 75 gallons per hour
5	Road Supply ..	Linden-Edjudina Road ..	5 bores, totalling 354ft. ..	Supply small so far. Work still in progress.
6	For Town Supply	Mt. Morgans, about 23 miles S.W. from Laverton	3 bores, totalling 218ft. ..	In progress.
7	Domestic Supply	Camel Back, Linden-Yundamindera Road	2 bores, totalling 151ft. ..	In progress.
8	For Road Traffic	At Ghost Rocks, on Menzies-Ida Road	1 bore, depth 103ft. ..	Fresh water supply about three gallons per hour.
			Total 38 bores = 3,496ft.	
		Murchison District.		
9	Domestic ..	Coorang (Youanme)	6 bores, totalling 477ft. ..	Two of these bores are equipped as wells, and give a fair supply of fresh water.
10	For State Battery	Coorang (Youanme)	1 bore, depth 73ft. ..	Supply good.
11	Road Supply ..	Nannine-Barrambie Road ..	2 bores, totalling 95ft. 6in.	Bore 2 selected as well site ; fair supply of fresh water.
12	For Prospectors..	About 17 miles South of Youanme	3 bores, totalling 136ft. ..	Two of these bores equipped as wells ; fair supply of fresh water.
13	Road Supply ..	Cue-Mindoolah Road, near Rabbit Proof Fence	1 bore, depth 40ft...	Good supply fresh water, selected as well site.
14	Do. ..	Palagea Rocks, Magnet-Youanme Road	17 bores, totalling 754ft. ..	Bore 17 selected as well site ; good supply fresh water.
15	For Prospectors..	Redcastle, near Berrigrin ..	4 bores, totalling 235ft. ..	One equipped as Bore well ; good supply salt water.
16	Do. ..	Hancocks, near Sandstone ..	1 bore, depth 130ft. ..	Equipped as Bore well ; good supply fresh water.
17	Do. ..	About 5 miles West of Mindoolah	2 bores, totalling 233ft. ..	One equipped as well ; small supply fresh water.
18	Do. ..	Errol's or Legacy	3 bores, totalling 173ft. ..	Bore No. 3, fair supply of fresh water, selected as well site.
19	Road Supply ..	Bellchamber's-Youanme Road	1 bore, depth 60ft. ..	Good supply fresh water ; selected as well site.
			Total 41 bores = 2,406ft. 6in.	
		Pilbara District.		
20	For Prospectors..	Near Whim Creek	3 bores, totalling 79ft. ..	Good supply of fresh water in Bore 3.
21	Do.	Millindinna Pool, about six miles North of Egina	1 bore, depth 70ft. ..	Good supply of fresh water.
22	Do.	Hester's Springs and Langenbeck Range	3 bores, totalling 130ft. ..	Two abandoned ; good supply of fresh water in other one.
23	Do.	About 40 miles South-East of Whim Creek	3 bores, totalling 124ft. ..	One abandoned, good supply of fresh water in other two.
24	Do.	About 9 miles S. of Station Peak	1 bore, depth 92ft. ..	Good supply fresh water.
25	Do.	About 33 miles S.S.E. of Whim Creek	7 bores, totalling 242ft. ..	Water struck in one bore only, and supply too small.
26	Do.	About 35 miles S.S.E. of Whim Creek	1 bore, depth 73ft. ..	No water.
27	Do.	About 42 miles S.S.E. of Whim Creek	1 bore, depth 74ft. ..	Good supply of fresh water.
28	Do.	About 50 miles S.S.E. of Whim Creek	4 bores, totalling 125ft. ..	Three abandoned ; fresh water in other one.
29	Do.	About 65 miles S.S.E. of Whim Creek	4 bores, totalling 127ft. ..	Two abandoned ; good supply fresh water Bore 1 ; small supply Bore 4.
30	Do.	About 37 miles S.S.W. of Whim Creek	5 bores, totalling 218ft. 6in.	Two abandoned ; good supply of fresh water in other three.
31	Do.	About 16 miles S. of Whim Creek	1 bore, depth 110ft. 6in.	Good supply of fresh water.
32	Do.	About 20 miles S.E. of Whim Creek	1 bore, depth 38ft. ..	Good supply of fresh water.

BORING—*continued.*

Item.	Boring for Water.	Locality.	General Description.	Remarks.
		Pilbara District—continued.		
33	For Prospectors..	About 48 miles S.E. of Whim Creek	2 bores, totalling 73ft. ..	One abandoned ; fresh water in other one.
34	Do.	About 60 miles S.E. of Whim Creek	6 bores, totalling 209ft. ..	Four abandoned ; fresh water in other two.
35	Do.	Eastern Creek, near Cook's Creek, about 35 miles N.E. from Nullagine	2 bores, totalling 147ft. ..	One abandoned ; good supply of fresh water in other one.
36	Do.	King's Creek, near Cook's Creek	3 bores, totalling 252ft. ..	Two abandoned ; brackish water in other one.
37	Do.	Between Cooglegong and Asbestos Leases	2 bores, totalling 101ft. ..	One abandoned ; fair supply of fresh water in No. 2.
38	Do.	Paddy's Market, near Asbestos Leases	4 bores, totalling 151ft. ..	Three abandoned ; fair supply of fresh water in other one.
39	Do.	Between Asbestos Leases and Strelly River	6 bores, totalling 229ft. ..	Three abandoned ; good supply of fresh water in other three.
40	Do.	Between Strelly River and Shady Camp	8 bores, totalling 375ft. ..	Four abandoned ; good supply of fresh water in other four.
41	Do.	Between Shady Camp and Doolena Gorge	4 bores, totalling 105ft. ..	Abandoned, no water.
42	Do.	About 6 miles N.E. from Talga River Crossing	2 bores, totalling 65ft. ..	No. 1 abandoned ; good supply of fresh water in No. 2.
43	Do.	Between Wodgina and DeGrey, about 5 miles from Marble Bar	3 bores, totalling 82ft. ..	No water.
44	Do.	About 7 miles N. of Dead Bullock Well	3 bores, totalling 130ft. ..	Two abandoned ; small supply of fresh water in other one.
45	Do.	Woodstock-Pt. Hedland Road at Whitecliffs	2 bores, totalling 132ft. ..	Small supply fresh water.
46	Do.	At Western Shaw	1 bore, depth 80ft. ..	Small supply fresh water.
47	Do.	About 6 miles S. of Western Shaw	1 bore, depth 60ft. ..	Good supply fresh water.
48	Do.	About 14 miles S. of Western Shaw, near Moore's Workings	2 bores, totalling 95ft. ..	Abandoned.
			Total 86 bores = 3,789ft.	
		DIAMOND DRILL.		
49	Diamond Drill ..	At Rubicon G.M., Day Dawn ..	3 bores, totalling 583ft.	The Department found plant, men, carbons, etc.; the Company paid for carbons used, and all wages except foreman's. These holes were from 800ft. level, and cost about £1 12s. per foot. Rock exceedingly hard.
50	Do.	At East Fingall G.M., Day Dawn	9 bores, totalling 2,719ft.	Terms of loan as above. The average cost per foot was about 9s. 33d. Bores from surface at various angles.
51	Do.	At the Millionaire Mine, Mount Morgans	3 bores, totalling 1,561ft.	Terms of loan as above. This work is still in progress, and the average cost so far, is about 13s. 4d. per foot. Bores from surface at 60deg.
			Total, 15 bores = 4,863ft.	
		SUMMARY.		
	Hand Boring Plants	Murchison District	41 bores, 2,406ft. 6in. ..	Average cost per foot about 8s. 4d.
	Do. ..	Eastern Goldfields	38 bores, 3,496ft. ..	Average cost per foot about 6s. 3d.
	Do.	Pilbara Goldfields	86 bores, 3,789ft. ..	Average cost per foot about 12s.
			165 bores = 9,691ft. 6in.	(Including travelling and all charges.)

WELL SINKING.

Item.	Wells.	Locality.	General Description.	Remarks.
		Murchison District.		
52	No. 3, Garden Gully	Garden Gully (Meekatharra Water Supply)	6ft. x 4ft. x 81ft. deep, with 2 6ft. x 4ft. drives totalling 84ft.	This is Well No. 3; the supply is about 4,000 gallons fresh water per hour. Water pumped 10 miles to town and mines.
53	Youanme No. 1	Coorang (Youanme)	5ft x 3ft. x 91ft. deep ..	Good supply fresh water.
54	Well	Walga-gunga-Montagu Road ..	5ft. x 3ft. x 96ft. 8in. deep	Fair supply fresh water.
55	Do.	Cue-Mindoolah Road, at Rabbit Proof Fence	5ft. x 3ft. x 32ft. deep ..	Good supply fresh water.
56	Errols No. 2 ..	At Legacy Leases, about 2 miles N.E. of Errols Townsite	5ft. x 3ft. x 40ft. deep ..	Good supply fresh water.
57	Well	Magnet-Youanme Road ..	5ft. x 3ft. x 54ft. deep ..	Good supply fresh water.
58	Hancock's No. 1	Hancock's, near Sandstone ..	5ft. x 3ft. x 119ft. deep ..	Good supply fresh water.
59	Well	Nannine-Barrambie Road ..	5ft. x 3ft. x 33ft. 6in. deep, with one drive 5ft. 6in. x 3ft. 6in. x 12ft. long	Fair supply fresh water.
60	Do.	Bellchambers-Youanme Road	5ft. x 3ft. x 78ft. deep ..	Good supply fresh water.
61	No. 1 Bore Well	Near Mindoolah	A Bore Well about 123ft. deep	Supply about 40 gallons per hour fresh water.
		Eastern Goldfields.		
62	No. 4 Well ..	On No. 8 Bore, Station Creek	6ft. x 4ft. x 50ft. deep, with 2 drives 6ft. x 4ft. totalling 40ft.	Good supply fresh water.
63	State Battery Well	At Widgiemooltha on No. 2 Bore	6ft. x 4ft. x 51ft. deep, with 1 drive 6ft. x 4ft. x 9ft. long	Good supply salt water.
64	Well No. 1 ..	Armidale (Desdemona) ..	Bore Well about 145ft. deep	Good supply fresh water.
		Pilbara Goldfields.		
65	E. Creek No. 1..	At Eastern Creek, 16 miles N.E. of Mosquito Creek	5ft. 4in. x 3ft. 4in. x 54ft. deep	Good supply fresh water.
66	Murphy's Gap Well	At Murphy's Gap, near Moolyella	5ft. 3in. x 3ft. 2in. x 25ft. deep	Good supply fresh water.
67	Snell's Well ..	Oakover River	5ft. x 3ft. x 49ft. deep ..	Purchased.
68	12 Bore Wells ..	Distributed over area between Marble Bar and Wodgina, and North Pole Diggings and Western Shaw Government Well	These bore wells are equipped with rope and bucket, and enable small parties to obtain enough water for prospecting purposes.	
69	18 Bore Wells ..	Between 21 deg. and 22 deg. South Lat. and 117 deg. 30′ and 118 deg. 30′ E. Long.		

Summary.

17 Wells sunk, 1,000 feet. and 31 Bore Wells, 1,768 feet.

WELLS—GENERAL MAINTENANCE.

This covers minor repairs and additions, such as cleaning out, putting in new ropes and buckets. The following wells have received attention :—

70. *In the Murchison District :*—Reedy's Tuckanarra Town Well, Eelya Bore Well, Cuddingwarra, Gabanintha, Stake, Maninga Marley, Abbott's, The Gap, Chesterfield, Mt. Magnet Stock Well, Marchesi's, Black Range, and the 50-Mile, also Wells on the Nannine-Barrambie Road, and between Lake Way and Nannine.

71. *In the Pilbara District :*—Croydon Lower Camp, West Pilbara, 20-Mile Sandy Battery Well, and all the more important main road watering stations, about 50 in number.

72. *On the Eastern Goldfields :*—King's, Warner's, Widgiemooltha, Wells in the neighbourhood of Menzies and between Leonora and Lawlers (other than Stock Wells).

STOCK ROUTES.

73. *Cue-Fortescue Stock Route :*—Minor repairs to the following wells :—Nos. 1, 3, 4, 6, 7, 8, 9, 10, 11, 12, and 13.

74.—*Peak Hill-De Grey Stock Route :*—No. 15 Well deepened. Wells Nos. 16, 17, 18. and 19 cleaned out.

75. *Wiluna-Sturt Creek Stock Route :*—To connect East Kimberley with Eastern and Murchison Goldfields. Work in progress. No reports received.

76. *Peak Hill-Leonora Stock Route :*—Improvements to all water stations in progress will make Route good for 600 head mobs.

MISCELLANEOUS WORKS.

Item.	Class of Work.	Locality.	General Description.	Remarks.
		Murchison District.		
77	Pumping Plant ..	At Garden Gully (Meekatharra Water Supply)	9 h.p. Wilson Oil Engine and 2-throw 5in. x 12in double acting deep well pump installed	No. 3 Well
78	Do. ..	Sandstone No. 2 Well ..	Work covers erection of 12ft. Samson Windmill and 3,000 gals. elevated tank	
79	Do. ..	At Yallowgindat, about 7 miles S.W. from Meekatharra	Work covers erection of 12ft. Samson Windmill and 3,000 gals. elevated tank	
80	Do. ..	Hancock's, near Sandstone ..	Work covers erection of 12ft. Samson Windmill and 3,000 gals. elevated tank	
81	Road Clearing ..	Palagea Rocks to Coorang Well	About 20 miles by width of 12 feet	Work covers inspection of alternative routes.
82	Additions Meekatharra Water Supply	Meekatharra	Extension of telephones, etc.	To connect office in town with pump station.
		Eastern Goldfields.		
83	Pumping Plant ..	Jaurdie Hills	9 h.p. Tangye Oil Engine and 9in. x 4⅞in. treble deep well pump installed	
84	Do. ..	Leonora W.S., Well No. 4 ..	Installation of motor pump, cables, etc., on well	Water driven to pump station.
85	Additions to Plant	Leonora Water Supply ..	Erection of 50,000 gallon timber service tank	This makes capacity of service tanks 110,000 gallons.
86	Pumping Plant ..	Randalls	Re-arrangement of Steam Pumping Plant, etc.	
87	Do. ..	Mt. Redcliffe	New pump, etc., on Well	
88	Do. ..	Mt. Celia	New pump, etc., on Well	
89	Hand Power Equipment	Murrin Murrin	New stand-pipe, etc. ..	Well purchased for town supply.
90	Fencing	No. 2 Camel Station, Coolgardie	About 6½ miles of wire fencing with iron standards and timber corner posts	For camel breeding; area 25,000 acres, most of it good country. Water Supply obtained from G.W.S. Main.
91	Additions to Watering Station	Widgiemooltha Tank	Installation of Steam Pumping Plant	State Battery, Norseman Railway, and residents supplied from this tank.
92	Additions to Plant	Menzies-Woolgar W.S. ..	Installation of telephones, etc.	
93	Do. ..	Wingarnie Tank	Installation of 12ft. Samson Windmill and Pump	For Railway supply.
94	Repairs	Randalls	Repairs to pumping plant and condensers	For State Battery Department.
95	Workshop ..	Coolgardie	Well buckets, steel windlass stands, fence wire, fence standards and droppers, etc., etc. Repairs to pumps, boring plants, other working plants, and State Battery machinery.	Practically all iron work required in 3 Districts is turned out of Coolgardie Shop; also repairs to pump stations and some State Batteries are attended to by the same staff. By doing work departmentally in this shop £700 was saved in 18 months (cost of shop plant, £650).

INSPECTIONS AND REPORTS.

96. About 50 important reports were prepared during the year.

WORK DONE FOR ARCHITECTURAL DIVISION, PUBLIC WORKS DEPARTMENT.

		Pilbara District.		
97	Repairing Buildings	Marble Bar	Repairs to Marble Bar Hospital	
98	Do. ..	Marble Bar	Repairs to Marble Bar Police Quarters	
99	Do. ..	Nullagine	Repairs to Nullagine Police Quarters	
100	Do. ..	Nullagine	Repairs and removal of Post Office, Nullagine	

Works for Conservation of Water.

Item.	Tank Construction.	Locality.	General Description.	Remarks.
		Eastern Goldfields.		
101	Pingin Tank ..	Pingin, about 18 miles S.E. from Edjudina Leases	An asphalt lined and roofed tank of about 408,000 gallons capacity, equipped with Douglas force pump, stand-pipe, troughing, etc.	For domestic supply. This work includes about 65 chains of drains and channels graded with masonry drops, and about ¼ a mile of fencing.
102	Eundynie Tank..	Eundynie, about 6 miles S.S.E. of Higginsville	An asphalt lined and roofed tank of about 130,000 gallons capacity	This work includes about 73 chains of drains and 77 chains of fencing, as well as clearing, grubbing, etc.
103	Kanowna-Gindalbie Road Tank	About 10½ miles from Kanowna	An excavated, lined, and roofed tank of about 30,000 gallons capacity	In progress.
104	Enlarging Rock Tank	Marvel Loch, about 20¾ miles S.E. from Southern Cross	About 70 cubic yards of granite removed, making capacity 51,000 gallons. This tank is in solid granite	The work covers 50 chains of additional drains, and the equipment of tank with force pump, stand-pipe, troughs, etc.
		Pipe Lines, etc.		
		Eastern Goldfields.		
105	Malcolm Water Supply Extensions	At Malcolm Townsite	45 chains of 3in. Mannesmann pipe as an extension to Railway Department Main. This discharges into 15,000 gall. service tank on hill above town from which water gravitates to mines and town	Revenue collected by Railway Department.
106	Randalls Water Supply	Randalls, about 50 miles S.E. from Kalgoorlie	One mile of old main taken up and relaid with 3in. Mannesmann pipe, balance of main repaired.	
107	Jaurdie Hills ..	Between Government Well and Enterprise Mine	2 miles 12 chains of old pipe line taken up and relaid with 4in. Mannesmann pipe, also about 50 chains of 2in. G.I. pipe	Salt water is pumped to 3 batteries from Government Well, and fresh water, obtained from Government tank, is pumped at intervals to the mines and residents. Rising main is common to both waters.
		Murchison District.		
108	Meekatharra Water Supply	Garden Gully	About 25½ chains of 3in. Mannesmann pipe laid connecting No. 1 and No. 3 Stations	Increased demand for water necessitated additional well No. 3, with pump, plant, and pipe line.

Rainfall at various Stations.

Station.	Rainfall, 100 points = 1 inch.												
	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Niagara	..	45	82	108	84	111	65	110	..	5	37	..	647
27-Mile Condenser	..	..	89	75	..	220	12	..	..	..	..	..	396
Menzies	..	48	94	202	129	148	49	57	14	5	26	..	772
Davyhurst	..	93	164	577	258	136	60	54	10	10	40	..	1,402
Siberia	..	..	..	387	215	65	..	45	..	..	..	..	712
Goongarrie	4	80	127	251	152	132	34	95	10	44	71	..	1,000
Black Flag	..	15	89	91	150	..	..	..	..	..	..	..	345
Gindalbie	..	165	92	214	184	154	50	103	22	20	27	..	1,031
Kunanalling	20	140	171	281	125	57	..	..	..	16	32	18	860
Coolgardie	..	..	65	168	149	159	38	81	..	38	28	..	726
Widgiemooltha	12	144	150	356	..	115	25	.	32	..	55	..	889
15-Mile Condenser	..	..	81	178	232	168	66	53	44	22	44	..	888
Jaurdie Hills	..	..	..	252	97	104	..	5	..	30	..	..	488
Norseman	..	133	29	216	394	123	63	43	26	28	44	21	1,120
Kundip	..	161	85	83	173	118	160	209	92	78	98	27	1,284
Ravensthorpe	5	155	70	262	100	179	128	151	99	88	113	32	1,382
Hopetoun	..	..	123	314	231	368	347	313	42	..	..	..	1,738
Edjudina	..	90	87	124	112	55	36	117	15	17	66	32	751
Pilbara and W. Pilbara	261	700	..	152	382	201	125	..	..	8	11	345	2,185

MINES WATER SUPPLY BRANCH.

EASTERN GOLDFIELDS.

Return of Revenue and Expenditure for the 12 months, January to December, 1908.

Name of Watering Station.	Revenue. £	s.	d.	Expenditure. £	s.	d.
1. Davyhurst Water Supply	1,404	4	0	833	17	0
2. Menzies Well—No. 3 Pumping Station ..	506	0	2	345	0	9
3. Menzies No. 1 Tank, No. 1 Pumping Station ..	554	9	6	107	15	3
4. Menzies No. 2 Tank, No. 2 Pumping Station ..	1,800	13	6	381	1	2
5. Niagara Reservoir ..	288	18	4	156	5	0
6. Kunanalling Tank ..	122	5	5	121	6	0
7. Gindalbie Tank	268	10	1	165	17	6
8. 15 Mile Condenser ..	33	4	3	165	18	8
9. Edjudina Tank	41	4	1	157	2	6
10. Mulline Tank	58	13	8	69	10	7
11. Norseman No. 1 Tank, including Princess Royal	378	1	4	441	1	5
12. Norseman No. 2 Tank ..	469	10	4	196	17	10
13. Norseman Well	1,918	12	6	501	10	2
14. 47-Mile Well, Edjudina Road	..			59	15	4
15. No. 1 Well, Edjudina Road	..			51	15	10
16. No. 3 Well, Edjudina Road	..			61	6	6
17. Widgiemooltha Tank ..	331	18	1	225	14	3
18. Leonora Water Supply (Pumping Station) ..	16	3	1	47	15	1
19. Goongarrie Tank ..	119	1	7	256	11	8
20. Paddington Water Supply	644	13	4	340	14	8
21. Yundamindera Well ..	20	5	0	40	8	11
22. Mertondale Water Supply	1,296	5	6	106	19	7
23. Red Flag Well	..			12	2	11
24. Black Flag Tank ..	28	12	0	13	11	0
25. Yarri Rock Hole ..	..			4	3	7
26. Mt. Flora Well	..			1	13	8
27. McKenzie Well	..			3	7	3
28. Hawk's Nest Well ..	..			1	13	8
29. Eundynie Tank	..			3	17	6
30. Mt. Jackson Tank ..	15	0	0	1	10	0
31. Box Soak Well	..			22	18	11
32. Golden Ring	..			25	1	0
33. Windigh Brook	..			3	7	3
34. Mt. Margaret Well ..	..			0	12	10
35. 7-Mile	..			4	1	4
36. Jaurdie Hills Tank ..	48	4	9	111	15	9
37. Margaret Brewery Well..	..			4	8	0
38. Woolgar Water Supply ..	..			10	19	0
39. Siberia Tank	..			59	17	0
40. Wangine	4	2	6	28	11	8
41. Speakman Tank ..	..			12	3	0
42. Stock Well	..			1	7	0
43. Musson Soak	..			13	12	4
44. Ularring Soak	..			12	18	0
45. Ularring Well	..			4	4	8
46. Jacoletti Tank (Marvel Loch)	33	19	10	96	3	9
47. Red Tank	..			8	13	0
48. 42-Mile Tank	56	0	0	12	19	0
49. Norseman Condenser ..	78	18	10	36	2	2
50. Cork Tree Flat Well ..	..			0	7	0
51. Dodger's Wells				23	12	3
52. Galvalley Rock Hole ..	..			7	7	0
53. Pingin Rock Hole ..	..			3	6	6
54. Londonderry Paddock No. 1	..			17	10	5
55. 22-Mile Rock	..			0	12	6
56 Crawford's Soak ..	..			4	8	8
57. Wingarnie Tank (50-Mile)	83	9	0	0	18	8
58. Jubilee Well	..			0	7	6
59. Yarrie Well	..			0	7	3
60. Gindalbie Condenser ..	..			3	9	0
61. Mt. Morgans Well ..	..			20	16	0
62. King Well	..			14	7	0
63. Redcastle	..			0	6	6
64. Lower Box Soak ..	..			6	9	8
65. Butcher's Well	..			4	8	0
66. Doctor's Well	..			8	13	4
67. Pig Well (Gwalia Bach)	7	0	0	7	11	6
68 Camel Farm No. 2 ..	..			106	2	0
69. 27-Mile Condenser ..	..			41	17	6
70. Swan Lagoon	..			59	16	9
71. Gibson Soak	..			71	15	8
72. 30-Mile Condenser ..	..			71	15	7
73. 90-Mile Condenser ..	..			47	17	4
74. Salmon Gum Condenser	..			47	17	4
75. Kangaroo Soak	..			1	19	4
76. Jaurdie Hills Well ..	65	3	8	95	5	7
77. Cosmo-Newberry Well ..	..			20	0	0
78. Cement Creek Crooked Well	..			1	9	4
79. Sandy Creek	..			5	17	4
80. Mt. Ida Soak	..			10	17	9
81. French's Soak	..			0	12	0
82. McAuliffe's Soak.. ..	..			0	12	0
83. Kilkenny	..			0	12	0
84. May Nulty	..			2	17	1
85. 16-Mile	..			3	6	2
86. 16-Mile Well near Lawlers	..			2	18	8
87. 34-Mile Well near Lawlers	..			0	11	3
88. Linden	..			2	4	9
89. No. 9 Well	..			2	18	8
90. Sullivan's Creek	..			2	4	0
91. Teutonic	..			2	18	8
92. Wilson's Creek	..			1	9	4
93. Wilson's Patch ..	..			1	9	4
94. Darlot Town	..			2	18	8
95. Darlot Old Town ..	..			1	9	4
96. Darlot New Well ..	..			1	9	4
97. 35-Mile	..			2	4	0
98. Gnamma Well (Hole) ..	..			0	14	8
99. 14-Mile Well	..			1	19	4
100. Cody's Well	..			2	18	8
101. 28-Mile	..			2	4	0
102. Doyle's	..			2	4	0
103. Mt. Clifford	..			1	19	4
104. Diorite Well	..			7	6	8
105. Malcolm Soak	..			2	18	8
106. Waite Kauri	..			2	18	8
107. Lyons	..			2	18	8
108. Armadale	..			15	17	4
109. Emu Lake Tank ..	..			1	4	0
110. Chain of Water Holes ..	..			4	8	0
111. Hacket's Well ..	..			0	12	4
112. Flat Rocks Well ..	12	0	0	..		
113. North Mt. Weld Well ..	12	0	0	3	3	0
114. New Zealand Gully Tank	3	10	0	..		
115. Jacoletti Well	54	3	4	..		
116. Donkey Rocks	13	0	0	..		
117. Higginsville Water Supply	84	6	4	..		
118. Condenser. Never Never Leases	0	11	0	..		
119. Ora Banda (Water Reserve)	57	4	3	..		
120. Edjudina Well	14	0	0	..		
121. Londonderry Tank ..	4	0	0	..		
122. Golden Cube	14	0	0	..		
123. No. 2 Well, Yerilla-Edjudina Road ..	14	0	0	..		
124. Duladgin	0	5	0	..		
125. Cheriton's Well ..	0	10	0	..		
126. Comet Vale Water Supply	0	15	0	..		
127. Pike's Hollow Well ..	7	0	0	..		
128. Linden Water Supply..	2	10	0	..		
129. Mt. Malcolm Water Supply	11	5	0	..		
130. 45-Mile Well	2	18	0	..		
131. Yacke Yackine ..	10	0	0	..		
132. Carbine Well	5	0	0	..		
133. Water Right No. 8 and Tank	1	15	0	..		
134. Water Shaft, Callion ..	1	5	0	..		
	£11,019	2	3	6,149	13	9

SUMMARY.

Charged to C. F. Authorities but not allocated to any special Watering Station.						
Wages of Caretaker, Pumpers, etc. Upkeep of Tanks, Pump Stations	..			966	2	2
Plant for Maintenance ..	..			1,220	7	2
Forage	..			469	2	5
Office Expenses	..			35	14	0
	£11,019	2	3	8,840	19	6

MINES WATER SUPPLY BRANCH—*continued.*

MURCHISON AND EAST MURCHISON GOLDFIELDS.

Return of Revenue and Expenditure for the 12 Months, January to December, 1908—continued.

Name of Watering Station.	Revenue. £ s. d.	Expenditure. £ s. d.
1. Day Dawn Well ..	0 15 0	11 12 6
2. Abbott's	..	12 19 11
3. Nannine Water Supply	209 11 9	19 9 2
4. Magnet Stock Well ..	..	12 10 8
5. Meekatharra Water Supply	1,991 2 7	1,021 14 6
6. Maninga Marley Well	18 0 0	9 6 0
7. Gabanintha Well ..	18 18 0	14 15 6
8. Mount Fraser ..	..	38 18 4
9. Berrigrin	..	2 16 8
10. Barrambie	..	3 16 8
11. Peregrine	...	2 16 8
12. Kilale	...	1 8 4
13. Eelya Bore	...	63 0 0
14. Hancock's Well, Black Range	..	2 7 6
15. No. 3 Well, Black Range	...	4 15 10
16. 71-Mile Well	..	4 5 0
17. Breakaway	..	2 2 6
18. Bulkabardoo	..	4 5 0
19. Murdabooka Well ..	...	2 2 6
20. Muletah	..	2 2 6
21. Ned's Well	..	2 2 6
22. Mindoolah	..	2 15 0
23. Cuddingwarra ..	..	2 15 0
24. Bob's Well	..	1 8 4
25. Jack's Well	..	6 6 8
26. Tuckanarra	..	1 8 4
27. Reedy's	..	9 3 4
28. Lloyd's.	..	4 5 0
29. Chesterfield	..	5 13 4
30. Burnakurra Well ..	13 0 0	3 12 4
31. Tancarow	..	4 1 8
32. Portella	..	1 8 4
33. Roads Board ..	..	2 16 8
34. Chumerang ..	..	1 8 4
35. Scotty's Well ..	..	2 16 8
36. Granite	..	1 8 4
37. Limestone	..	1 8 4
38. Diorite	..	4 5 0
39. Ward	..	1 8 4
40. Wiluna Stock ..	..	1 8 4
41. Wiluna Town ..	..	1 8 4
42. Schist	..	4 5 0
43. Bubble	..	9 18 4
44. Mollie	..	1 8 4
45. Kalake	..	2 16 8
46. Crystal	..	1 8 4
47. Diamond	..	1 8 4
48. Emerald	..	1 8 4
49. Moolyagool	..	1 8 4
50. Opal	..	1 8 4
51. Murphy's Well ..	..	5 13 4
52. Ruby	..	1 8 4
53. Worthington	..	1 8 4
54. Minderoo	..	2 16 8
55. Fisher's	..	1 8 4
56. Daniel's	..	1 8 4
57. Yallogindat	..	1 8 4
58. Simpson Well ..	..	2 1 8
59. Gap Well	..	9 4 2
60. Mummarra	..	2 1 8
61. Sandstone	..	1 11 7
62. Lawlers Stock Well ..	..	15 13 4
63. Lawlers Town Well ..	21 10 0	10 0 0
64. Sandstone No. 1 ..	..	15 18 4
65. Sandstone No. 2 ..	..	12 5 0
66. Fairyland	..	4 6 0
67. Mt. Sir Samuel ..	..	1 8 4
68. Oasis	..	5 13 4
69. Abercrombie	..	2 16 8
70. Wallaby Knob ..	..	22 8 4
71. Contradiction.. ..	..	9 8 4
72. No. 5 Well, Lawlers-Day Dawn Road ..	..	5 13 4
73. No. 6 Well	..	6 6 8
74. No. 7 Well	..	1 8 4
75. Leinster	..	1 8 4
76. Vivian	..	1 8 4
77. McCaffery's	..	1 8 4
78. Gum Creek	..	8 10 0
79. Nesbit's Soak ..	..	2 0 10
80. Errols Soak	..	1 6 8
81. Quinns' Soak.. ..	..	7 0 0
82. Bulchina	..	1 10 0
83. No. 1 Well, Cue-Black Range Road ..	..	7 0 0
84. No. 2, Well Cue-Black Range Road ..	..	5 16 8
85. Millie Well	..	8 10 0
86. Mick's	..	1 10 0
87. Youanme	..	0 6 9
88. Yarraquin Well ..	0 7 0	5 10 0
89. Garden Granites Well	..	5 10 0
90. Italians' Patch ..	..	8 0 0
91. Nungarra	..	12 0 0
92. Black Range ..	..	3 0 0
93, Bellchambers ..	..	3 0 0
94. 50-Mile	..	3 0 0
95. Peak Hill Well ..	41 7 0	..
96. Lennonville Water Supply	21 0 0	..
97. Boogardie Stock Well	1 0 0	..
98. Nyuing Well ..	0 5 0	..
99. Well, Magnet-Youanme Road	0 1 0	..
100. Yallowgindat Well ..	2 0 0	..
101. Mainland Stock Well	1 6 0	..
102. Balloon Pool ..	..	1 8 4
	£2,340 3 4	1,559 4 11

SUMMARY.

Charged to C.F. Authorities but not allocated to any special Watering Station.		
Wages of Caretakers and Pumpers, Upkeep Watering Stations, etc. ..	..	657 17 11
Plant for Maintenance ..	..	345 1 8
Forage	..	372 12 7
Office Expenses	..	3 1 7
	£2,340 3 4	2,937 18 8

PILBARA AND WEST PILBARA GOLDFIELDS.

1. Marble Bar Town Well	27 0 0	9 19 8
2. Stock Paddock ..	..	10 10 0
3. Warrawoona	..	4 15 0
4. Condon	..	3 10 0
5. Wodgina Well ..	..	5 0 0
6. Port Hedland 1 Mile Well	..	5 2 3
7. Port Hedland 4 Mile Well	..	5 2 3
8. Butcher Camp ..	..	22 13 4
9. Granites No. 1, Mosquito Creek ..	..	5 3 4
10. Mackay's Well (20 Mile Sandy)	..	8 11 8
11. Lower Middle Creek ..	..	2 11 8
12. Nullagine Town Well ..	..	1 18 4
13. 4-Mile Well	..	1 15 0
14. Hale's Grave	..	3 10 0
15. Carbana	..	3 10 0
6. Sandy Creek	..	3 10 0
17. Wyman's	..	1 15 0
18. Big Schist	..	1 1 8
19. Just in Time Well ..	1 6 0	..
	£28 6 0	99 19 2

SUMMARY.

Charged to C.F. Authorities but not allocated to any special Watering Station.		
Wages of Yardman, etc. ..	..	108 5 6
Maintenance of Wells, etc.	..	187 11 7
Plant for Maintenance ..	..	325 8 3
Forage	..	141 19 9
Office Expenses	..	32 15 0
	£28 6 0	895 19 3

MINES WATER SUPPLY BRANCH—*continued.*

OTHER GOLDFIELDS.

Return of Revenue and Expenditure for the 12 Months, January to December, 1908— continued.

Name of Watering Station.	Revenue.	Expenditure.
	£ s. d.	£ s. d.
1. Cordingup Soak ..	16 10 0	1 3 4
2. Elverton Dam ..	14 8 0	22 6 2
3. Hopetoun Well ..	78 5 4	148 6 11
4. Kundip Tank ..	192 10 9	229 4 2
5. Ravensthorpe No. 1 Tank	60 0 9	116 14 0
6. Ravensthorpe No. 2 Tank	324 8 6	285 15 4
	£686 3 4	803 9 11

Name of Watering Station.	Revenue.	Expenditure.
SUMMARY.		
	£ s. d.	£ s. d.
Charged to C.F. Authorities but not allocated to any special Watering Station. Maintenance of Wells, Tanks, etc.	..	21 1 8
	£686 3 4	824 11 7

TOTAL SUMMARY.

	Revenue.	Expenditure.
	£ s. d.	£ s. d.
Eastern Goldfields ..	11,019 2 3	8,840 19 6
Murchison and East Murchison Goldfields ..	2,340 3 4	2,937 18 8
Pilbara and West Pilbara Goldfields	28 6 0	895 19 3
Other Goldfields	686 3 4	824 11 7
	£14.073 14 11	13,499 9 0

DIVISION V.

ANNUAL PROGRESS REPORT

OF THE

GEOLOGICAL SURVEY

FOR THE YEAR 1908.

WITH THREE MAPS.

TABLE OF CONTENTS.

ANNUAL PROGRESS REPORT OF THE GEOLOGICAL SURVEY FOR THE YEAR 1908.

The Under Secretary for Mines.

Geological Survey Office,
Perth, 26th January, 1909.

SIR,

I have the honour to submit, for the information of the Hon. Minister for Mines, the following report upon the work executed by the various officers of this Department during the year 1908.

THE STAFF.

The work of the Department has been carried out by 10 officers of the permanent staff and three temporary officers, made up as follows:—

Field Staff—Three Geologists and one Topographical Surveyor.

Office Staff—Two Draftsmen, one Clerk, and one Palæontologist (temporary).

Laboratory Staff—One Mineralogist and Assayer, and four Assistants, two of whom are temporary.

FIELD WORK.

H. P. WOODWARD, Assistant Government Geologist.—In the latter portion of January I was engaged upon the completion of the re-survey of the Greenbushes Tinfield, a full report upon which, accompanied by a Geological and Contour Map, has been issued as Bulletin No. 32.

Early in the month of February I was despatched to Kalgoorlie with instructions to make an examination of the lower levels of the principal mines of the Boulder Belt with the object of framing a cable for the information of the Agent General, the full text of my report being as follows:—

The Lodes at the bottom levels of the Boulder Belt, East Coolgardie Goldfield.

"In response to your instructions of January 20th I visited Kalgoorlie, where I inspected the Great Boulder, Ivanhoe, and Golden Horseshoe of the Western Group, and the Associated, Great Boulder Perseverance, and Kalgurli of the Eastern.

"*The Western Group.*—The lodes of this group have a definite fissure character, the ore body being of a highly siliceous nature, distinct and easily recognisable from the country, which latter carries no appreciable gold values.

"No movement appears to have taken place at the time of the opening of the primary fissures, since no striation or polishing is apparent upon the lode walls, which are of a more or less ragged character. Subsequently, however, considerable disruption has taken place both along the ore channel and across it. The former of these are noticed as polished walls in the lode matter itself, generally crossing it from wall to wall at a long angle to the south-eastward with apparently a throw to the southward. These minor faults are apt, in places, when considerable movement has taken place, to cause the lode to assume the character of a series of lenses.

"The lodes are also intersected by a series of thrust faults, the planes of which dip to the westward. These are most common in the Ivanhoe mine, where they have displaced the lode sometimes as much as 40 feet on the hade. These faults are apparently of the swing character, that is, they have a much greater throw at one end than at the other, their origin being in all probability due to a main disturbance in an east and west direction situated to the northward of this belt.

"The ore bodies in these mines vary very considerably in size, being from two to 40 feet in width, and in values from one dwt. to many ounces, whilst up to the present they have yielded about one ounce of gold for every ton of stone treated; but the ore reserves are estimated upon a basis of 14dwts, which should yield a very handsome profit upon the present low rate of working costs, these being more than covered by the treatment of stone of half this value.

"In the lower levels of these mines the ore bodies present as permanent a character as they do in those above, whilst the values at the 2,200 feet level in the Great Boulder (which is the deepest mine upon the field) are higher than any since the zone of secondary enrichment in the upper levels was worked.

"In the Ivanhoe 1670ft. level also greatly improved values are met with, whilst at the 1,650ft. level in the Golden Horseshoe at the point where the lode has been only crosscut it is 10 feet in width and assays 11dwts., this being a poor point evidently, and doubtless much higher values will be cut after driving upon the lode.

"It is impossible to state the size of the lodes at the bottom levels of these mines, since only 5ft. levels have been driven upon their courses; therefore the published statement of the values of the lode at the bottom level in the Great Boulder mine is misleading so far that it does not make it explicit that this width is only the width of the drive and not of the lode, which has not yet been determined by crosscutting or stripping.

"From a careful study of the character of the lode and the ore values at the various levels in these mines, the conclusion is arrived at that no secondary enrichment has taken place below the 1,200ft. level; therefore from this point downwards it may be considered as a primary sulphide zone associated with tellurides and free gold, the values fluctuating as in all ore bodies; but since the lodes maintain their size, character, and average values—whilst in two out of the three mines under review higher values than hitherto met with in this zone have been encountered at the bottom levels—the only natural inference to be drawn is that these reefs are the result of open fissures enriched from below, and in consequence there need not be the very slightest apprehension of their sudden determination or impoverishment, their downward limit being

governed by their source, and the extent to which they can be profitably worked depending solely upon economical conditions.

"*The Eastern Group.*—The lodes of this group differ materially not only from those of the western group but from all others in this State, in that they lack the characteristic commonly attributed to ore deposits, viz., definition.

"The gold is contained in a zone of considerable width, the rocks of which have been foliated by shearing strains, the direction of the schistosity being in a more or less north and south direction. In this zone, the whole of which carries gold in greater or less quantities, are lenticular or pipe-like portions of greater enrichment called lode formations, which bodies, although often of considerable size and richness, lack visible definition, their extent only being determined by the value of the ore by assay.

"These mines upon the whole have yielded richer stone than those of the western group, but owing to their character cannot be so economically handled, since more dead work has to be done of a prospecting character in order to discover the next lens when the limits of the one have been determined; but owing to the nature of the rocks it is easier to mine and treat than the more siliceous ore met with in the Boulder belt.

"The bodies of ore worked in this zone exceed those of the other class in width, in places reaching a measurement of 60 feet, but the longitudinal and vertical extent of the individual shoots is naturally more limited owing to their lenticular character.

"The greatest depth to which these have been worked so far is about 1,700 feet in the Associated, and so far as can be judged from the nature and character of the country and the value of the ore, there appears to be no reason why numbers of these rich shoots should not still be met with at greater depths, and since in the western zone their average permanent values are apparently met with below the 1,000ft. level, if all ore reserves situated above this level are eliminated from estimate, the result will prove conclusively that these mines carry large quantities of profitable ore to the deepest levels to which they have as yet been opened."

———

Upon February 24th the Government Geologist left for England with the object of representing the Mining Industry of this State at the Franco-British Exhibition in London when I was appointed Acting Government Geologist, which position I continue to hold.

At the commencement of March I visited Collie with the object of reporting upon what was supposed to be the discovery of a new coalfield, but which I found to be only the extension of the known basin in a north-easterly direction. This area was mapped in and the following report submitted:—

Prospecting for Coal at Collie.

"As instructed, Mr. H. W. B. Talbot, Topographical Surveyor, proceeded to the Collie Coalfield with the object of tracing and mapping the outcrops of crystalline rock upon the north-western side of the Collie basin, which work occupied him about one week. Upon the completion of this I visited Collie and was enabled, under his guidance, to make a rapid survey of this portion of the basin.

"Upon the plan herewith the outcrop of the crystalline rocks has been laid down as a solid black line, whilst the probable connection between it and the existing survey as shown upon Dr. Jack's map is indicated by dots, whilst Dr. Jack's coal basin also is shown as solid.

"The area as now defined will be found to be almost identical with that laid down by myself and published upon a sketch map in the *ad interim* report of the Department of Mines in 1894, and is undoubtedly a portion of the Collie basin.

"The beds passed through in the Nos. 2 and 3 shafts and bores are said to dip one in 24 to the north-west. If this is the case an anticlinal fold exists between this portion of the field and that being mined where the dip is uniformly to the south-east, and this would account for the non-success of the No. 1 diamond drill bore and also for certain reported isolated outcrops of granite to the south-east of these new workings, which were taken to indicate the edge of the basin.

"So far the seams reported are too small to be payable, whilst the analysis of the coal, although good, being only obtained from a sample weighing three-quarters of an ounce, is unreliable.

"There is of course nothing to indicate that the larger seams of the series exist below these, and in fact the character of the coal would rather lead one to the conclusion that we have here the lower series of high-class small seams met with at West Collie (21-Mile Siding) and below the large seams in the deep bores, but owing to the faulted character of the field and the irregularity in size of the seams it is of course possible that seams of workable size may exist at a greater depth, the solution of which question can only be arrived at by boring.

"The applicants for assistance are not possessed of a suitable plant for boring to a greater depth than that at present attained, and I am doubtful whether they would be able to manage a calix in a satisfactory manner, so that these facts must be taken into consideration before granting this subsidy. Realising this, the prospectors would be content if the Government would put down a bore departmentally, and this I consider would give by far the most satisfaction to all concerned.

"In any case if the subsidy is granted it must be looked upon as lost money, for even should it be proved that a workable coal seam exists at a greater depth it is extremely doubtful whether the necessary capital can be raised to open another pit in order to enter into the already overdone competition, since the combined output of Collie is really only sufficient to keep one pit running profitably."

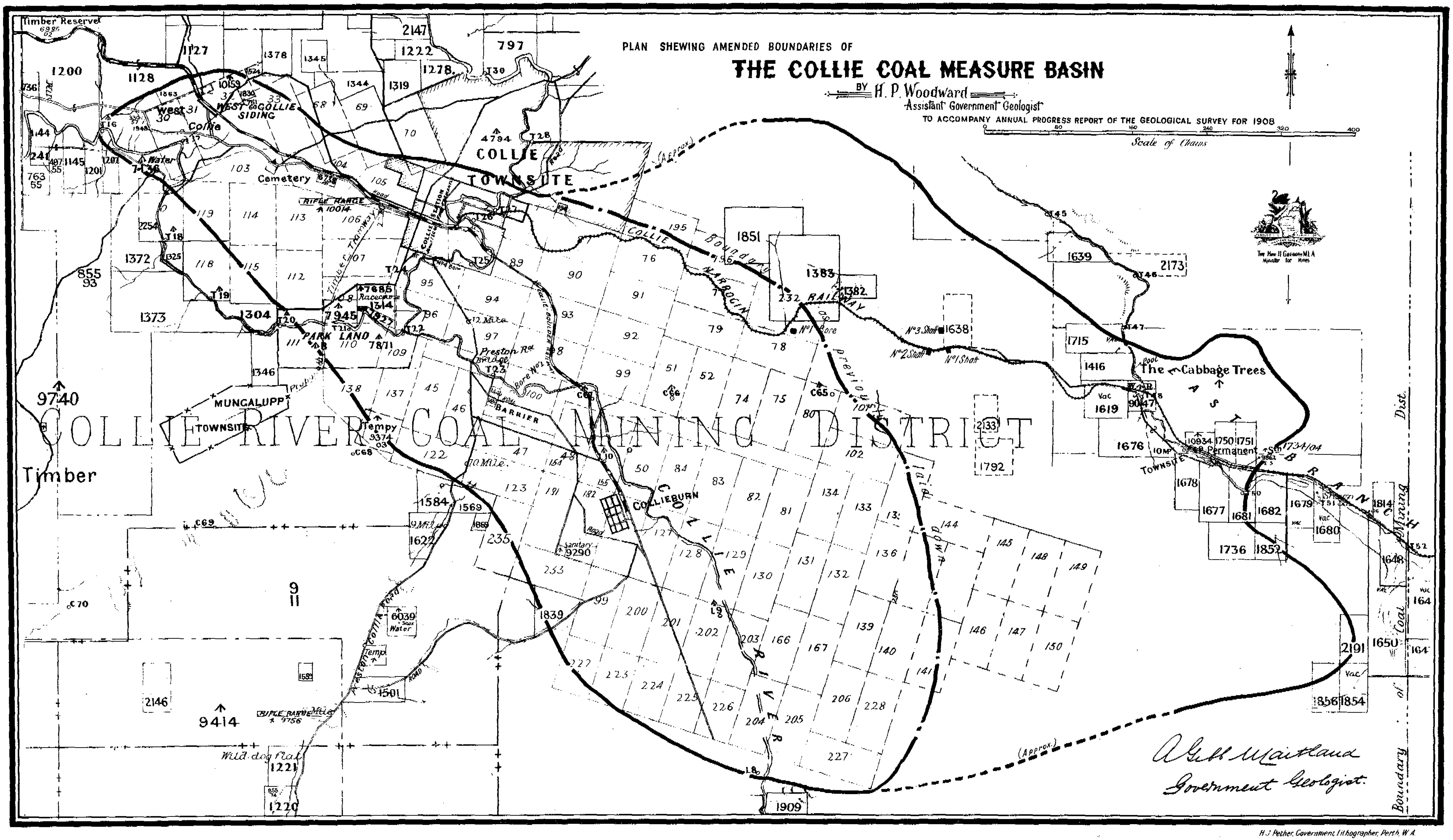
———

About the end of March, at the request of the Hon. Minister for Agriculture, I was despatched to Christmas Island, which is situated about 30 miles off the South Coast, near Israelite Bay, with the object of reporting upon the extent and value of certain phosphatic deposits:—

Phosphate Deposits of Christmas Island.

Christmas Island is a member of the Eastern Group of the Archipelago of the Recherché, which consists of a scattered belt of islands lying along the southern coast between Fanny Cove and Israelite Bay, or more correctly between 121deg. 30min. and 124deg. 10min. E. Long.

This Island, which lies about 20 miles in a south-easterly direction from Israelite Bay, is about one mile in length and averages about a quarter of a mile in width but spreads out at either end where bold,


PLAN SHEWING AMENDED BOUNDARIES OF
THE COLLIE COAL MEASURE BASIN
BY H. P. Woodward
Assistant Government Geologist
TO ACCOMPANY ANNUAL PROGRESS REPORT OF THE GEOLOGICAL SURVEY FOR 1908
Scale of Chains
COLLIE RIVER COAL MINING DISTRICT
COLLIE TOWNSITE
WEST COLLIE SIDING
MUNGALUPP TOWNSITE
PARK LAND
COLLIEBURN
COLLIE RIVER
COLLIE NARROGIN RAILWAY
The Cabbage Trees
EAST BRANCH
Timber
Timber Reserve
Cemetery
Rifle Range
(Approx.)
Collie Coal Mining Dist. Boundary
A Gibb Maitland
Government Geologist
H. J. Pether, Government Lithographer, Perth, W. A.

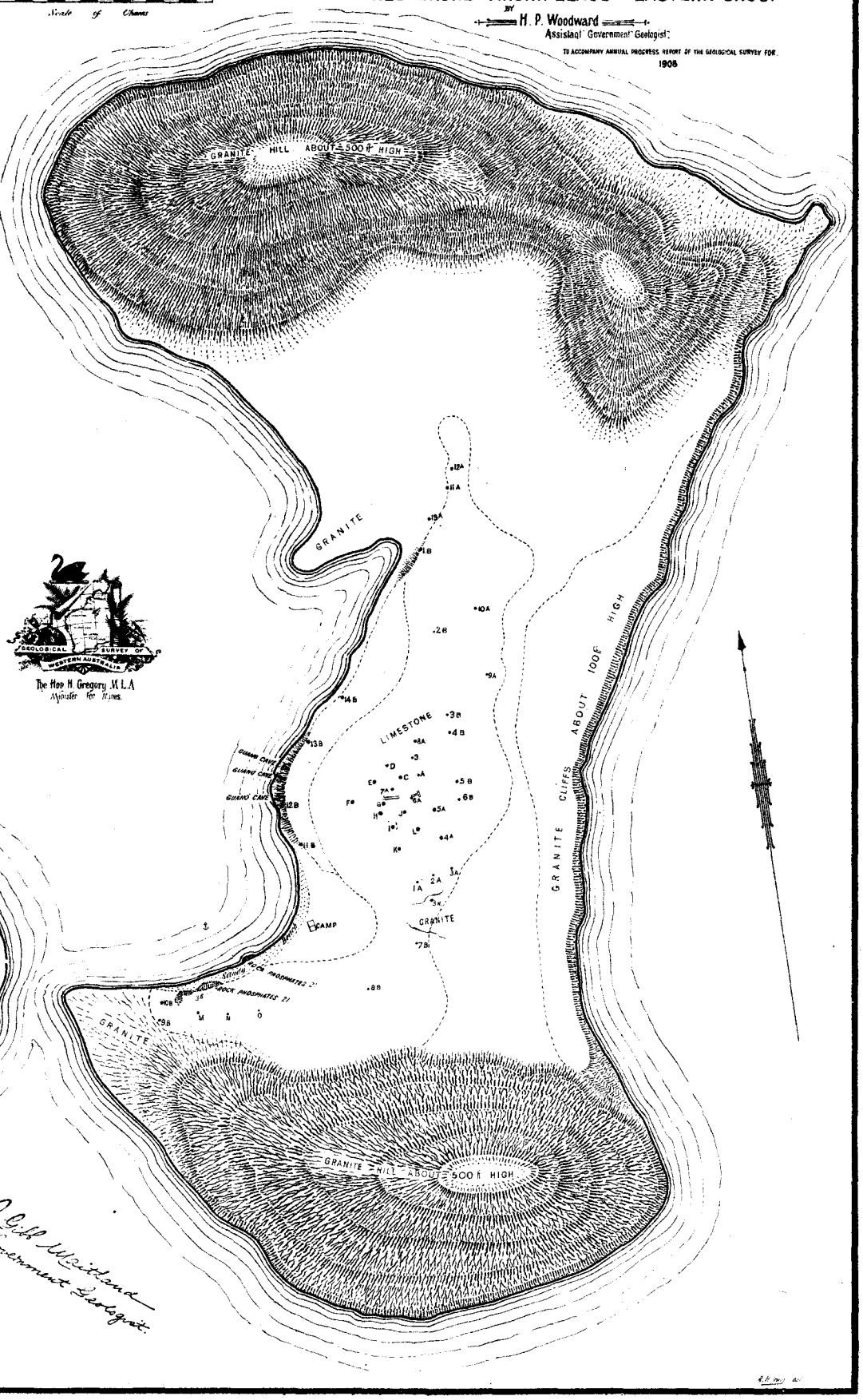
PLAN SHEWING PHOSPHATE DEPOSITS ON CHRISTMAS ISLAND

RECHERCHE ARCHIPELAGO EASTERN GROUP

Scale of Chains 0 7 14

BY H. P. Woodward
Assistant Government Geologist.

TO ACCOMPANY ANNUAL PROGRESS REPORT OF THE GEOLOGICAL SURVEY FOR 1908



The Hon H. Gregory M.L.A.
Minister for Mines.

A. Gibb Maitland
Government Geologist.

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

bare, dome-shaped granite masses rise to an elevation of about 500 feet above the sea level.

The central or isthmus-like portion which connects these two is comparatively low, attaining its greatest elevation to the seaward (east), where it presents a perpendicular granite cliff face of about 100 feet to the ocean swell.

There is a general fall of the surface to the westward where the limestone cliffs never exceed 30 feet in height, whilst about the centre of this side a sandy beach extends for a length of about 13 chains.

This island forms a conspicuous object, presenting the appearance of two isolated peaks each of which rises abruptly from the sea and is visible for a distance of about 30 miles.

A few chains from the south-western part of the island is another called New Year Island, which is a low bare granite mass, the two being so grouped as to form a land-locked harbour protected from all quarters but the north-west, which is in the direction of the mainland.

So far no fresh water has been discovered upon this island, but it is highly probable that a supply of fair quality can be obtained by sinking to a moderate depth in the sandy hollow near the camp. Firewood is scarce since the only vegetation consists of scrub of small size, whilst there is absolutely no timber.

The granite rocks which form the foundation of this island are of a highly igneous character, thus differing considerably from many of those met with in the south-western district which may possibly be of metamorphic origin. They present a bold, bare, polished surface upon which the foothold is very insecure, often having the appearance of colossal ruins or obelisks.

The inclined polished surfaces exhibit a complex structure of dark-coloured biotite granite and gneiss or schists, the foliations of which are much plicated, and appear to represent the primary rocks of this group since fragments and masses of them are often met with entangled in the magmas of porphyritic granite which appears to have been intruded at a subsequent period.

These porphyritic granites are of a pale flesh colour, the ground mass being composed of quartz, felspar, and mica (muscovite), whilst scattered here and there throughout the whole are large crystals of orthoclase felspars which vary in size from one-half to an inch in length.

Radiating from these porphyritic masses are dyke-like extensions in which the character of the rock changes rapidly into pegmatite, whilst further still from the primary magma these pass almost imperceptibly into quartz veins which occasionally contain a little felspar or mica in the form of large crystals, the latter being mostly biotite.

Intersecting the entire series are numerous narrow veins of highly basic fine-grained greenstones which contain magnetite in such large proportions that even the thinnest microscopic sections are almost opaque.

Overlying these granite rocks are a series of limestones and sandstones which were apparently deposited by the action of waves and wind since the lower members of the series contain boulders of granite cemented together by a dark-coloured shelly limestone.

Overlying this shell limestone are a series of cream-coloured limestones very similar to those met with along the south-western coast, followed by a fine-grained sand rock (often ferruginous) upon the top of which is an irregular deposit of travertine limestone which either occurs in the form of layers or nodules often mixed with dark-coloured sandy soil.

Two sections of this limestone have proved to be phosphatic, viz., the basal beds of shelly limestone which have been converted into rock phosphate and the surface travertine.

In considering the first of these the reason for the presence of phosphoric oxide in considerable quantity is difficult to account for since there is nothing in the character of the rock to indicate bone structure, whilst one would imagine that a beach composed of loose shelly gravel would not be selected by birds for a camping ground and nesting place. The fact remains, however, that the carbonate of lime which originally formed the shell fragments has been largely transformed into phosphate of lime. The only possible solution being that at some remote period these beds formed cave bottoms in the cliff face in which large deposits of guano accumulated, the soluble phosphates in which gradually acted upon the shelly matter whilst preserving its structure.

The overlying creamy limestones and sandstones are almost destitute of phosphoric oxide, and since any organic structure that may have existed has been entirely destroyed by meteoric agencies their origin is obscure, but in all probability they resulted from blown sands and shelly matter.

Upon the other hand the presence of travertine can be easily accounted for by the action of capillary attraction in drawing upwards ground waters which have dissolved portions of the carbonate of lime contained in the underlying sands; these, upon nearing the surface during dry warm weather, have evaporated, leaving behind their burden of lime at first as a thin film which has been added to from year to year until a layer of often considerable thickness has been formed, or when in the first instance the deposition has taken place around a particle which has been increased by the addition of thin coats periodically, thus forming nodules which sometimes attain considerable size.

Overlying the travertine deposits is a layer which varies considerably in thickness of soil of a dark colour, rich in organic matter, upon which the salt bush and other vegetation flourish and in which numerous penguins and mutton birds burrow and nest.

This travertine limestone is, as a rule, phosphatic, but its value varies very considerably, ranging from brown resinous-like veins or coatings of almost pure tricalcic phosphate down to a hard white vitreous limestone containing scarcely a trace.

The phosphorization of the limestone has apparently taken place directly from the contact of descending solutions containing soluble phosphates derived from the excrement of sea fowls, the stronger phosphoric oxide having replaced an equivalent of the weaker carbonic oxide, thus forming an insoluble phosphate of lime.

This chemical change has naturally not taken place by any means to a uniform degree over the entire area, the zone of highest value being for the most part confined to those localities where there is a sufficient cover of soil to allow the birds to burrow, whilst those portions where the travertine outcrops at the surface usually contain little phosphoric oxide.

This phosphorized travertine covers a total area of 153,600 square yards and has an average thickness of about two feet, and therefore amounts to 102,400 cubic yards, whilst the average thickness of overburden of sand or soil is two feet.

A considerable number of shallow holes have been sunk upon this area, the majority of which were carefully sampled, the positions of which are shown upon the plan.

These samples were taken in such a manner as to nearly approach that which would be employed in working these deposits upon a large scale, viz., stripping the overburden and screening the limestone to get rid of sand and earth; therefore the results obtained do not represent the actual value of the clean limestone,* since a certain quantity of sand and soil adhering to the stone was included.

The area covered by the limestone may be roughly divided into three, the first of which is situated at the north and includes a belt upon the cliff tops extending southward towards the camp. In the section it will be noticed that the values in phosphoric oxide are uniformly low and it in consequence may be excluded from any calculations.

The second area, which may be called the central, is situated in a dip near the centre of the island, and it has been very thoroughly prospected; this I estimate to contain 15,483 cubic yards of an average value of 13.50 per cent. phosphoric oxide worth about 34s. per ton.

The southern, or third, area has been very little prospected, but what has been done recently is of a most promising character, for not only are the values good but the deposit is of greater thickness. I estimate that there are 36,300 cubic yards in this section, whilst as far as tested it contains an average of 11.50 per cent. of phosphoric oxide, which would make it worth 29s. per ton; this is probably considerably under its true value since all the trial shafts have been sunk upon the edge of the area.

The rock phosphates on the shore returned the highest percentage of phosphoric oxide, but since it outcrops for only a short distance the extent of this deposit cannot be estimated, but it probably covers a considerable area beneath the southern section last mentioned. A rough estimate of the outcrop gives about 1,000 cubic yards in sight of an average value in phosphoric oxide of 23.64 per cent., worth about £3 per ton.

* Analyses of four picked samples, by the Mineralogist and Assayer :—

No. 765—Resin-like substance in rock, Xmas Island .. .. Phosphoric oxide, P_2O_5 32.03% ; Calcium Phosphate, $Ca_3P_2O_8$, 69·92%

No. 767—G. S. M. 8136 .. .. Phosphoric oxide, P_2O_5 33.67% ; Calcium Phosphate, $Ca_3P_2O_8$, 73.50%

No. 768—G. S. M. 8137 .. .. Phosphoric oxide, P_2O_5 29.67% ; Calcium Phosphate, $Ca_3P_2O_8$, 64.77% encloses large crystals of felspar.

No. 769—G. S. M. 8138 .. .. Phosphoric oxide, P_2O_5 27.20% ; Calcium Phosphate, $Ca_3P_2O_8$, 59.37%

The following is a list of the samples with the section of the formation exposed in each hole and the locality symbol for reference to the map, the analyses having been made by the Government Analyst :—

	Section.	P_2O_5 = value	$Ca_3(PO_4)_2$.	CO_2 =	Carb. Lime.
1A.	6in. Sand with little limestone rubble	..	..	..	..
	12in. Rubbly limestone with sand	10.62	23.18	6.49	14.85
	48in. Sand rock	..	..	..	..
2A.	18in. Sand and soil	..	..	..	..
	15in. Rubbly limestone	9.00	19.65	16.70	37.95
3A.	18in. Sand and soil	..	..	..	..
	15in. Calcareous sandstone	6.01	13.12	25.18	57.22
	Sand rock	..	..	..	..
4A.	12in. Sand	..	..	..	..
	8in. Rubbly limestone	9.94	21.70	19.75	44.88
	Hard limestone	..	..	..	..
5A.	13in. Sand	..	..	..	..
	12in. Limestone	12.02	26.24	14.18	32.22
	Sand rock	..	..	..	..
6A.	Trench West End—				
	6in. Sand	..	..	..	..
	18in. Rubbly limestone	21.36	46.62	2.86	6.49
	Hard limestone	..	..	..	..
	Trench East End—				
	3in. Sand	..	..	..	..
	6in. Rubbly limestone	21.36	46.62	2.86	6.49
7A.	East End—				
	36in. Sand	..	..	..	..
	24in. Ferruginous limestone	14.41	31.46	15.22	34.59
	Sand rock	..	..	..	..
7A.	West End				
	36in. Sand	..	..	..	..
	18in. Limestone	23.58	51.47	3.47	7.88
	Sand rock	..	..	..	..
8A.	18in. Limestone rubble	15.89	34.71	9.11	20.70
	Sand rock	..	..	..	..
9A.	7in. Soil	..	..	..	..
	18in. Limestone	4.92	10.74	21.13	48.02
	Sand rock	..	..	..	..
10A.	6in. Soil and rubble	..	..	..	..
	12in. Limestone	3.17	6.92	27.95	63.52
	Sandy limestone	..	..	..	..
11A.	15in. Ferruginous calcareous sandstone	8.69	18.97	0.63	1.40
	Sand rock	..	..	..	..
12A.	12in. Rubbly limestone and soil	3.00	6.55	26.62	60.50
	Sand rock	..	..	..	..
13A.	18in. Limestone rubble and sand	3.33	7.27	7.60	17 27
	48in. Yellow sand	..	..	..	..

LIST OF SAMPLES—*continued.*

Section.	P_2O_5 = value.	$CaO_3(PO_4)_2$.	CO_2 =	Carb. Lime.
1B. Limestone outcrop (General)	5.43	11.85	28.75	65.34
2B. 12in. Sand	..	..	..	..
6in. Sand and rubble	..	..	..	..
12in. Limestone	5.22	11.39	25.90	58.86
Sand rock	..	..	..	..
3B. 5in. Sand	..	..	..	..
12in. Limestone	5.06	11.05	24.12	54.81
4B. 17in. Limestone and soil	..	..	..	..
6in. Hard limestone	6.23	13.60	23.69	53.84
Sand rock	..	..	..	..
6B. 36in. Sand	..	..	..	..
18in. Sand and rubble	19.55	42.66	2.25	5.11
6in. Limestone				
Sand rock	..	..	..	..
7B. 42in. Rubbly limestone	12.86	28.07	0.73	1.66
Sand	..	..	..	..
8B. 12in. Sand	..	..	..	..
6in. Ferruginous limestone and sand	8.68	18.95	0.87	1.97
Ferruginous sandstone	..	..	..	..
9B. 24in. Sand	..	..	..	..
42in. Ferruginous sandy soil with nodules	6.37	13.90	0.35	0.79
Ferruginous sandstone and grit	..	..	..	..
A. 18in. Sand	..	..	..	..
30in. Limestone	3.23	7.05	23.50	53.41
Sand rock	..	..	..	..
B. 48in. Sand	..	..	..	..
12in. Limestone	11.56	25.24	14.63	33.25
C. 36in. Sand	..	..	..	..
24in. Limestone	19.30	42.13	8.04	18.27
Sand rock	..	..	..	..
D. 60in. Sand	..	..	..	..
18in. Limestone	17.01	37.13	8.68	19.72
E. 48in. Sand	..	..	..	..
18in. Rubbly limestone	16.27	35.52	8.85	20.11
12in. Limestone				
Hard limestone	..	..	..	..
G. 36in. Sand	..	..	..	..
G. 18in. Rubble and soil	12.97	28.23	5.33	12.11
12in. Soil				
12in. Limestone				
Sand	..	..	..	..
H. 36in. Sand	..	..	..	..
24in. Rubble and soil	11.81	25.78	10.15	23.06
12in. Limestone				
Sand rock	..	..	..	..
I. 9in. Sand	..	..	..	..
12in. Limestone	9.73	21.24	17.13	38.93
Sand rock	..	..	..	..
J. 42in. Sand	..	..	..	..
42in. Sandy limestone	9.23	20.17	16.57	37.66
K. 48in. Sand	..	..	..	..
30in. Limestone	9.75	21.28	23.66	53.77
L. 36in. Sand	..	..	..	..
36in. Rubble and sand	18.90	41.26	0.41	0.93
M. 6in. Sand	..	..	..	..
18in. Limestone	9.17	20.02	21.20	48.18
Sand rock	..	..	..	..
N. 12in. Sand	..	..	..	..
54in. Limestone	*12.51	..	..	..
Sand rock	..	..	..	..
N3. 3in. Sand	..	..	..	..
42in. Limestone	15.46	33.74	0.70	1.59
21 Shell rock phosphate	23.64	51.61	3.55	8.07
31 General sample, from camp to guano caves (cliff)	1.28	2.82	30.50	69.32
36 General sample, cliff south of camp	7.79	17.01	20.88	47.45
42 Rock phosphates, roof of guano caves	†1.38	..	..	..

* = 27.22 Tricalcic phosphate.
† = 3.01 Tricalcic phosphate.

PHOSPHATIC FERTILISERS.

(By E. S. Simpson, Mineralogist and Assayer.)

Of the many substances necessary to insure the healthy and vigorous growth of those plants upon which man depends so much for food and other supplies, there are only four which are not very generally present in all soils in abundant quantities. These four are water, phosphorus, nitrogen, and potash; the absence of the first of which in sufficient quantities necessitates some form of irrigation, the absence of one or more of the last three, some form of artificial fertilisation. This latter process consists in the addition to the soil of small quantities of substances containing a large proportion of the desired element. These fertilisers are largely of mineral origin, and derived from a source where the desired element is abundant and only partly or not at all utilised. Thus coal beds contain nitrogen which is not of any value to plant life until during the preparation of gas it is converted into ammonia compounds rich in available nitrogen. Potash fertilisers are derived mainly from

beds of potash salts buried at considerable depths in the ground in Germany. Phosphorus is derived from very many sources, both organic (bones, guano, etc), and inorganic (Thomas's phosphate, etc.).

The phosphorus in many of these fertilisers has a long and interesting history which will be considered after a statement of the main varieties of phosphatic material used as a source of fertilisers.

CLASS A.—*Primary minerals*—

Apatite,
Amblygonite, etc.,
Iron Phosphates.

CLASS B.—*Animal concentrations*—

Bones, new and fossil,
Guano,
Bat guano,
Coprolite (in part).

CLASS C.—*Secondary minerals, the phosphorus in which was originally derived from materials of Class B*—

Rock phosphate (lime phosphate),
Aluminium phosphate,
Iron phosphates,
Copralite (in part).

CLASS D.—*Manufactured products*—

Superphosphate,
Thomas's phosphate,
Precipitated phosphate,
Bone ash.

The ultimate source of all the phosphorus in these substances is those small amounts of apatite and other phosphates present in the rocks forming the crust of the earth. As the rocks weather these have been and are still being absorbed by vegetation; these again are food for animals which concentrate the phosphorus in the bones. Such bones being indigestible (*e.g.*, fish bones), form a considerable proportion of the excreta of birds, reptiles, bats, etc., giving rise to deposits of guano, bat guano, and coprolite. Rain water acting on such deposits carries part of the phosphorus in solution down on to the surface of the underlying rocks where chemical interaction takes place with the formation of one of the many forms of "rock phosphate" according to the nature of the original rock—lime phosphate rock when limestone, aluminium phosphate rock when aluminous lava or granite, iron phosphate rock when ironstone or ferruginous lava. The Coprolite of this class is also formed by precipitation from water of dissolved phosphate of lime.

The relative value of phosphatic material depends upon its solubility in water, in dilute carbonic acid, and in saline solutions, since it is only when dissolved in the water of the soils that it can be absorbed by the plant. The naturally occurring material, with the exception of guano, bat guano, and bone, are almost wholly insoluble and only when finely ground do they show any appreciable effect on vegetation, and that effect is spread over a long period of time owing to the slowness of solution. They have, therefore, to be subjected to certain processes with a view of increasing their solubilities. In this connection the solubility of the chief compounds occurring in the crude and manufactured fertilisers must be considered. These are:—

Tricalcium phosphate.—Practically insoluble in water, dilute carbonic acid and saline solutions. It is the chief constituent of apatite, bone, bone-ash, coprolite, and lime-rock phosphate. Occurs to some extent in guano.

Dicalcium phosphate.—Practically insoluble in water, but readily attacked by dilute carbonic acid or many saline solutions. Occurs in guano, bone, bone-dust (desiccated bone, etc.), and forms main constituent of "Precipitated phosphate." Forms slowly in superphosphate when stored.

Monocalcium phosphate.—Readily soluble in water. Chief constituent of superphosphate.

Basic lime phosphate.—Practically insoluble in water, but attacked by carbonic acid and saline solutions. This is the important constituent of "Thomas's phosphate" or "Slag phosphate."

Aluminium phosphate is practically insoluble. It occurs in many rock phosphates both by itself and in conjunction with iron phosphates and tricalcium phosphate. In superphosphate made from aluminous calcium phosphates more or less of it occurs, especially with the lapse of time.

Iron phosphates of several varieties are known, all insoluble. They occur in phosphatic iron ores from which Thomas's phosphate is prepared, in many rock phosphates and in superphosphate in a similar way to aluminium phosphate.

The important constituent of all these compounds is the compound of phosphorus and oxygen known as phosphoric oxide, or more commonly, but incorrectly, phosphoric acid.

This constituent has three different market values, according to its solubility. Recent Perth rates were per unit (one per cent.) per ton:—

	s.	d.
Water soluble	5	2
Citrate soluble*	3	10
Insoluble	2	7

Owing to the low price of the insoluble phosphoric oxide and its slow action on vegetation it is very desirable that most crude phosphatic material should be treated so as to convert the common insoluble form into the form soluble in water or saline solutions.

The most important of these manufactured fertilisers rich in water soluble phosphoric oxide is "Superphosphate." This substance is prepared by the action of sulphuric acid on a high grade natural calcium phosphate, the final product consisting mainly of a mixture of monocalcium phosphate (soluble in water) and gypsum. In this process approximately equal weights of acid and rock are mixed together and nothing removed by washing so that the resultant superphosphate contains a percentage of phosphoric oxide just half of that in the original rock. For this reason, if for no other, it is necessary to have a high grade raw material, the lowest limit to produce a saleable "super" being about 25 per cent. phosphoric oxide. Superphosphate can only be made from a lime phosphate material, and not from an iron or aluminium phosphate. Small proportions of the oxides of iron and aluminium up to 2 or 3 per cent. do not appreciably affect the value of a rock phosphate but above that point they decrease its value for the making of superphosphate since the manufactured product is found to develop with lapse of time insoluble phosphates of these metals. A little calcium

* *i.e.* Soluble in saline solutions.

carbonate in the rock is advantageous as it renders the final product drier and more granular, but beyond 10 per cent. is a decided disadvantage as it consumes a large proportion of acid which would otherwise be usefully employed in converting insoluble into soluble phosphate. Other metallic compounds readily attacked by sulphuric acid, such as magnesium carbonate, clay, etc., are objectionable constituents of rock for the same reason. Except that it lowers the general grade of the fertilisers, insoluble matter such as sand is no drawback to the crude rock.

Pure tricalcic phosphate when treated with the requisite amount of chamber acid will yield a superphosphate carrying 25 per cent. of phosphoric oxide. A good commercial superphosphate will contain from 15 to 20 per cent. of phosphoric oxide, necessitating 30 to 40 per cent. in the crude rock employed.

It is evident from what has been stated above that much crude phosphatic material is unsuited for conversion into superphosphate. Such material is utilised in one of three ways:—

(1.) Very fine grinding is resorted to, and the crushed material used as a fertiliser without further treatment.

(2.) Iron ores containing appreciable amounts of phosphorus are smelted to form a pig iron rich in phosphorus, which in the process of conversion into steel yields Thomas's phosphate slag, which only needs fine grinding to be available for fertilising. Deposits of iron and aluminium phosphates or of low-grade calcium phosphates could be utilised in this way by smelting with iron ores.

(3.) Similar crude material and phosphatic bye-products from other industries have in Europe been utilised by dissolving in acid and forming "Precipitated phosphate" by the addition of black ash from the alkali furnaces.

———

THE COMMERCIAL ASPECT OF PHOSPHATES AND SUPERS.

(Being an extract from a pamphlet published by Dr. Charles Chewings).

The thickness or depth of strata, its horizontal extension, accessibility, and conveniences for winning the rock, taken together with the percentage of tricalcic phosphate it carries (not less than 50 per cent. to 60 per cent.), and its freedom from an excess of the oxides of iron and aluminium, taken together are the points to be considered in determining the value of a phosphate rock deposit. The usual method of testing the value is to put bore-holes down over the area 100 feet apart, and if the results warrant it to then sink pits 10ft. by 5ft. at intervals 500 feet apart. Fifteen feet is the greatest depth boreholes are sunk on South Carolina, when, if no phosphate is encountered, other localities are tested. The value of a phosphate rock depends very largely on its suitability for making superphosphates therefrom. In the manufacture of superphosphates the phosphate is first ground to a fine powder; then mixed with sulphuric acid. The acid dissolves the phosphate, and two parts of the lime (which are combined with the phosphoric acid in the tricalcic form) are first set free and then combine with the sulphuric acid, making a hydrous and water-soluble phosphate, called a superphosphate, and a sulphate of lime, or gypsum. The reaction may be shown thus:—

Tricalcic phosphate. Sulphuric acid. Gypsum.

$$3CaO, P_2O_5 + 2(H_2O, SO_3) = 2(CaO, SO_3) +$$

Monocalcic phosphate.

$$CaO, 2H_2O, P_2O_5$$

There is also what is known as a "dicalcic" or "reverted" form that is insoluble in water, but readily soluble in ammonium citrate, as well as "available" to the roots of plants ($2CaO, H_2O, P_2O_5$). There is a tendency in nature for the monocalcic form to revert to the dicalcic form, and again for the dicalcic to revert to the tricalcic. It is said that when a superphosphate contains too much iron and alumina the tendency to revert is much accentuated, and for this reason they are regarded as deleterious ingredients.

The sulphuric acid molecules' action on the constituent molecules in an ordinary phosphate rock is clearly shown in the following equations, given by Wyatt:—

Tricalcic phosphate $Ca_3P_2O_8 + 2H_2SO_4 = 2Ca\,SO_4 + Ca\,H_4P_2O_8$.

Calcium carbonate $CaCO_3 + H_2SO_4 = CaSO_4 + CO_2 + H_2O$.

Aluminium phosphate $(Al\,PO_4)_2 + 3H_2SO_4 = Al_2\,(SO_4)_3 + (H_3PO_4)_2$.

Phosphate of iron $(Fe\,PO_4)_2 + 3H_2SO_4 = Fe_2\,(SO_4)_3 + (H_3PO_4)_2$.

Magnesium carbonate $Mg\,CO_3 + H_2SO_4 = Mg\,SO_4 + CO_2 + H_2O$.

Fluoride of calcium $Ca\,F_2 + H_2SO_4 = Ca\,SO_4 + 2HF$.

In the preparation of superphosphate the percentage of phosphoric acid per ton of rock is reduced, roughly, by one-half, but the tonnage in superphosphate therefrom is about doubled by the sulphuric acid, water, etc., that is added in the making.

Superphosphates made from rock phosphate that carries a large quantity of iron and alumina have a tendency to revert, or become insoluble again; therefore the unit percentage of tricalcic phosphate is worth less in rock containing a good deal of these than rock containing only a little. Calcium fluoride in excess also reduces the value of a rock phosphate as it uses up too much acid; it forms sulphate of lime (gypsum) and adds weight, to the detriment of the superphosphate. Siliceous matter is a useless, harmless ingredient, adding unnecessary weight.

Phosphates carrying too much carbonate of lime are not good for making superphosphates, as they absorb too much acid. Some water must be added to form gypsum in the preparation of superphosphate. Some phosphates carry too little carbonate of lime. Tricalcic phosphate contains 45.81 parts by weight of phosphoric acid, and 54.19 of calcic oxide. Iron, alumina, and magnesia may partially replace the lime in the raw rock, but the phosphate is always deteriorated thereby, particularly when iron and alumina are the replacing constituents. Wyatt states that next to insufficiency of phosphoric acid itself, a lack of *carbonate* of lime (not lime) is the most serious defect in a phosphate. The defect is augmented in the presence of iron and alumina in any form. By blending, the happy quantity of carbonate of lime can often be effected. Finely-powdered chalk will do, or any other source of cheap carbonate of lime. This method of drying (viz., by adding lime) is to be preferred to any roasting process: how could it (says Wyatt) when we know that the monocalcic or water-

soluble phosphate of lime cannot exist in any other form than the hydrated state? Iron and alumina are not so obstructive if carbonate of lime is present in proper quantity. Calcining the rock before treating is harmful. Free lime retards the drying action, and, of course, calcium produces free lime by driving off the carbonic acid (treating carbonates with acids also releases the carbon dioxide); hence it follows that a phosphate rock from which super. is to be made should be completely chemically analysed, and not only the percentage of tricalcic phosphate and of iron and alumina determined. Phosphates from different localities are often mixed to get a good rock for high-grade super. Finest grinding of the material is absolutely essential.

The factor for converting phosphoric anhydride (P_2O_5) into phosphate of lime is 2.18; consequently $2.26 \times 2.18 = 4.92$ phosphate of lime.

For traders the following form may be found useful in buying:—"The unit per ton of $Ca_3P_2O_8$ not to be less than ( ) and contain not more than ( ) per cent. of Fe and Al, calculated as oxides, on the dry basis. Every unit of these oxides, singly or combined, in excess of maximum shall be deemed to neutralise two units of the phosphate of lime, and such excess shall, therefore, be deducted from the total phosphate of lime if found in the results of chemical analysis."

In commerce phosphoric anhydride (P_2O_5) is misleadingly referred to as phosphoric acid. Laboratory tests show that the phosphoric acid in bone, while insoluble in water, may be partly dissolved at a certain temperature by a neutral solution of ammonium citrate. This medium is used to determine what is called "available" in other phosphatic products. The rate of solubility in this medium is measured by the method of preparation of the bone and its fineness, the phosphate in a raw bone-meal of the same fineness showing rather a lower rate of solubility than the phosphates in steamed bone. The phosphate in finest steamed bone is much more soluble than that of the coarser grades. This measure of the rate of solubility of bone, while not, perhaps, showing the exact rate at which the plants may obtain it, is a fairly safe guide in its use for most crops, as compared with those mineral phosphates which are not perceptibly soluble in this medium. The range of solubility in different kinds and grades of bone is from 20 per cent. to 75 per cent., and the average of a large number show that about 30 per cent. is soluble in citrate of ammonia, which would be called "available" if found in mixed fertilisers, and probably can be as safely depended upon as the "available" shown in other products.

Soluble Superphosphate means the percentage of tricalcic phosphate which has been dissolved, and *not* the percentage of monocalcic phosphate. In analysis terms: monocalcic phosphate of 17.3 per cent. is equal to tricalcic phosphate rendered "soluble," 27.2 per cent.; this means that it would require 27.2 per cent. tricalcic phosphate to furnish 17.3 per cent. of soluble phosphate. The former is called "soluble phosphate," and such a super. as the above would be described as containing 27.2 per cent. of soluble phosphate. In commercial transactions in mineral phosphates the "total available" only is regarded, the contents of insoluble being ignored.

Marketable superphosphate usually contains from 32 per cent. to 35 per cent. of bone phosphate, which contains some 17 per cent. of phosphoric acid, the phosphoric acid being in an "available" form. Bone ash superphosphates contain on the average about 16 per cent. of total available phosphoric acid. South Carolina rock superphosphates contain 12 to 14 per cent. of total available, of which 1 per cent. to 3 per cent. is dicalcic or reverted. The sum of the soluble and reverted forms is called the "total available."

Florida superphosphates, from the pebble rock, often contain 16 per cent. or 17 per cent. of total available, with varying percentages of reverted and insoluble.

Tennessee superphosphates run up to 16 per cent. to 18 per cent. of "total available" and the concentrated or "double superphosphates" may contain as high as 45 per cent. of "available," practically all of which is soluble. It will thus be seen that bone phosphate (raw) of 60 per cent. and upwards will, when treated, produce a superphosphate containing a 30 per cent. and upwards bone phosphate, the half of which should be soluble in water, and the other half in ammonium citrate. The phosphoric acid contents of a 60 per cent. (or any other percentage) raw rock may be ascertained by multiplying the 60 per cent. by 46 per cent., that being the proportion of phosphoric acid in bone phosphate.

The phosphates mentioned above, with the exception of Thomas's phosphate, constitute what are known as "raw materials." As a rule they are not used directly on the land, but are first subjected to chemical treatment to render the phosphoric acid constituent more soluble and assimilable by the plant. In the raw state, even if ground very fine, the bone phosphate is insoluble in water, and the phosphoric acid is not so readily available to the plant as when "treated," on account of the slow rate of decay of the raw material. The finer the grinding of course the more rapid the decay, and this is the method adopted with phosphates that do not lend themselves readily to the manufacture of superphosphates, *e.g.*, when they have an excess of impurities such as alumina or iron, or the percentage of phosphoric acid is too low. Natural bones contain on an average about 20 per cent. of phosphoric acid (if good), which is equivalent to 43.60 per cent. of bone phosphate, but in certain cases 60 per cent. Ground bones are more readily attacked by the natural solvents—air, water, and solvent substances in the soil—than the mineral phosphates, but if the bones are "treated" the phosphoric acid contents become immediately available.

Early in June I proceeded to the Phillips River Goldfield to conduct a Geological Survey of the Ravensthorpe, Mt. Desmond, and Kundip mining centres, which were mapped in and the mines examined. A full report upon this, accompanied by a Geologically-coloured and Contour map will appear shortly as Bulletin No. 35, which is now in the printer's hands.

I also visited Wagin to examine some workings for gold upon private property, but since the assays of the samples taken did not prove the existence of that metal, no report was prepared. Owing to the absence of the Government Geologist my time has been very largely occupied upon official matters, and therefore only 101 days have been spent in the field during the year.

PLAN OF THE IRON LODES

KOOLAN ISLAND

YAMPI SOUND

BY

W. D. Campbell

ASSISTANT GEOLOGIST

TO ACCOMPANY ANNUAL PROGRESS REPORT OF THE GEOLOGICAL SURVEY FOR

1908

0 10 50 100

Scale of Chains

GEOLOGICAL SURVEY OF WESTERN AUSTRALIA

The Hon. H. Gregory M.L.A.
Minister for Mines

TRUE NORTH

MAG. 2½° W.

KOOLAN ISLAND

YAMPI PASS

YAMPI SOUND

Iron Ore

Quartzite

Field Nos 12-19

Field No 16

Field No 15

Field Nos 1-3

BULK SAMPLE

129

128

132

131

130

60°

50°

80°

40°

Alfred Maitland
Government Geologist

R. H. Irwin Del.

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

W. D. CAMPBELL, Assistant Geologist.—In the early portion of the year this officer continued his survey of the Irwin River coal district and the preparation of plans, sections, and Part I. of the report; an interim report, with photographs of the glacial beds met with there, was also prepared in advance of the main report.

In May he proceeded to Derby with Mr. Surveyor Ellis and inspected and reported upon the Yampi Iron Ore deposits, Mr. Hadley's mission cutter being engaged specially for that purpose. The report submitted on his return is as follows:—

Yampi Sound Iron Ore Deposits.

"The locality at Yampi Sound where leases Nos. 128 to 132 have been taken up on iron ore deposits is an island known to the aboriginals in the neighbourhood as Koolan. On the south side there is a navigable passage from three-quarters to one-eighth of a mile wide, the narrow part being at the eastern end. The island is about eight miles long and one mile wide, and has a series of mountainous ridges in the direction of its greatest length, composed of highly inclined metamorphic rocks consisting chiefly of sandstones, quartzites, and schists; these have been upturned and their denuded edges have a strike of about 118 degrees and underlay about 50 degrees southerly. The iron lodes appear to be interbedded with these rocks, and their outcrops are very conspicuous along the high ridge skirting the south side of the island and other ridges near the north side. The ore has not become hydrous but retains a black metallic lustre, characteristic of magnetite, but does not uniformly exhibit magnetic properties.

The ore appears to have been first discovered here in the early pearling times, probably about thirty years ago, but it was re-investigated last year by Mr. Percy Kean of the Australian Prospecting Association of Charters Towers, Queensland, which company supplies the Mount Morgan Gold Mines with iron ore for flux purposes. Mr. Kean has now taken up leases with the idea of exporting the ore.

At the west end of the westernmost lease, No. 130, the lode forms the south slope of the ridge from its summit about 350 feet in altitude to its base at the water's edge. Easterly from here a quartzite ridge intervenes between it and the water, but the outcrop is exposed all along the side of the ridge in this direction and for 200 feet in altitude on its side. This lode outcrops more or less continuously through the one and a half miles intervening between leases Nos. 131 and 132, where the general character of occurrence is similar to No. 130.

Eastward of lease 132 there is a break in the country, the position of the ferruginous outcrop as it reappears several chains distant being more to the southward, where it occurs in two or more beds which underlay to the northward at about 40 degrees, as do also the accompanying strata, but the lay of the quartzite ridge remains unaltered. The explanation of this may be that there is a fold of the strata, leases Nos. 128 and 129 occupying the upper part of the fold.

In the three western leases the lode appears to vary from four to fifty feet in width, whilst in places another smaller one can be seen about fifty feet distant on the north side. The ore in the main lode has numerous cross jointing, dipping 66 degrees to the westward; this will have to be taken advantage of in quarrying, for its hardness and toughness preclude promiscuous drilling.

In the lode body there are occasional bars and patches of vesicular iron ore, whilst sheets of this material appear to also accompany it in places. Towards the foot of the cliff in the westerly leases there are grey micaceous slates, and on the opposite side of the shallow bay there are siliceous and ochreous beds.

All across the island there is a succession of sandstone beds underlying southerly. About three-quarters of a mile north of lease No. 131 there is a small steep-sided bay, near which a line of iron ore outcrops; it must be about forty feet thick and separates easterly into two divergent beds which follow a nearly parallel course about twenty chains apart; the northernmost continues for a distance of nearly a mile but the southern one extends considerably farther; both underlay south and appear to range from five to twenty-five feet in width. I would suggest the desirability of reserving these ore beds on the northern side of the island, temporarily at least, and so preserve it from export.

About half a mile from the eastern extremity of the island there are several rocky islands which appear to consist principally of iron ore, but they were not inspected. Cockatoo Island, about two miles west of the opposite end of the island, appears to have a similar southerly underlay to that of Koolan, whilst there are also some smaller outlying islands of a dark brown colour, which may denote the presence of iron ore.

Most of the iron lodes lie so conformably with the strata that they have the appearance of being contemporaneous with them, but this theory is not supported by the divergent ones on the north side of the island, which possess the general characteristics of fissure veins. The lodes generally appear to closely resemble the celebrated magnetite beds of Lapland and Sweden. The siliceous strata overlying the ore exhibit, in places, a ripple-marked surface and also irregular markings which may have been formed by shrinkage cracks or may possibly even be fossilized organic remains. [8424.]

Pools of good water were found in holes in the iron ore at the top of the cliff in M.L. 128 and upon the lode at the head of the south arm of the above-mentioned cove, at the north side of the island; a spring also was reported by one of the aboriginals accompanying our party, situated in the mangroves in the creek bed west of M.L. 132, near which tracks and camping places of aboriginals were noticed.

The accompanying sketch shows the position of the iron ore deposits in the portions of Koolan Island that were visited, and a list is appended of the mineral specimens obtained here.

On the journey out from and the return to Derby, Sunday, Mermaid, and Long Islands were touched at, the rock being found to consist for the most part of gneissic granite. Whilst at Sunday Island I was shown specimens of tourmaline said to have been found there. Near Water Point at the south side of Yampi Sound there is a dark-coloured schistose rock containing clear particles of quartz. There is every indication that the last terrestrial movement in this district was one of subsidence, which theory is supported by the great scarcity of sandy beaches and the numerous coral

reefs. The channels separating the islands are often over 200 feet deep.

List of Mineral Specimens.

Reg. No.	Description.
8424	Koolan Island, Yampi Sound, South side of M.L. 130, quartzite showing ripple marks.
8425	Do. Quartzite showing markings (organic remains (?)).
8426	Do. Conglomerate composed principally of iron ore.
8427	Do. Iron ore.
8428	Do. Iron ore showing iridescence.
8429	Do. Magnetic iron ore from South side of M.L. 132.
8430	Do. From South side of M.L. 132, sandstone, underlaying iron ore on the North side.
8431	Do. South side of M.L. 129, vesicular iron ore.
8432	Do. Sandstone accompanying iron ore.
8433	Do. Conglomerate.
8434	Do. South side of M.L. 129 at sea level, micaceous schist.
8435	Do. South side of arm of bay, opposite M.L. 128. shaley sandstone,
8436	Do. Ochreous bed.
8437	Do. Sandstone, ½ mile North of M.L. 130.
8438	Do. ¾ mile North of M.L. 131, iron ore.
8440	Sunday Island, North side, gneiss.
8441	Yampi Sound, one mile South of Water Point, dark schistose rock.
8442	Do. One mile South of Water Point, quartz reef in dark schist.

On returning to Derby he proceeded, as soon as pack-horses were available, to the Federal Downs where wolfram had been found, of which he brought some bulk samples to head office, and prepared the following report:—

Wolfram Find near Federal Downs Station, West Kimberley.

"In accordance with instructions I proceeded after my return from Yampi Sound, as soon as horses and equipment were available, to the Wolfram Find with an aboriginal guide. The locality is about 70 miles north-easterly from Derby. At Mount Marmion a day was occupied collecting fossils from a calcareous zone at the base of the hill in the Upper Carboniferous beds; these fossils together with some samples of the limestone bands, which appear likely to afford good cement-making material, will be despatched by dray later on to Perth. The deep bore at the 67-mile on the Derby to Lennard Road was then visited and reported on, and the journey to the wolfram was resumed. The precipitous limestone range which forms the north boundary of the clay and sandstone plain was passed through by the valley at the head of the watercourse which passes near the Hawkstone Peak, when diorite and garnetiferous micaceous and chlorite schist hills appear. These schists contain numerous quartz veins which trend mostly in the direction of their foliation about 275 degrees and dip 80 degrees southerly. The hills are mostly steep, and in one of these about 350 feet high, comprising M.L. 146, the wolfram occurs crystallised out in the quartz veins which range from 3 to 15 inches wide, the wolfram crystals projecting from the side of the vein into the quartz matrix. The ridge of the hill is about a quarter of a mile long in the direction of the quartz veins. The principal patch of wolfram ore is towards the west end of the hill and on the south side.

"Samples were taken from various parts as well as bulk specimens totalling 163lbs. A sample of wolfram and quartz from here was submitted by Mr. J. F. Taylor, the lessee, and the laboratory report dated 9th October, 1907, stated that there was 68.5 per cent. of tungstic oxide.

The show of wolfram is fair and it may be found that the various veins unite at depth. No developmental work however had been done but tools were brought on the ground while I was there by Mr. Armitage, who is Mr. Taylor's representative. The approach to the lease is along the valley-flat right up to the outcrop.

An assay for gold also has been made in the Laboratory and the report states that 'none was found, but some specimens of a green mineral which proves on examination to be scorodite (arsenate of iron). It doubtless results from the weathering of arsenical pyrites, which mineral will probably be found below water level in the wolfram lode.'

"I then proceeded westerly to Mondooma, passing along the same belt of likely mineral country to near Trig. L2 where some promising schistose and pegmatite rock occurs, the latter containing tourmaline, staurolite, and kyanite, the last named being a translucent pale blue mineral which when clear and of good colour is cut as a gem and it is therefore well worth further attention.

"To the westward of Mondooma, the schists with quartz reefs re-appear for about 3 miles; beyond this is an extensive plain with a few scattered granite hills, until the white quartzite mountainous Wyndham Range is approached near Obagooma. This white quartzite is similar to that occurring at Yampi Pass.

"Several bores have been put down by the pastoralists to depths of 150 feet and more, on the line of springs that occur on the flat plain 10 to 18 miles south from Obagooma, and a copious flow of good artesian water has been obtained."

He next was occupied with preliminary work in connection with re-gauging the Artesian bore discharges, but this was eventually taken over by the Public Works Department, when a progress report was prepared. For facilitating water supply information the boundary of the granite hills was sketched from the Canning River to St. John's Brook south of Donnybrook, a distance of about 120 miles.

Inspections and recommendations were made for mineral reservations on the Oakabella Estate and on proposed mineral resumptions in the Northampton district also on reputed coal measures at Lynton, and reports and inspections on the possibility of artesian water supplies at Cookernup and Capel; also report on coal near Serpentine and on an alleged gold find near Highbury.

Reputed Coal Indications at Lynton, Northampton District.

"I have to report that I visited the Lynton District in company with Mr. J. W. Acton, prospector. I drove out by the Nonga Road and Chearry Well (The Gardens) and saw the square shaft sunk many years ago by Mr. Gregory. It is about the centre of Loc. 2395 and is in friable sandstone with thin ironstone beds. The shaft is nearly filled in now and the dump showed no indications of any other material, but coal is said to have been found in it. I consider the report to be manifestly absurd.

"Mr. Acton then showed me the site where he wished to make a trial boring at the junction of the Whitewater and Hutt Rivers at the crossing of the track from Lynton, opposite the north end of Loc. 1500. There are here massive beds of ferruginous sandstone, which dip to the west about 2 degrees, and these are overlaid by coastal limestone a few chains westerly. I could not find any fossil remains in the beds and the only specimens that Mr. Acton had found proved to be only circular ferruginous concretions. The strata are evidently of Jurassic age and are not likely to contain coal beds."

Cookernup Water Supply.

"I have to report that I visited Cookernup and saw Mr. A. L. Cunnold, the Secretary of the Farmers' Association, who showed me the site suggested by the Association for the test bore; it is on the west side of the Railway adjoining the railway crossing and is Crown land. Mr. Cunnold said that the Association have applied to have this block made a camping reserve for the convenience of settlers out west, so that if any water was struck it would be of public benefit as that obtained by wells is not good, and he represented that if artesian water was obtained at a reasonable depth it would encourage the settlers generally to put down bores. The site is marked on the accompanying litho of the townsite.

"The nearest indication of gneissic rock is one and a quarter miles easterly from the site, and it is probably about 30 feet higher, a steady rise occurring eastward of the township boundary. The strata hereabouts consist of a very stiff clay with ferruginous seams or patches. The probabilities of obtaining artesian water are fair and a supply would be of considerable value to the district. I can therefore commend the proposal."

Capel Water Supply.

"I have to report that I visited Capel and inspected the geological conditions of the site of the proposed bore and also of the locality generally. The site suggested is on the edge of the coastal limestone (8580) and the nearest granite occurs about seventeen miles easterly. The intervening country is flattish for six miles and is composed of clays and argillaceous sandstone, there are then hills of sandstone and clay, capped extensively with ironstone gravel and laterite.

"Basalt has been found to occur in the bed of the Capel River at Boronia Bridge, six miles south-easterly from Capel (8579). There appear to be several reported outcrops of this rock, viz., at Blackwood River, two miles from St. John's Brook and at Black Point on the South Coast; these are all approximately in a due south direction from Bunbury where the basalt can be seen on the sea-coast. There does not however appear to be any probability of this rock occurring at Capel.

The conditions appear to be favourable for obtaining an artesian supply of water here.

In regard to the position of the site, I do not think that there would be any objection as far as the probable flow is concerned if a higher site was chosen, as this one would be only a few feet above the bed of the river."

Proposed Boring for Artesian Water and Coal at Serpentine.

"I have visited the blocks of land numbered 468/72 at Serpentine, referred to by Mr. C. J. R. Le Mesurier in his letter of the 5th August. They are situated three miles south of the Railway Station between the Perth-Bunbury road and the railway line. The foot of the Darling Range is here a quarter of a mile east of the road; this is the boundary of the gneiss rock.

"The ground is flattish and is formed of clayey and sandy strata, with a covering of ironstone gravel and laterite in places. The north end of the blocks is watered by the Two-mile Brook and the south end by the Three-mile Brook, which however do not run throughout the year. There are shallow wells in the neighbourhood having subsoil soakage. I could not hear of any well near that had been sunk to 100 feet, but I have found since that it is situated about three miles to the south.

"The specimens submitted to the Department consist of:—

(*a*) a ferruginous clayey conglomerate,
(*b*) friable grey sandstone, and
(*c*) loose particles from a bed at the bottom of the well.

"These contain a few fragments of lignite about the size of a pin's head and a few larger particles of a ferruginous cement.

"Since returning to Perth, Mr. Le Mesurier has called on me and stated that he has given up the idea of boring here and that he has applied more recently for a prospecting area on Crown lands, two miles south of Keysbrook or four miles further south than the former place.

"I consider both sites to be too near the range for successful sinking for artesian water and the strata to be too porous for the existence of coal seams."

Reported Gold Find near Highbury, Narrogin.

"In accordance with instructions I visited the site of the reported find of gold, five miles south of Highbury, which is on Loc. 5592 belonging to Mr. George Syme and is marked on Lands Department litho, 385/40D, and specimens showing gold are said to have been picked up on the ploughed field but no reef has been found. Two trenches have been made in the direction of 21 degrees (magnetic) about two chains apart; the western one is about 5 chains long and about 1 foot deep with several deeper parts, in decomposed granite sand and ironstone gravel. The eastern one is 2 chains long and about 3 feet deep with a cross trench about 15 feet long; there are here a few blocks of pegmatite apparently from a vein about 9 inches thick. Granite outcrops a few chains to the south, the joints trending 256 degrees. I did not see any auriferous quartz.

"I saw Mr. George Syme on my way back who said he had no specimens as they had all been given away but that he intended to resume prospecting in about 2 months. Police Constable Crowe had a small sample said to have been found here which is a ferruginous quartz showing gold. Although it is not impossible for the samples to have been found in this locality, I can only say that I did not see any similar quartz there.

"I also visited Loc. 2456 about 1½ miles to the north of Syme's, where there is a large white quartz reef about 20 feet wide trending in the direction of 251 degrees, which is about the same as the jointing of the granite, and underlaying about 45 degrees to the east. A sample has been assayed in the Laboratory (L. 1733) but no gold was found."

During the year Mr. Campbell was engaged for 180 days in the field.

C. G. GIBSON, Assistant Geologist.—The following is a summary of the work performed by this officer during the year:—

During January he was at the Head Office employed upon his Bonnievale Report* whilst in the early part of February he revisited the Youanme district with the object of obtaining further information. He returned about the middle of the month and from that time onwards until April 6th he was engaged in the preparation of his report upon Berrigrin and the Black Range District.*

He then proceeded to the Murchison Goldfield making an examination of Errolls, Barrambie, and Gum Creek upon his way to Wiluna in the East Murchison Goldfield,† from which District he returned upon June 23rd, and from that date was engaged upon his report until August 24th when he started for Kanowna in order to examine the country passed over by the Trans-Continental Railway Survey, from which expedition he returned upon December 4th.

During the year Mr. Gibson has been 192 days in the field.

H. W. B. TALBOT, Topographical Surveyor.—This officer returned to Perth from Ravensthorpe, where he had been carrying out a topographical survey, upon January 20th, leaving again on February 17th for Collie with the object of surveying the supposed new coal field which work occupied him until the 23rd, but he returned again with me upon March 4th for two days.

Upon March 30th he left Perth for Ravensthorpe in order to assist me in the preparation of the Geological Map of the district, which work occupied him until June 29th.

After completing the necessary plan drawing he took his annual leave and then started for Wiluna upon August 25th in order to accompany the Canning Expedition in the capacity of geologist, upon which work he is still engaged.

During the year Mr. Talbot has been engaged for 248 days in the field.

L. GLAUERT, Palæontologist.—This officer was temporarily engaged upon July 1st to assist in the arrangement of the Museum, upon which work he was employed until October 1st. During October and a portion of November he was engaged upon the examination of a series of rock specimens collected by myself upon the Phillips River Goldfield, the result of which work is now incorporated with the report by Mr. Simpson, which will be issued as an appendix to Bulletin No. 35.

During the remainder of the year he has devoted his time to the identification, classification, and description of a large series of fossils collected by Mr. Campbell upon the Irwin River Coalfield, which work will be published in a special Palæontological Bulletin now in course of preparation.

THE GEOLOGICAL LABORATORY.

Mr. E. S. Simpson, Mineralogist and Assayer, who controls the laboratory operations, has handed me the following report upon the work carried out under his direction during the year:—

"I have the honour to submit the following report upon the work carried out under my supervision during the year 1908:—

"The accompanying table, prepared upon the same lines as those appearing in the previous annual reports, shows that the routine work of the laboratory is still on the increase. This is especially noticeable in the work done for other Government Departments, principally for the State Batteries Branch. In consequence of the large amount of time taken up by this work it has been found impossible to devote as much attention as is desirable to the detailed examination of the material comprised in the Geological collection with regard to which authoritative information is continually in request both at home and abroad. Such information serves not only to advertise the mineral resources of the State to persons likely to enter upon local industries and enterprises, but is of the greatest assistance to the mining community already settled in the State. In order to free senior professional officers from much clerical and other work incompatible with the salaries paid to them, and in order to facilitate their investigations, it is highly desirable that a cadet and junior clerk should be attached to the staff, and another room added to the laboratory for research work.

In spite of constant interruptions a considerable advance has been made with an investigation into the composition and properties of the coal from the various seams worked at the Collie. This will have a bearing upon the relative liability to spontaneous combustion, relative keeping qualities, etc.

"A beginning has been made with a re-examination of all the bore-waters of the State. This will help to decide whether they become better or worse after long flowing and what is the ultimate source of the water.

"During the earlier portion of the year I still continued to act as a member of the Local Franco-British Exhibition Board and as such, in conjunction with Messrs. King, Maughan, and Göczel completed the collection, cataloguing, and despatching of the mineral exhibit shown by the State. This has won several prizes at the Exhibition, including a Grand Prix, and has been described in eulogistic terms by the scientific and general Press. Every effort will, I trust, be taken to preserve the greater portion of this collection intact, in order that it may be used on future occasions as an advertisment of the mining industry and resources of the State.

"During the year the Executive Council decided that the mineral collections of the Perth Museum and of the Geological Survey should be amalgamated and placed under the control of the Government Geologist. To me was allotted the task of taking over the Museum collection and preparing a combined exhibit in the Mineral Gallery. After three months of almost constant work with the assistance of Messrs. Glauert and Jackson, the greater portion of Western Australian specimens in the Museum have been gone through, weeded out, and all those of value catalogued and incorporated with the Geological Survey collection. They can now be seen in the Mineral Gallery of the Museum, where they constitute a very valuable and instructive exhibit."

From this report it will be seen that although nominally the laboratory of this Department, the great bulk of the work performed is for others and the general public. This is due to the fact that, firstly, all the referee work of the Battery Department is carried out in our laboratory, and secondly, the liberal manner in which this Department treats the prospector, by making free assays and determinations. The demand for these two have now attained such considerable proportions that the limited staff are quite unable to cope with it, and in consequence a large amount of departmental work of a research character has to be

* Bulletin No. 31. † Bulletin No. 34.

left undone since Mr. Simpson finds it impossible to personally undertake it. The time has therefore arrived when it has become imperative that the services of a highly qualified chemist should be secured who could devote the whole of his time to the requirements of this Department under the supervision of Mr. Simpson. Such an addition would not in reality be an increase of our staff since in the initial stages we had the undivided services of Mr. Simpson who with his one assistant were able to devote practically their entire time to such chemical investigations as were required by the Department, whilst at the present both he himself and his four assistants are fully occupied upon outside work.

The Batteries Department is even in a better position than we are, for by agreement they pay one assistant who devotes his entire time to their work which has now assumed such considerable proportions that he is unable to manage it single-handed, for although the total number of assays is given as 1,094, since these are check or umpire samples they have to be done in either duplicate or triplicate, which is really raising the total number of assays made to something like 2,000.

MISCELLANEOUS MINERAL NOTES.

Several interesting minerals have been noted during the year.

Olivenite (basic arsenate of copper), in fibrous veins and in earthy crusts and masses in oxidised ore from Alice Mary Copper Mine, Kundip.

Erythrite (hydrous arsenate of cobalt), in crystals covering faces of cracks in ore from Cave Hill G.M., Waverley; Alice Mary C.M., Kundip; and Carlow Castle C.M., Roebourne.

Native Sulphur.—A soft yellowish sandstone from Dongara possessing a very sulphurous smell was found to contain:—

Sulphur, free .. .. 14.24 per cent.
Sulphur as gypsum .. 0.39 per cent.

Vermiculite, Bulong.—A rich green foliated mineral, perfectly transparent in moderately thin sheets was found to approximate to Jefferisite in composition and to possess a remarkable capacity for exfoliating when heated.

Scorodite (hydrous arsenate of iron).—Pale green porous masses in surface portion of quartz vein carrying wolfram at Federal Downs Station, West Kimberley.

Allanite (silicate iron aluminium calcium and cerium metals).—Black isotropic masses in pegmatite from Fraser's Range.

Fergusonite (tantalate and niobate of yttrium, cerium, and uranium), and *Euxenite* (tantalate, niobate and titanate of yttrium, cerium, and uranium).—Angular fragments from alluvial material at Cooglegong. These minerals have been described in detail in a paper presented to the Australian Association for the Advancement of Science.

Talc (hydrated silicate of magnesium).—A deposit of this mineral has been opened up at Mt. Taylor. It is of excellent quality, well suited for the production of talc powder for all industrial uses."

Table showing Routine Work of the Geological Survey Laboratory during 1908.

	Public.		Official.			Total.
	Pay.	Free.	Geological Survey.	Batteries.	Other Departments.	
Total samples dealt with	97	364	302	1,076	330	2,169
Assays for gold	72	148	55	1,076	213	1,564
Assays for silver	6	50	8	13	22	99
Assays for copper	11	45	9	1	6	72
Assays for tin	4	21	6	...	9	40
Assays for lead	...	15	2	...	7	24
Assays for iron	...	2	1	...	...	3
Assays for nickel	...	2	...	...	...	2
Assays for cobalt	...	3	...	...	...	3
Assays for aluminium	...	2	...	...	...	2
Assays for manganese	...	2	...	...	...	2
Assays for chromium	...	1	...	...	...	1
Assays for thorium	...	1	...	...	1	2
Assays for tantalum	...	...	6	...	1	7
Assays for bismuth	...	1	...	...	1	2
Assays for lime	]	...	...	...	...	1
Assays for phosphoric oxide	...	37	7	...	8	52
Assays for sulphur	...	1	1	...	...	2
Analyses complete	1	4	40	...	5	50
Analyses proximate	5	2	5	...	1	13
Analyses partial	1	2	3	...	2	8
Determination of rocks and minerals	5	188	170	...	82	445
Petrographical descriptions	...	...	49	...	...	49
Calorific valuations	13	2	5	...	...	20
Valuations of gold specimens	...	2	1	...	12	15
Miscellaneous	1	6	3	4	12	26
	120	537	371	1,094	382	2,504

THE GEOLOGICAL MUSEUM.

Prior to 1908 two independent State Geological Collections had been on exhibition in Perth, the one in the Museum and Art Gallery, which included the specimens gathered by the previous Government Geologists, and the other in that portion of the same building occupied by the Geological Survey Department.

This duplication entailed extra expense and was not of so great a value for educational and mining purposes as a united collection would be, therefore the Executive Council decided early in the year to combine these two as a National Geological Collection to be housed in the Museum and Art Gallery, under the arrangement and custody of the Government Geologist. Upon the completion of the New Art Gallery therefore the collection in the Museum was transferred to this Department, the old back gallery being placed at our disposal for its arrangement and exhibition, whilst our collection was removed from the room above our offices, the latter being handed over to the Museum Authorities for a Water Colour Gallery and Lecture Theatre.

The two collections were then incorporated and arranged under the supervision and direction of Mr. Simpson, Mineralogist and Assayer to this Department, assisted by Messrs. Glauert and Jackson. The main scheme of arrangement adopted is first a division of the collection into three groups representing specimens belonging to this State, the Commonwealth, and Foreign, then each of these into Minerals, fossils and rocks, whilst the minerals, rocks, etc., of this State are further grouped under the districts from which they were obtained, thus Western Australian gold specimens are shown in the cases starting from the South-east corner of the Gallery, commencing with those from Kimberley followed by those from Pilbara, and so on. These occupy most of the cases upon the eastern side and are followed by the other metallic ores such as lead, copper, tin, iron, etc., which are carried round into the cases at the north-west corner. The next cases upon the west side contain the non-metallic products of this State, after which the balance of the cases on this side are occupied by the Commonwealth and Foreign specimens.

Down the centre of the Gallery is a double line of cases which at the north end contain the fossils, followed by the rock and rock-forming minerals, these being grouped under districts, whilst at the back of each case in an upright frame the geological maps of the district from which they were obtained will be exhibited.

A technical collection is also in the course of preparation but it will be impossible to exhibit this until further accommodation is provided.

At the present time a considerable number of blank spaces will be observed in the show-cases, these have been intentionally left for the specimens at present in London at the Franco-British Exhibition, upon the return of which it will form a very fine collection.

The collection has now assumed the considerable proportions of 9,967 registered specimens (exclusive of the London Exhibit), out of which number 1,290 have so far been taken over from the Museum Authorities and registered. Included in this number are 448 registrations of fossils which, having as yet not been determined, are given one number; therefore when these are worked out the total will be very considerably increased.

The collection also contains 1,004 microscopic rock slides which have been increased to the extent of 160 during the past year.

The combination of the collections has most certainly been a move in the right direction, but of course like all radical changes there are many little issues to be settled before the arrangement can be considered as entirely satisfactory. So far it has been mutually agreed between the Museum Authorities and the Survey that the former keep the Gallery clean and police it whilst the latter relieve the former of the work of arrangement, determination, etc., which occupies pretty well one assistant's time. The point however which has as yet not been settled is out of what vote is the purchase of specimens, etc., to come; if out of the Museum vote a portion of this should be allocated for this purpose and be placed at the disposal of the Government Geologist, whilst upon the other hand if it is to be paid out of this Department's vote an additional sum will have to be set down for that purpose.

GENERAL.

Besides the numerous special reports for various Government Departments, 59 have been written upon applications for the alienation of lands reserved for mining purposes, 8 upon subsidies applied for under the Mining Development Act, and 2 upon Mining upon Private Property.

PUBLICATIONS.

During the year the following official publications have been issued:—

Annual Progress Report for the year 1907.

Bulletin No. 31. Part 1: The Bonnievale and Kunanalling Districts, Coolgardie Goldfield; and Part 2: The Black Range District, East Murchison Goldfield.

Bulletin No. 32. Notes on the Geology of the Greenbushes Tinfield, with special reference to the Deep Leads; a Report upon the Mt. Malcolm Copper Mine, Eulaminna, Mt. Margaret Goldfield; and a Report upon Fraser's Gold Mine, Southern Cross.

Bulletin No. 34. Report upon the Auriferous Deposits situated at Barrambie and Errolls (Cue District) and Gum Creek (Nannine District), Murchison Goldfield, and Wiluna, East Murchison Goldfield.

Whilst :—

Bulletin No. 35. Geological Report upon the Gold and Copper Deposits of the Phillips River Goldfield

is in the printer's hands, and

Bulletin No. 33. Geological Investigations in parts of the Gascoyne, Ashburton, and West Pilbara Goldfields.

is in course of preparation.

LIBRARY.

The collection in the Geological Survey Library now consists of 3,646 volumes, it having been increased during the year by the addition of 484 donations and 52 purchases.

The donations to the library are mostly from the various Geological Surveys, being accompanied by maps of which a considerable number from all parts of the world are now in the possession of the Department.

PROPOSED PROGRAMME OF FIELD WORK FOR 1909.

A re-survey of the Kalgoorlie Mining District, with a report upon the lodes of the Boulder Belt.

A Geological and Topographical Survey of Kanowna, Niagara, and Kookynie.

The completion of the West Pilbara Goldfield, with reports upon the Whim Creek and other Copper Mines.

An examination of the country between Pilbara, Peak Hill, and Meekatharra, with special reports upon the last two mentioned centres.

A general examination of the Murchison Goldfield including the minor centres not already reported upon.

The completion of the examination of the belt of country between the Irwin River and Northampton.

I have, etc.,

HARRY P. WOODWARD,

Acting Government Geologist.

INDEX.

INDEX—*continued.*

DIVISION VI.

SCHOOL OF MINES OF WESTERN AUSTRALIA.

DIRECTOR'S REPORT, 1908.

The Under Secretary for Mines.

The School has made satisfactory progress during the year, the number of individual students attending classes has increased, and several of the advanced students have secured good appointments.

Early in February Mr. Moore, B.Sc., F.S.A.S.M., the newly appointed Lecturer in Chemistry, Metallurgy, and Assaying, arrived in Kalgoorlie and relieved the *locum tenens,* Mr. M. R. Conigrave, B.Sc., who was transferred to the Coolgardie Technical School as Superintendent.

In April I secured for Mr. P. Adams, who had obtained at the previous examinations the Diploma of Associate of the School, a position as Assistant Mine Surveyor at the Sons of Gwalia, and it is gratifying to record that he has now been appointed Head Surveyor in charge of all the survey operations of the Mine. During the remainder of the year the position of Assistant was temporarily filled by Mr. H. Adams, who has now obtained the Diploma of Associate and has received an appointment on the Boulder Main Reefs. The appointment of an Assistant in Chemistry will be made early in 1909 on receipt of the applications now being invited from those qualified to fill the position. At the beginning of the year Mr. J. M. Corlette, B.E., resigned his position as Lecturer to take up an appointment as an Assistant Engineer of Water Supply and Sewerage, in Newcastle, N.S.W., but the School was fortunately able to at once secure the temporary services of Mr. Maurice Copland, M.A., B.C.E., who has had a considerable experience of engineering work on the Rand and who carried on the class work in a thoroughly efficient manner until the arrival of Mr. Gartrell in May. Mr. H. W. Gartrell, M.A., B.Sc., who has been appointed Lecturer in Applied Mechanics, Drawing, etc., was the holder of an Angas Engineering Scholarship with which he journeyed to America and acquired a wide knowledge of engineering practice which should prove of great value to the students attending his classes.

The attendance at classes has been well maintained throughout the year, and the examination results show that much good work has been accomplished. The majority of the students attending classes are engaged in outside employment, and few are able to devote their whole time to study. There is, however, a tendency for a greater number of younger students to attend the School. The members of the Staff have been untiring in their efforts to advance the best interests of the School, and my thanks are due to them for their cordial co-operation.

The Engine-driving and Practical Electricity classes under Mr. Bircher continue to be well attended, and good results have been obtained at the Government examinations for Engine-drivers' Certificates conducted by the Chief Inspector of Machinery. During 1908, as far as the records are available, two students obtained second class certificates, and six obtained third class certificates. These classes, which are well equipped with models and apparatus, afford excellent practical instruction in subjects of great importance to the workers on the Goldfields. A portion of the work will in future be included in the new courses for Mechanical and Electrical Engineering, as shown in the syllabus of classes accompanying this report.

The School has continued its system of free assays for prospectors, to whom much valuable information has been given concerning the samples brought in for examination. During the year 1908 free assays and mineral determinations have been made for prospectors as follows:—

Assays for Gold and Silver	389
Assays for Copper	35
Assays for Tin, Lead, etc.	14
Determinations of minerals, rocks, etc. ..	57
Total	495

These assays and determinations have all been made by responsible members of the Staff, who have spared no pains to ensure accuracy in the results.

In addition to his ordinary class work, Mr. Larcombe, F.G.S., the Curator of the Museum, has been kept busy identifying minerals for prospectors, and classifying and cataloguing the numerous samples displayed in the Museum. The Museum has been kept open for visitors each afternoon, and although the arrangement of the specimens has not yet been completed, the exhibits have proved a source of interest, and many have availed themselves of the opportunities afforded of studying the fine collections of local and foreign minerals.

Numerous donations of mineral samples, catalogues, and reports have been made to the School during the year, for which I duly record my thanks. The Mechanics' Institute has generously granted free membership to three of our senior students, and Messrs. Bewick, Moreing, and Co., through their General Manager in Western Australia, Mr. J. A. Agnew, still grant the valuable concession of including the West Australian School of Mines in the list of institutions from which senior scholars will be selected and provided with employment.

The Students' Association, which is now a strong organisation, continues to accomplish useful work, controlling, as it does, the Annual dinner, the football, cricket, and lacrosse clubs, as well as safeguarding the interests of the students in other directions. In the plans which have been prepared for the Engineering shops a very desirable pro-

vision has been made for a Students' common room. This will supply a much felt want, as owing to the fact that the room originally set aside for the students was requisitioned for lecture purposes, students now entirely lack a suitable meeting place. Improvements are being made to the School by the laying on of water around the grounds, the planting of trees, and the erection of Caretaker's quarters, while the tennis court secured by the Students' Association has proved a great boon, highly appreciated by the students.

The question of establishing a complete course in Mechanical and Electrical Engineering at the School of Mines has been further dealt with during the year, and arrangements have now been made for the conduct of class work in all the subjects required for each of these courses. From the numerous inquiries which have been received from intending students it is certain that the establishment of the courses will increase the popularity of the School. The courses will meet a much felt want, and will enable those engaged in Engineering work on the mines to obtain valuable instruction in many subjects connected with their work, but students must recognise that a considerable amount of theoretical and practical training in the preliminary classes is necessary if they are to obtain the full advantage of the Engineering Lectures. All the classes will be conducted for the time being by the present Staff of the School, and in order that this may be possible the time-table has been arranged so that certain subjects will be taken in alternate years. The services of a skilled mechanic to supervise the practical work in Fitting and Turning will be secured, while it is to be hoped that extra accommodation in the matter of Machine shops and Lecture room will shortly be available.

Since July, 1908, a class in Elementary Physics, conducted on Monday afternoon by Mr. McDougall, has been regularly attended by twenty senior scholars of the Kalgoorlie State School. Such classes, by instilling a sound knowledge of the rudiments of Science, are capable of doing excellent work. The lack of preliminary training in Mathematics, English, and Science of Secondary School standard has been a great handicap to students attending the School of Mines classes, as students deficient in their knowledge of elementary subjects find great difficulty in making satisfactory progress with the class work. The labours of the Lecturers are thereby considerably increased, and an effort is now being made to organise further classes, preparatory in character, suited to the requirements of such students. In this connection the continuance of classes in Physics for State School scholars is certain to result in an increased supply of good material for the School of Mines in the future, and similar classes in other Science subjects might be established with advantage.

PRACTICAL CLASSES.

As far as possible prominence has been given to practical work in connection with the School classes. Students have excellent opportunities of gaining practical experience in Chemistry, Assaying, and Metallurgy 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.

On several occasions throughout the year the class rooms of the School have been used for the conduct of examinations for Engine-drivers' certificates, Teachers' A and B certificates, Pharmacy, and Public Service examinations, and have proved very convenient.

F. B. ALLEN,
Director, School of Mines.

12th January, 1909.

SCHOLARSHIP EXAMINATIONS, 1908.

JUNIOR SCHOLARSHIPS.

South-West and Eucla Division:—
Getty, A.
Henzel, T. L.
Stephen, C. J.
Scholarship not awarded.

Eastern Division:—
Leevers, J. C.
Griffiths, D. D.
Buteman, J.
J. C. Leevers gains a Junior Scholarship.

ENTRANCE SCHOLARSHIPS.

Eastern Division:—
Parker, O., Kalgoorlie.
Wheeler, S. J., Kalgoorlie.
O. Parker gains an Entrance Scholarship.

Outside Eastern Division:—
Hood, S. J.
Woodward, J. H. F.
Moorehouse, N.
S. J. Hood gains an Entrance Scholarship.

SENIOR SCHOLARSHIP.

Burrows, M. F. G.
Cook, H. J.
Compton, G. S.

M. F. G. Burrows gains a Senior Scholarship.

CHAMBER OF MINES SCHOLARSHIP.

The following candidate has been recommended for a Chamber of Mines Scholarship:—

Mining Scholarship, £20—Banks, R., Kalgoorlie.

ASSAYERS' CERTIFICATES.

The following students of the Perth Technical School, which has been in existence for several years, and whose students are admitted to the School of Mines Examinations, have gained certificates:—

H. Adams—Assayer's Certificate, March, 1904.
P. Adams—Assayer's Certificate, February, 1905.
T. Brown—Assayer's Certificate, November, 1906.
J. Brooking—Assayer's Certificate, November, 1906.

DIPLOMAS.

The following students of the Kalgoorlie School of Mines have gained diplomas:—

S. J. Beech—Diploma in Metallurgy, November, 1906.
P. Adams—Diploma in Metallurgy, November, 1907.
H. Adams—Diploma in Metallurgy, November, 1908.

PRIZES.

The following students have gained prizes entitling them to one year's free tuition in the next grade of the respective subjects:—

Practical Electricity I.—Bowen, W.
Practical Electricity II.—Lang, J. H.
Engine-driving I.—Curren, F. J.
Descriptive Geometry—Oates, H. A.
Mechanical Drawing I.—Treby, H. G.
Mining Geology.—Feldtman, F. R.

The following awards of prizes offered by Critchley Parker, Esq., have been made on the results of the Annual Examinations:—

1908.

Australian Mining Standard—Adams, H.
Metallurgy of Tin—Woolf, M.

The following students have been recommended for the prizes offered by the Mechanics' Institute:—

Peat, J.; Banks, R.; Bradley, W.

For the full examination results and lists of certificates gained by the students, reference should be made to the School of Mines' Syllabus.

DIVISION VII.

ANNUAL REPORT OF THE CHIEF INSPECTOR OF MACHINERY AND CHAIRMAN OF BOARD OF EXAMINERS FOR ENGINE-DRIVERS FOR YEAR ENDED DECEMBER, 1908, WITH STATISTICS.

The Under Secretary for Mines, Perth.

Office of the Chief Inspector of Machinery,
The Treasury Buildings,
Perth, 30th April, 1909.

Sir,—

In accordance with Section 81 of "The Inspection of Machinery Act, 1904," I have the honour to submit, for the information of the Hon. the Minister for Mines, the following report on the operations of the Act in the districts proclaimed thereunder, together with statistical tables, for the year ended 31st December, 1908.

There has been no alteration since last report in the duties imposed by the Act, which, with the exception of arrears in inspection work caused through shortness of Staff, has been faithfully carried out.

Following the procedure adopted in previous reports, I have divided my remarks into six sections, which are dealt with herein under the following headings, and in their respective order:—

(1.) Inspection of boilers.
(2.) Inspection of machinery.
(3.) Survey of machinery of Harbour and River Boats, and plant belonging to the Fremantle Harbour Trust Commissioners.
(4.) Survey of machinery of vessels registered under "The Navigation Act, 1904."
(5.) Engine-drivers' examinations, and inquiries.
(6.) Accidents.
(7.) General.

DIVISION I.—INSPECTION OF BOILERS.

New Registrations.—On the 31st December there were 3,340 registered boilers as against 3,257 on the corresponding date in 1907, an increase of 83 during the past year. Of the total registrations 1,336 were out of commission, either for sale, undergoing repair, temporary stoppage through closing down of works, or having been discarded altogether and replaced by boilers of greater horse-power or better type.

The following Return, showing the various types of boilers registered in each district, indicates that of the new boilers registered during the year, 20 were of Cornish type, 18 Loco. type portable (the majority of which have gone into the agricultural districts), 14 water-tube, 11 vertical, 5 return multitubular, and 5 locomotive.

RETURN No. I.—*Return showing Classification of the various Boilers registered in each District on 31st December, 1908.*

Type of Boiler.	Districts.										Total.	
	South-Western.	Coolgardie and Yilgarn.	Dundas.	East Coolgardie.	North-East Coolgardie and Broad Arrow.	North Coolgardie.	Mt. Margaret.	East Murchison.	Murchison, Peak Hill, and Yalgoo.	Pilbara and West Pilbara.	1908.	1907.
Lancashire	22	6	...	44	5	14	10	5	19	...	125	121
Cornish	99	94	24	169	47	93	96	67	130	...	819	800
Semi-Cornish	30	4	3	6	2	5	...	3	26	...	79	78
Vertical, Stationary	334	67	15	88	35	70	72	48	81	...	810	801
Do. Portable	79	5	...	4	1	1	...	...	5	...	95	94
Do. Multi, Stationary	29	3	...	4	1	8	9	3	5	...	62	61
Do. Multi, Portable	15	...	...	...	...	...	3	...	...	...	18	18
Do. Patent Tubular	11	...	...	2	...	...	...	...	...	...	13	13
Loco. Type, Rectangular, Firebox, Stationary	61	9	2	23	11	8	15	9	18	...	156	155
Do. do. do. Portable	304	17	6	16	6	6	10	8	12	...	385	371
Do. Circular Firebox, Portable	95	1	...	3	...	1	...	...	...	...	100	97
Locomotive	58	9	...	8	2	...	5	5	3	...	90	85
Water Tube	80	15	2	96	...	3	21	8	1	...	226	212
Return Multitubular, underfired, Stationary	82	17	2	43	6	10	12	6	11	...	189	187
Do. do. do. Portable	5	5	..	3	..	...	...	...	3	...	16	16
Do. do. internally fired, Stationary	66	4	...	2	...	...	1	...	4	...	77	74
Do. do. do. Portable	1	...	...	...	...	3	...	...	...	...	4	4
Egg End and other types not elsewhere specified	17	7	1	6	1	...	2	1	1	24	60	58
Digesters	16	...	...	...	...	...	...	...	...	...	16	12
Totals	1,404	263	55	517	117	222	256	163	319	24	3,340	3,257

No less than 24 per cent. of the new registrations are of the Cornish type, which still appears to be regarded as one of the most serviceable kind, and certainly is, under present conditions, the best adapted for our Goldfields districts, especially in those parts where the Coolgardie Water Scheme is not available.

There are now 226 water-tube boilers in use in the State as compared with 212 for the previous year, equal to 16.8 per cent. of new registrations, and the number is steadily increasing. I have already extolled the merits of this particular type of boiler when working under favourable conditions—*vide* Annual Report for year 1905, page 4.

Of the other types the numbers have increased in much the same ratio as in former years. Eighteen new loco.-type portable boilers have been brought into use, nearly all of which are doing service for agriculturists, to whose needs this type is undoubtedly suited, chiefly on account of their portability and reputation for withstanding a great deal of rough handling.

Boilers Locally Constructed.—Eighteen new boilers were constructed in the State during 1908, viz., Cornish (14), Vertical (3), and Lancashire (1), as against 21 for 1907 and 16 for 1906. It is still a matter for comment that although 83 new boilers were required by our various industries and were brought under the provisions of the Act, during the last twelve months, records show that no less than 65 of these were imported from other countries, most of which were of British manufacture. I have drawn attention previously to the fact that the boilers locally constructed under the supervision of this Department, for which a regulation fee is charged, are quite equal in workmanship and in the quality of materials used to those imported of similar type, besides having the advantages of not being subject to the risk of damage incidental to transporting heavy machinery great distances; and being supplied to the owner fully equipped and in every other way conforming to the requirements of the Act. Of course there are a number of types of steam boilers which for obvious reasons cannot be manufactured here. But of those enumerated above, with the exception of the patent water-tube types, there is no reason why demands for any other kinds cannot be well supplied by the enterprising local engineering firms. As this matter is of more than passing interest to steam users, engineers, and boiler-makers, I am tempted to repeat some remarks made in my annual reports for the years 1905 and 1906, under the same heading:—

> "Where specifications are submitted to this Department care is taken to see that all material used in boiler construction is of an approved and reliable brand; and, if desired, supervision during construction is arranged, in order to be assured that the workmanship is good. This action has not only the merit of adding to the public safety, but also secures to the steam-users a much more desirable and reliable boiler—that is to say, one which will not be continually giving trouble. Some of the local firms who make a speciality of this class of work have equipped themselves, at considerable cost, with appliances and modern machinery necessary for accuracy, speed, and economy; and I venture to say that the class of work turned out compares favourably in every respect with similar types of boilers which in the past, for obvious reasons, have been imported from the Eastern States, Great Britain, America, and other parts. In view of the foregoing, and assuming that the initial cost compares favourably with the imported article landed in the State, it is surprising that these enterprising firms do not receive greater support, which would not only mean the employment of many more workmen, but a consequent benefit to the State in other directions."
>
> "The workmanship in each case has been satisfactory, and the materials used in construction of standard strength, and approved brands. The whole of the boiler plates required, for the want of necessary iron works within the Commonwealth, are still imported from other countries, and cases have come under notice where construction work has been subjected to considerable delay owing to want of requisite material. With one or two exceptions, specifications for new boilers have been submitted to this Department for approval, and upon payment of statutory fees, work has been inspected at frequent intervals during construction by officers of the Department."

With one or two notable exceptions, the imported boilers have been quite up to the excellent standard noted in the past. Particularly does this apply to English manufactures certified to by the Board of Trade; the Manchester Steam Users' Association; and the National Boiler and Engine Insurance Company of England.

RETURN NO. II.—*Return showing operations in each of the proclaimed districts (boiler inspections only).*

	Districts.											Total.	
	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.	1908.	1907.
Total number of Boilers	1,404	263	55	517	76	41	222	256	163	319	24	3,340	3,253
Inspections for the year:													
Thorough ...	881	128	32	326	36	27	129	187	115	127	...	1,988	2,128
Working ...	80	8	8	7	...	...	20	32	13	13	...	181	318
Boilers condemned:													
Temporarily ...	33	5	...	4	...	1	5	9	6	6	...	69	98
Permanently ...	8	...	...	...	...	1	...	2	...	2	...	13	18
Total Number of Notices issued for Repairs	241	37	6	83	5	4	51	98	19	22	...	566	748
Number of Certificates issued	788	123	33	310	36	26	124	178	123	136	...	1,877	1962
Total amount of Fees ...	£ s. d. 1,514 9 4	£ s. d. 260 9 6	£ s. d. 75 15 0	£ s. d. 772 5 0	£ s. d. 63 17 6	£ s. d. 60 7 1	£ s. d. 332 19 9	£ s. d. 425 3 1	£ s. d. 268 15 0	£ s. d. 347 14 4	£ s. d. ...	£ s. d. 4,121 15 7	£ s. d. 4,943 16 10
Number of Inspectors ...	*4			2			1			1		8	9

* Five Inspectors during first four months of year.

NOTE.—This Return does not include work done under "The Navigation Act, 1904," or for Fremantle Harbour Trust Commissioners.

Operations in each District.—The operations or results of inspections in the several districts during the year under review do not compare favourably with the results of each of the three preceding years, and in order that this might be more clearly demonstrated, I have set the totals for 1907 in above Return in juxtaposition to the totals for 1908, and prepared the following statement which shows that 161 boilers and 494 machinery groups were in use, but uncertificated, as on the 31st December last. The inspections representing revenue totalling £429 5s.

RETURN No. III.

Return showing Number of Boilers and Machinery Overdue for Inspection, and Amount of Fees represented, on 31st December, 1908.

Districts.	Boilers overdue.	Fees represented.	Machinery overdue.	Fees represented.	Total inspections overdue.	Total fees represented.	Remarks.
		£ s. d.		£ s. d.		£ s. d.	
South-Western ..	*88	150 0 0	142	13 15 0	230	163 15 0	Metropolitan District, 1 Inspector Fremantle, 1 Inspector. Northampton — Ravensthorpe, 1 Inspector.
Coolgardie and Yilgarn	18	42 0 0	61	2 15 0	79	44 15 0	
Dundas	..	..	..	..	..	..	
East Coolgardie ..	*	..	258	83 10 0	258	83 10 0	2 Inspectors.
North-East Coolgardie	8	18 5 0	14	1 15 0	22	20 0 0	
Broad Arrow	..	..	6	..	6	..	
North Coolgardie ..	2	5 0 0	..	..	2	5 0 0	1 Inspector.
Mount Margaret ..	4	7 5 0	..	..	4	7 5 0	
East Murchison ..	15	35 0 0	5	1 15 0	20	36 15 0	1 Inspector.
Murchison and Yalgoo	26	66 0 0	8	2 5 0	34	68 5 0	
Totals ..	161	323 10 0	494	105 15 0	655	429 5 0	

* If an additional Inspector were appointed, work in these Districts would be kept up to date, besides relief being available for officers on sick or recreation leave.

As has already been brought under the Hon. the Minister's notice when Inspector Brodie resigned in April last year, and in several other official communications on the subject, I have to emphasise the fact that the inspectorial staff at my disposal is inadequate to fully carry out the mandatory duties prescribed in and imposed by the Act which I have the honour to administer, and unless my requests in this connection can be met by approval of the appointment of at least an additional Inspector, or by narrowing the scope of the Act's provisions (which can only be done by an amending Act), I am obliged to say that I cannot at present anticipate any material improvement of the unsatisfactory state of affairs disclosed by the figures in the foregoing Returns Nos. II. and III.

Under "The Steam Boilers Act, 1897," now repealed, which dealt with the *inspection of boilers only*, there were eight (8) Inspectors appointed to efficiently carry out that work in the districts, which extend from the coast North of Geraldton in a North-Easterly direction to Peak Hill and Wiluna, thence to Erlistoun on the Eastern Goldfields, and thence to Esperance on the South coast. This is approximately the extent of country to which the provisions of the repealed Act applied, and to which the existing Act applies, and is about equal in area to the States of Victoria and New South Wales combined. Under "The Inspection of Machinery Act, 1904," is embraced the following work, in addition to the inspection of boilers, viz., inspection of factory and mining machinery—including hydraulic and electric passenger elevators; survey of boilers and machinery on river and harbour vessels; machinery accident inquiries; supervision of engine-drivers' examinations; and inquiries, and by special arrangement, assistance and advice in mechanical engineering matters are furnished to the Fremantle Harbour Trust Commissioners, also the survey of boilers, machinery, and hulls under the Navigation Act. To do this work an authorised staff of eight (8) Inspectors is provided, which even to carry out ordinary work is insufficient, without taking into consideration cases of emergency, officers on sick leave, furlough, etc., and the fact that duties are ever increasing in the way of new registrations.

I am more than satisfied with the manner in which the present staff has, under most trying conditions, carried out the work, and I cannot refrain from remarking here that I have been interrogated from time to time regarding the necessity for an Inspector of Machinery "being obliged to attend to too much work in one day," and "is it necessary for them to be always at high pressure, and having to work a considerable amount of overtime," with, in some cases, a gradual reduction in pay in accordance with the classification. The pertinency of these remarks is fully borne out by the record of overtime (given gratuitously) worked by the Inspectors in the various districts.

Five hundred and sixty-six notices requiring repairs and alterations were served during the year, as compared with 48 for 1907. The nature of these repairs—not being considered of general interest—I am not in this report following the past practice of furnishing details. At each inspection the steam pressure gauge is tested with a portable "Vulcan" tester fitted with a standard gauge. Many gauges were condemned during the year, whilst others required adjustment.

Boilers Permanently and Temporarily Condemned.—Of the 2,169 boilers inspected, 13 have been permanently condemned as dangerous to life and property, and 69 have been temporarily condemned pending the carrying out of important repairs, which are in each instance clearly specified by the Inspectors. As shown in the following Return (No. IV.), the percentage of permanently condemned and tempor-

arily suspended boilers is in each instance less than during the last two (2) years.

This is a fair indication that steam users are adopting better methods of maintenance, and are guided by the advice voluntarily given by experienced Inspectors.

RETURN No. IV.

Year.	Temporarily condemned.	Permanently condemned.
1899	2.64 per cent.	1.42 per cent.
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 „

It is expected, however, that during the next year or two there will be a relatively high percentage of condemnations, as I have issued instructions to Inspectors to insist upon the stripping and withdrawal of tubes, after several years of service, from boilers of the multitubular type, which do not permit of anything like a thorough internal and external inspection when lagged and fully tubed. Instances rarely occur where repairs of a more or less extensive character are not required in this type of boiler after five or six years' service, and owners by assisting the Department in this direction, *i.e.,* by opening up boiler periodically, show a consideration for their own interests. A boiler explosion, in many cases, is the result of a crack or grooving, or corrosion in some inaccessible place, where visible inspection is impossible. Any visible defect, such as corrosion, a cracked plate, or broken stays, would almost invariably be detected, and the boiler put out of commission or worked at reduced pressure until repaired. It is not the visible defects to which explosions must be attributed, but rather to invisible imperfections, such as faulty rivetting, crystallisation of metal, and general deterioration or wilful neglect on behalf of the attendant. Take, for instance, a case where the Inspector has no reason to suspect the existence of any defect of the kind, and to get at the place might mean stripping the boiler and interrupting the work at a very busy time, the boiler gives way, and then the public, wise after the event, say that the existence of the weakness should have been discovered. The Department, of course, can deal only with structural defects, those of maintenance and management being under the owner's control. For new boilers, not built under departmental supervision, it is essential to assume a fairly large margin of safety, and to maintain that margin throughout the boiler's service as nearly as it is possible to do so.

There are several instances in this State of boilers that have been working for fifteen years still carrying the same pressure for which they were originally designed, the builder allowing a very high factor of safety for the maximum working pressure, thus leaving ample margin for ordinary wear and tear. Certain it is that a boiler after that service has deteriorated; the metal, owing to continual strains and fatigue stresses, has become impaired, and in consequence the original margin of safety has not been maintained. There are two methods of dealing with this aspect of boiler inspection. The first is to make a periodical reduction, according to age of boiler, in the authorised working pressure. To this means of maintaining the factor of safety some objection can be made, inasmuch as a boiler that has been well cared for, properly fired, and has used good feed water, would be subject to the same reduction as one that had been but indifferently maintained and managed. The second method, and the one adopted by this Department, is to deal with each boiler on its merits, and leave it to the judgment of the Inspector, who may have to satisfy me afterwards that his opinions were correct. However, there can be no questioning the fact that an old boiler should have at least as great, if not a greater factor of safety as a new one. Boilers do not in any way announce their intention to blow up, and therefore owners would be doing well by seeing that boilers are prepared in such a manner that as far as practicable every part can be carefully examined when required by an Inspector to do so, no matter what cost is incurred or inconvenience caused in the process, for whenever a boiler cannot be thoroughly examined in every part, there must always remain an element of doubt and risk in the mind of an Inspector when granting a certificate. These remarks apply chiefly to owners in the agricultural districts, where there are many difficulties in the way, and the cost of preparing, say, a portable multitubular boiler for thorough internal inspection is great. Much discretion is exercised in this matter, and the alternative of a reduction of pressure in lieu of drawing tubes has been offered, and accepted in many instances. On one occasion an Inspector was called upon to examine a loco. portable boiler which was in such a filthy state that it was impossible to make an inspection until two days later. In view of this negligence the working pressure was reduced. Apart from the reluctance to properly prepare for examination, the provisions of the Act relating to boilers have been well observed, and it has not been found necessary to institute proceedings against owners for infringements in any district.

Maintenance and Care of Boilers.—The reports of District Inspectors are generally in agreement as to the care and maintenance of boilers being better than in previous years. There are two reasons which I assign for this result. One is that owners and engineers in charge have now become fully convinced of the fact that, when boilers are given that amount of careful attention due to them, *i.e.,* proper firing, the removal of all causes of external corrosion and other injury, the softening of bad feed water, the removal of scale and other deposits, and the prevention of grease from getting into the interior, much better consideration is shown by Inspectors when granting certificates, and the full privileges conferred by the Act can, without difficulty, be obtained. The other is that the provision of a third class engine-driver's certificate, which entitles the holder to take charge of small engines, has induced many employers, certainly in some of the larger factories and mines, to employ as firemen men holding this class of certificate. The deduction is obvious. These men, before gaining certificates, must put in a certain period obtaining practical experience in the management and safe working of boilers and engines of various types, and in addition must possess a fair knowledge of the principles which lead to the economical working of both. The employers and employees are gainers,

the former in that he is assured of obtaining workmen who have an intelligent grasp of their work, and the latter by having advantages open to him to gain practice and experience to assist in an ambition to gain a higher grade certificate as an engineman. In this connection the desirability of making it compulsory, with certain exceptions, for boiler attendants to hold at least a third class engine-driver's certificate, or pass a qualifying examination and obtain a certificate to be provided for the purpose, is worth consideration. The idea is not a new one, as similar regulations to the one proposed are already in operation in some of the Eastern States and New Zealand. After all the boiler is the principal source from which serious danger is to be expected in a steam plant. Later on in this report reference is made to the serious damaging of a boiler solely caused through the ignorance or negligence, or both, of the attendant. Had that attendant been certificated, the certificate would have been either suspended or cancelled, and he would not have been able to again take charge of boilers until the suspension had been removed or the certificate renewed. I consider that it is reasonable to anticipate danger in this direction, and wisdom to provide means to remove a probable cause, if only to a small extent, in the manner suggested.

Explosions.—The extraordinary record of the entire absence of explosions during the eleven years compulsory inspection has been in force in this State is again improved by my inability to report the occurrence of an explosion during the last twelve months. The result really makes comment almost unnecessary, but I cannot pass the item over without remarking that the splendid result indicates the great care exercised by Inspectors in carrying out their work, and the efficacy of the provisions of an Act which empowers and enables them to do so. The total number of boiler inspections during the last eleven years, ending 31st December, 1908, is 24,543.

Mishaps.—A few minor mishaps were reported during the year, but fortunately none were attended with injury to person or property. Considerable damage was done to a boiler of a locomotive at one of the timber mills in the South-Western District. The engine was accidentally run on to a short dead-end, carried away a dead-stop, and went over an embankment. The damage done was a severe straining of a large amount of rivet section (a portion of which could not be effectively re-caulked, and required the fitting of new plates), the cracking of tube-plate, and broken stays. A Cornish boiler at the Brownhill Extended Gold Mine was more or less damaged by having the furnace-tube burnt. This was caused by allowing oil to mix with the feed water and come in contact with the furnace-tube plates. The evil was corrected. Another case of collapse of two sections of the furnace-tube occurred to a Cornish boiler (self setting). It appears that the attendant before leaving for the day noticed too much water in the boiler, and proceeded to run some off. The blow-off cock could not be readily opened, and in order to free the plug he hammered the shell of cock, and damaged both shell and plug. During the night the damaged cock leaked freely, and in the morning the attendant fired the boiler without noticing that the water was not in sight in the water-gauge. The attendant was discharged.

At the Co-operative Collieries, Collie, a remarkable case of rapid corrosion occurred in a Cornish boiler built by a local engineering firm only two years previously. Upon being opened up for ordinary inspection, the furnace flue-tube was found in very bad order throughout. At the longitudinal weld of every section the tube was seriously corroded along its full length, the worst parts being from 1in. to 1½in. wide, and from 1-8th in. to 11-32nd in. deep—the original thickness of plate being 7-16th in. It appears, in welding the furnace tube sections, a piece of different material had been laid on, as is customary, and the feed water had attacked and completely eaten this part away in places. A peculiar form of grooving was found on almost every section of the flue-tube. It is most pronounced, and has the appearance of having been done with a round-nose chisel. Every section of the flue-tube is grooved more or less circumferentially and several longitudinally. The most peculiar feature is that the circumferential grooves are only 6in. to 9in. from the Adamson flanged seams, whilst other parts of section are practically "as good as new." Some of the worst grooves are from 4 to 5 feet in length, and from 1-8th in. to ¼in. deep and 3-8th in. wide. The Galloway tubes were badly corroded and grooved circumferentially, but the grooves are not so deep as those on flue-tube. A number of rivets around top end of Galloways were corroded almost flush with plates, also a number of rivets in "Adamson's joints" were badly corroded, whilst several caulking rings were corroded to a knife edge. The flue was fairly worn out, and is the worst case that has come under my notice. A prompt analysis of the feed water was made by the Government Analyst, and his report is quoted for general information:—

"I have now examined the following samples:—

Collie Cardiff 1.—Feed water.
2.—Water drawn from boilers.
Collie Co-operative 3.—Feed water.
4.—Water drawn from boilers.
5.—Water from up-throw fault.

Nos. 2 and 4 both contain sulphuric acid in the proportions of 16.8 and 56.5 grains per gallon respectively.

Nos. 1 and 3 contain alum (potassium aluminium sulphate) in the proportions of 5.2 and 7.15 grains per gallon respectively.

The above facts disclose the reason of the extraordinary corrosion which has taken place, and the whole series of chemical changes (which is very interesting but not unprecedented) is as follows:—

(a.) Iron pyrites in the coal by oxidation in presence of moisture forms free sulphuric acid.
(b.) This acid percolating through the clays (aluminium and potassium silicates) which accompany the coal, form potassium aluminium sulphate (alum).
(c.) The alum, under influence of heat, gives rise to free sulphuric acid with corrosion of boiler.

The action is very similar to the explanation which I gave you personally, but instead of iron, which I expected to find in the waters, there is aluminium, which is derived by a secondary reaction on the clay.

The best method of treatment (if a new supply is out of the question) would be by adding lime to the feed water. Quick lime should be made up into a

thin paste with water (milk of lime) and added to the feed water in the following proportions:—

Cardiff, ¼lb. per 1,000 gallons.
Co-operative, ½lb. per 1,000 gallons.

If allowed to settle before passing into the boiler, it will be preferable, so as to reduce the small amount of hard scale which will otherwise be deposited.

I have not thought it necessary to give a complete analysis, in fact the samples were not large enough after special tests had been completed.

I have omitted to state that the water from the upthrow fault at the Co-operative is apparently free from alum, but considering the general nature of the country I should expect this also to become contaminated if drawn upon.

Of course the amount of lime specified above is for *present* conditions. If fluctuations occur giving rise to increased amounts of alum, the lime must be increased, and the proprietors had better have the water analysed from time to time."

A semi-portable boiler on the same mine was equally badly affected by similar water.

Another case of rapid corrosion occurred at the Sons of Gwalia G.M., where a Cornish boiler required the back end plate renewing or the provision of stiffness, after only three (3) years' service. The plate was generally corroded to a maximum depth of 5-16th in. in the portion beyond the outer gusset stays, and a general wasting of an average depth of an ⅛in. The nature of the feed water had been brought under the Company's notice on several occasions, but steps were not taken to instal a suitable water purifying plant till the damage was done in this case.

An unusual accident—the bursting of a pressure gauge—occurred on a locomotive at Yarloop. At the time of the accident the gauge appeard to be working as usual, and was registering 140lbs. pressure when without warning it burst with a loud report. The shattered glass was driven in all directions, and the outside casing blown on the foot-plate. Fortunately the driver and fireman both escaped injury.

The gauge was of ordinary "Bourdon" design, and was practically new. When testing the elliptical tube after the mishap, a crack 1¼in. long was disclosed, and this freely leaked at a pressure of 55lbs. Steam had escaped through the crack, and the casing being a good tight fit, had allowed the pressure to increase until sufficient to burst it.

DIVISION II.—INSPECTION OF MACHINERY.

During the year ninety (90) additional machinery plants have been registered, bringing the total registrations up to 2,532. The districts responsible for the increases are South-Western, North-East Coolgardie, East Murchison, and Murchison; whilst decreases, due to machinery being dismantled and added to existing plants, or dispersed altogether, are apparent in the returns furnished for the Coolgardie and Yilgarn, East Coolgardie, Broad Arrow, North Coolgardie, and Mt. Margaret districts.

Upon comparing the figures given in Return No. V. hereunder with the corresponding return for last year, it will be noted that, notwithstanding the increase in the number of registered plants, there were 483 fewer inspections made during 1908 than in the previous twelve months. This result, as explained earlier in report, has been due to shortness of staff, as I find in the South-Western district alone there were no fewer than 494 plants which were uncertificated at the end of the year.

DIVISION II.—INSPECTION OF MACHINERY.

RETURN No. V.

Return showing classification of Machinery and operations during the year ending 31st December, 1908.

—	South-Western.	Coolgardie and Yilgarn.	Dundas.	East Coolgardie.	North-East Coolgardie	Broad Arrow.	North Coolgardie.	Mount Margaret.	East Murchison.	Murchison, Peak Hill, and Yalgoo.	Total, all districts. 1908.	Total, all districts. 1907.
Total number of registrations	1,222	151	29	384	26	15	136	188	118	263	2,532	2,442
Total number of inspections made ...	869	57	23	126	8	4	58	100	70	123	1,438	1,921
Certificates issued bearing fees	458	12	1	79	...	...	13	41	15	34	653	902
Certificates issued (steam) without fees	365	40	22	34	8	4	44	59	55	89	720	954
Repair notices issued	46	...	...	13	...	...	1	...	6	5	71	127
Electric Winding Engines	16	1	...	3	...	...	...	...	...	...	20	16
Electric Lighting and Power Plants ...	18	2	...	3	1	...	1	11	5	5	46	41
Electric Motors for all purposes	280	16	...	239	...	...	8	42	7	19	611	569
Lifts for passengers	33	...	...	...	...	...	...	...	...	...	33	29
Lifts for goods	61	...	...	10	...	...	...	...	...	...	71	60
Refrigerating Plants	14	...	...	5	...	...	1	2	1	...	23	19
Oil Engines	234	7	1	1	2	...	13	8	12	27	305	264
Horse-power of Oil Engines	1,673·65	88·75	1·5	30·5	45	...	143	69	53	217	2,321·4	2,033·15
Gas Engines	41	...	...	...	...	...	...	...	...	...	41	39
Horse-power of Gas Engines	312·58	...	...	...	...	...	...	...	...	...	312·58	298·73
Air Winches	...	3	...	15	2	...	...	...	...	...	20	22
Gas Producer Plants	1	1	...	1	...	...	...	3	...	2	8	1
Gas Producer Plants, Horse-power ...	(32)	(54)	...	(30)	...	...	...	(116)	...	(126)	(358)	...
Other Types not elsewhere specified ...	16	...	...	...	...	...	...	...	...	...	16	...

NOTE.—This return does not include the work done under "The Navigation Act, 1904," or that specially arranged for with Fremantle Harbour Trust Commissioners.

It has been found necessary to issue written notices for repairs and guarding in respect to 71 plants only, as against 127 during 1907. The Inspectors' reports, I regret to state, still indicate that the fencing and guarding required by the Act are generally neglected, even in new machinery, in such obvious points as projecting set screws, in-running cog-wheels, low shafting, belting, etc. The requirements of the Act

are mandatory with regard to the fencing of mill gearing and dangerous parts of machinery, and are not contingent in any way upon previous notice or warning from the Inspectors.

The necessity of adequate fencing is impressed upon occupiers by these reports and by constant instructions (both written and verbal) from the Inspectors. I would strongly urge that in the case of new machinery and installations, owners, consulting engineers, architects, and others would be well advised to see that in the contracts provision is made for supplying machinery safeguarded and installed in such a manner as to comply with the requirements of the Act, as it is often possible to secure more efficient safeguards at less cost if this important matter is attended to at the outset.

Cases have been reported where efficient guards provided by the owner have been discarded by workmen; it is the duty of the owner to use due diligence in enforcing the maintenance of the means of safety provided, but a workman who wilfully removes them is liable to prosecution. The reports of the district Inspectors show that year by year machinery becomes better fenced, and sources of danger diminished. Instructions to guard and fence are as a rule readily carried out, and prosecutions for default in this connection have been *nil*. Instances are, however, brought under notice from time to time by Inspectors of fencing, etc., being deferred until they visit the premises. Still there can be no doubt as to the great improvement made, although it is obviously and unfortunately impossible to estimate the number of accidents which have been prevented by careful guarding and fencing. It is not surprising, therefore, to find in recent years a decrease in the number of accidents caused by machinery. Fencing, of course, is not the only matter requiring attention in connection with machinery, as I am frequently confronted with reports of mishaps in which the following opinion is expressed:—

"Machinery sufficiently and properly guarded, accident due to carelessness or negligence."

Some extremely bad cases of unfenced shafting and other gearing, which could not be regarded as in any way safe either by position or construction, have been met with. Whilst owners, as a rule, do recognise the danger of low running gearing, they very often appear not to recognise the risk incurred by their workmen approaching a revolving shaft or large driving pulley by means of a ladder, or otherwise, to oil a bearing or adjust a belt. The same disregard of danger is very frequently found in respect to gearing, which has been properly enclosed by fencing. It is often said "only the man in charge of the machinery is allowed to go inside the fencing to do work of that kind, and he is a skilled and experienced workman." But it is here the danger lies, and it is the unskilled workman who, either tacitly or admittedly is allowed to incur unnecessary peril, and who frequently meets with an accident.

What might have proved a very serious accident was the breaking of the crank shaft of the main winding engine, made by a well-known English firm, at the Great Boulder Proprietary, Ltd., in November last, without the least warning. The engine-driver on duty at the time stated that he was pulling a cage with two trucks on from the 1,400ft. level to the surface. When the cage had travelled about 300 feet he heard a noise and thought the clutch had broken, and promptly stopped the engine. Failing to discover any defect the engine was re-started and the cage brought steadily to the surface. During the operation it was noted that the drums attached to the shaft appeared to wobble, and upon examination it was found that the latter had broken at the centre bearing. The shaft—which was a solid one, 22ft. 5in. long, greatest diameter where drums attached 15in., and smallest diameter at three main bearings 12in., weight by calculation 5 tons 13cwt. 2qrs.—was completely severed.

The ends of the shaft showed plainly that it had been fractured for some time before it totally separated. First impressions suggested that the forging of the shaft might have been faulty, but when the levels of the three bearings were taken, it was found that the centre one was a quarter of an inch low, and no doubt the breakage was caused by the bending of the shaft in the centre. A new shaft was forged in Victoria and turned-up in Kalgoorlie. The engine was idle 51 days.

Lifts.—At the close of the year there were 33 passenger and 71 goods lifts registered, as compared with 29 and 60, respectively, at the end of last year.

The circular containing useful suggestions for the information and guidance of lift owners, and issued last year, has had a most beneficial effect, and the condition in which lifts generally were found at the periodical inspection was a great improvement on that noted in former years.

In one case it was found necessary to refuse a certificate for a new goods lift. This lift was not provided with worm gearing and had no speed governor. The brake failed to hold the cage during its trials, consequently it was considered unsafe for use, even as a goods lift, until the control gear, which was in the cage, was removed to the wall in basement. When this was done a temporary certificate was granted for goods only, until a good governor connected with self-acting grip gear was fitted.

Several cases of ineffective and broken door catches were discovered and remedied.

In the metropolitan district there are a few lifts with electric cage control, and the cable conveying current to the cage in one instance got so defective that it fused and fired the installation, and nearly started a serious fire. The cable in question was an inferior one, but as the matter was one which concerned an Insurance Company more than this Department, nothing could be done.

One lift, which has been a source of trouble ever since registration, was condemned, and the owner induced to renew the entire gear. It is now working satisfactorily.

In another case the rim of a worm wheel broke while the lift was running, and was due to bad workmanship, the rim of the wheel having been weakened by certain holes being drilled in it for set-screws, which could not be discovered by ordinary inspection. The worm casing was broken but no accident to passengers ensued.

Two cases of defective ropes were reported. In the former case the self-acting grips came into operation, and hung the cage up. A few months before this mishap stringent measures were threatened unless the owner effected alterations and put the safety catches in proper working order. In the latter case, broken strands were discovered at an ordinary inspection. The rope was not generally badly worn, the defect being local, and peculiar inasmuch as the ends of the wire were in place—the defect being discovered by observing a slight difference in the diameter of the rope.

One case only of overwinding came under notice, and this appeared to be caused by the stretching of rope and very hot weather throwing self-acting cut-out gear out of proper adjustment. There is invariably very little head room over lifts, although the brake did not act as quickly as it should have done. The attendant only was in the cage, and no damage was done.

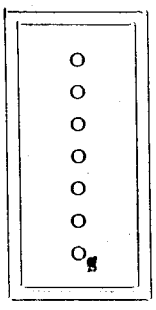
An unusual defect was discovered in a lift working in one of the large drapery establishments in Perth. In this case the worm spindle, which is 1½in. in diameter, was found to be reduced by one of the thrust bearing washers to ⅝in. in diameter by ⅜in. wide, just as if it had been cut in the lathe with a parting tool. The occurrence is difficult to account for. The washers run in an oil bath, the quality of the metal in the shaft was excellent, and there appeared to be no reason why this particular washer should have cut the shaft more than any one of the other four, which had not marked it. The lift in question had carried about 7,000 passengers on Christmas Eve, and a few days after the defect was discovered. The occurrence points to the necessity of having worm gearing casings opened at least once a year, and if the gear casing should be removed during the currency of a certificate, the Department should be notified in order that advantage might be taken of the opportunity to examine the gearing. This would necessitate stoppage of the lift from a couple of hours to a day.

The electric lift referred to in my last report as being in course of installation in one of our city buildings, and in which the automatic control system had been adopted, was got into working order early in the year, and has since been giving satisfaction. In this lift—known as the "Press Button Electric Hoist"—the movements of the cage can be controlled in two ways:—

(a.) By an attendant who can only work the lift from the cage, or

(b.) By means of the automatic control. At each landing there are two buttons, one being merely a call bell to attendant in the cage, and the other connected to the automatic control system by means of which anyone can operate the lift for himself. (But both cannot be in use simultaneously.)

In the latest type of automatic control a single push button is placed at each landing door, and a set of similar buttons is placed inside the cage and labelled to correspond with the various landings. In addition there is also a button to stop the cage in any position. The accompanying sketch shows the arrangement of buttons in the cage for a six-floor building:—



6th Floor
5th „
4th „
3rd „
2nd „
1st „
S. = Dead Stop

If the cage is not in use, by simply pressing the button on any landing the cage automatically travels to this landing, whether it was previously above or below. To take the cage to any landing, the passenger, after entering the cage *and closing the door behind him,* has only to press the numbered button inside the cage when the hoist immediately starts and stops automatically at the required landing. The dead-stop button enables the passenger to stop the cage at any part of its travel if he should find he has accidentally touched the wrong button and is travelling in the wrong direction. As soon as the cage stops he has merely to press the right button when the cage will travel to the corresponding landing. By this arrangement a lift attendant is unnecessary. A device is included which prevents the operation or calling of the cage from more than one landing at a time, and the passenger in the cage has sole control over the hoist until he has done with it. The cage doors, in addition, are provided with electric switches and automatic locks, which prevent the opening of any door until the cage is level with the same landing. The electric switches on the doors are arranged in such a manner that the circuit operating the lift is broken as long as the doors remain open, and the hoist in consequence cannot be worked until the doors are securely closed. It is thus impossible for a careless passenger to enter the cage and travel to some other floor leaving the door open for anyone to fall down the lift shaft.

DIVISION III.—SURVEY OF HARBOUR AND RIVER BOATS' MACHINERY AND PLANT BELONGING TO THE FREMANTLE HARBOUR TRUST COMMISSIONERS.

Harbour and River Steamers, etc.—The boilers and machinery of all steam craft, and the motors of all launches in use, carrying goods or passengers for reward, in our harbours and rivers, were duly inspected and certificated as required by the Act. At the end of the year there were 21 steam vessels and 21 launches, total 42 on the registers, as against 36 for year ending December, 1907. Of this number six were out of commission, one having been dismantled; three were transferred and registered under the Navigation Act, in order that deep sea certificates might be obtained; and one (1), the steam tender "Susan," sank in the Fremantle Harbour after collision with a mail steamer through which the fireman lost his life.

The arrangement between this Department and the Fremantle Harbour Trust Commissioners is still in existence, whereby the inspection of machinery and boilers, and the survey of hulls of the vessels enumerated in Return No. VI. hereunder, can be carried out by the one officer, the hull surveys being necessary to comply with the provisions of "The Boat Licensing Act, 1878," the powers of the Board being vested in the Trust Commissioners. Every opportunity was taken to sight hulls when boats were on slip and in many instances tail shafts were drawn and examined. Rudders, steering gear, and hull connections have been maintained in an efficient state. Renewals and repairs recommended from time to time have been faithfully carried out to the Inspector's satisfaction. The work having very materially increased for the Fremantle Harbour Trust Commissioners, the matter of receiving additional remuneration in proportion to the services rendered, is under consideration. At present an amount of £36 per annum is received and paid to revenue.

RETURN No. VI.

Return of Surveys of Boilers and Machinery on Steamers, etc.

Name of Vessel.	Description of Machinery.	Means of Propulsion.	Motive Power.	Date of Last Survey.	Nature of Defects, Instructions, and Repairs effected, etc.
"Florrie" ..	Single Cylinder High Pressure Condensing Engine	Screw	Steam	28–3–08	
"Helena" ..	Compound Condensing Engine	Paddle	do.	10–4–08	
"Duchess" ..	Compound Surface Condensing Diagonal Engine	do.	do.	10–4–08	
"Torrens" ..	Compound Surface Condensing Engine	Screw	do.	11–11–08	
"Countess" ..	Compound Surface Condensing Diagonal Engine	Paddle	do.	4–3–08	
"Susan" ..	Vertical Compound Condensing Engine	Screw	do.	25–3–08	
"Lady Forrest"	Compound Surface Condensing Engine	do.	do.	19–6–08	
"Brownie" ..	Tandem Quadruple Condensing Engine	do.	do.	25–3–08	
"Avon" ..	Double High Pressure Non-condensing Engine	do.	do.	18–1–08	Defective stays renewed.
"Taniwha" ..	Single Cylinder Non-condensing Engine	do.	do.	25–11–08	
"Kentish Lass"	Double Cylinder Non-condensing engine	Stern Wheel	do.	15–6–08	
"Thistle" ..	Compound Surface Condensing Engine	Screw	do.	3–11–08	
"Eagle" ..	Compound Surface Condensing Engine	do.	do.	26–2–08	
"Decoy" ..	Direct Acting Paddle Engine, Non-condensing	Paddle	do.	21–9–08	
"Loch Lomond"	Double High Pressure Non-condensing Engine	Screw	do.	13–8–08	
"Zephyr" ..	Two Triple Expansion Surface Condensing Engines	Twin Screw	do.	21–7–08	
"Jessie" ..	High Pressure Non-condensing Engine	Screw	do.	28–7–08	New set of tubes fitted, and defective stays renewed.
"Silverstar" ..	Triple Expansion Surface Condensing Engine	do.	do.	4–9–08	New cast-iron bridge bearer for each furnace fitted, and stoke-hold plate in front of boiler renewed.
"Reliance" ..	Compound Surface Condensing Engine	do.	do.	3–3–08	
"Westralian" ..	Two Compound Surface Condensing Engines	Twin Screw	do.	29–9–08	
"Waratah" ..	Compound Surface Condensing Engine	Screw	do.	14–7–08	Front and back circular seams caulked, also landing of tube plate and furnace in combustion chamber. New piston rings in low pressure cylinder. Top and bottom end brasses adjusted Feed and bilge pump valves overhauled. Bottom stay in combustion chamber tightened.
"Fremantle" ..	Triple Surface Condensing engines	do.	do.	21–8–08	
"Albatross" ..	Triple Expansion Surface Condensing Engines	do.	do.	19–6–08	
"Valdemar" ..	Double Cylinder Internal Combustion Engine	do.	Oil	1–12–08	
"Valhalla" ..	Internal Combustion Engine	do.	do.	10–3–08	
"Valkyrie" ..	Do. do. do.	do.	do.	10–3–08	
"Ophir I." ..	Do. do. do.	do.	do.	30–3–08	
"Ophir II." ..	Do. do. do.	do.	do.	30–3–08	
"Olga" ..	Do. do. do.	do.	do.	24–2–08	
"Wilfred" ..	Do. do. do.	do.	do.	28–2–08	
"Eagle" ..	Do. do. do.	do.	do.	17–3–08	
"Brooke I." ..	Do. do. do.	do.	do.	17–3–08	
"Etta" ..	Do. do. do.	do.	do.	17–3–08	
"Perseverance"	Do. do. do.	do.	do.	10–2–08	
"May" ..	Do. do. do.	do.	do.	30–3–08	
"Fram" ..	Do. do. do.	do.	do.	5–2–08	
"Dorothy" ..	Do. do. do.	do.	do.	17–1–08	
"Mary" ..	Do. do. do.	do.	do.	17–1–08	
"Linnet" ..	Double Cylinder Internal Combustion Engine	do.	do.	20–2–08	
"Spray" ..	Internal Combustion Engine	do.	do.	7–11–08	
"Valdavia" ..	Double Cylinder Internal Combustion Engine	do.	do.	10–3–08	
"Ophir III." ..	Internal Combustion Engine	do.	do.	30–1–08	
"Peter Pan" ..	Do. do. do.	do.	do.	25–11–08	
"Mayflower" ..	Double Cylinder Internal Combustion Engine	do.	do.	10–8–08	

DIVISION IV.—ENGINEERING SURVEYS UNDER "NAVIGATION ACT, 1904."

Engineering surveys under "The Navigation Act, 1904," which, for purposes of economy, are carried out by an officer attached to this Department, and under my control, were made on the following vessels, and for which certificates were granted:—

"Venus" (2)	"Awhina" (2)
"Maitland" (2)	"Dunskey" (2)
"Uraidla" (2)	"Vigilant" (2)
"The Bruce" (2)	"Kolya" (2)
"Penguin" (2)	
"Kanowna"	"Agnes"
"Una"	"Governor"
"Zephyr"	"Gannet"
"Bullarra"	"Herbert"
"Kyarra"	"Moonta"
"Junee"	"France"

(The figure indicates that vessel was twice surveyed.)

The fees derived from these surveys amounted to £90 10s., and were received and paid to the Harbour and Lights Department's Revenue. Up to date the whole of the expenses of these surveys has been paid from the Votes of the Inspection of Machinery Department, but the question of making an adequate yearly charge is now under consideration.

The following vessels, for which certificates were not granted, were also surveyed:—

"Sultan" (4) (under repair).
"Elaine" (after fire).
"Yanda."
"Mortlake" (2) (after fire).
"Riverina" (after fire).

This work involves in some instances frequent visits to each vessel under survey, especially if the vessel is undergoing repairs, before a declaration as to sea-worthiness can be granted, and the work is slightly increasing each year.

Some lighthouses and buoys have from time to time also received attention.

Fifteen coal hulks are now in use in the various harbours, and these have been surveyed during the year. In several instances extensive repairs were found to be necessary. One hulk, the "Herschell," at Albany, was considered dangerous to shipping through liability to foundering in the fairway, and was condemned. The owner had the hulk towed out of Port and beached on the coast.

DIVISION V.—ENGINE-DRIVERS' EXAMINATIONS.

Examinations for engine-drivers' certificates of competency have been held in the following centres:—

Perth (4)	Cue (2)
Bunbury (2)	Wiluna (1)
Kalgoorlie (2)	Albany (1)
Peak Hill (1)	Lawlers (1) and
Menzies (2)	Northam (1).
Malcolm (2)	

Forty-two meetings of the Board of Examiners have been held, 304 applications for certificates dealt with, and 205 certificates, as particularised in Return No. VII., granted.

RETURN No. VII.—*Return showing total number of Certificates (all Classes) granted during 1908.*

Class of Certificate.	Number granted.	
	1908.	1907.
First Class Competency (including Certificates issued under Regulation 9A)	34	15
Second Class Competency (including Certificates issued under Regulation 9A)	45	26
Third Class Competency	63	67
First Class Service (including Certificates issued under Section 63)	..	..
Second Class Service (including Certificates issued under Section 63)	1	3
Third Class Service	1	19
Locomotive and Traction Competency	16	21
Locomotive and Traction Service	1	11
Traction Competency	3	2
Traction Service	1	1
Marine Competency (including Certificates issued under Section 63)	7	13
Interim	18	15
Copies of Certificates and Licenses	15	18
Total	205	211

30 Certificates granted under Regulation 9A.

Only one inquiry was held by the Board during the year, and that was regarding a charge of impersonation laid by one driver against another. The Board was unable, however, to take any action owing to the absence of sufficient evidence to support the complaint.

Numerous complaints have been received regarding the employment of uncertificated persons in charge of machinery, but with the exception of two cases, which are referred to hereunder, it was found that the circumstances surrounding the others, although technical breaches had perhaps been committed, were such as not to warrant extreme action being taken.

At Greenbushes an uncertificated driver, who had been previously warned, was prosecuted for taking charge of an engine. Fine and costs amounted to £3 7s.

The manager of the Melton G.M., Gindalbie, was proceeded against for employing two uncertificated men to take charge of machinery. The case was heard at Kanowna, and a verdict was given against the Department. It was admitted in evidence that the two men employed were firemen, that their employment was confined to the compressor engine, boiler, and winch, that they drew tanks of water, and that it was necessary for them to regulate portions of the air-compressor. The Resident Magistrate in dismissing the case said "it is not dismissed on any technicality, but on its merits, and I consider a certificated engine-driver is not required at the shaft known as No. 2, as the two men were only acting under the supervision of the certificated driver at No. 1 shaft."

The two shafts were approximately 140 feet apart, and there were obstructions in the shape of firewood, which prevented a clear view of the machinery at No. 2 shaft being obtained from No. 1 shaft. The practice would be bad even if the Act admitted of such an interpretation, which it does not, but the ruling in the case under notice tends to render Section 53 (1) to a great extent inoperative.

The section reads:—

> "Every person employed as an engine-driver in charge of any steam engine shall hold an engine-driver's certificate under the Act."

The Magistrate's decision in which, considering all the facts of the case, I do not concur, may be used by other persons who desire to employ uncertificated men, with little fear of the result of any action which may be taken.

The matter of supervision of engine-drivers' examinations at centres outside of the capital has been referred to by the Engine-drivers' Association, who desire that in lieu of the examinations being supervised by Departmental officers at various places as at present, the Board should be made a travelling one, and deal direct with candidates in the principal centres.

The creation of a travelling Board might insure the carrying out of oral examinations on possibly a more uniform basis, but the cost (which in 1906 was £323 3s. 7d., in 1907 £275 10s. 8d., in the year just closed £205 2s. 4d.) would be increased. Again, unless the Board could travel to every centre in which an examination is held, the system would not be an improvement upon the present economical one.

During the first month of the year a serious accident, due to negligence of the engine-driver, occurred at the Great Boulder Proprietary Mine. The driver was in charge of the cyanide mill engine, single cylinder horizontal type, 16¼in. x 30in., fitted with Meyer's variable expansion gear, and controlled by a throttle valve governor of the usual type. The cause of the accident was very plain. The shift boss (also a certificated engine-driver) asked the engine-driver for more speed, and the latter, in order to obtain this, stated that he could see no other way than to disconnect the governor belt, and to run the engine on the throttle valve alone. Having taken the belt off and altered the stop valve from about six turns open (its normal position) to about one turn open, he found it necessary to leave the engine room and in a casual way asked two men employed in the mill, and who knew nothing about engines, "to keep an eye upon the place." During his absence the driving belt came off, and the engine immediately raced away at tremendous speed, thereby bursting the rim of flywheel. One man was killed and another seriously injured. The Board suspended the driver's first class certificate for 12 months, and cautioned the shift boss for acquiescing in the driver's action in removing governor belt.

Exchange of Certificates.—Under the reciprocal arrangement entered into with the Eastern States, as instructed, and in furtherance of which Regulation 9A was framed, 30 certificates were granted. The arrangement is still capable of some improvement, as several cases have come under the Board's notice in which drivers holding first class certificates have been found, when subjected to short oral examination, to be deficient in knowledge, and much behind the standard required in this State. The difficulty could be adjusted by the various States adopting a uniform standard of examination, and until this is satisfactorily accomplished, disabilities are sure to exist. The new clause added to Regulation 15 has been of much assistance to the Board in dealing with applicants with only a limited experience of one or more particular engine.

It will be noted that the number of first and second class certificates granted during the year is greater in each case than during 1907, although a lesser number of applications have been dealt with. This increase at first sight apparently indicates that a better class of candidate has been examined. But whilst an improvement has been noted in this direction, the regulation mentioned above is chiefly responsible for the increase, as the Board has now power, which did not exist previously, to grant a certificate to a candidate who may have had experience on one type of engine only, whereas under the original regulation he would have been refused on account of his knowledge being too limited to warrant the granting of a certificate with full privileges.

The modifying of the examination in this respect has also proved specially beneficial to engine owners in some of the small and struggling industries, as many, who had sufficient knowledge to manage and run their own small engine, have become qualified to be examined on that particular engine and gain the requisite certificate to comply with the Act.

In regard to the matter of dealing with complaints from certificated engine-drivers and others concerning uncertificated drivers, a communication was sent to the General Secretary of the Engine-drivers' Association suggesting that all complaints from branches be sent direct to himself, in order that they might be verified before being forwarded to the Department for attention. This action was considered desirable owing to the frequency of complaints being found in some instances to be trivial, and unworthy of time and expense being devoted to inquiring into them. I have not yet been advised of the adoption of these suggestions, which would be more satisfactory to all concerned than the old method of dealing with irresponsible persons.

DIVISION VI.—ACCIDENTS.

RETURN No. VIII.

Cause.	Districts.											Total.	
	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.	1908.	1907.
Circular saws	1	...	...	3	...	...	...	...	1	1	...	6	4
Lathes, planing, and shearing machines ...	1	...	...	1	...	...	...	...	...	...	...	2	7
Passenger lifts ...	2	...	...	...	..	...	...	...	...	...	...	2	6
Shafting, belting, couplings, pulley drums, and other mill gearing*	1	1	...	22(2)	1	...	1(1)	3	3(2)	4(1)	...	36	39
Moulding machines ...	1	...	...	...	...	...	...	...	...	...	...	1	1
Scalding	...	...	...	1	...	...	...	...	1	1	...	3	1
Hoists	...	...	...	1	...	...	...	...	...	...	...	1	...
Grinding and emery wheels	...	...	...	2	...	...	...	...	...	...	...	2	1
Totals ...	6	1	...	30(2)	1	...	1(1)	3	5(2)	6(1)	...	53(6)	59

*Excluding accidents covered by other headings. Figures in parentheses denote number of fatal accidents.

As shown in above Return the total number of accidents caused by or in connection with machinery was 53, of which 6 were fatal; as compared with 61 and 4 fatal during 1907. Of the total, no less than 36 occurred in connection with shafting, belting, and gearing attached to them.

The first fatal accident occurred at the Great Boulder Proprietary on the 6th January, a mill hand losing his life through being struck over the heart by a piece of the rim of a burst fly wheel, which was caused by the engine racing, through the main driving belt, 11½in. wide, coming off, the governor previously being made inoperative. The weight of the fly wheel was about three tons, and burst into several pieces.

The same district was responsible for another fatality, at the Hainault Mine, on the 17th January. The deceased was caught by the revolving shafting of a sands conveyor plant, and dismembered. No one actually witnessed the accident, consequently the precise manner in which the unfortunate man became entangled can only be conjectured. The shafting was sufficiently guarded.

Two other belting accidents, ending fatally, occurred at the Bellevue Mine, Ltd., on 21st February, 1908, and the Northern Mines, Ltd., on 11th April, 1908, respectively, both in the East Murchison district. In the first instance the man was struck by a loose belt which fractured his skull. The Inspector inquiring into the accident expressed the opinion that had more care been exercised in performing his duties the deceased might have avoided the accident.

In the second case a man was caught whilst endeavouring to remove battery belt, and received a fracture of the skull and other injuries.

At the Cosmopolitan Proprietary G.M., in the North Coolgardie district, a machinery attendant lost his life on the 18th July through loose clothing being caught by running shafting, whilst oiling bearings at night time. At the inquest held it was clearly demonstrated that the machinery was well fenced, guarded, and lighted. Another similar accident, which ended fatally, happened at the St. George G.M., Murchison District, on the 20th June. The victim's clothing came in contact with a revolving elevator shaft, which seized and wound him around, causing severe injuries to the spine.

Belts and Shafting.—Many avoidable accidents continue to be reported in connection with running belts and shafting. It appears that no matter how well guarded or protected a plant may be, unnecessary risks are taken by employees. I have lately perused and concurred in some draft regulations which have been framed, and which will, I understand, be issued in connection with others under "The Mines Regulation Act, 1906."

The intention of the Regulations is to make it compulsory to stop or run machinery dead slow when a belt is to be put on or taken off. Past experience has shown, and it is recognised that as long as discretion is left to employees and operators of machinery, due care and caution will not be exercised. Employers or their executive officers are also in a measure to blame in not insisting on more care being observed. Reports on accidents are concluded with monotonous regularity with such remarks as "due to the injured one's own carelessness," or "had a little caution and forethought been exercised by the injured person, the accident would not have occurred."

Thus it is apparent, in face of publication of accidents, their causes, precautionary measures to be adopted to prevent them, and even the powerful motive of self preservation, are all insufficient to counteract the carelessness engendered by familiarity with dangerous and perilous work. The failure of above Return to show greater incidence of safety may be explicable, of course, on the grounds of increased use of machinery and other trade developments, besides possible improved reporting. It should also be borne in mind that the grand total includes casualties not only slight in nature, but due to causes which cannot practically be prevented, and that either through a contempt of danger or through failure to realise the risks attendant on proximity to machinery, many operatives deliberately disobey rules by oiling and cleaning machinery in motion, removing or replacing belts on revolving wheels or pulleys, and in other ways invite what experience has shown to be dangerous effects. Long usage is difficult to battle

with, and the ingrained proclivity among workers to oil and clean machinery whilst in motion, often quite unnecessarily, gives much trouble. Many employers attempt to prevent the practice by warnings and notices, but do not follow these up by supervision. The steady and skilled workman is as ready to court injury as the careless and ignorant. Therefore in framing the Regulations referred to it is expected that responsibility will be divided between employer and employed. In the past, it is held on the one hand that employers did not make serious effort to alter the old system of working, and on the other, men persisted from time to time in both gratuitously taking unnecessary risks themselves and exposing fellow workmen to needless danger, on account of their having done the "something" many times before. Projecting belt fasteners are capable of inflicting considerable injury. In one case a man's arm was broken and his body badly cut. In another, the projecting fasteners tore open the scalp of a fitter whose head came in contact with the belt. Adequate protection in such cases can be afforded only by shielding or guarding the whole accessible length of belt to a height of say six feet above the floor by such materials as wood, sheet iron, or wire netting; the horizontal guard across the belt and pulley, often provided, is not sufficient to prevent accidents of this nature, as employees often crawl underneath to make a short cut, or for some other purpose.

Six accidents of a more or less serious character occurred in connection with circular saws. Fencing is insisted upon in all ordinary cases, and although the number of accidents is perhaps proportionately heavy, their severity has lessened. Each accident reported from this cause has been investigated by an Inspector. Contributory causes to accidents from circular saws are the absence of riving knives, the disuse of push blocks or sticks, and a faulty adjustment of the guard over the saw at a proper height. Guards of all kinds are provided by employers where practicable, but are used without discrimination as to adjustment for the work in hand. This is an old complaint, but it is still nevertheless well founded.

Inspectors report an extraordinary objection by workmen in some mills to the use of riving knives, which are used for clearing the saw, preferring to use wedges instead.

Several accidents in connection with winding plants have been recorded during the year, in which considerable damage to property has been done. Fortunately in one case only was a workman injured. Considerable attention has been directed by the above occurrences to the question of brakes, or to be more accurate, to the question of what can be considered an adequate and effective brake to attach to a winding engine designed for a certain depth and load. The question of the fitness of steam and air-applied brakes is one of great importance, for an accident to the steam or air pipes might render the brakes inoperative at a critical moment, and cause serious loss of life. Brakes which are kept out of operation by steam or air pressure, and which come into action on release of it, are, from this point of view, to be preferred to steam or air applying the brakes direct to the drums. But with all brakes of this type, the question of the advisableness of providing an emergency brake which could be operated by hand or foot naturally arises. Taking the winding engines in nine of the largest mines on our Eastern Goldfields, it is found that six are equipped with the self-applying, *i.e.,* the brake applied by weights; two are operated by steam, and one by compressed air. Of these, I consider the brake applied by weights the most reliable.

The steam applied brakes referred to have apparently always worked without accident to steam or air pipes, but of course it is possible for such to take place and render the brake useless, besides there is always the possibility of the escaping steam obscuring the view of the driver, who might thereby be tempted to leave his engine for personal safety. The bursting of a steam pipe on one of the clutch or steam reversing engines might cause the same result, but if a gradual self-applying brake were fitted to the engine, *i.e.,* one so designed as not to injure or snap the rope by sudden shock, the men in a shaft would have a better chance of safety. Before adopting a definite course in the direction of fitting of certain types of brakes, it is intended to go further into the subject, for which purpose data is now being collected. Auxiliary brakes (foot or hand) require to be frequently tested by both Inspectors and enginemen. It is a fact that a brake in good order and fit for its functions may in 48 hours be out of adjustment and ineffective. On the other hand, the efficacy of a brake operated by one driver may be undoubted, whilst in the hands of another operator it is next to useless, owing to the inability of the latter to properly manipulate it. Whatever braking device is attached to an engine, it is very essential that constant attention should be given to it.

DIVISION VII.—GENERAL.

Inspectorial Staff.—As alluded to earlier in report, Inspector Brodie, who was temporarily appointed in May, 1907, resigned at the end of April, but a successor was not appointed. In November Inspector Nicholson's resignation was accepted, and a strong recommendation put forward for the early appointment of another Inspector to take up the latter's duties. Up to date, however, an officer had not been appointed. The delay has caused some inconvenience as regards inspection work in the direction indicated in Division I.

Clerical Staff.—Changes have been made in the Cue and Malcolm districts officers, otherwise the clerical staff in Head Office and the districts officers is the same as last reported. A temporary clerk is still at Head Office pending the provision of a permanent officer.

Revenue.—The total amount of fees paid to Revenue during the year was £4,728 2s. 1d., being £215 less than the total received for the year 1907. The larger number of boilers out of use (1,336), and arrears of work (through being short-handed), representing fees amounting to £429 5s., accounts for the falling off and failure to reach the estimated revenue of £5,000.

Mileage Travelled.—45,515 miles were travelled (25,999 by rail, 18,843 by road, and 673 by steamer) to inspect 2,169 boilers and 1,438 machinery plants, being equivalent to 12.6 miles per inspection.

Classification of Inspectors of Machinery.—As you are aware the Public Service Commissioner's Classification in so far as the Inspectors are concerned, was agreed to by the Appeal Board with one excep-

tion, and the present and maximum salaries are furnished in the following table:—

Title.	Place.	Present Salary.	Maximum as Classified.
		£	£
Inspector ...	Kalgoorlie ...	300*	350*
Do. ...	Do.	273*	245*
Do. ...	Malcolm ...	245*	245*
Do. ...	Cue ...	220*	245*
Do. ...	Perth	280	315
Inspector and Surveyor	Fremantle ...	280	315
Inspector ...	South Western ...	249	245
Do. ...	Do.	249	245

*Exclusive of district allowance.

From my knowledge of the work to be performed, and the qualifications necessary to perform it, I consider that the positions have (in some cases) been undervalued. Comparisons with salaries and wages paid to engineers, fitters, foremen, electricians, etc., on our Goldfields and elsewhere, who are paid from £6 to over £14 per week, and are provided in many instances with house, fuel, and light free, abundantly confirms my contention. In addition, these latter professional people have the responsibility only of that particular portion of work to which the professions apply, and have not (excepting rare cases) and do not require any knowledge of each other's business. Not so an Inspector of Machinery. He is obliged to be competent, to know at least as much of the work of each profession with which he comes into contact as all the private individuals who are responsible to their employers in their individual capacity; but in face of this, the Inspector's position is adjudged to be not worth as much as any one of the outside positions mentioned above. An Inspector must have a knowledge of the construction and working of all known types and classes of boilers; be conversant with the various stresses and strains to which they are subject; acquainted with every kind of steam engine and machinery, have an intelligent knowledge of their working parts, and their weak points, to enable him, who is classified at £245 per annum, to advise and issue instructions, involving in some instances an expenditure of many hundreds of pounds; to managers, engineers, fitters, boilermakers, and others whose services are valued at from £300 to over £700 per annum. He must also have a fair knowledge of electricity and electrical appliances, and be sufficiently alert to detect defects (a task rendered difficult by a peculiar weakness of some owners and attendants to conceal them). He must be able to make clear and concise reports; have a knowledge of machine drawing and construction; conduct inquiries regarding accidents; institute and conduct prosecutions, and so on. And these functions, requiring first class knowledge in each branch or profession affected are not carried out within the four walls of a building, or pegs of a mining lease, but an Inspector has to put up with all the discomforts incidental to travelling thousands of miles in a year in all sorts of places, labour under all manner of disabilities, and cheerfully face every adverse condition to physical well-being, and these are legion, in the shape of indifferent accommodation, etc. The classification of some of the District Inspectors, a minimum salary for whom has been fixed at £220 per annum, maximum £245, is calculated to further limit the already limited inducements offered to good men, who are not numerous in our small population, to join the Department when positions are vacant, *e.g.*, amongst some recent applications for Inspectorship it was noted that such qualifications as the following were submitted:—"Yardsman," "five years' assistant manager, tea estate," "Kitchen-boy, fitter, and machine hand," "Farm work and machine fitting," "Engine-driver in charge of pumping engine," etc., etc.

A number of inspections have been made on behalf of other departments requiring special advice and reports on the condition, value, etc., of various plants, *e.g.*, much time and care was involved in making a careful valuation of the electric light machinery (including engines, boilers, condensers, dynamoes, motors, pumps, etc.) in use at the Perth Gas and Electric Company's works, and Messrs. Donaldson & Collins' Aerated Water Factory, on behalf of the Crown Law Department in connection with the important law suit Spencer *v.* the Crown. This Department does not receive compensation of any kind for services of this nature, which if attended to by private engineers would cost a considerable sum. Our revenue would benefit considerably if at least the salary of the officers engaged upon the work were paid by the Department requiring their service during the period employed thereon. If this can be arranged, there can be no objection to the Inspectors, who are trained men and best qualified, being utilised in the direction mentioned.

Cost of Inspection of Machinery, etc.—In the Public Service Commissioner's report for the year ending June, 1908, which was presented to Parliament, it is stated that inspection of mines and machinery costs more in this State than in either Victoria or New South Wales. The comparisons made are not fair ones, in fact are misleading, inasmuch as in both the States mentioned inspection of boilers, machinery, etc., is carried out by two distinct departments, viz., the Mines Department and the Department controlling the Factories Acts. Again, Inspectors under the Machinery Act in this State carry out certain functions which do not come within the scope of kindred departments in Victoria and New South Wales, *e.g.*, engine-drivers' examinations cost the State of Victoria about £1,000 per annum, apart altogether from the cost of mines and factory inspection, whilst in this State the cost is included in inspection of machinery, as also is marine engine-drivers' examinations, which in the Eastern States are conducted by special Boards of Examiners. Engineering surveys under the Navigation Act in this State are effected by an officer attached to the Machinery Department. In the States quoted similar surveys cost from £800 to £1,200 per annum independently. Engineers' services are also provided under arrangement to the Fremantle Harbour Trust Commissioners, and which, if carried out by an officer directly under the Trust, would cost about £200 per annum.

Another important item which should not be overlooked is that in this State the immense distances to be travelled render the retention of a given number of Inspectors, whereas in a State like Victoria, where means of locomotion are easier and more rapid, the same amount of work might possibly be attended to with a less number of Inspectors, notwithstanding the greater population as compared with this State. The requirements of the Statutes in each State are also somewhat different. Under the mining laws in

both Victoria and New South Wales boilers and machinery are not subject to thorough annual inspection by Government Inspectors, and in consequence it is not surprising to find that serious boiler explosions, resulting in loss of life, have occurred in both States within the last few years, due to absence of close inspection, which should be done by experienced engineers possessing similar mandatory powers as contained in "The Inspection of Machinery Act, 1904." In this State happily there has not been a single explosion, such as are recorded in Great Britain and elsewhere, since the introduction of the Act, eleven years ago, and not a single life has been lost. Similar Acts to our own are in force in Tasmania, New Zealand, and Queensland.

Correspondence.—Outward correspondence totalling 6,807 was dispatched, and inward correspondence amounting to 8,409 was received and registered during the year.

I have again to thank the various Inspectors of Mines, Mining Registrars, Clerks of Courts, for assistance rendered in connection with engine-drivers' examinations and issue of certificates, which has been much appreciated. Also each member of the Staff for the loyal and capable manner in which they have carried out their work.

C. J. MATHEWS,
Chief Inspector of Machinery and
Chairman of Board of Examiners.

30th April, 1909.

DIVISION VIII.

REPORT OF THE CHIEF INSPECTOR OF EXPLOSIVES AND GOVERNMENT ANALYST FOR THE YEAR 1908.

The Under Secretary for Mines.

Department of the Minister for Mines,
The Government Chemical Laboratory,
Wellington Street, Perth, 31st December, 1908.

Sir,

I have the honour to submit, for the information of the Honourable the Minister, my thirteenth Annual Report concerning the conduct of the work entrusted to me during the year ending 31st December, 1908.

The twelve months under review do not present any features of special or outstanding interest, though the figures given below show that a large amount of work has been done. The reason for this is that no opportunities have been presented for research work, as the staff has been fully occupied with routine duties.

Numerous opportunities of making special investigations which would be both of interest and of practical public value constantly occur, but the irregular condition of my staff during the year has obliged me to put these opportunities aside. It is impossible, also, to obtain sufficient remuneration for analysts in this State to enable me to procure that amount of talent and experience which is required for carrying out research work.

IMPORTATION OF EXPLOSIVES.

The following tables give all the information annually published with regard to the importation of explosives into Western Australia:—

STATISTICS OF IMPORTATIONS OF EXPLOSIVES INTO WESTERN AUSTRALIA.

TABLE I.—*Importation for 1908.*

	Quantity. lbs.	Value. £
Gelignite	3,251,928	94,586
Dynamite	12,000	330
Blasting Gelatine	438,500	17,712
Gelatine Dynamite	339,852	11,726
Detonators	3,009,000	3,341
Fuse	547,872 coils	11,265
Powder, Blasting	116,500	2,896
Powder, Sporting	1,150	133
Explosives, N.E.I.		15,125
Fireworks		312
		£157,426

TABLE II.—*Comparison of Importations for the last Five Years.*

Explosives, etc.	Year. 1904.	1905.	1906.	1907.	1908.
Nitro-Glycerine Compounds	160,817	158,472	157,467	103,062	124,354
Blasting Powder	3,352	5,026	2,317	5,403	2,896
Sporting Powder	652	97	610	288	133
Fuse	15,653	14,762	10,893	8,476	11,265
Fireworks	245	..	586	362	312
Cartridges	14,781	..	11,061	..	15,099
Detonators	4,043	..	3,322	3,935	3,341
N.E.I.	22	2,641	12,725	1,066	6
Caps	..	..	272	..	20
	£199,565	£180,998	£199,253	£122,592	£157,426

TABLE III.—*Kinds and Quantities of Principal Industrial Explosives imported in 1907 and 1908.*

	lbs. 1907.	lbs. 1908.
Gelignite	2,469,780	3,261,928
Blasting Gelatine	552,600	438,500
Gelatine Dynamite	297,500	339,852
Dynamite	..	12,000
Blasting Powder	282,750	116,500
Sporting Powder	3,057	1,150
	3,605,687	4,169,930

TABLE IV.—*Comparison with other States.*

Explosives, etc.	Western Australia.	Victoria.	Queensland.	New South Wales.	South Australia.	Tasmania.	Proportion of total for Australia imported into Western Australia.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	
Nitro-Glycerine Compounds ...	4,052,280	1,457,200	1,819,113	1,981,000	772,000	564,100	
Blasting Powder	116,560	195,390	385,315	1,783,850	123,300	69,480	
Sporting Powder	1,150	42,070	1,000	31,407	8,985	10,859	
	4,169,930	1,694,660	2,205,428	3,796,257	904,285	644,439	31·08 °/₀
	£	£	£	£	£	£	
Fuse	11,265	2,433	8,318	Not given	2,771	Not given	
Detonators	3,341	2,626	2,237	3,500	871	1,374	
Other Explosives	6	8,324	2,294	374	385	1,405	
	14,612	13,383	12,849	3,874	4,027	2,779	28·36 °/₀
	£	£	£	£	£	£	
Total value of Explosives enumerated above	141,995	69,077	83,141	59,245	32,527	34,113	33·80 °/₀

It will be seen that the value of the importations shows an increase of £35,000, which indicates that in spite of the alleged depression in the mining industry there is an increasing demand for explosive agents on our goldfields.

The testing necessitated in the course of inspection of these explosives, both on arrival in this State and at the various centres of storage throughout the country, has been very considerable, as shown by the following figures:—

TABLE V.—*Tests made on Explosives.*

	No. of Samples.
Monobel Powder	4
Gelignite	1,445
Fuse	922
Gelatine Dynamite	246
Blasting Gelatine	179
Dynamite	6
Miscellaneous	10
Total	2,812

The above figures show an increase of 280 samples over the tests for the previous year, although in 1907 a large number of special tests were carried out in connection with the detection of mercury. This increase is largely due to the increased number of fuse tests which have been made in continuation of the special precautions which are being taken to bring about a greater uniformity and regularity in the safety fuse used in blasting, and which occupied a considerable proportion of my report last year.

It is very gratifying to find that the burning speed limit, which was imposed by regulation under the Mines Regulation Act at my suggestion, is having a very beneficial effect. The regular testing of fuse on the mines is now becoming an established practice, and everything points to the fact that a greater regularity is now being exhibited in the fuse supplied to our miners than has ever hitherto been the case.

STORAGE.

Although one or two new magazines have been erected, the storage capacity of others has been reduced, so that there has not been any considerable change in the total figures as compared with last year.

There are at present 74 magazines on explosives reserves, including five Government buildings. One of the latter is not being used at Esperance, and two have been leased to other occupiers. The total capacity of these buildings is 11,180 tons. Outside the reserves there are 36 magazines licensed, with a total capacity of 36 tons.

The explosives reserve at Black Range has been cancelled and a new reserve at Sandstone has been laid out instead. New sites have also been selected at Meekatharra and Wiluna. There are at present 43 reserves, with a total area of 3,195 acres.

The question of lightning conductors is very gradually being settled. The magazines at Coolgardie have all been satisfactorily installed with the latest form of lightning conductor as specified by the Government Electrician, but no steps have as yet been taken with regard to the buildings at Kalgoorlie, owing to supposed imminent removal of the reserve to the new sites selected to the west of the abattoirs. Final arrangements have not yet been made with regard to this very much needed alteration, some difficulty being experienced in getting a suitable line of railway connection, and other disputable matters which have arisen from time to time. There seems some reasonable hope, however, that in my next Annual Report I may be able to record that some commencement has been made towards the establishment of the new reserve on a proper footing.

LICENSED PREMISES.

The licenses issued and revoked for the storage and sale of explosives are shown in the following table:—

Applications received	47
Licenses issued	47
Licenses revoked	36
Licenses remaining in force	194

INSPECTION.

It is with very great regret that I have to record that during the year the extended furlough of Mr. A. J. Guest, my Travelling Inspector and Assistant Government Analyst, developed into a permanent severance of that officer from my staff. Throughout the 11 years during which he was connected with this Department Mr. Guest did most valuable and conscientious work, and it was a matter of great regret to me that the breakdown of his health necessitated his resignation.

Since his withdrawal, and in connection with the classification proposals of the Public Service Commissioner, the organisation of the staff has been somewhat altered, as explained below.

Mr. T. N. Kirton has been permanently appointed as Assistant Inspector of Explosives. In the course of his duties he has made the following inspections:—

Magazines	140
Store premises	163
Total	303

as against 314 for the previous year. Owing to shortage of staff I have been compelled at times to retain Mr. Kirton in the Head Office when he should have been engaged upon inspection circuits. This entirely accounts for the slight falling off in the number of inspections made.

The following places have been visited during the year:—Coolgardie, Kalgoorlie, Kanowna, Kookynie, Menzies, Malcolm, Morgans, Laverton, Leonora, Lawlers, Sir Samuel, Wiluna, Nannine, Meekatharra, Cue, Day Dawn, Magnet, Yalgoo, Geraldton, Albany, York, Beverley, Wagin, Katanning, Oaktown, Ravensthorpe, Southern Cross, Esperance, Norseman, Peak Hill, Kojonup, Collie, Yarloop, Northampton, Sandstone, and Armadale. These, of course, are in addition to inspections made in the metropolitan area.

The prosecutions which have taken place as a result of the inspections made are shown in the Appendix.

On the whole the condition of the explosives imported into the State has been very good. The following list gives particulars of the explosives which have been destroyed during the year from one cause or another, and which, as will be seen, represent a very small percentage on the total consumption:—

Date.	Place.	Kind and quantity.	Remarks.
6-2-08 ..	Fremantle ..	Gelignite, 260 cases Gelatine Dynamite, 40 cases Blasting Gelatine, 20 cases	Owing to not passing the official test.
15-3-08 ..	Coolgardie ..	Fuse, 310 coils	Owing to report that fuse hung fire and would not burn.
8-7-08 ..	Albany ..	Detonators, 5,000	Owing to licensee being overstocked and not being able to get a sale for them.
10-10-08 ..	Cue	Gelatine Dynamite, 2,450 lbs.	Owing to chemical deterioration.
25-10-08 ..	Fremantle ..	Fuse, 300 coils	Owing to not complying with burning regulations and exploding.
13-11-08 ..	Coolgardie ..	Powder, Blasting, 20 lbs. ..	Damaged by wet.

It is of interest to note one development in the use of explosives which has taken place, namely in connection with agriculture, in the application of nitroglycerine explosives to the clearing of land. The blowing up of large trees by means of small charges of explosives is becoming a very common practice, as it is found it is not only expeditious but cheap, and every month this practice is growing to an extraordinary extent, so that in some districts it has led to the consumption of quite considerable quantities of explosives.

GENERAL ANALYTICAL WORK.

The general chemical work under my charge has shown further expansion during the year. This expansion, so far as it can be disclosed by figures, is shown in the following tables:—

General Classification of Analysis.

	No. of Samples.
Explosives	2,812
Spirits	437
Waters	235
Soils	133
Fertilisers	156
Rocks and deposits	129
Essences	52
Oils	453
Miscellaneous and Foodstuffs ..	91
Sewage	238
Paints	7
Teas	24
Wheats	48
Criminal Investigation	89

General Classification of Analysis—continued.

	No. of Samples.
Leads	6
Fabrics	71
Butter	1
Jewellery	21
Vinegar	17
Medicinal Compounds	194
Leather	7
Milks	29
Turpentine	16
Hydrometers	22
Stomachs	13
Water Supply (special analyses)	48
Flours	7
Total	5,356

Departments for which work was performed.

	No. of Samples.
Customs	1,171
Agricultural Department	400
Crown Law Department	138
Inspector of Liquors	197
Mines	33
Works and Railways	420
Miscellaneous	72
Public Health	46
Private Analyses	67
Explosives	2,812
Total	5,356

The increase over last year of 438 analyses here shown is rather remarkable when one considers the extraordinary difficulties under which the staff has been working through the disorganisation caused by vacancies.

Most of the work has been of a routine character, but one or two special investigations of special interest might be referred to.

Coolgardie Water Supply.—The serious corrosion of the pipes used for conveying water from Mundaring to the Goldfields was submitted to me as subject for special investigation, and led to a great deal of work, involving also the examination of certain conditions existing in the mains of the Perth Water Supply. A very extensive report was prepared on the subject, with suggestions for arresting and preventing the corrosion. This report has not yet been made public, and therefore cannot be referred to in detail here, but I understand that the suggestions put forward by me are now being made the subject of experiments.

Potable Spirits.—The special work done in past years for the Inspection of Liquors Department has been continued and, amongst other matters, a complete examination was made of the bulk whiskies sold in Perth, on which a special report was prepared and presented to Parliament. A report begun in the previous year, comparing local and imported wines, was also completed, but a considerable amount of work of investigation will still be necessary before any exact lines of comparison can be laid down.

An addition to the equipment of the laboratory of a small refrigerating plant providing cold storage, and also a room in which work can be carried on at carefully controlled low temperatures, has enabled me to bring about a greater efficiency in some of the special methods of spirit analyses which have been originated in this laboratory, and which will enable greater exactness to be imparted to this class of work than has ever before been attainable.

Agricultural Work.—Though I must confess to some feeling of disappointment that a more systematic application is not made of my work in connection with agricultural problems, still a considerable amount has been done during the year. Too much of this work, however, is of a desultory kind and not directed towards the solution of general questions. Probably nowhere in the world is there a better field for the application of scientific methods to the investigation of agricultural problems than in this State, and one can only hope by thoroughly efficient work to gradually win one's way into the confidence of farmers, who, as they find some practical value derived from reports submitted to them will gradually come to make more use of the facilities which are at their disposal.

The most progressive work at present is that being done on the investigation of the milling qualities of wheats. This is being applied now in connection with the judging of wheat at Agricultural Shows and also towards the investigation of special varieties of wheat which are being submitted from time to time and which are undergoing testing at the Experimental Farms.

An interchange of information and samples between this State and Canada, which has begun, is also likely, I think, to lead to very beneficial results. Through the courtesy of the Cerealist to the Dominion Government, Dr. Saunders, and the Principal Chemist to the Agricultural Department, Mr. Frank T. Shutt, samples of some picked Canadian wheats have been received here and will be cultivated and submitted to special examination from time to time with a view to seeing whether they can be adapted to local conditions, and also with a view to throwing light upon the changes which appear to be brought about in different qualities of wheat by the climatic and soil conditions which exist here.

Superphosphate Bags.—The method of treating superphosphate bags in order to preserve them from the free acid contained in the fertiliser, which was referred to in my last report has, I am glad to say, received considerable attention. Inquiries with regard to the matter have been received from Belgium, Italy, and Shanghai, as well as from several parts of England. Several firms have experimented with it with the greatest success, while a bag treated by this method and filled with superphosphate was shipped from here to the Franco-British Exhibition, and after remaining there for some months was reported as still being in excellent condition. Commercial inquiries made from various quarters give promise that before long a regular trade may be opened up in the material from the red gum, which is used in this method of preservation, and in the near future should see this method of treatment firmly established.

Poison Plants.—Satisfactory reports as to the efficacy of the antidote which is being distributed broadcast over the country for the treatment of stock poisoned by the native poison plants continue to be received from time to time, and have been published in the daily Press.

The following letter recently received will give some idea of the view taken by farmers on the matter:—

"The tabloids which you were good enough to send us have come in very usefully. We had two valuable Shropshire ewes poisoned with York Road plant, and both recovered under treatment with your preparation. One ewe was practically stiffened and appeared to be too far gone for anything; yet a half dose enabled it to get up on its legs, and the complete dose put it as right as usual. It simply walked away as if nothing had happened. The neighbours tell me they have the same good results with your tabloids, and I feel sure were it not for your efforts in this very important matter many thousands of pounds worth of stock would have been lost to farmers and others. For our freedom from loss we sincerely thank you."

The staff under my control has been re-organised and classified by the Public Service Commissioner during the year and now comprises the following officers, but several of these posts have been vacant during the year and temporary officers have had to be employed to keep up with the work in hand.

Assistant Government Analyst ..	1
Assistant Inspector of Explosives ..	1
Analysts	5
Clerks	3
Magazine Keepers	2
Watchmen	3
	15

It will thus be seen that my staff comprised three analysts less than last year, although the work shows considerable increase.

It is very difficult with the remuneration offered to obtain men of the stamp required for the work which has to be performed, and I can only repeat the conviction already expressed, that if the laboratory is to

perform the functions of which it is capable and there is to be derived from it the maximum benefit to the State as a whole, then a very different view will require to be taken as to the status of the work performed and its monetary value.

I beg to acknowledge the assistance rendered to me during the year by the officers under the Commissioner of Police, and by the Inspectors of Mines under the State Mining Engineer.

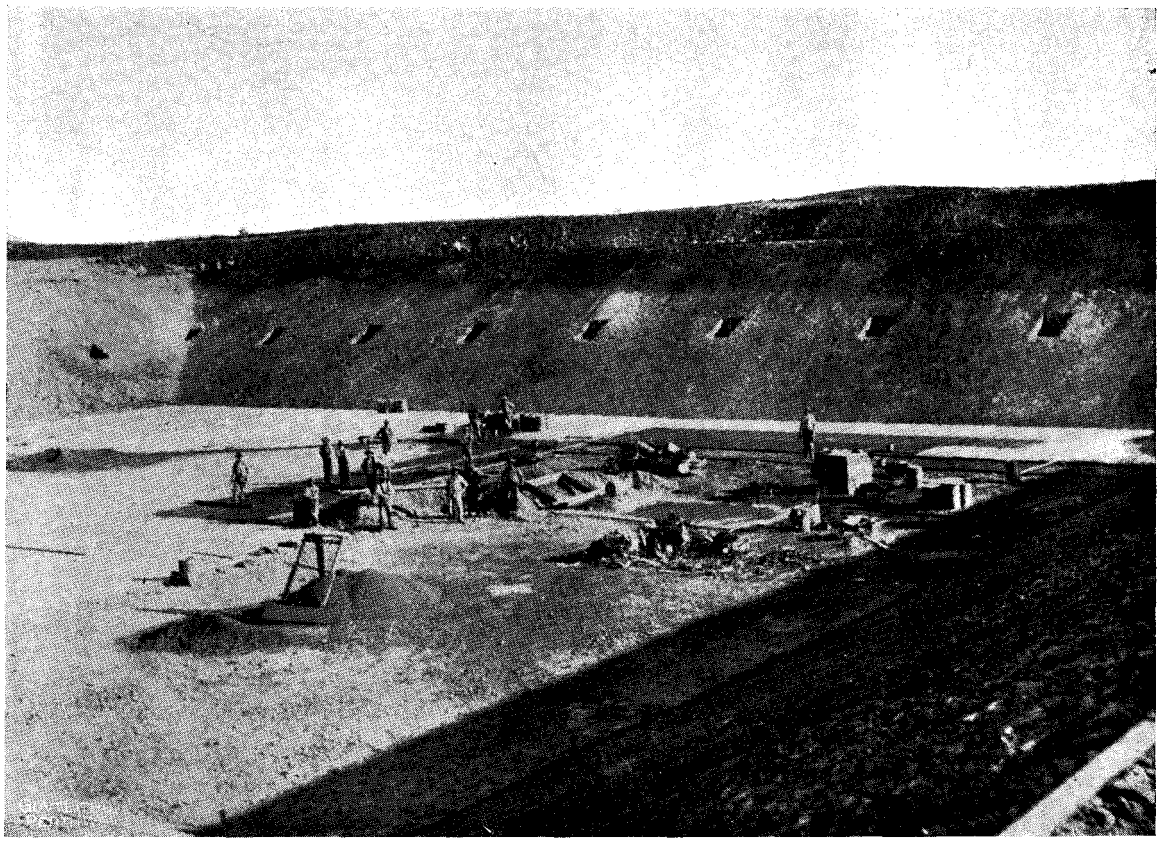
I have, etc.,

E. A. MANN,
Chief Inspector of Explosives,
and Government Analyst.

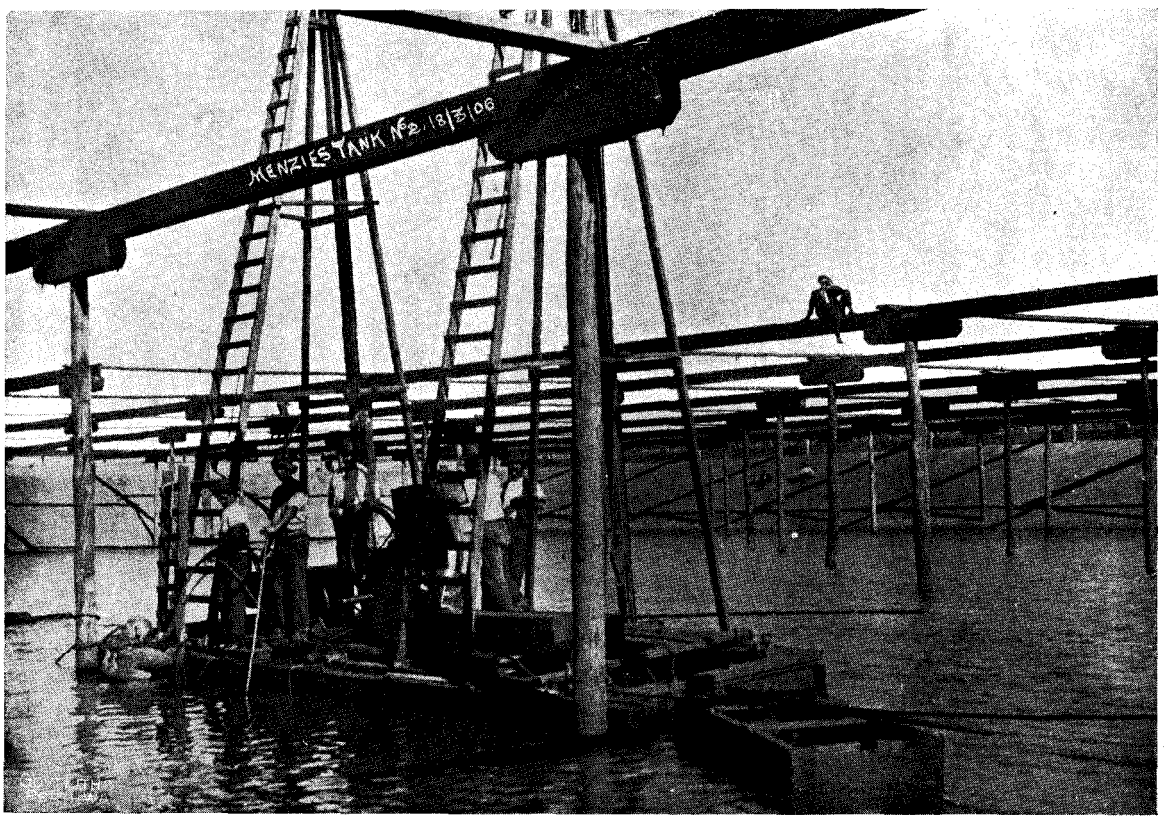
APPENDIX.

Prosecutions which have taken place during 1908.

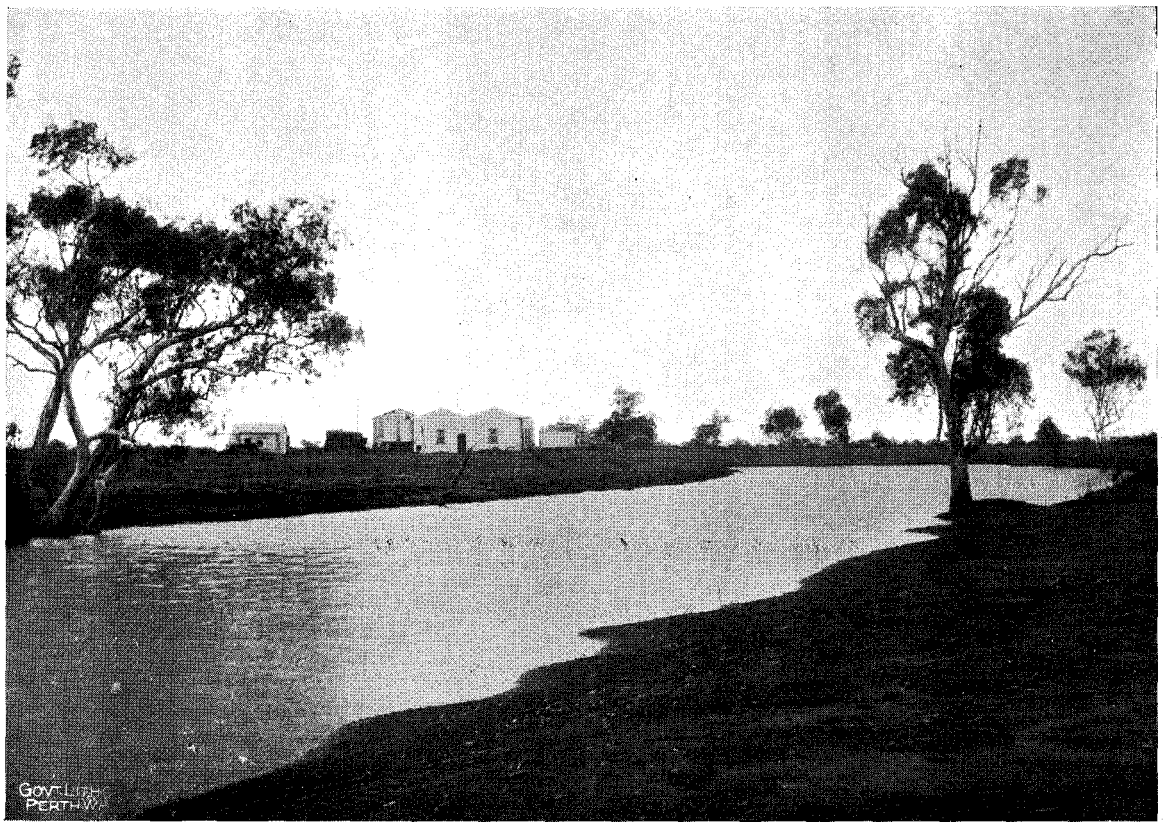
	Date.	Place.	Offence.	Penalty.
1.	14-7-08 ..	Ravensthorpe ..	Overstocking explosives on licensed premises	Fined 10s., 4s. 6d. costs.
2.	13-11-08 ..	Fremantle ..	Committing act likely to cause fire or explosion near Woodman's Point	Fined 5s., 13s. 6d. costs.
3.	13-11-08 ..	Fremantle ..	Do. do. ..	Fined 5s., 13s. 6d costs.
4.	10-12-08 ..	Armadale ..	Overstocking explosives in licensed magazine	Fined 19s. 6d., £1 10s. 6d. costs.



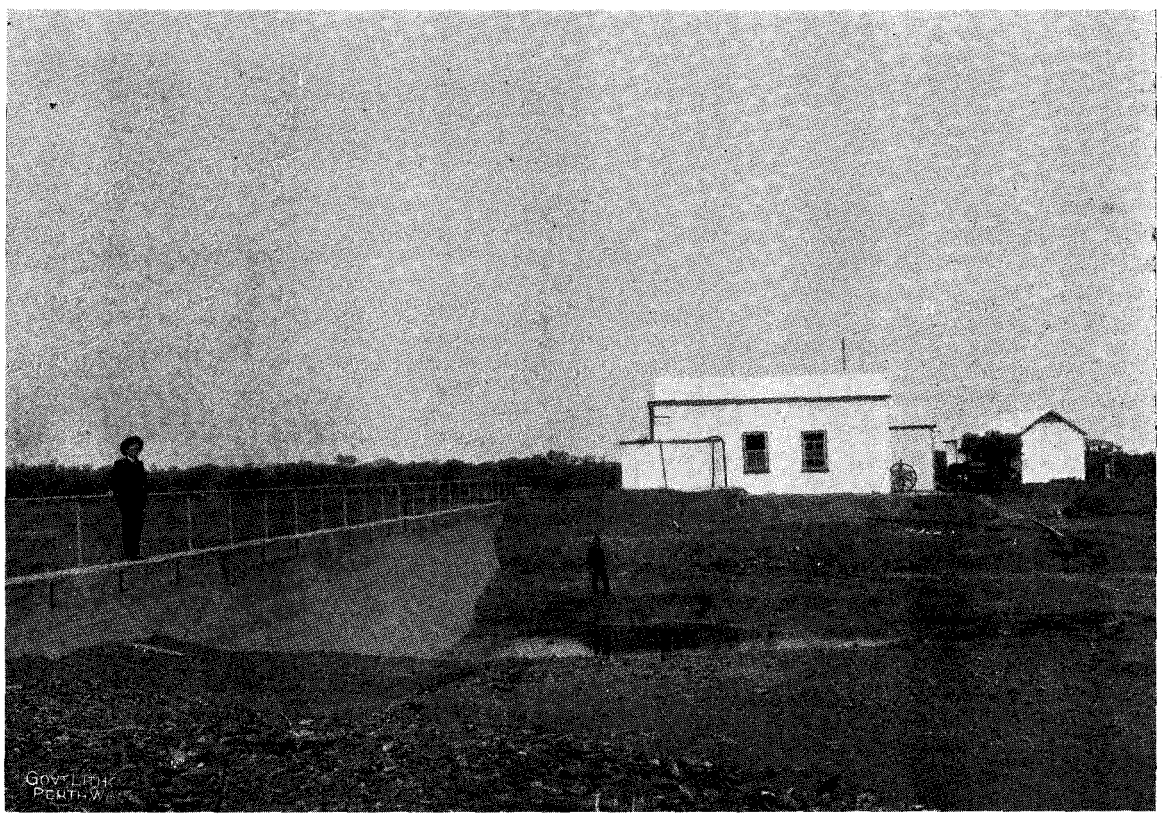
MENZIES WATER SUPPLY.
No 2 Tank, showing excavation and asphalt compo. lining in progress.



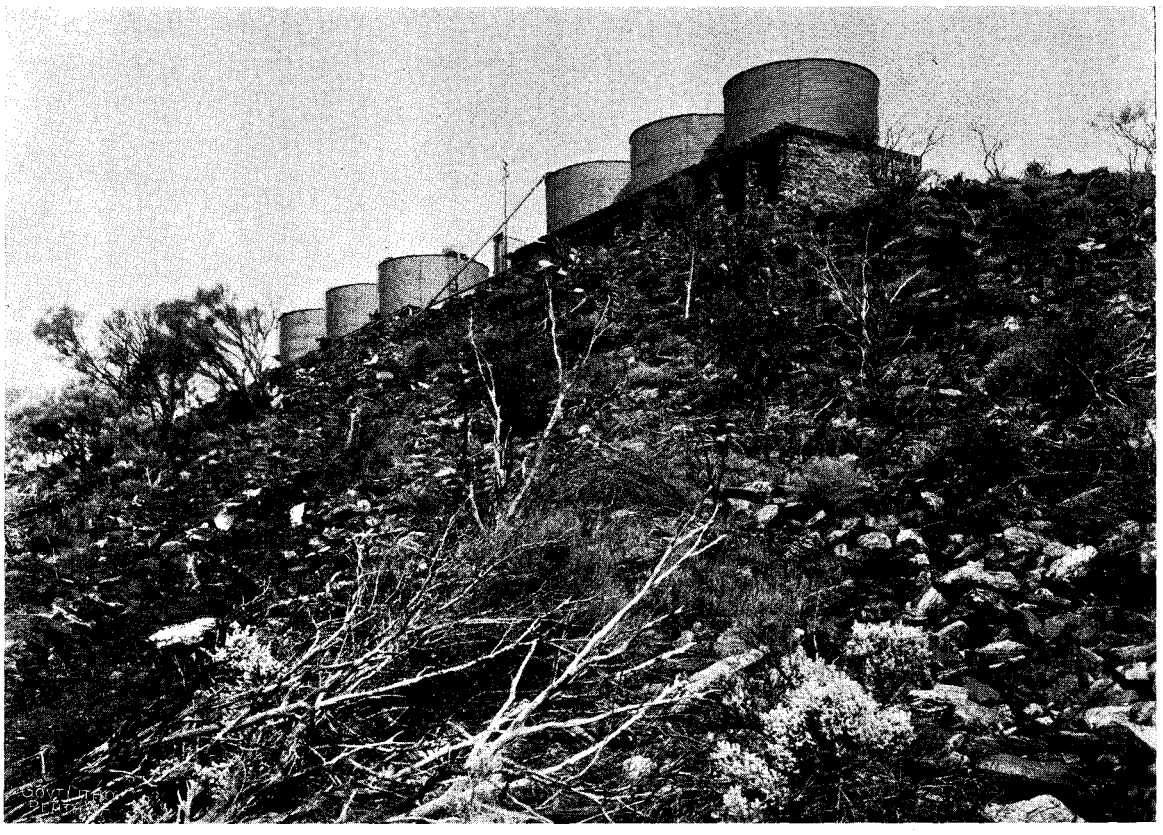
MENZIES WATER SUPPLY.
No. 2 Tank. Erection of roof in progress. Foundations of roof set by a diver.



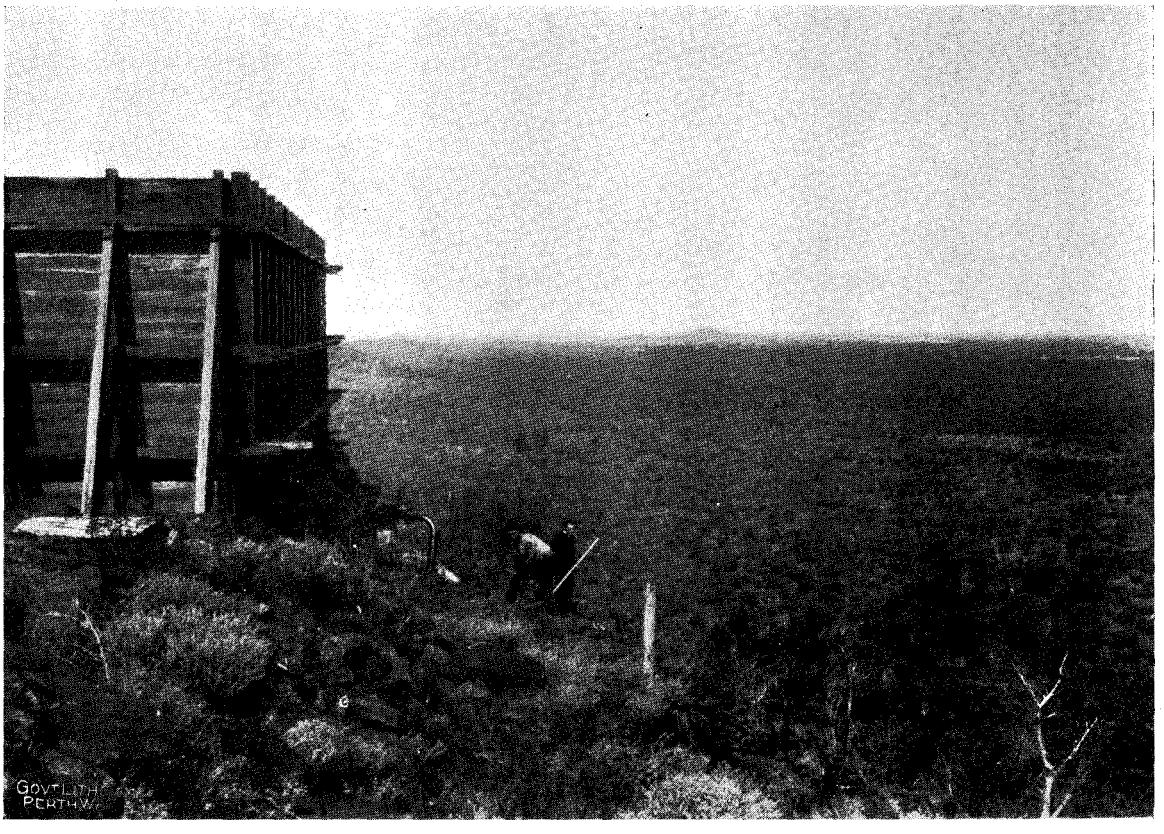
LEONORA WATER SUPPLY.
Pump Station and Reservoir, 10 miles north of Leonora. Capacity, 14 million gallons (after rain).



LEONORA WATER SUPPLY.
Concrete Weir and Pump Station, 10 miles north of Leonora. (Before rain.)



LEONORA WATER SUPPLY.
No. 1 set of Service Tanks on Mount George. Altitude 1,616 feet.



LEONORA WATER SUPPLY.
View from Service Tank No. 2, looking south, Leonora and Gwalia eight miles distant.

WESTERN AUSTRALIA.

MINING STATISTICS

To 31st December, 1908.

LETTER OF TRANSMITTAL.

Department of Mines,
Statistical Branch,
Perth, 30th April, 1909.

The Secretary for Mines.

Sir,—

I have the honour to transmit herewith the Mining Statistics for the year 1908.

The average quality of the metal produced from the mines in 1908 (as shown by the Returns of the Royal Mint) was slightly lower than in the preceding year. The average percentage of gold having been 82·95, as against 84·51. The silver content rose from 10·31 per cent. in 1907 to 11·09 per cent. in 1908, and the base metals from 5·18 per cent. to 5·96 per cent. The average value of the gold contained in each ounce of metal sent down by the mines during 1908 was, therefore, £3 10s. 6d., as compared with £3 11s. 9d. in 1907.

I have the honour to be,
Sir,
Your obedient servant,

JAMES WALLACE,
Statist.

MINING STATISTICS TO 31st DECEMBER, 1908.

TABLE OF CONTENTS.

TABLE OF CONTENTS—*continued.*

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.
V. Vacuum Filter Presses.

SUMMARY OF MINERAL PRODUCTS.

GOLD AND OTHER MINERALS PRODUCED DURING 1908, AND THE ESTIMATED VALUE THEREOF, TOGETHER WITH A COMPARISON FOR PREVIOUS YEARS, AND THE TOTAL PRODUCTION TO DATE.

Description of Mineral.	1908.		1907.		1906.		1905.		Previous to 1905.		Total to date.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
		£		£		£		£		£		£
1. Antimony ... ... (Exported) statute tons ...	...	...	25	630	...	...	...	...	22	230	47	860
2. Asbestos ... ... (Reported) do. ...	40	1,600	...	...	...	...	...	...	...	...	40	1,600
3. Coal ... ... (Reported) do. ...	175,248	75,694	142,373	55,158	149,755	57,998	127,364	55,312	706,950	373,598	1,301,690	617,760
4. Copper { Ore ... (Exported) do. ...	2,503	29,272	3,727	61,493	336	6,162	793	11,384	17,140	293,217	24,499	401,528
4. Copper { Ingot & Matte (Exported) do. ...	479	27,819	1,602	141,883	343	30,367	794	53,867	2,481	118,374	5,699	372,310
5. Gold (Exported and Minted) fine ounces ...	1,647,911	6,999,882	1,697,554	7,210,749	1,794,547	7,622,749	1,955,316	8,305,654	12,916,370	54,865,257	20,011,698	85,004,291
6. Ironstone ... ... (Reported) statute tons ...	...	...	1,094	438	1,280	512	3,213	1,285	52,233	34,448	57,820	36,683
7. Lead Ore ... ... (Exported) do. ...	...	...	...	...	...	...	...	...	33,644	364,756	33,644	364,756
8. Limestone ... ... (Reported) do. ...	...	...	3,602	1,382	9,472	1,691	9,145	1,220	71,487	13,997	93,706	18,290
9. Mica ... ... (Exported) do. ...	†	10	...	...	...	...	...	...	†	294	...	304
10. Pig Lead ... ... (Exported) do. ...	...	...	...	...	...	...	...	...	684	13,306	684	13,306
11. Scheelite ... ... (Exported) do. ...	...	...	4	140	...	...	...	...	...	...	4	140
12. Silver ... ... (Exported) fine ounces ...	168,455	18,877	189,265	25,382	282,145	37,612	359,744	44,278	740,214	85,458	1,739,823	211,607
13. Silver Lead Ore ... (Exported) statute tons ...	518	5,006	211	1,866	...	...	...	...	...	...	729	6,872
14. Tantalite ... ... (Exported) do. ...	†	400	...	...	...	...	18	5,729	...	...	18	6,129
15. Tin (Ore and Ingot) ... (Exported) do. ...	1,093	83,595	1,502	166,139	1,442	147,380	973	76,779	4,805	343,346	9,815	817,239
16. Zinc (Spelter, etc.) ... (Exported) do. ...	11	98	73	3,390	...	...	...	...	...	...	84	3,488
Unenumerated ... (Exported)	...	2,750	...	817	...	1,035	...	127	...	217	...	4,946
Total Values	...	£7,245,003	...	£7,669,467	...	£7,905,506	...	£8,555,635	...	£56,506,498	...	£87,882,109

† 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 1908.

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.
		£		£		£		£		£		£		£
Asbestos ... ... statute tons	40	1,600	...	...	...	...	...	...	...	...	...	...	...	...
Gold ... ... fine ounces	1,647,911	6,999,882	224,792	954,754	465,085	1,975,554	670,910	2,849,838	57,085	242,482	2,908	12,300	471,967	2,004,789
Copper ... ... statute tons	481	27,915	9,071	502,812	14,698	882,901	...	...	8,833	603,063	5,628	338,000	...	...
Copper Ore ... do	2,503	29,272					983	3,928	1,185	6,588	...	...	13	275
Lead (Pig, etc.) ... do	...	...	14,936	186,746	7,109	95,239	...	...	...	...	...	...	...	...
Manganese ... do	...	...	...	...	1,381	5,524	...	...	...	...	...	...	...	...
Platinum ... ... fine ounces	..	...	135	439	...	...	...	...	...	...	...	...	...	..
Silver ... ... do	168,455	18,877	2,490,163	253,920	1,162,276	117,889	25,665	2,835	...	...	...	...	1,731,336	175,337
Silver-Lead Ore etc. statute tons	405	4,427	358,730	1,906,275	...	...	...	...	61,047	319,549	900	9,000	...	...
Tin ... ... do	...	...	...	...	4,826	342,191	...	...	...	...	...	...	...	...
Black Tin ... do	1,093	83,295	1,795	205,447	...	...	...	...	...	...	...	...	...	...
Tin Ore ... do	...	...	...	...	...	...	79	6,070	4,521	421,580	...	...	...	...
Tantalite ... do	...	400	...	...	...	...	...	...	...	...	...	...	...	...
Wolfram ... ... do	...	...	86	6,742	421	32,792	3	252	5	338	...	...	...	...
Zinc Spelter ... do	...	...	276,720	600,883	...	...	...	...	...	...	...	...	...	...
Antimony (Metal and Ore) ... do	...	...	117	1,141	42	469	3,679	10,428	...	...	...	...	5	73
Bismuth ... ... do	...	..	9	2,017	103	16,042	...	...	4	462	...	...	...	...
Alunite ... ... do	...	...	1,082	2,705	...	...	...	...	...	...	...	...	...	...
Coal ... ... do	175,248	75,694	9,147,025	3,353,093	696,332	244,922	113,462	64,653	61,068	51,907	...	...	100,502	85,846
Coke ... ... do	...	...	283,873	199,933	...	...	...	...	...	...	...	...	...	...
Shale (Oil) ... do	...	...	46,303	26,068	...	...	...	...	...	...	...	...	...	...
Iron ... ... do	...	...	40,207	118,224	...	...	...	...	...	...	...	...	...	...
Iron Oxide ... do	...	...	1,827	1,857	...	...	...	...	...	...	...	...	...	...
Ironstone ... do	...	...	8,087	6,199	51,594	51,167	...	...	3,600	1,600	88,000	39,600	...	...
Lime ... ... do	...	...	24,922	21,610	...	...	...	...	...	...	...	...	...	...
Limestone ... do	...	...	53,668	14,779	146,306	51,706	...	...	...	...	29,500	6,000	...	...
Mica ... ... do	...	10	...	...	...	...	...	...	...	...	...	...	...	...
Molybdenite ... do	...	...	8	929	89	9,239	...	...	...	...	...	...	...	...
Precious Stones ... carats	...	...	...	43,158	...	17,700	...	...	...	...	...	...	...	793
Unenumerated	...	1,977	...	199,776	...	1,152	...	1,340	...	...	...	53,000	...	15,386
Total Values	... £	7,243,349	...	£8,609,607	... £	3,844,487	... £	2,939,344	...	£1,647,569	...	£457,900	... £	2,282,499

PART I.—GOLD.

TABLE I.

MONTHLY PRODUCTION OF GOLD, IN FINE OUNCES, SHOWING THE QUANTITY REPORTED TO THE MINES DEPARTMENT DURING 1908.

GOLDFIELD.	DISTRICT.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.		* TOTAL.	
		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 ...	...	...	17·42	...	21·76	...	8·71	...	6·97	...	6·97	...	65·68	...	127·51
Pilbara	Marble Bar ...	707·44	932·30	282·70	503·76	84·75	218·55	119·83	173·85	...	135·42	770·79	906·24	1,965·51	2,870·12
Do.	Nullagine ...	224·86		221·06		133·80		54·02		135·42		135·45		904·61	
West Pilbara ...	...	...	15·30	...	30·48	...	76·92	...	103·93	...	75·49	...	90·14	...	392·26
Ashburton ...	...	...	10·17	...	14·12	...	9·79	...	7·34	...	4·90	...	7·35	...	53·67
Gascoyne	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Peak Hill ...	...	...	1,011·85	...	609·87	...	696·28	...	...	...	707·90	...	851·62	...	3,877·52
East Murchison ...	Lawlers ...	4,828·36	11,043·66	5,009·96	11,135·85	5,216·03	11,015·95	4,990·79	10,443·74	5,874·80	13,428·56	5,623·00	10,829·63	31,542·94	67,897·39
Do.	Black Range	6,215·30		6,125·89		5,799·92		5,452·95		7,553·76		5,206·63		36,354·45	
Murchison ...	Cue	1,825·56	12,995·13	1,787·83	14,623·99	2,169·05	14,001·14	2,037·30	13,156·24	854·55	11,843·73	2,643·41	13,905·33	11,317·70	80,525·56
Do.	Nannine ...	2,739·22		4,006·15		2,627·74		1,878·20		2,073·63		1,923·72		15,248·66	
Do.	Day Dawn ...	8,272·18		8,493·39		8,531·71		8,363·78		8,401·47		8,705·98		50,768·51	
Do.	Mt. Magnet ...	158·17		336·62		672·64		876·96		514·08		632·22		3,190·69	
Yalgoo	...	...	142·84	...	25·80	...	20·27	...	25·25	...	5·41	...	21·24	...	240·81
Mt. Margaret ...	Mt. Morgans	1,733·20	12,051·14	2,635·56	15,176·66	2,957·04	14,355·14	1,972·02	15,737·35	2,562·60	13,388·36	2,555·44	14,166·58	14,415·86	84,875·23
Do.	Mt. Malcolm	7,163·75		8,135·34		7,706·77		6,792·20		7,287·53		7,080·30		44,165·89	
Do.	Mt. Margaret	3,154·19		4,405·76		3,691·33		6,973·13		3,538·23		4,530·84		26,293·48	
North Coolgardie	Menzies ...	2,197·52	5,215·15	2,535·41	5,855·72	3,553·04	7,930·74	2,300·96	5,852·26	3,941·77	8,876·61	3,321·35	9,029·34	17,850·05	42,759·82
Do.	Ularring ...	1,970·09		1,577·86		1,630·85		1,322·89		1,641·26		1,559·93		9,702·83	
Do.	Niagara ...	980·23		1,008·45		2,038·54		1,626·76		2,419·77		2,259·32		10,333·07	
Do.	Yerilla ...	67·31		734·00		708·31		601·65		873·81		1,888·74		4,873·82	
Broad Arrow ...	...	...	820·40	...	1,092·65	...	1,892·83	...	1,532·46	...	891·46	...	1,431·01	...	7,660·81
N.E. Coolgardie ...	Kanowna ...	1,621·79	1,657·10	2,272·03	2,350·98	2,208·80	2,257·45	2,835·87	2,863·15	2,541·38	2,559·74	2,054·68	2,088·04	13,534·55	13,776·46
Do.	Kurnalpi ...	35·31		78·95		48·65		27·28		18·36		33·36		241·91	
East Coolgardie ...	East Coolgardie	73,099·21	73,156·61	71,476·32	71,688·69	73,491·23	73,545·51	72,444·43	72,641·48	74,338·25	74,659·94	73,984·88	74,355·94	438,834·32	440,048·17
Do.	Bulong ...	57·40		212·37		54·28		197·05		321·69		371·06		1,213·85	
Coolgardie ...	Coolgardie ...	2,508·57	3,602·73	2,388·29	3,023·82	2,313·20	2,774·87	3,181·13	3,857·48	2,363·82	3,304·00	2,845·50	3,337·25	15,600·51	19,900·15
Do.	Kunanalling	1,094·16		635·53		461·67		676·35		940·18		491·75		4,299·64	
Yilgarn	...	...	1,881·20	...	2,131·73	...	1,566·48	...	1,073·18	...	2,163·56	...	1,560·49	...	10,376·64
Dundas	...	...	1,762·53	...	1,840·70	...	2,374·53	...	1,971·30	...	2,586·70	...	2,069·58	...	12,605·34
Phillips River ...	...	...	253·99	...	307·37	...	237·33	...	224·46	...	504·06	...	272·02	...	1,799·23
State generally ...		...	26·37	...	124·33	...	17·11	...	20·40	...	21·72	...	...	..	209·93
TOTAL Fine ounces ...		...	126,595·89	...	130,558·28	...	132,999·60	...	129,696·84	...	135,164·53	...	134,987·48	...	789,99 ·62
TOTAL Sterling value		**£537,745**		**£554,576**		**£564,947**		**£550,892**		**£574,143**		**£573,390**		**£3,355,693**	

* To 30th June.

TABLE I.—*Monthly Production of Gold, in Fine Ounces*—continued.

GOLDFIELD.	DISTRICT.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.		TOTAL FOR 1908.	
		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	...	...	4·36	...	2·61	...	4·36	...	3·48	...	3·48	...	4·36	...	150·16
Pilbara	Marble Bar ...	198·92	960·07	106·17	687·91	235·09	520·94	73 10	684·51	176·87	620·55	424·10	621·51	3,179·76	6,965·61
Do.	Nullagine ...	761·15		581·74		285·85		611·41		443·68		197·41		3,785·85	
West Pilbara ...	...	...	...	...	231·01	...	113·55	...	88·93	...	90·80	...	89·05	...	1,005·60
Ashburton ...	...	...	17·14	...	7·34	...	14·59	...	17·14	...	33·63	...	18·20	...	161·71
Gascoyne	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Peak Hill	...	...	815·17	...	684·78	...	601·06	...	632·24	...	727·61	...	641·72	...	7,980·10
East Murchison ...	Lawlers ...	6,261·95	12,043·12	9,249·64	14,795·00	6,311·86	13,378·43	5,325·94	11,794·16	6,657·76	11,740·54	6,759·66	13,143·67	72,109·75	144,792·31
Do. ...	Black Range	5,781·17		5,545·36		7,066·57		6,468·22		5,082·78		6,384·01		72,682·56	
Murchison	Cue	1,496·01		2,612·14		2,516·65		2,392·74		2,243·27		2,123·99		24,702·50	
Do.	Nannine ...	4,744·83	13,758·02	2,738·91	13,358·61	2,983·25	13,069·35	3,735·84	14,244·39	2,700·65	9,453·38	6,668·38	13,439·09	38,820·52	157,848·40
Do.	Day Dawn ...	6,651·22		6,847·09		6,662·10		6,721·86		3,515·74		3,255·92		84,422·44	
Do.	Mt. Magnet ...	865·96		1,160·47		907·35		1,393·95		993 72		1,390·80		9,902·94	
Yalgoo	...	...	11·29	...	14·92	...	26·50	...	116·73	...	85·89	...	54·89	...	551·03
Mt. Margaret ...	Mt. Morgans	2,771·22		2,535·24		2,108·76		2,421·94		2,478·07		2,181·04		28,912·13	
Do. ...	Mt. Malcolm	7,503·26	13,057·46	6,741·58	11,615·07	6,580·06	10,687·27	6,872·55	10,487·20	6,806·41	11,358·86	7,348·86	11,516·06	86,018·61	153,597·15
Do. ...	Mt. Margaret	2,782·98		2,338·25		1,998·45		1,192·71		2,074·38		1,986·16		38,666·41	
North Coolgardie ...	Menzies ...	3,603·11		2,697·38		4,188·43		2,936·61		2,416·66		3,331·13		37,023·37	
Do. ...	Ularring ...	2,057·95	8,305·29	2,498·04	7,656·64	1,226·47	8,183·08	2,137·78	7,785·66	1,573·29	6,717·61	2,402·56	9,843·49	21,598·97	91,251·59
Do. ...	Niagara ...	1,815·80		1,852·54		1,861·31		1,346·43		2,254·26		2,014·49		21,477·90	
Do. ...	Yerilla ...	828·43		608·68		906·87		1,364·84		473·40		2,095·31		11,151·35	
Broad Arrow ...	...	...	2,094·75	...	1,593·11	...	1,802·22	...	932·39	...	1,398·14	...	2,948·55	...	18,429·97
N.E. Coolgardie ...	Kanowna ...	2,263·33	2,322·94	1,970·77	2,002·84	2,142·36	2,198·11	1,769·09	1,818·89	1,934·82	1,991·47	2,740·30	2,962·01	26,355·22	27,072·72
Do.	Kurnalpi ...	59·61		32·07		55·75		49·80		56·65		221·71		717·50	
East Coolgardie ...	East Coolgardie	65,530·95	65,743·58	76,057·65	76,394·66	77,760·47	77,828·06	76,747·98	76,747·98	76,620·87	76,784·95	76,863·13	77,225·30	888,415·37	890,772·70
Do. ...	Bulong ...	212·63		337·01		67·59		...		164·08		362·17		2,357·33	
Coolgardie ...	Coolgardie ...	3,465·73	3,773·78	2,829·89	3,290·77	2,153·92	2,695·40	2,514·00	3,389·41	3,041·19	3,233·80	3,215·37	3,746·08	32,820·61	40,029·39
Do. ...	Kunanalling	308·05		460·88		541·48		875·41		192·61		530·71		7,208·78	
Yilgarn	... ...	...	2,352·22	...	2,747·16	...	1,982·57	...	1,484·49	...	1,813·25	...	1,406·54	...	22,162·87
Dundas	...	...	2,711·07	...	2,923·22	...	2,574·11	...	2,278·17	...	2,837·20	...	2,714·52	...	28,643·63
Phillips River ...	...	...	265·47	...	683·32	...	272·31	...	691·31	...	399·19	...	293·86	...	4,404·69
Donnybrook	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
State generally		...	61·20	...	...	...	...	...	...	...	...	...	...	...	271·13
TOTAL Fine ounces ...		...	128,296·93	...	138,688·97	...	135,951·91	...	133,197·08	...	129,290·35	...	140,668·90	...	1,596,090·76
TOTAL Sterling value		£544,971		£589,013		£577,487		£565,785		£549,191		£597,524		£6,779,763	

TABLE II.

TOTAL PRODUCTION OF GOLD, IN FINE OUNCES, AS REPORTED TO THE MINES DEPARTMENT, TO 31ST DECEMBER, 1908.

GOLDFIELD.	DISTRICT.	1908.		1907.		1906.		1905.		1904.		1903.	
		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	... ...	...	150·16	...	336·57	...	165·72	...	496·14	...	205·84	...	644·54
Pilbara	Marble Bar ...	3,179·76	6,965·61	5,856·44	10,042·96	2,256·97	5,711·90	4,534·25	11,473·83	3,129·37	8,029·65	4,787·33	9,570·04
Do.	Nullagine ...	3,785·85		4,186·52		3,454·93		6,939·58		4,900·28		4,782·71	
West Pilbara ...	... ...	...	1,005·60	...	464·08	...	749·16	...	801·14	...	3,427·71	...	5,100·48
Ashburton	... ...	...	161·71	...	143·01	...	278·24	...	207·53	...	509·96	...	903·94
Gascoyne	... ...	...	...	...	...	...	...	...	...	...	...	...	...
Peak Hill	... ...	...	7,980·10	...	8,111·14	...	2,008·20	...	13,586·87	...	14,113·57	...	31,750·17
East Murchison ...	Lawlers	72,109·75	144,792·31	61,259·79	119,207·31	60,351·20	95,771·49	68,232·52	84,923·28	78,543·91	89,730·30	84,738·16	85,451·08
Do.	Black Range ...	72,682·56		57,947·52		35,420·29		16,693·76		11,186·39		712·92	
Murchison	Cue	24,702 50		25,878·80		18,337·11		15,125·05		15,286·71		20,688·78	
Do.	Nannine	38,820·52	157,848·40	31,792·41	169,397·46	26,572·68	182,395·82	18,549·17	206,734·88	18,668·31	214,403·13	19,947·48	204,181·85
Do.	Day Dawn ...	84,422·44		101,591·06		124,047·58		161,507·28		161,163·51		136,768·68	
Do.	Mt. Magnet ...	9,902·94		10,135·19		13,439·05		11,553·38		19,284·60		26,776·91	
Yalgoo	... ...	...	551·03	...	4,371·38	...	4,450·19	...	4,742·77	...	2,353·41	...	3,138·35
Mt. Margaret ...	Mt. Morgans ...	28,912·13		28,755·18		30,206·54		35,130·45		55,463·96		64,817·55	
Do.	Mt. Malcolm ...	86,018·61	153,597·15	81,709·00	169,466·07	94,095·06	166,258·94	96,644·33	188,712·21	87,927·26	187,383·87	80,055·86	184,590·89
Do.	Mt. Margaret ...	38,666·41		59,001·89		41,957·34		56,937·43		43,992·65		39,717·48	
North Coolgardie ...	Menzies	37,023·37		37,053·24		33,237·86		41,895·33		37,100·73		52,870·58	
Do.	Ularring ...	21,598·97	91,251·59	19,072·73	86,790·67	25,210·13	110,957·04	43,387·07	148,771·00	21,769·41	145,064·61	19,142·55	162,139·18
Do.	Niagara	21,477·90		18,881·94		37,418·89		45,520·17		67,230·33		77,013·02	
Do.	Yerilla	11,151·35		11,782·76		15,090·16		17,968·43		18,964·14		13,113·03	
Broad Arrow ...	... ...	...	18,429·97	...	21,907·18	...	21,510·61	...	18,583·66	...	22,180·19	...	26,021·17
N.E. Coolgardie ...	Kanowna ...	26,355·22	27,072·72	29,244·99	31,197·96	37,267·87	38,098·74	42,341·66	43,174·38	38,648·56	39,799·63	40,554·03	41,279·02
Do.	Kurnalpi ...	717·50		1,952·97		830·87		832·72		1,151·07		724·99	
East Coolgardie ...	East Coolgardie	888,415·37	890,772·70	937,238·61	941,170·94	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
Do.	Bulong	2,357·33		3,932·33		6,474 63		9,772·88		11,155·38		13,180·06	
Coolgardie	Coolgardie ...	32,820·61	40,029·39	53,029·44	60,810·37	55,771·11	64,030·18	54,499·04	63,664·27	53,505·01	63,199·76	58,692·50	71,285·59
Do.	Kunanalling ...	7,208·78		7,780·93		8,259·07		9,165 23		9,694·75		12,593·09	
Yilgarn	... ...	...	22,162·87	...	19,291·98	...	23,546·75	...	19,291·42	...	25,508·64	...	19,276·71
Dundas	... ...	...	28,643·63	...	23,602·23	...	20,434·84	...	25,960·95	...	31,830·27	...	33,845·76
Phillips River ...	... ...	...	4,404·69	...	4,313·87	...	2,779·89	...	2,563·26	...	4,016·63	...	7,050·73
Donnybrook	... ...	...	...	...	...	...	...	...	...	...	...	...	53·21
State generally		...	271·13	...	1,367·70	...	1,315·71	...	...	...	...	...	...
TOTAL	Fine Ounces ...	...	1,596,090·76		1,671,992·88	...	1,736,295·29	...	1,840,656·49	...	1,913,835·44	...	1,962,360·83
	Sterling Value	£6,779,763		£7,102,174		£7,375,314		£7,818,612		£8,129,456		£8,335,579	

TABLE II.—*Total Production of Gold, in Fine Ounces, etc.*—continued.

GOLDFIELD.	DISTRICT.	1902.		1901.		1900.		1899.		PREVIOUS TO 1899.		* TOTAL TO DATE.	
		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	... ...	...	301·71	...	262·25	...	504·21	...	804·06	...	12,298·42	...	16,169·62
Pilbara	Marble Bar ...	4,501·02	10,602·12	3,636·77	9,072·45	10,168·33	14,507·02	11,856·46	17,357·03	35,352·07	40,839·98	89,258·77	144,172·59
Do.	Nullagine ...	6,101·10		5,435·68		4,338·69		5,500·57		5,487·91		54,913·82	
West Pilbara ...	... ...	...	1,910·42	...	198·73	...	779·48	...	1,689·63	...	1,350·94	...	17,477·37
Ashburton	... ...	...	926·66	...	938·04	...	1,493·56	...	1,572·00	...	751·38	...	7,886·03
Gascoyne	... ...	...		...	85·10	...	64·86	...	330·63	...	24·68	...	505·27
Peak Hill	... ...	...	35,297·81	...	18,607·23	...	25,175·67	...	30,582·24	...	35,246·08	...	222,459·08
East Murchison ...	Lawlers	75,687·91	75,880·05	65,342·19	65,356·03	56,340·31	56,431·96	38,665·04	38,727·41	53,203·37	53,216·79	714,474·15	909,491·01
Do.	Black Range ...	192·14		13·84		91·65		62·37		13·42		195,016·86	
Murchison	Cue	21,016·82	172,914·32	18,755·54	123,865·85	18,383·98	93,833·87	21,869·47	71,209·25	63,391·83	251,186·07	263,436·59	1,847,970·90
Do.	Nannine	19,329·49		17,690·99		25,913·18		16,301·86		46,426·57		280,012·06	
Do.	Day Dawn ...	102,030·80		57,867·95		12,413·87		11,331·86		80,561·43		1,033,706·46	
Do.	Mt. Magnet ...	30,537·21		29,551·37		37,122·84		21,706·06		60,806·24		270,815·79	
Yalgoo	... ...	...	5,198·89	...	8,351·30	...	8,794·00	...	10,572·38	...	12,360·82	...	64,884·52
Mt. Margaret ...	Mt. Morgans ...	54,019·40	187,265·81	44,290·60	165,434·40	38,781·48	126,955·40	23,945·34	71,148·01	21,023·38	65,777·32	425,346·01	1,666,590·07
Do.	Mt. Malcolm ...	75,691·81		81,786·28		70,373·52		38,000·23		39,949·54		832,251·50	
Do.	Mt. Margaret ...	57,554·60		39,357·52		17,800·40		9,202·44		4,804·40		408,992·56	
North Coolgardie ...	Menzies	50,168·26	154,238·37	51,568·02	121,974·00	47,103·26	91,388·29	58,536·52	100,631·51	113,696·08	137,248·10	560,253·25	1,350,454·36
Do.	Ularring	25,766·96		17,821·18		11,641·47		10,199·16		4,374·54		219,984·17	
Do.	Niagara	69,877·50		42,146·08		25,013·63		22,703·15		8,805·64		436,088·25	
Do.	Yerilla	8,425·65		10,438·72		7,629·93		9,192·68		10,371·84		134,128·69	
Broad Arrow	... ...	...	17,092·95	...	29,885·18	...	43,438·91	...	40,615·81	...	45,881·82	...	305,547·45
N.E. Coolgardie ...	Kanowna ...	39,497·86	40,777·95	35,318·30	38,138·17	38,127·32	41,355·01	63,881·85	67,376·85	171,692·64	173,897·85	562,930·30	582,168·28
Do.	Kurnalpi ...	1,280·09		2,819·87		3,227·69		3,495·00		2,205·21		19,237·98	
East Coolgardie ...	East Coolgardie	941,436·40	958,285·90	856,748·86	874,193·90	657,863·87	674,992·98	799,464·46	826,832·33	822,731·03	846,124·35	10,004,269·81	10,153,327·26
Do.	Bulong	16,849·50		17,445·04		17,129·11		27,367·87		23,393·32		149,057·45	
Coolgardie	Coolgardie ...	65,002·37	74,502·96	59,973·11	73,083·48	70,702·09	90,009·59	89,081·78	110,359·36	169,925·39	213,948·94	763,002·45	924,923·89
Do.	Kunanalling ...	9,500·59		13,110·37		19,307·50		21,277·58		44,023·55		161,921·44	
Yilgarn	... ...	...	20,066·81	...	21,925·95	...	24,353·94	...	14,151·16	...	99,940·41	...	309,516·34
Dundas	... ...	...	28,579·34	...	29,843·03	...	34,036·83	...	37,839·28	...	53,248·48	...	347,864·64
Phillips River ...	... ...	..	7,441·30	..	665·83	...	36·72	...	...	...	...	...	33,272·92
Donnybrook	... ...	...	61·36	...	3·54	...	339·95	...	370·27	...	13·43	...	841·76
State generally	...	...	...	...	108·93	...	128·46	...	1,151·91	...	...	...	4,343·84
TOTAL — Fine Ounces ...		...	1,791,344·73	...	1,581,993·39	...	1,328,620·71	...	1,443,321·12	...	2,043,355·86	...	18,909,867·50
TOTAL — Sterling Value		£7,609,149		£6,719,881		£5,643,622		£6,130,838		£8,679,624		£80,324,012	

* To 31st December, 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 1908.

GOLDFIELD.	DISTRICT.	WARDEN'S OFFICE.	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 and Agitating Vats.	Agitating Vats.	Filter and Vacuum Presses	Above Ground.	Under Ground.	Diggers
Kimberley	..	Hall's Creek	20-5-86	20-5-86	31-10-02	1-11-02	33,833	..	2	13	50	1	..	..	..	1	..	6
Pilbara	Marble Bar / Nullagine	Marble Bar	1-10-88	1-10-88	1-3-07	1-3-07	32,696	25,809	14	180	55	..	17	..	..	25	27	55
								6,887	24	265	40	1	9	2	..	45	31	26
West Pilbara	..	Roebourne	20-9-95	1-11-95	1-3-07	1-3-07	10,843	..	12	156	30	1	4	..	..	10	11	27
Ashburton	..	Onslow	11-12-90	11-12-90	18-10-01	14-10-01	14,230	..	1	6	..	..	..	..	..	..	..	5
Gascoyne	..	Carnarvon	25-6-97	15-4-97	18-10-01	14-10-01	5,313	..	..	..	..	..	..	..	..	..	..	..
Peak Hill	..	Peak Hill	19-3-97	1-4-97	18-10-01	14-10-01	24,732	..	42	352	50	3	12	3	9	73	52	9
East Murchison	Lawlers / Black Range	Lawlers	28-6-95	28-6-95	7-8-08	1-9-08	28,369	19,875	137	2,085	220	3	77	21	9	472	420	42
								8,494	151	2,152	90	1	42	8	1	314	489	62
Murchison	Cue / Nannine / Day Dawn / Mt. Magnet	Cue	24-9-91	24-9-91	1-3-07	1-3-07	20,650	8,970	99	1,152	113	..	53	..	..	152	217	14
								7,050	126	1,491	182	3	80	3	1	164	198	118
								895	65	639	135	..	38	10	6	318	356	22
								3,735	47	444	85	4	32	3	1	96	77	3
Yalgoo	..	Mt. Magnet	8-2-95	23-1-95	..	..	18,833	..	39	467	90	1	14	5	..	15	14	2
Mt. Margaret	Mt. Morgans / Mt. Malcolm / Mt. Margaret	Mt. Morgans	12-3-97	1-4-97	1-3-07	1-3-07	44,860	1,637	49	754	172	..	81	9	3	169	212	42
								3,330	113	2,036	260	1	107	17	5	391	558	31
								39,893	85	1,407	173	5	52	14	6	295	288	40
North Coolgardie	Menzies / Ularring / Niagara / Yerilla	Menzies	28-6-95	28-6-95	7-8-08	1-9-08	29,936	6,805	79	1,055	153	..	83	3	3	233	385	5
								6,913	58	759	75	4	80	6	2	121	232	39
								688	55	721	105	..	51	9	3	141	158	21
								15,530	62	965	67	2	47	..	..	171	184	32
Broad Arrow	..	Broad Arrow	17-11-96	20-11-96	8-6-06	1-7-06	1,038	..	57	683	130	3	61	..	..	103	128	73
North-East Coolgardie	Kanowna / Kurnalpi	Kanowna	20-3-96	15-4-96	27-3-08	1-4-08	20,604	1,094	77	885	153	3	71	3	2	155	296	72
								19,510	6	60	5	2	4	4	..	14	16	19
East Coolgardie	East Coolgardie / Bulong	Kalgoorlie	21-9-94	1-10-94	27-3-08	1-4-08	1,800	810	208	2,994	715	112	289	175	131	2,538	3,089	50
								990	23	287	25	1	4	..	..	16	33	48
Coolgardie	Coolgardie / Kunanalling	Coolgardie	6-4-94	6-4-94	1-3-07	1-3-07	11,702	9,384	136	1,760	274	..	120	4	2	272	438	32
								2,318	42	521	85	..	38	..	..	71	119	37
Yilgarn	..	Southern Cross	1-10-88	1-10-88	1-3-07	1-3-07	13,685	..	60	1,011	130	1	78	5	1	189	160	..
Dundas	..	Norseman	31-8-93	31-8-93	1-3-07	1-3-07	11,430	..	78	1,038	120	2	65	7	3	134	179	10
Phillips River	..	Ravensthorpe	21-9-00	14-9-00	1-3-07	1-3-07	5,572	..	24	303	40	2	..	..	..	29	36	3
†Donnybrook	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
State generally	..	Perth	..	..	..	..	..	..	8	166	..	4	..	..	..	..	..	..
		Total	..	..	..	..	**330,126**	..	**1,979**	**26,807**	**3,822**	**160**	**1,609**	**311**	**188**	**6,727**	**8,403**	**945**

† Abolished, 4th March, 1908.

TABLE III.—*Return showing, for the respective Goldfields and Districts, etc.*—continued.

GOLDFIELD.	DISTRICT.	1908 GOLD PRODUCTION—DISTRICTS.						1908 GOLD PRODUCTION—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	..	..	..	..	..	..	..	91.45	..	130.00	58.71	150.16	..
Pilbara	Marble Bar	1,254.47	56.13	1,115.00	1,869.16	3,179.76	..	1,635.03	77.55	2,867.25	5,253.03	6,965.61	..
	Nullagine	380.56	21.42	1,752.25	3,383.87	3,785.85	..						
West Pilbara	..	..	..	..	..	..	..	527.03	168.17	752.00	310.40	1,005.60	..
Ashburton	..	..	..	..	..	..	..	161.71	..	..	..	161.71	..
Gascoyne	..	..	..	..	..	..	..	..	..	..	..	..	..
Peak Hill	..	..	..	..	..	..	..	106.19	265.79	49,095.15	7,608.12	7,980.10	396.49
East Murchison	Lawlers	221.72	..	229,933.53	71,888.03	72,109.75	2,456.06	351.41	164.71	323,601.24	144,276.19	144,792.31	2,473.15
	Black Range	129.69	164.71	93,667.71	72,388.16	72,682.56	17.09						
Murchison	Cue	44.46	416.49	28,926.00	24,241.55	24,702.50	78.08	1,353.44	1,477.00	318,285.96	155,017.96	157,848.40	13,539.71
	Nannine	994.58	616.51	51,195.63	37,209.43	38,820.52	383.85						
	Day Dawn	267.46	342.79	216,126.00	83,812.19	84,422.44	13,082.78						
	Mt. Magnet	46.94	101.21	22,038.33	9,754.79	9,902.94	..						
Yalgoo	..	..	..	..	..	..	..	26.85	314.39	545.00	209.79	551.03	..
Mt. Margaret	Mt. Morgans	174.37	12.75	80,416.55	28,725.01	28,912.13	1.76	203.96	141.80	337,979.40	153,251.39	153,597.15	6,889.09
	Mt. Malcolm	29.59	84.70	185,986.15	85,904.32	86,018.61	4,390.79						
	Mt. Margaret	..	44.35	71,576.70	38,622.06	38,666.41	2,496.54						
North Coolgardie	Menzies	..	197.64	52,704.50	36,825.73	37,023.37	546.89	56.48	574.56	119,620.50	90,620.55	91,251.59	695.17
	Ularring	..	371.28	25,855.50	21,227.69	21,598.97	15.30						
	Niagara	56.48	1 05	28,166.00	21,420.37	21,477.90	132.98						
	Yerilla	..	4.59	12,894.50	11,146.76	11,151.35	..						
Broad Arrow	..	..	..	..	..	..	..	606.91	277.80	25,822.85	17,545.26	18,429.97	271.76
North-East Coolgardie	Kanowna	210.83	492.22	52,568.78	25,652.17	26,355.22	131.31	663.11	627.81	52,584.38	25,781.80	27,072.72	131.31
	Kurnalpi	452.28	135.59	15.60	129.63	717.50	..						
East Coolgardie	East Coolgardie	2,743.38	1,027.72	1,672,068.20	884,644.27	888,415.37	100,823.12	2,778.69	1,208.23	1,676,225.80	886,785.78	890,772.70	100,823.12
	Bulong	35.31	180.51	4,157.60	2,141.51	2,357.33	..						
Coolgardie	Coolgardie	104.41	416.26	65,865.40	32,299.94	32,820.61	195.17	112.87	483.25	72,634.40	39,433.27	40,029.39	195.17
	Kunanalling	8.46	66.99	6,769.00	7,133.33	7,208.78	..						
Yilgarn	..	..	..	..	..	..	..	..	13.81	54,047.75	22,149.06	22,162.87	349.55
Dundas	..	..	..	..	..	..	..	15.74	709.61	41,102.10	27,918.28	28,643.63	4,729.46
Phillips River	..	..	..	..	..	..	..	99.77	10.61	6,519.98	4,294.31	4,404.69	84.33
† Donnybrook	..	..	..	..	..	..	..	..	..	..	..	..	..
State generally	..	..	..	..	..	..	..	..	..	10.00	271 13	271.13	..
						Total for 1908	..	8,790.64	6,515.09	3,081,823.76	1,580,785.03	1,596,090.76	130,578·31

† Abolished, 4th March, 1908.

TABLE III.—*Return showing, for the respective Goldfields and Districts, etc.*—continued.

GOLDFIELD.	DISTRICT.	TOTAL GOLD PRODUCTION—DISTRICTS.						TOTAL GOLD PRODUCTION—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	.. .. ..	..	..	..	..	..	..	2,042.37	..	17,597.50	14,127.25	16,169.62	..
Pilbara	Marble Bar	8,063.49	2,330.26	48,877.38	78,865.02	89,258.77	574.01	12,671.71	2,666.46	76,339.12	128,834.42	144,172.59	574.01
	Nullagine	4,608.22	336.20	27,461.74	49,969.40	54,913.82	..						
West Pilbara	.. .. ..	..	..	..	..	..	..	3,980.32	220.73	13,932.25	13,276.32	17,477.37	..
Ashburton	.. .. ..	..	..	..	..	..	..	7,570.39	315.64	..	..	7,886.03	..
Gascoyne	.. .. ..	..	..	..	..	..	..	268.27	18.51	236.70	218.49	505.27	..
Peak Hill	.. .. ..	..	..	..	..	..	..	451.78	1,969.54	389,601.85	220,037.76	222,459.08	1,883.59
East Murchison	Lawlers	4,673.96	5,747.25	1,483,569.14	704,052.94	714,474.15	17,072.11	5,919.99	7,647.04	1,671,846.56	895,923.98	909,491.01	17,138.88
	Black Range	1,246.03	1,899.79	188,277.42	191,871.04	195,016.86	66.77						
Murchison	Cue	810.62	2,046.51	291,149.37	260,579.46	263,436.59	299.11	11,528.85	15,617.50	2,260,228.24	1,820,824.55	1,847,970.90	114,190.37
	Nannine	7,702.57	5,076.92	314,076.18	267,232.57	280,012.06	1,104.76						
	Day Dawn	1,751.55	3,126.30	1,329,306.15	1,028,828.61	1,033,706.46	111,654.07						
	Mt. Magnet	1,264.11	5,367.77	325,696.54	264,183.91	270,815.79	1,132.43						
Yalgoo	.. .. ..	..	..	..	..	..	..	519.89	604.58	92,664.18	63,760.05	64,884.52	3.30
Mt. Margaret	Mt. Morgans	717.27	3,040.58	680,097.91	421,588.16	425,346.01	5,682.67	3,455.40	8,420.92	2,739,887.92	1,654,713.75	1,666,590.07	37,231.92
	Mt. Malcolm	1,504.53	3,660.65	1,379,981.15	827,086.32	832,251.50	21,538.70						
	Mt. Margaret	1,233.60	1,719.69	679,808.86	406,039.27	408,992.56	10,010.55						
North Coolgardie	Menzies	962.58	1,930.49	542,222.32	557,360.18	560,253.25	8,644.22	2,942.53	11,185.81	1,681,027.13	1,336,326.02	1,350,454.36	19,508.89
	Ularring	4.62	807.31	214,270.51	219,172.24	219,984.17	5,432.74						
	Niagara	955.40	1,252.79	782,018.52	433,880.06	436,088.25	5,379.28						
	Yerilla	1,019.93	7,195.22	142,515.78	125,913.54	134,128.69	52.65						
Broad Arrow	.. .. ..	..	..	..	..	..	..	17,057.11	1,882.57	430,478.10	286,607.77	305,547.45	517.26
North-East Coolgardie	Kanowna	103,871.12	7,400.49	657,651.02	451,658.69	562,930.30	2,494.22	114,850.60	9,553.63	662,409.72	457,764.05	582,168.28	2,500.49
	Kurnalpi	10,979.48	2,153.14	4,758.70	6,105.36	19,237.98	6.27						
East Coolgardie	East Coolgardie	22,982.55	18,665.36	11,063,701.73	9,962,621.90	10,004,269.81	604,106.92	49,425.26	32,413.72	11,175,686.31	10,071,488.28	10,153,327.26	604,106.92
	Bulong	26,442.71	13,748.36	111,984.58	108,866.38	149,057.45	..						
Coolgardie	Coolgardie	5,497.64	6,759.23	1,126,188.94	750,745.58	763,002.45	594.63	5,828.75	11,594.84	1,332,832.12	907,500.30	924,923.89	614.85
	Kunanalling	331.11	4,835.61	206,643.18	156,754.72	161,921.44	20.22						
Yilgarn	.. .. ..	..	..	..	..	..	..	70.57	905.13	728,558.93	308,540.94	309,516.64	3,474.07
Dundas	.. .. ..	..	..	..	..	..	..	1,877.30	4,623.53	412,425.03	341,363.81	347,864.64	15 013.71
Phillips River	.. .. ..	..	..	..	..	..	..	408.65	632.20	39,212.81	32,232.07	33,272.92	2,180.19
† Donnybrook	.. .. ..	..	..	..	..	..	..	23.24	..	1,653.30	818.52	841.76	..
State generally	.. .. ..	..	..	..	..	..	..	124.89	155.90	27.00	4,063.05	4,343.84	361.72
						Total to 31-12-1908 ...		241,017.87	110,428.25	23,726,644.77	18,558,421.38	18,909,867.50	819,300·17

† 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 1908, AND THE TOTAL PRODUCTION TO DATE.

Kimberley Goldfield.

MINING CENTRE.	NUMBER OF LEASE.	REGISTERED NAME OF COMPANY OR LEASE.	TOTAL FOR 1908.					TOTAL GOLD 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. Dockereli	..	Voided leases	..	..	..	..	..	..	..	44·00	435·93	..
Ruby Creek	61	Ruby Queen	..	..	130·00	58·71	..	..	..	9,678·00	6,216·22	..
Do.	..	Voided leases	..	..	..	..	..	..	..	2,955·50	3,218·91	..
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	91·45	..	..	..	..	2,042·37	..	..	..	..
		Total	**91·45**	..	**130·00**	**58·71**	..	**2,042·37**	..	**17,597·50**	**14,127·25**	..

Pilbara Goldfield.

MARBLE BAR DISTRICT.

MINING CENTRE.	NUMBER OF LEASE.	REGISTERED NAME OF COMPANY OR LEASE.	TOTAL FOR 1908.					TOTAL GOLD 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	161	(Bamboo Consolidated G.M. Co.)	..	..	..	..	..	..	..	1,579·50	2,995·85	..
Do.	161	(Bulletin)	..	..	..	..	..	..	..	1,965·00	3,427·92	..
Do.	161, 653	Bulletin leases	..	..	290·00	780·30	..	..	..	440·00	1,104·97	..
Do.	..	Voided leases	..	..	..	..	..	..	..	7,202·75	10,818·50	..
Do.	..	Sundry claims	..	..	..	..	..	..	158·54	144·00	454·40	..
Boodalyerrie	..	Voided leases	..	..	..	..	..	..	148·85	120·25	587·86	..

Breen's Find ..	..	Voided leases	..	..	..	..	..	..	..	14·00	66·82	..
Elsie ..	(625)	Elsie Abandoned	..	..	..	..	..	..	..	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 ..	615	Roberts Group: British Exploration of Australasia, Ltd.	..	..	20·51	30·54	..	..	..	270·71	420·68	..
Do. ..	673	Enterprise	..	..	41·16	23·97	..	..	..	41·16	23·97	..
Do. ..	641	Franklin	..	4·98	134·83	54·93	..	..	69·06	403·84	430·10	..
Do. ..	661	Franklin North Extended	..	..	13·25	3·93	..	..	..	13·25	3·93	..
Do. ..	672	New Chum Railway	..	..	45·22	26·39	..	..	..	45·22	26·39	..
Do. ..	658	Railway Signal	..	..	30·36	29·27	..	..	..	30·36	29·27	..
Do. ..	674	Thistle	..	..	6·26	3·58	..	..	..	6·26	3·58	..
Do. ..	..	Voided leases	..	..	..	..	..	..	71·26	12,213·15	17,292·55	..
Do. ..	..	Sundry claims	19·24	..	11·91	22·65	..	28·18	35·57	1,260·89	1,772·50	..
North Pole ..	..	Voided leases	..	..	..	..	..	..	..	416·00	277·02	..
North Shaw ..	..	Voided leases	..	..	..	..	..	7·53	..	351·45	674·72	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	567·06	..	..	..
Sharks ..	..	Sundry claims	..	..	..	..	..	145·08	19·37	6·00	33·00	..
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 ..	505	(Bowbells: British Exploration of Australasia, Ltd.)	..	..	..	..	..	..	..	483·70	753·59	..
Do. ..	483, 505	British Exploration of Australasia, Ltd. ..	..	..	..	..	..	..	..	1,413·00	1,112·85	..
Do. ..	675	Britiannia	..	..	11·50	17·81	..	..	..	11·50	17·81	..
Do. ..	483	(Gauntlet)	..	..	..	..	..	..	..	1,128·30	3,124·40	..
Do. ..	483	(Gauntlet: British Exploration of Australasia, Ltd.)	..	..	..	..	..	..	..	161·00	207·86	..
Do. ..	(665)	Imperialist	..	..	13·00	6·66	..	..	..	13·00	6·66	..
Do. ..	604	Klondyke Boulder	..	..	289·00	588·70	..	..	..	850·69	1,767·26	..
Do. ..	(650)	Klondyke Boulder East	..	..	14·00	43·43	..	..	8·33	14·00	43·43	..
Do. ..	627	Klondyke Queen	..	..	..	..	..	..	..	75·75	185·20	..
Do. ..	..	Voided leases	..	..	..	..	..	..	4·86	2,981·11	8,306·82	..
Do. ..	..	Sundry claims	..	..	194·00	237·00	..	44·30	333·29	1,069·04	2,099·72	..
Western Shaw	..	Voided leases	..	..	..	..	..	..	..	1,221·00	930·73	..
Do. ..	..	Sundry claims	..	51·15	..	..	..	..	55·92	..	..	..
Wyman's Well	(624)	Phœnix	..	..	..	..	..	..	33·55	89·04	439·20	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	16·72	210·86	444·61	..
Yandicoogina ..	..	Voided leases	..	..	..	..	..	..	140·76	2,664·50	5,597·99	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	232·60	103·75	120·34	..
		From District generally :—										
		Sundry parcels treated at :										
		Various Works	..	..	..	..	..	..	..	237·95	1,145·96	..
		Reported by Banks and Gold Dealers	1,235·23	..	..	..	..	7,788·14	217·05	..	..	..
		Total	**1,254·47**	**56·13**	**1,115·00**	**1,869·16**	..	**8,063·49**	**2,330·26**	**48,877·38**	**78,865·02**	**574·01**

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

Pilbara Goldfield—*continued.*

NULLAGINE DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1908.					Total Gold 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	..	..	82·75	355·49	..	..	..	82·75	355·49	..
Do.	176L	Doherty Reward	..	..	13·00	59·39	..	..	..	13·00	59·39	..
Do.	182L	Morning Star	..	..	25·00	113·70	..	..	..	25·00	113·70	..
Do.	178L	Shamrock	..	..	14·25	71·55	..	..	..	14·25	71·55	..
Elsie		Voided leases	..	..	..	..	..	..	..	408·25	1,323·85	..
Do.		Sundry claims	..	..	..	..	..	..	..	20·00	16·85	..
Middle Creek	106L	Barton	..	..	911·00	959·83	..	..	..	4,530·65	5,395·41	..
Do.	(172L)	Eureka	..	..	..	..	..	..	..	46·00	46·56	..
Do.	173L	Federation	..	..	32·25	123·16	..	..	..	44·25	154·70	..
Do.	136L	Little Wonder	..	..	..	..	..	..	..	751·00	3,215·58	..
Do.	138L	Little Wonder West	..	..	4·00	5·47	..	..	..	195·50	471·36	..
Do.	168L	Yes-No	..	..	23·50	39·51	..	..	..	122·00	160·25	..
Do.		Voided leases	..	..	..	..	..	..	..	56·00	44·95	..
Do.		Sundry claims	..	..	25·50	28·01	..	..	..	25·50	53·83	..
Mosquito Creek	143L	Ard Patrick	..	..	100·00	296·89	..	..	..	558·50	1,928·86	..
Do.	(95L, 109L)	(Bell Exploration Co., Ltd.)	..	..	..	..	..	..	..	..	·35	..
Do.	(109L)	(Federal)	..	..	..	..	..	..	..	48·00	56·46	..
Do.	79L	(Galtee More)	..	..	..	..	..	..	..	586·00	1,648·33	..
Do.	79L, 145L	Galtee More leases	..	..	120·00	255·02	..	..	..	990·00	1,959·98	..
Do.	159L	Lands End	..	..	28·00	44·13	..	1·07	..	96·70	327·71	..
Do.	171L	Latest Surprise	..	21·42	108·00	147·74	..	..	21·42	108·00	147·74	..
Do.	(95L)	(Parnell)	..	..	..	..	..	..	..	357·35	366·08	..
Do.	(95L)	Parnell	..	..	..	..	..	..	..	196·50	87·75	..
Do.	(95L, 109L)	(Parnell leases)	..	..	..	..	..	..	..	1,815·00	1,736·09	..
Do.		Voided leases	..	..	..	..	..	..	..	1,090·00	1,866·00	..
Do.		Sundry claims	..	..	81·50	122·19	..	..	166·47	1,860·44	2,633·65	..
Nullagine	119L, 120L, 121L, 122L	British Exploration of Australasia, Ltd.	..	..	..	..	..	..	..	777·00	88·93	..
Do.	122L	(Grant's Hill)	..	..	..	..	..	..	..	1,658·00	701·61	..
Do.	(156L)	Mundalla	..	..	28·00	108·49	..	..	..	45·50	340·38	..
Do.		Voided leases	..	..	..	..	..	..	13·96	4,946·25	10,065·42	..
Do.		Sundry claims	..	..	91·25	324·42	..	104·70	97·49	3,789·00	8,111·74	..
20-Mile Sandy	167L	Mountain Maid	..	..	..	..	..	..	..	107·00	268·70	..
Do.		Voided leases	..	..	..	..	..	..	..	375·95	480·77	..
Do.		Sundry claims	..	..	64·25	114·10	..	..	14·36	1,671·90	2,901·55	..

From District generally :—												
Sundry parcels treated at :												
Enterprise Works	..	..	..	..	..	..	..	..	199·99	..	..	..	..	199·99	..
Royer's Public Crushing Works	..	..	..	..	..	..	..	..	7·53	..	..	..	..	7·53	..
State Battery—20-mile Sandy	..	..	..	..	..	..	..	..	7·26	..	..	..	..	152·46	..
Various Works	..	..	..	..	..	..	..	..	..	..	..	..	50·50	2,407·85	..
Reported by Banks and Gold Dealers	..	..	..	..	..	380·56	..	..	..	..	4,502·45	22·50	..	..	..
Total	..	..				**380·56**	**21·42**	**1,752·25**	**3,383·87**	..	**4,608·22**	**336·20**	**27,461·74**	**49,969·40**	..

West Pilbara Goldfield.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1908.					Total Gold 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	..	·71	5·00	7·32	..	..	1·10	540·25	315·15	..
Do. ..	142	Peep of Day	..	..	13·00	3·71	..	..	..	13·00	3·71	..
Do. ..	(134)	Three Prodigals	..	..	..	..	..	..	..	10·35	19·22	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	30·50	31·64	..
Do. ..	..	Sundry claims	..	..	..	..	..	10·44	2·71	10·00	11·51	..
Mallina ..	..	Voided leases	..	..	..	..	..	..	..	103·60	102·83	..
Pilbara ..	146	Pilbarra Broken Hill	..	48·12	..	..	..	..	48·12	..	..	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	148·00	293·42	..
Do. ..	..	Sundry claims	1·11	86·24	..	..	..	1·11	86·24	..	..	..
Station Peak ..	(117)	Pilgrim's Rest	..	..	..	22·00	..	..	..	395·00	230·27	..
Do. ..	(117, 118) ..	(Pilgrim's Rest leases)	..	..	..	..	..	..	..	9,598·00	9,151·73	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	37·50	48·19	..
Towranna ..	..	Voided leases	..	..	..	..	..	..	..	1,934·80	2,088·26	..
Weerianna ..	143	Early Morn	..	..	11·00	3·87	..	..	..	11·00	3·87	..
Do. ..	135, 136, 137, 138	Roebourne Copper & Gold Mines, W.A., N.L.	..	..	723·00	273·50	..	..	..	723·00	273·50	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	25·25	220·30	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	4·00	25·30	..
From Goldfield generally :—												
Reported by Banks and Gold Dealers	.. ..		525·92	33·10	..	..	..	3,947·37	82·54	..	6·38	..
Total	.. ..		**527·03**	**168·17**	**752·00**	**310·40**	..	**3,980·32**	**220·73**	**13,932·25**	**13,276·82**	..

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

Ashburton Goldfield.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1908.					Total Gold 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	..	..	..
		From Goldfield generally :—										
		Reported by Banks and Gold Dealers .. .. .. —	161·71	..	..	..	..	7,216·02	..	..	..	..
		Total	**161·71**	..	..	..	..	**7,570·39**	**315·64**	..	..	..

Gascoyne Goldfield.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1908.					Total Gold 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	..	..	..	..	..	268·27	..	..	..	..
		Total	..	..	..	..	..	**268·27**	**18·51**	**236·70**	**218·49**	..

Peak Hill Goldfield.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1908.					Total Gold 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.
Horseshoe ..	327P	Brilliant	..	62·05	·04	53·63	..	..	62·05	·04	53·63	..
Do. ..	..	Voided leases	..	..	..	..	..	..	751·44	712·34	1,884·02	2·00
Do. ..	..	Sundry claims	..	..	..	..	..	..	393·01	16·05	45·14	..
Mt. Fraser ..	317P	Mt. Fraser	..	..	66·50	66·36	..	..	..	142·50	148·69	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	247·00	172·27	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	80·00	55·41	..

Peak Hill ..	3P	Atlantic No. 1 North: Peak Hill Goldfield, Ltd.	..	..	..	..	..	..	..	355·51	455·13	..
Do. ..	1P	(North Star)	..	..	..	..	..	..	162·32	..	..	..
Do. ..	310P	Oversight	..	..	87·11	62·49	..	..	3·11	851·11	440·08	..
Do. ..	1P, 2P, 4P, 5P, 6P, 8P, 9P, 13P, 15P, 16P, 26P, 27P, 28P, 29P, 35P, 36P, 43P, 53P, 54P, 63P, 146P, 152P, 190P, 222P, 239P, 248P, 252P, 262P, 274P, 306P, 313P, R.C. 1P, Q.Cs. 13P, 14P, T.A. 1P	Peak Hill Goldfield, Ltd.	..	..	48,495·00	7,199·77	396·49	..	191·46	379,636·35	210,864·67	1,881·59
Do. ..	319P	Undersight	..	116·08	12·50	23·81	..	..	116·08	126·50	100·25	..
Do. ..	..	Voided leases	..	..	..	..	..	..	65·33	2,227·00	2,082·24	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	100·11	643·00	130·56	..
Ravelstone ..	(49P), 325P ..	Gadgett	..	..	37·00	11·46	..	..	..	37·00	11·46	..
Do. ..	(318P)	May King	..	..	9·00	6·66	..	..	..	81·00	30·33	..
Do. ..	323P	Old Irish	..	..	75·50	28·28	..	..	..	75·50	28·28	..
Do. ..	328P	Redemption	..	..	112·00	53·16	..	..	..	112·00	53·16	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	3,537·85	2,715·54	..
Do. ..	..	Sundry claims	..	..	200·50	97·67	..	..	..	515·60	274·38	..
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		..	..	..	4·83	..	..	..	..	4·83	..
	Various Works		..	..	..	..	..	..	..	30·00	319·97	..
	Reported by Banks and Gold Dealers		106·19	87·66	..	..	..	451·78	101·09	..	..	..
	Total		**106·19**	**265·79**	**49,095·15**	**7,608·12**	**396·49**	**451·78**	**1,969·54**	**389,601·85**	**220,037·76**	**1,883·59**

East Murchison Goldfield.

LAWLERS DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1908.					Total Gold 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.
Cork Tree ..	..	Voided leases	..	..	..	..	..	..	29·90	3,767·00	3,292·87	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	13·00	9·32	..
Kathleen Valley	113	(Nil Desperandum)	..	..	..	..	..	..	..	17,960·00	7,618·73	..
Do. ..	113	Nil Desperandum	..	..	1,074·00	637·90	..	..	..	1,074·00	637·90	..
Do. ..	113, (635) ..	(Nil Desperandum leases)	..	..	..	..	..	..	..	2,722·50	1,625·77	..
Do. ..	382	(Yellow Aster)	..	..	..	..	..	..	..	37,605·00	27,051·42	..
Do. ..	382	Yellow Aster G.M. Co., N.L.	..	..	3,253·50	689·66	..	..	..	4,421·75	1,718·61	..

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 1908.					Total Gold 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.
Kathleen Valley	..	Voided leases	..	..	..	..	..	..	141·57	1,288·50	1,292·34	..
Do. ..	..	Sundry claims	..	..	..	·59	..	..	478·40	1,122·25	679·06	..
Lake Darlot ..	182	Amazon	..	..	566·00	531·71	..	..	7·92	3,366·00	5,759·17	..
Do. ..	93	Ballangarry	..	..	782·00	256·23	..	..	..	4,729·60	2,404·28	..
Do. ..	941	Ena	..	..	13·00	15·24	..	..	..	61·00	79·50	..
Do. ..	626	Filbandint	..	..	..	..	..	..	..	999·00	918·19	..
Do. ..	375	King of the Hills	..	..	251·00	194·15	..	..	101·48	748·00	1,255·48	..
Do. ..	648	Monte Christo	..	..	1,610·00	661·34	..	..	..	5,837·60	2,971·01	..
Do. ..	273	St. George	..	..	..	..	..	..	2,927·22	708·50	7,849·37	..
Do. ..	363	Waikato	..	..	..	..	..	..	9·24	4,370·00	5,241·49	..
Do. ..	633	(Zangbar)	..	..	..	..	..	..	..	997·00	505·75	..
Do. ..	633, 823 ..	Zangbar leases	..	..	7,930·00	2,535·08	..	..	..	18,743·00	6,997·51	..
Do. ..	..	Voided leases	..	..	..	..	..	..	818·41	15,828·20	10,289·56	..
Do. ..	..	Sundry claims	..	..	269·00	116·51	..	1·16	232·96	2,026·94	1,264·63	..
Lawlers ..	19, 414	Bounty leases	..	..	..	..	..	..	..	1,630·35	1,788·67	..
Do. ..	532	(Brilliant)	..	..	..	..	..	..	..	3,648·00	2,600·94	..
Do. ..	532	Brilliant	..	..	..	312·10	..	..	..	..	312·10	..
Do. ..	532, (533) ..	(Brilliant leases)	..	..	..	..	..	..	..	8,741·00	5,704·36	7·00
Do. ..	900	Dobra Scrica	..	..	198·00	230·82	..	..	..	933·00	902·65	..
Do. ..	376	(Donegal: London and Western Australian Exploration Co., Ltd.)	..	..	..	..	..	..	..	38·00	69·73	..
Do. ..	377	(Eastern United Extended)	..	..	..	..	..	..	..	106·00	69·72	..
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 T.L. 8.	(East Murchison United, Ltd.) ..	..	..	..	..	..	..	..	291,797·00	155,594·26	900·48
Do. ..	(949)	Empire South	..	..	..	..	..	..	..	30·00	13·24	..
Do. ..	(22)	(Gorrie's May Be)	..	..	..	..	..	..	..	282·00	268·09	..
Do. ..	999	Hidden Secret	..	..	82·00	79·83	..	..	..	82·00	79·83	..
Do. ..	(948)	Joker	..	..	..	..	..	..	..	28·00	21·11	..
Do. ..	(1003)	Last Chance	..	..	12·00	6·80	..	..	..	12·00	6·80	..
Do. ..	(936)	Lillian Lass	..	..	28·00	19·32	..	..	..	84·50	61·20	..
Do. ..	58	Woronga: (London and Western Australian Exploration Co., Ltd.)	..	..	..	..	..	..	..	2,438·50	2,755·45	..

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.	1038	Moa	37·00	64·39	..	..	..	37·00	64·39	..
Do.	(381)	(Never Can Tell)	..	..	..	..	..	610·00	847·81	..
Do.	1030	Never Can Tell	71·00	20·14	..	..	..	71·00	20·14	..
Do.	373	New Holland	148·00	141·04	..	..	..	4,485·25	2,310·33	..
Do.	(971)	New Leviathan	19·00	4·44	..	..	..	19·00	4·44	..
Do.	(858)	New Woman	..	..	..	..	..	402·50	390·48	..
Do.	(22), 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, (916), 918, 929, (947), 1053	Northern Mines, Ltd.	93,577·00	18,802·94	1,446·50	..	..	157,519·00	31,103·98	2,595·91
Do.	459	(Quartzite King)	..	..	..	..	..	119·50	92·47	..
Do.	385	(Queen)	..	..	..	..	..	1,252·00	623·25	..
Do.	889	(Rajah)	..	..	..	..	..	867·00	229·59	..
Do.	889, 895	Rajah leases	63·00	13·22	..	..	..	1,388·00	699·94	..
Do.	1021	Sunbeam	43·50	25·36	..	..	..	43·50	25·36	..
Do.	910	Sunrise	1,333·00	699·40	..	..	..	2,491·00	1,794·60	..
Do.	957	Trump	13·50	6·34	..	..	..	13·50	6·34	..
Do.	521	Vivien	..	..	..	..	..	45·50	21·75	..
Do.	908	Vivien Gem	802·50	857·29	..	..	..	1,486·50	1,384·29	..
Do.	408, 521, 574, 624, 625, 719	Vivien G.M. Co., Ltd.	33,421·03	12,996·22	271·30	..	..	127,418·18	53,917·40	1,147·06
Do.	62, 562, 563	(Waroonga South leases)	..	..	..	..	..	42,150·00	14,329·48	..
Do.	988	Wild Cat	2,577·00	2,119·83	..	..	..	2,987·00	2,274·40	..
Do.	1010	Yongala	83·00	31·54	..	..	..	83·00	31·54	..
Do.		Voided leases	..	..	..	..	289·43	34·419·95	43,640·26	89·33
Do.		Sundry claims	619·50	438·01	..	14·81	43·33	4,891·85	3,010·40	..
New England		Voided leases	..	..	..	..	57·54	899·00	720·25	..
Do.		Sundry claims	..	..	..	..	2·58	554·50	465·23	..
Sir Samuel	21, 24, 35, 38, 308 310, 368, (369), 439, 582, (583), 584, 585, (586), 615, 890, (891)	Bellevue, Ltd.	10,487·00	6,715·13	738·26	..	..	10,487·00	6,715·13	738·26
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.	339	Vanguard	..	..	..	..	..	9,941·00	3,967·24	..
Do.		Voided leases	..	..	..	..	..	3,488·00	2,419·01	..
Do.		Sundry claims	46·00	22·43	..	..	15·81	1,170·50	1,082·85	..

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 1908.					Total Gold 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 ..	983	Adelaide Junction	..	..	66·00	23·48	..	..	..	66·00	23·48	..
Do. ..	940, 973, 974 ..	Adelaide leases	..	..	104·00	26·85	..	..	..	104·00	26·85	..
Do. ..	(976)	Big Lode	..	..	82·00	56·47	..	..	..	109·00	65·87	..
Do. ..	143	Brothers	..	..	108·00	46·28	..	..	..	3,093·00	2,757·31	..
Do. ..	946	Bulletin	..	..	2,171·00	656·62	..	..	..	2,335·00	796·09	..
Do. ..	959	Bulletin North	..	..	302·00	68·71	..	..	..	391·00	91·44	..
Do. ..	(982)	Caledonia	..	..	178·00	193·90	..	..	..	178·00	193·90	..
Do. ..	149	(Derwent)	..	..	..	..	..	..	..	164·30	350·97	..
Do. ..	970	Dudley Castle	..	..	..	..	..	..	..	27·50	1·93	..
Do. ..	140	Golden Age	..	..	46·00	25·16	..	..	..	544·00	329·77	..
Do. ..	140, 162, 163 ..	(Golden Age Consolidated, Ltd.)	..	..	..	..	..	..	..	42,521·00	19,750·45	..
Do. ..	140	(Golden Age Lake Way, Ltd.)	..	..	..	..	..	..	..	12,899·00	7,468·69	..
Do. ..	(928)	Golden Age South	..	..	150·00	110·94	..	..	..	629·00	318·51	..
Do. ..	1016	Golden Bracelet	..	..	126·00	612·53	..	..	..	126·00	612·53	..
Do. ..	149, 542, 548, 550, 906, 930, 931, 932, 937, 938, 943, 944, 952	Gwalia Consolidated, Ltd.	..	..	63,745·00	17,213·85	..	..	..	140,377·32	49,888·96	69·03
Do. ..	(955)	Highland Mary	..	..	10·00	1·89	..	..	..	10·00	1·89	..
Do. ..	954	Indicator	..	..	767·00	143·44	..	..	..	767·00	143·44	..
Do. ..	933	Lady of the Lake	..	..	66·00	24·54	..	..	..	157·00	133·07	..
Do. ..	149	(Lake Way Goldfield 1899, Ltd.)	..	..	..	..	..	..	..	8,243·00	7,960·40	..
Do. ..	162, 163	Lake Way leases	..	..	..	..	..	..	..	630·00	369·60	..
Do. ..	956	Lone Hand	..	..	171·00	21·10	..	..	..	251·50	39·06	..
Do. ..	137	Monarch of the East	..	..	..	..	..	..	..	222·00	131·71	..
Do. ..	137	(Monarch of the East G.M. Co., N.L.) ..	..	..	..	..	..	..	..	12,251·00	8,888·27	..
Do. ..	870	Moonlight	..	..	501·00	184·46	..	..	..	1,856·00	787·66	..
Do. ..	967	Red Page	..	..	260·00	206·20	..	..	..	457·00	434·50	..
Do. ..	917	Squib	..	..	87·50	16·99	..	..	..	218·50	47·49	..
Do. ..	677	Try Again	..	..	97·00	341·53	..	..	..	1,171·00	1,132·56	..
Do. ..	942	Try Again Extended	..	..	263·00	357·60	..	..	..	263·00	357·60	..
Do. ..	162	(West Australian Goldfields, Ltd.) ..	..	..	..	..	..	..	..	2,786·00	1,238·44	..
Do. ..	980	White Swan	..	..	172·50	54·76	..	..	..	200·50	62·37	..
Do. ..	990	Wild Duck	..	..	123·00	132·20	..	..	..	141·00	141·04	..
Do. ..	..	Voided leases	..	..	..	..	..	..	537·27	7,755·95	6,042·62	124·00
Do. ..	..	Sundry claims	..	..	768·50	309·07	..	..	..	2,353·65	1,221·17	..
		From District generally :—										
	Sundry parcels treated at :											
		Cinderella Works	..	..	149·50	58·21	..	..	..	466·00	974·68	26·00
		Condor Battery	..	..	..	4·11	..	..	..	..	4·11	..
		Cork Tree Cyanide Works	..	..	..	8·52	..	..	..	..	8·52	..
		Lawlers Public Battery	..	..	..	131·94	..	..	..	214·00	1,291·72	..
		State Battery, Lake Darlot	..	..	10·00	293·29	..	..	..	315·00	843·52	..
		State Battery, Wiluna	..	..	..	209·02	..	..	..	..	209·02	..
		Urquhart Cyanide Works	..	..	..	1.067·70	..	..	..	..	3,982·81	200·00

	Vanguard Battery	..	..	..	..	..	..	..	..	9·34	..	..	..	..	9·34	..
	Wilks Bros. Cyanide Works	..	..	..	..	..	..	..	..	32·33	..	..	..	..	32·33	..
	Various Works	..	..	..	..	..	..	..	..	..	..	..	..	384·50	4,438·77	526·73
	Reported by Banks and Gold Dealers	..	..	..	..	221·72	..	..	..	..	4,657·99	54·19	..	..	..	..
		Total	..	..		**221·72**	..	**229,933·53**	**71,888·03**	**2,456·06**	**4,673·96**	**5,747·25**	**1,483,569·14**	**704,052·94**	**17,072·11**	

BLACK RANGE DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1908.					Total Gold 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	163B	Belfast	..	4·86	36·50	95·66	..	..	4·86	176·50	280·95	..
Do.	109B, 130B	Birrigrin G.Ms., Ltd.	..	..	652·50	507·25	..	..	..	652·50	507·25	..
Do.	(394B)	Excellent	..	..	..	..	..	..	..	17·00	4·93	..
Do.	(129B)	Golden Spur	..	..	..	..	..	..	..	352·00	147·01	..
Do.	(319B)	Great Aurora	..	..	..	..	..	..	..	59·50	23·14	..
Do.	109B	(Hawthorne)	..	..	..	..	..	..	..	1,555·00	2,613·25	..
Do.	(296B)	Independence	..	..	..	..	..	..	..	32·50	14·12	..
Do.	130B	(Ione)	..	..	..	..	..	..	..	24·00	20·83	..
Do.	128B	(Pelerin)	..	..	750·71	934·44	..	..	..	1,765·46	3,621·53	..
Do.	128B, 336B, 356B, 487B	Pelerin leases	..	..	272·00	525·63	..	..	..	272·00	525·63	..
Do.	429B	Possible	..	..	161·25	92·22	..	..	..	272·75	265·92	..
Do.	159B	Red Castle	..	..	119·00	61·08	..	..	..	254·50	377·39	..
Do.	(133B)	Reply	..	..	..	..	..	..	..	135·50	47·42	..
Do.	(471B)	Sebastopol North	..	..	..	..	..	..	5·71	4·50	20·62	..
Do.	113B	Stranger	..	..	43·50	82·54	..	..	..	419·50	533·89	..
Do.	168B	(Wheel Ellen)	..	..	..	..	..	..	787·03	201·00	1,423·81	..
Do.	279B	Woodleys	..	..	89·00	48·64	..	..	..	249·20	174·66	..
Do.		Voided leases	..	..	..	..	..	..	..	248·00	225·45	..
Do.		Sundry claims	..	..	55·25	13·68	..	..	..	194·75	97·20	..
Maninga Marley	341B	Agnes	..	..	10·00	5·87	..	..	..	151·00	66·77	..
Do.	203B	(Havilah)	..	..	..	..	..	..	..	1,507·50	2,315·74	..
Do.	203B, 243B, 249B, 254B, 287B, 288B, 289B, 305B, 350B	Havilah G. M. Co., N.L.	..	..	11,754·00	6,129·96	..	..	..	15,434·00	9,445·83	..
Do.	203B, 243B, 249B, 254B, 287B, 288B, 289B, 305B	(Havilah leases)	..	..	..	..	..	..	..	2,240·00	2,432·48	..
Do.	(335B)	Kurrajong	..	3·99	24·00	27·45	..	..	3·99	86·25	83·55	..
Do.	513B	Kurrajong	..	..	17·00	17·79	..	..	..	17·00	17·79	..
Do.	53B	(Maninga Marley)	..	..	..	..	..	..	..	222·75	274·92	..
Do.	53B, 77B, 100B	Maninga Marley leases	..	..	328·50	473·36	..	..	..	5,600·33	6,103·15	..
Do.	67B	Maninga Marley North	..	..	1,114·00	1,141·55	..	..	..	1,966·50	2,644·73	..
Do.	475B	May King	..	..	88·00	71·46	..	..	..	88·00	71·46	..
Do.		Voided leases	..	..	..	..	..	..	..	120·50	78·83	..
Do.		Sundry claims	..	..	25·50	30·86	..	..	..	192·50	162·92	..
Montagu	185B	(Caledonian)	..	..	..	..	..	..	..	346·90	785·20	..
Do.	185B, 351B	Caledonian leases	..	..	160·00	258·00	..	..	..	160·00	258·00	..
Do.	(436B)	K's and J's Reward	..	..	..	..	..	..	21·31	9·00	19·24	..
Do.	135B	Montagu Boulder	..	..	..	..	..	..	..	240·00	121·92	..
Do.	(403B)	Montagu Main Reef	..	..	..	..	..	..	..	7·00	2·12	..

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 1908.					Total Gold 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.
Montagu ..	175..	Montagu Monarch	..	..	112·00	106·11	..	..	..	271·50	537·74	..
Do. ..	(448B)	Our Jack	..	..	..	..	..	..	..	10·00	9·80	..
Do. ..	.. ..	Voided leases	..	..	..	..	..	..	..	278·75	197·70	..
Do. ..	.. ..	Sundry claims	..	..	10·00	5·30	..	..	..	69·25	28·67	..
Nunngarra ..	49B	Abundance	..	..	69·00	34·49	·09	..	..	421·75	283·93	·09
Do. ..	450B	Albion	..	9·47	..	..	..	..	39·95	5·50	21·26	..
Do. ..	22B, 233B, 290B, 300B, 309B, 314B, 315B, 321B, 322B, 323B	Black Range Kohinoor Mining Co., N.L. ..	..	..	2,311·00	2,581·83	..	..	..	3,073·00	4,291·70	..
Do. ..	478B	Breakaway	..	..	58·50	43·56	..	..	..	58·50	43·56	..
Do. ..	382B	(Bull Oak)	..	..	..	..	..	..	..	725·00	956·77	..
Do. ..	369B, 379B, 382B, 383B	Comrades leases	..	..	1,460·50	1,275·28	..	..	..	2,554·50	2,205·40	..
Do. ..	(432B)	Diver	..	..	..	..	..	..	..	30·00	22·12	..
Do. ..	(381B)	Dreamland	..	1·05	38·50	48·94	..	..	1·05	82·00	293·31	..
Do. ..	211B	Eclipse	..	..	..	..	..	..	..	321·25	229·39	..
Do. ..	389B	Faugh-a-ballagh	..	..	139·00	109·31	..	..	..	139·00	109·31	..
Do. ..	(19B), 49B ..	(Fingall and Abundance)	..	..	..	..	..	..	..	40·75	29·64	..
Do. ..	337B	Freedom	..	..	208·00	66·90	..	..	..	540·00	587·08	..
Do. ..	(364B)	Golden Ball Extended	..	..	32·00	14·96	..	..	..	70·00	58·96	..
Do. ..	457B	Indomitable	..	..	68·00	12·14	..	..	..	68·00	12·14	..
Do. ..	22B	(Kohinoor)	..	..	..	..	..	..	..	331·25	1,122·39	..
Do. ..	330B	Kohinoor North	..	13·47	256·00	204·74	..	..	13·47	334·00	218·12	..
Do. ..	139B	(Lady Ellen)	..	..	..	..	..	..	..	219·75	458·96	..
Do. ..	139B, 234B ..	Lady Ellen leases	..	..	126·50	309·30	..	..	..	226·50	447·69	11·00
Do. ..	286B	Late Seddon	..	2·38	137·00	160·22	..	..	2·38	259·50	262·25	..
Do. ..	383B	Maid Marion	..	..	..	..	..	..	2·47	373·00	490·40	..
Do. ..	285B	Missing Link	..	..	45·00	98·96	..	..	..	284·50	481·53	..
Do. ..	365B	(New Sensation)	..	..	..	..	..	..	..	163·00	380·89	..
Do. ..	365B, 366B ..	New Sensation leases	..	..	155·50	219·55	..	..	..	281·50	355·32	..
Do. ..	205B	Nunngarra	..	..	..	..	..	..	..	123·00	36·19	..
Do. ..	(397B) ..	Poseidon	..	..	..	..	..	..	..	30·00	119·31	..
Do. ..	329B	Royal Flush	..	..	54·00	30·50	..	..	..	207·50	241·35	..
Do. ..	(173B, 182B, 183B)	Sandstone Development G.M. Co., N.L. ..	..	..	189·00	100·83	..	..	..	869·00	235·01	..
Do. ..	300B	(Sceptic)	..	..	..	..	..	..	3·75	..	..	..
Do. ..	121B	Squib	..	..	15·50	15·17	..	..	..	413·75	541·96	1·22
Do. ..	499B	Venture	..	..	42·50	8·24	..	..	..	42·50	8·24	..
Do. ..	(395B)	Welcome	..	..	..	..	..	..	..	31·00	6·57	..
Do. ..	(182B)	(Wirraminna Central)	..	..	..	..	..	..	..	407·25	183·91	..
Do. ..	(183B)	(Wirraminna South)	..	..	..	..	..	..	..	50·75	36·59	..
Do. ..	378B	Worker	..	40·52	230·50	285·39	..	..	40·52	578·50	791·20	..

Do.	..	..	Voided leases	.. .. ..	..	..	..	..	..	25·94	53·60	2,554·75	2,462·32	2·33
Do.	..	..	Sundry claims	.. .. ..	..	29·86	243·50	139·06	..	46·67	656·88	1,592·15	1,415·67	..
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.	..	(298B)	Aruncourt	.. ..	..	..	..	..	..	..	38·14	43·00	33·16	...
Do.	..	5B	(Black Range)	.. ..	..	..	..	..	..	..	152·68	637·00	1,477·66	5·60
Do.	..	4B, 5B, 9B, 11B, 17B, 26B, 70B, 140B, 150B, 256B	Black Range Mining Co., N.L.	.. ..	..	..	22,859·00	19,850·06	..	..	..	24,347·00	22,015·36	..
Do.	..	(325B)	Eileen	.. ..	..	..	..	..	..	..	..	41·00	13·59	..
Do.	..	233B	(Floater)	.. ..	..	..	..	..	..	..	..	51·25	36·14	..
Do.	..	149B	(Golden Gate)	.. ..	..	..	..	..	..	..	..	113·75	62·98	..
Do.	..	151B	Golden Key	.. ..	..	..	..	..	..	..	..	883·00	1,412·75	..
Do.	..	473B	Horseshoe	.. ..	..	..	31·50	16·35	..	..	..	31·50	16·35	..
Do.	..	196B	Juno : Sandstone Development G.M. Co., N.L.		..	..	2,064·00	2,829·82	17·00	..	..	2,064·00	2,829·82	17·00
Do.	..	16B	(Kingoonya)	.. ..	..	..	..	..	..	..	..	1,406·00	1,850·40	..
Do.	..	493B	Leap Year	.. ..	..	..	32·50	18·56	..	..	..	32·50	18·56	..
Do.	..	509B	May S.	.. ..	..	25·78	13·00	8·40	..	..	25·78	13·00	8·40	..
Do.	..	6B, 10B, 16B, 74B, 81B, 114B, 149B, 151B, 189B, 193B, 206B, 216B, 238B, 463B, 477B	Oroya Black Range, Ltd.	.. ..	..	..	45,920·00	30,460·95	..	..	..	67,087·00	45,437·21	..
Do.	..	187B	Sandridge : Sandstone Development G.M. Co., N.L.		..	..	37·00	11·03	..	..	..	263·00	102·22	..
Do.	..	6B	(Sand Stone)	.. ..	..	..	..	..	..	..	..	1,439·50	1,938·54	..
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.	..	(251B)	Venus : Sandstone Development G.M. Co., N.L.		..	..	..	..	..	..	..	36·00	3·27	..
Do.	..	8B	Wanderie		..	..	330·50	271·14	..	..	..	2,350·50	2,385·95	..
Do.	..	(161B)	Wanderie No. 1 North	.. ..	..	..	149·50	65·06	..	..	..	809·50	605·80	..
Do.	..	23B	Wanderie No. 1 West ..	.. .. ..	..	..	369·00	131·40	..	..	..	2,031·50	1,180·48	..
Do.	..	174B	(Wonoka)	.. ..	..	..	..	..	..	..	..	68·50	36·35	..
Do.	..	174B	Wonoka : Sandstone Development G.M. Co., N.L.		..	..	70·50	30·81	..	..	..	235·50	186·93	..
Do.	..	..	Voided leases	.. .. ..	..	..	..	..	..	..	5·68	1,144·38	1,543·16	..
Do.	..	..	Sundry claims	.. .. ..	..	1·46	61·00	34·54	..	..	1·46	238·50	140·88	..
Youanme	..	(537B)	Atholl	.. ..	..	3·97	..	..	..	..	3·97	..	..	..
Do.	..	544B	Lady Agnes	.. ..	..	..	12·00	6·66	..	..	..	12·00	6·66	..
Do.	..	554B	Oaks		·36	1·84	..	..	..	·36	1·84	..	..	..
Do.	..	550B	Sunny Morn		..	19·88	..	..	..	..	19·88	..	..	..
Do.	..	530B	Thompson's Luck	.. .. ..	..	6·18	..	..	..	..	6·18	..	..	..
			From District generally :—											
			Sundry parcels treated at :											
			El Dorado Works		..	..	..	102·41	..	..	..	..	410·28	..
			Maninga Marley Works		..	..	..	1,542·74	..	..	..	..	1,950·71	..
			State Battery—Nunngarra		..	..	16·00	620·01	..	..	..	34·00	5,012·73	29·53
			Various Works		..	..	..	..	..	..	..	..	1,952·28	..
			Reported by Banks and Gold Dealers		129·33	..	..	..	..	1,173·06	..	..	..	..
			Total		**129·69**	**164·71**	**93,667·71**	**72,388·16**	**17·09**	**1,246·03**	**1,899·79**	**188,277·42**	**191,871·04**	**66·77**

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

Murchison Goldfield.

CUE DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1908.					Total Gold 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.	..	..	4,302·00	2,885·62	43·20	..	..	9,474·33	8,568·75	43·20
Do. ..	1467, 1488 ..	Barrambie South G.M. Co., N.L.	..	..	120·00	32·48	..	..	..	120·00	32·48	..
Do. ..	1467	(Dawn of Hope)	..	..	..	..	..	..	9·99	5·09	29·70	..
Do. ..	(1492)	General Kuropatkin	..	..	13·50	4·28	..	..	..	28·50	11·80	..
Do. ..	1458	(Golden Treasure)	..	..	..	..	..	..	6·54	..	..	..
Do. ..	1712	Mystery	..	..	15·00	60·91	..	..	..	15·00	60·91	..
Do. ..	..	Voided leases	..	..	..	..	..	..	5·96	55·00	52·27	..
Cuddingwarra	1510	Emily	..	..	102·50	152·61	..	..	..	339·50	511·04	..
Do. ..	1662	Gold King: Victory United G.M. Co., N.L. ..	..	..	55·00	14·08	..	..	..	55·00	14·08	..
Do. ..	1643	Rhinegold	..	..	42·00	25·85	..	..	..	223·00	79·85	..
Do. ..	595, 1122, 1685 ..	Victory United G.M. Co., N.L.	..	..	2,885·00	1,714·47	..	..	..	20,940·00	31,342·73	15·42
Do. ..	..	Voided leases	..	..	..	..	..	..	36·52	12,091·75	10,544·28	..
Do. ..	..	Sundry claims	..	..	10·00	11·29	..	..	..	288·50	245·76	..
Cue	1047	(Agamemnon)	..	..	..	..	..	..	..	2,276·33	1,564·83	..
Do. ..	1047, 1310 ..	Agamemnon leases	..	..	277·00	192·58	..	..	..	4,710·00	2,638·79	..
Do. ..	1047	(Agamemnon, Ltd.)	..	..	..	..	..	..	..	7,053·50	4,649·42	..
Do. ..	(1700)	Arcadia	..	..	62·00	15·21	..	..	..	62·00	15·21	..
Do. ..	1713	Bonnie Dundee	..	..	48·00	24·43	..	..	..	48·00	24·43	..
Do. ..	1687	Columbia	..	..	30·00	30·84	..	..	..	30·00	30·84	..
Do. ..	1703	Countess	..	..	45·00	25·95	..	..	..	45·00	25·95	..
Do. ..	(1386)	Countess Extended	..	..	440·50	221·04	..	..	..	3,273·00	1,776·15	..
Do. ..	203, 1148 ..	(Cue Consolidated G.Ms., Ltd.)	..	..	..	..	..	..	..	23,427·50	18,382·10	..
Do. ..	203..	Cue No. 1	..	..	..	612·48	..	..	..	7,640·50	12,579·87	..
Do. ..	1446	(Cue Town No. 3)	..	..	471·00	196·17	..	..	..	639·00	287·68	..
Do. ..	1446, 1447 ..	Cue Town No. 3 leases	..	..	226·50	112·58	..	..	..	226·50	112·58	..
Do. ..	1684	Duke of York	..	..	623·00	302·44	..	..	..	623·00	302·44	..
Do. ..	1637	(Gem of Cue)	..	..	103·50	83·51	..	..	..	214·50	233·79	..
Do. ..	1020	Gem of Cue Extended	..	..	..	732·16	..	..	..	20·00	3,136·31	..
Do. ..	1637, 1663 ..	Gem of Cue leases	..	..	1,322·50	869·41	..	..	..	1,322·50	869·41	..
Do. ..	1020, 1044 ..	(Gem of Cue, Ltd.)	..	..	..	..	..	..	..	11,724·00	6,746·05	..
Do. ..	1509	Happy Jack	..	..	140·00	122·43	..	..	..	896·00	656·45	..
Do. ..	(1565)	Happy Jack South	..	..	..	..	..	..	..	54·00	10·00	..
Do. ..	1681	Hidden Treasure	..	..	214·50	228·95	..	..	..	214·50	228·95	..
Do. ..	(1511)	Jubilee	..	..	..	..	..	..	..	408·00	139·00	..
Do. ..	1148	(Light of Asia)	..	..	..	..	..	..	..	10,175·00	7,302·20	..
Do. ..	1148, 1299, 1300, 1634, 1666, 1667	Light of Asia leases	..	..	4,812·00	3,368·00	..	..	..	7,337·00	4,973·37	..
Do. ..	(1642)	Lily	..	..	..	..	..	..	..	158·00	61·60	..
Do. ..	1674	Lily	..	..	373·50	380·36	..	..	..	373·50	380·36	..
Do. ..	1691	Lucky Hit	..	..	46·50	31·45	..	..	..	46·50	31·45	..
Do. ..	1694	New Golden Stream	..	..	138·00	129·54	..	..	..	138·00	129·54	..
Do. ..	(1135)	(New Volunteer)	..	..	..	..	..	..	..	3,718·00	3,164·74	..
Do. ..	(1259)	(New Volunteer Extended)	..	..	..	..	..	..	..	229·00	154·19	..
Do. ..	(1135, 1259) ..	New Volunteer leases	..	..	..	..	..	..	..	908·00	531·44	..

Do.	..	(1621)	..	..	Old Brilliant	..	..	..	..	..	..	..	..	..	..	208·25	94·74	..
Do.	..	1705	..	..	Old Caledonia	..	..	..	..	..	151·50	25·51	..	..	..	151·50	25·51	..
Do.	..	1481	..	..	Old Princess Ada	..	..	..	..	..	12·00	15·43	..	..	..	1,661·00	633·69	..
Do.	..	(1683)	..	..	Once Again	..	..	..	..	..	15·00	21·23	..	..	..	15·00	21·23	..
Do.	..	(1589)	..	..	Pioneer	..	..	..	..	..	..	..	..	..	..	50·00	3·17	..
Do.	..	1433	..	..	Princess Ada	..	..	..	..	..	328·50	154·03	..	..	..	4,139·50	1,439·28	..
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	..	..	..	..	..	948·50	706·92	..	..	..	2,020·00	1,689·62	..
Do.	..	1151, 1252, 1362, 1391, 1498			Queen of the May leases	..	..	..	..	..	587·00	497·83	..	..	..	6,897·00	6,962·67	..
Do.	..	1248	..	..	Rising Sun	..	..	..	..	..	42·00	17·79	..	..	..	1,240·00	856·41	..
Do.	..	1576	..	..	Rose	..	..	..	..	..	74·00	8·67	..	..	..	330·00	275·58	..
Do.	..	1374	..	..	(Salisbury)	..	..	..	..	..	..	..	..	..	..	579·00	324·64	..
Do.	..	1374	..	..	Salisbury	..	..	..	..	..	927·00	617·71	..	..	..	2,239·00	955·94	..
Do.	..	1374, (1407, 1408, 1413)			(Salisbury leases)	..	..	..	..	..	..	..	..	..	..	4,279·00	3,081·67	43·35
Do.	..	1044	..	..	South Volunteer	..	..	..	..	..	402·00	276·28	..	..	..	6,177·00	3,164·79	..
Do.	..	1325	..	..	(Starlight)	..	..	..	..	..	..	..	..	..	..	1,506·50	1,473·40	..
Do.	..	1325, 1539		..	Starlight leases	..	..	..	..	..	198·00	281·93	..	..	..	391·50	722·87	..
Do.	..	1672	..	..	Star of Hope	..	..	..	..	132·91	..	..	..	..	132·91	..	..	..
Do.	..	1655	..	..	Struggle	..	..	..	..	..	293·00	114·45	..	..	..	355·50	145·83	..
Do.	..	(1504)	..	..	Success	..	..	..	..	..	22·50	5·72	..	..	23·44	81·50	47·08	..
Do.	..	(1640, 1641)		..	Twilight leases	..	..	..	..	..	36·50	45·61	..	..	..	94·50	121·40	..
Do.	..	1692	..	..	Volunteer South Extended	..	..	..	..	..	113·50	97·04	..	..	..	113·50	97·04	..
Do.	..		..		Voided leases	..	..	..	..	..	..	..	..	34·72	198·93	71,588·55	48,967·85	..
Do.	..		..		Sundry claims	..	..	..	..	..	1,108·50	816·41	..	·13	263·16	6,804·35	5,067·05	..
Eelya	..	1648	..	..	Eelya North	..	..	..	..	..	45·00	183·66	..	..	..	121·50	451·79	..
Do.	..	1496	..	..	Eelya Reward	..	..	..	..	..	..	..	..	..	..	82·50	48·96	..
Do.	..	1696	..	..	Jasper Queen	..	..	..	..	..	51·00	137·80	..	..	..	51·00	137·80	..
Do.	..		..		Sundry claims	..	..	..	..	..	51·00	65·08	..	..	47·25	125·80	148·77	..
Erroll's	..	(1528)	..	..	Inheritance	..	..	..	..	..	58·00	22·42	..	..	..	103·00	106·95	..
Do.	..	1531	..	..	(Legacy)	..	..	..	..	..	1,765·00	1,045·56	..	..	..	4,847·00	2,920·85	..
Do.	..	1490	..	..	Three Star	..	..	..	..	..	..	..	..	..	..	51·00	151·52	..
Do.	..	1531, 1572, 1588, 1671, 1680			Wha G.Ms., Ltd.	..	..	..	..	..	2,244·00	1,483·49	..	..	..	2,244·00	1,483·49	..
Do.	..		..		Sundry claims	..	..	..	..	..	70·00	18·12	..	..	..	70·00	18·12	..
Mindoolah	..	1603	..	..	Boggy Day	..	..	..	..	..	120·00	165·03	..	..	..	302·50	497·86	..
Do.	..	1623	..	..	Excelsior	..	..	..	..	..	265·50	133·07	..	..	..	492·50	297·55	..
Do.	..	(1598)	..	..	Frances	..	..	..	..	..	..	..	..	..	..	60·00	15·34	..
Do.	..	(1661)	..	..	Golden Gate	..	..	..	..	..	36·00	10·05	..	3·07	..	36·00	10·05	..
Do.	..	1624	..	..	Le Soleil	..	..	..	..	..	52·50	10·13	..	..	..	297·00	300·24	..
Do.	..	1518	..	..	Mindeloo	..	..	..	..	..	..	..	..	..	..	147·00	216·58	..
Do.	..	1609	..	..	Mindoolah Main Reef	..	..	..	..	..	70·00	70·07	..	..	..	337·00	123·57	..
Do.	..	1651	..	..	Mindoolah Queen	..	..	..	..	..	137·50	28·44	..	..	..	232·00	63·94	42·97
Do.	..	(1614)	..	..	Morepork	..	..	..	..	..	..	..	..	..	..	29·00	21·24	..
Do.	..	(1669)	..	..	Ned's Birthday	..	..	..	..	..	80·00	7·23	..	..	..	80·00	7·23	..
Do.	..	(1645)	..	..	Nil Desperandum	..	..	..	..	..	43·00	18·08	..	..	..	92·50	47·58	..
Do.	..	1652	..	..	Pride of Mindoolah	..	..	..	..	..	176·50	93·63	..	..	..	326·50	194·82	..
Do.	..	1682	..	..	Wondery	..	..	..	..	..	15·50	10·13	..	..	..	15·50	10·13	..
Do.	..		..		Voided leases	..	..	..	..	..	..	..	..	..	..	5,191·50	2,893·80	..
Do.	..		..		Sundry claims	..	..	..	..	..	223·50	127·03	..	..	9·81	646·00	848·39	..
Reedy's Find		1675	..	..	New Year's Gift	..	..	..	..	27·95	41·00	23·55	..	..	27·95	41·00	23·55	.
Do.	..	1648	..	..	Pinnacles	..	..	..	..	31·99	13·50	7·76	..	..	31·99	13·50	7·76	..
Do.	..	(1563)	..	..	Wanderer	..	..	..	..	..	..	..	..	..	..	65·50	257·11	..
Do.	..		..		Voided leases	..	..	..	..	..	..	..	..	..	109·49	325·00	273·64	..
Do.	..		..		Sundry claims	..	..	..	..	16·90	13·00	11·58	..	136·94	17·76	195·05	116·52	..

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 1908.					Total Gold 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.
Tuckanarra ..	1697	Big Lode North	..	..	5·00	4·56	..	..	..	5·00	4·56	..
Do. ..	1665	Boyd's Extended	..	..	34·00	34·24	..	..	..	53·00	137·83	..
Do. ..	1583	Cable	..	..	267·00	133·02	..	..	..	548·00	431·58	..
Do. ..	1527	Ensign	..	206·74	107·00	279·06	29·88	..	206·74	107·00	279·06	29·88
Do. ..	(1435)	(Havelock)	..	..	..	..	..	6·68	..	123·50	84·81	..
Do. ..	(1435)	Havelock G.M. Co., N.L.	..	..	..	..	..	..	..	50·00	14·15	..
Do. ..	(1532)	Judy's Gift	..	..	..	..	..	7·97	206·55	83·00	234·53	..
Do. ..	1688	Judy's Gift	..	..	15·00	2·07	..	..	..	15·00	2·07	..
Do. ..	1337	Nemesis	..	..	446·00	1,275·85	..	..	..	1,566·00	4,109·36	..
Do. ..	1649	Trilby	..	..	..	..	..	..	..	16·00	1·47	..
Do. ..	1432	Union Jack	..	..	172·00	492·43	..	..	..	858·00	2,932·05	124·29
Do. ..	..	Voided leases	..	..	..	..	..	..	672·36	12,211·10	9,178·24	..
Do. ..	..	Sundry claims	..	..	130·50	81·45	..	3·76	31·62	2,160·75	5,036·37	..
		From District generally :—										
		Sundry parcels treated at :										
		Cue No. 1 Works	..	..	..	1,326·00	..	..	..	..	1,326·00	..
		Heydon's Cyanide Works	..	..	..	25·10	..	..	..	..	25·10	..
		Mindoolah Main Reef Works	..	..	..	316·85	..	..	..	..	316·85	..
		State Battery—Tuckanarra	..	..	..	315·33	..	..	..	518·50	2,323·66	..
		Various Works	..	..	..	..	..	..	..	6,858·52	17,598·06	..
		Reported by Banks and Gold Dealers	44·46	..	..	..	..	617·35	7·54	..	..	..
		Total	**44·46**	**416·49**	**28,926·00**	**24,241·55**	**73·08**	**810·62**	**2,046·51**	**291,149·37**	**260,579·46**	**299·11**

NANNINE DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1908.					Total Gold 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.
Abbotts ..	827N	Just-in-Time	..	..	8·50	4·40	..	..	..	8·50	4·40	..
Do. ..	171N	Mt. Vranizan	..	..	..	..	..	..	..	13,416·00	12,205·69	..
Do. ..	172N, 247N, 248N	New Murchison King G.Ms.	..	..	110·00	120·41	..	..	..	21,356·00	24,463·53	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	187·00	227·91	..
Do. ..	..	Sundry claims	..	..	5·50	22·53	..	..	..	13·00	30·99	..
Burnakura ..	238N	Alliance	..	..	224·00	128·46	..	..	..	3,739·00	3,378·25	5·87
Do. ..	509N, 527N ..	Federal City leases	..	..	4,041·00	1,538·25	..	..	..	11,089·00	5,736·85	..

Do.	408N, 451N, 517N	New Alliance leases						2,458·00	1,669·63				11,307·00	15,119·90	13·12
Do.	693N	Perseverance					149·15	96·00	152·11			206·11	96·00	152·11	
Do.		Voided leases										3,000·54	635·50	1,290·86	7·91
Do.		Sundry claims									11·35	22·93	25·00	18·90	
Chesterfield	806N	Big Ben						125·00	229·89				125·00	229·89	
Do.	634N	Dorothy						95·00	63·34		29·02	21·00	231·00	185·28	
Do.	361N	Margueritta						69·00	62·13			105·59	3,365·50	3,583·39	·80
Do.	(775N)	Margueritta North Extended						17·00	18·88				17·00	18·88	
Do.		Voided leases										18·57	2,202·75	2,513·44	
Do.		Sundry claims						50·00	72·77				115·50	113·77	
Gabanintha	(676N)	Golden Hope											178·00	78·79	
Do.	(503N)	(Golden Hope Extended)											104·50	188·09	
Do.	(503N)	Golden Hope Extended											82·00	35·30	
Do.	(461N, 503N, 569N)	(Golden Hope leases)											101·00	61·21	
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											1,056·00	459·66	
Do.	32N, 46N, 460N	Nannine Goldfields, Ltd.						476·00	119·17				8,620·00	3,685·34	406·49
Do.	32N	(Tumbulgum)											670·50	255·47	
Do.	46N	(Tumbulgum Extended)											63·00	83·02	
Do.		Voided leases											3,819·00	3,520·82	
Do.		Sundry claims											220·00	199·69	
Garden Gully	798N	Jasper Star					26·36	5·88			26·36	5·88			
Do.		Voided leases											260·00	525·11	
Do.		Sundry claims						94·00	90·86				106·00	132·20	
Gum Creek	(757N)	Gladsome							107·24					279·90	
Do.	672N	Hilda No. 1						23·00	16·72				74·25	79·10	
Do.	(671N)	Hilda No. 2										73·00	17·00	14·00	
Do.		Voided leases									25·27	15·12	1,194·33	1,005·89	
Do.		Sundry claims											148·00	84·32	
Jillawarra	758N	Bubinue						28·50	35·12				52·50	82·51	
Do.	455N	Jillawarra						48·00	31·21				868·00	965·85	
Do.	(761N)	Yalga											3·00	74·08	
Do.		Voided leases										252·47	456·50	472·01	
Do.		Sundry claims									169·02	1·69			
Meekatharra	578N	Batavia											136·00	155·22	
Do.	597N	Commodore						128·00	307·37				444·00	1,126·98	
Do.	555N	Commodore Block											279·00	1,022·82	
Do.	(660N)	Commodore Extended											32·00	3·99	
Do.	477N	Fenian						3,516·00	6,265·25				6,793·75	16,129·46	
Do.	313N	Halcyon						73·50	21·39			2·11	2,826·75	1,289·12	
Do.	635N	Halcyon Extended						82·00	206·45				313·00	549·31	
Do.	236N	Haveluck						234·00	38·58				2,774·25	1,893·51	
Do.	(592N)	Haveluck Proprietary											2,640·50	656·00	
Do.	475N	(Ingliston Consols Extended)											1,536·25	4,248·25	·30
Do.	475N, 515N, 729N	Ingliston Consols Extended leases						917·00	1,676·01				1,647·50	3,798·02	
Do.	544N	Ingliston Consols South											20·50	24·49	
Do.	398N	(Ingliston Extended)											1,320·25	1,106·46	
Do.	398N, 437N, 462N	Ingliston Extended G.Ms., Ltd.						16,816·00	6,338·64				39,539·00	17,166·44	
Do.	514N	Ingliston No. 2											61·50	54·05	
Do.	637N	Ingliston South Extended						10·00	10·60				10·00	10·60	
Do.	507N	Ingliston United						9·00	10·20				293·25	147·95	
Do.	(748N)	Lady Lorna											12·00	7·06	

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 1908.					Total Gold 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.
Meekatharra ..	728N	Macquarrie	..	..	2,465·50	450·43	..	..	..	3,060·00	607·84	..
Do. ..	734N	Macquarrie North	..	7·63	59·00	10·48	..	..	7·63	59·00	10·48	..
Do. ..	533N	Marmont	..	..	8,661·00	6,065·94	..	..	..	13,272·00	12,634·19	..
Do. ..	580N	Marmont Extended	..	..	..	..	..	..	..	43·00	38·03	..
Do. ..	610..	Multum in Parvo	..	..	·02	426·31	..	..	..	41·13	1,994·80	..
Do. ..	774N	Nil Desperandum	..	..	10·00	3·22	..	..	..	10·00	3·22	..
Do. ..	93N	N. 93	..	36·47	509·00	176·61	..	..	36·47	4,423·50	2,078·19	..
Do. ..	832N	Occidental	..	..	19·50	12·23	..	..	..	19·50	12·23	..
Do. ..	372N	Pioneer	..	..	103·50	172·42	..	..	..	3,526·25	3,772·88	..
Do. ..	803N	Recovery	..	..	214·00	48·66	..	..	..	214·00	48·66	..
Do. ..	531N	Revenue	..	..	5·40	604·38	..	..	..	15·25	4,689·98	..
Do. ..	541N	Revenue North	..	..	76·00	23·55	..	..	..	335·50	157·10	..
Do. ..	709N	Rocklee	..	..	..	..	..	..	..	104·00	86·73	..
Do. ..	(710N)	St. George	..	..	..	..	..	..	..	399·00	117·33	..
Do. ..	773N	St. Francis	..	..	212·00	43·90	..	..	..	212·00	43·90	..
Do. ..	789N	Sweetheart	..	78·52	..	..	3·00	..	78·52	..	..	3·00
Do. ..	675N	Two Bells..	..	..	..	..	..	..	..	105·50	134·84	..
Do. ..	(695N)	Two Bells North	..	..	..	..	..	..	..	47·00	19·65	‡
Do. ..	.. ..	Voided leases	..	..	..	..	..	..	61·70	7,592·48	6,872·81	..
Do. ..	..	Sundry claims	..	..	326·60	98·18	..	177·68	..	1,175·35	828·65	..
Munara Gully..	..	Voided leases	..	..	..	..	..	..	..	13,167·75	6,489·65	..
Do. ..	..	Sundry claims	..	..	58·00	17·38	..	..	..	63·00	21·75	..
Nannine ..	756N	Black Pigeon	..	..	12·50	6·86	..	..	..	12·50	6·86	..
Do. ..	791N	Black Snake	..	..	97·00	50·23	..	..	..	97·00	50·23	..
Do. ..	273N	(Caledonian)	..	..	..	..	..	..	..	887·00	1,225·50	..
Do. ..	8N	Caledonian Extended	..	..	144·50	56·17	..	..	..	1,540·50	2,499·81	..
Do. ..	273N, 543N ..	Caledonian leases	..	..	744·00	256·85	..	..	..	2,488·50	1,073·00	..
Do. ..	754N	Champion	..	..	660·50	294·92	..	..	..	682·50	326·55	..
Do. ..	(704N)	Christmas Hope	..	..	..	..	..	..	..	23·00	57·20	..
Do. ..	830N	Dark Horse	..	..	36·00	17·67	..	..	..	36·00	17·67	..
Do. ..	(780N)	Easter Gift	..	..	29·00	48·78	..	..	..	29·00	48·78	..
Do. ..	792N	Easter Gift	..	..	9·00	14·36	..	..	..	9·00	14·36	..
Do. ..	(767N)	Island Revenue	..	..	54·50	154·37	..	..	..	54·50	154·37	..
Do. ..	617N	Lady Mary line of reef	..	..	218·00	60·14	..	..	..	451·00	152·02	..
Do. ..	16N, 25N, 166N	Mt. Hall, Royalist Consolidated and Nannine leases	..	..	1,661·00	1,019·73	..	..	..	13,602·60	16,509·23	127·60
Do. ..	(778N)	Nannine Home Rule	..	..	74·50	7·46	..	..	..	74·50	7·46	..
Do. ..	765N	Oozulimbird	..	..	186·50	160·90	..	..	..	186·50	160·90	..
Do. ..	752N	Queen of the Lake	..	..	131·00	31·97	..	..	..	163·00	54·26	..
Do. ..	785N	Queenslander	..	..	54·00	70·47	..	..	..	54·00	70·47	..
Do. ..	25N	(Royalist Consolidated)	..	..	..	..	..	..	19·18	762·53	3,500·70	..
Do. ..	(682N)	Shamrock	..	..	..	..	..	..	..	21·20	8·14	..
Do. ..	813N	Waikari	..	..	90·50	96·29	..	..	..	90·50	96·29	..
Do ..	.. ..	Voided leases	..	..	..	..	..	34·02	116·76	53,400·70	31,061·37	39·85
Do ..	..	Sundry claims	..	..	402·50	149·41	..	7·63	..	1,390·00	1,310·77	..

Quinns ..	(716N)	Ethel May	..	..	..	..	..	..	..	118·50	100·72	..
Do. ..	622N	Phoenix	..	..	990·00	825·96	90·70	..	..	2,490·00	1,387·33	90·70
Do. ..	776N	Phoenix Extended	..	..	11·11	20·58	..	..	..	11·11	20·58	..
Do. ..	..	Voided leases	..	..	..	..	..	7·30	270·32	2,142·25	1,164·87	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	228·04	39·00	11·63	..
Stake Well ..	(662N)	Bushman's	..	..	..	..	..	..	44·05	97·00	58·12	..
Do. ..	(667N)	Castlemaine United	..	..	9·50	11·21	..	..	143·68	56·50	61·15	..
Do. ..	781N	Dyed Garments	..	..	142·00	49·51	..	..	..	142·00	49·51	..
Do. ..	599N	Gladstone	..	..	..	..	..	..	..	203·00	83·86	..
Do. ..	566N	Kohinoor	..	..	400·00	139·01	..	..	..	1,414·00	582·37	..
Do. ..	(691N)	Kohinoor Extended	..	..	..	..	..	..	..	42·00	14·80	..
Do. ..	593N	(Koh-i-Noor South)	..	..	..	..	..	..	..	2,714·50	991·63	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	930·00	659·71	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	6·70	57·00	46·07	..
Star of the East	174N	Star of the East, Ltd.	..	..	..	..	..	..	..	27,019·00	20,122·53	..
Do. ..	.. ..	Voided leases	..	..	..	..	..	..	..	225·00	182·87	..
Yalginda ..	834N	Black Jack	..	332·86	9·00	1,095·21	..	..	332·86	9·00	1,095·21	..
Do. ..	760N	Criterion	..	..	72·50	43·71	..	..	..	72·50	43·71	..
Do. ..	708N	Gibraltar	..	..	100·00	19·78	..	..	..	100·00	19·78	..
Do. ..	759N	Golden Calf	..	..	25·00	13·02	..	..	..	25·00	13·02	..
Do. ..	666N	Karangahaki	..	..	2,232·00	1,174·21	..	..	..	2,559·50	1,770·40	..
Do. ..	770N ..	Revenue Proprietary	..	..	10·50	8·99	..	..	..	10·50	8·99	..
Do. ..	..	Sundry claims	..	6·00	115·50	89·54	..	..	6·00	115·50	89·54	..
		From District generally :—										
		Sundry parcels treated at :										
		Champion Cyanide Works	..	..	..	489·94	1·04	..	..	..	489·94	1·04
		Champion Extended Cyanide Works	..	..	..	49·00	..	..	..	..	49·00	..
		Hempseed's Cyanide Works	..	..	..	37·37	..	..	..	..	37·37	..
		Nannine Cyanide Works	..	..	..	1,409·66	289·11	..	..	..	1,765·26	334·91
		State Battery—Meekatharra	..	..	..	1,585·83	..	..	..	..	2,322·96	..
		State Battery—Nannine	..	..	..	139·02	..	..	..	..	272·09	..
		Various Works	..	..	..	..	..	..	..	153·75	1,545·52	..
		Reported by Banks and Gold Dealers	968·22	..	..	..	..	7,214·92	..	..	..	..
		Total	**994·58**	**616·51**	**51,195·63**	**37,209·43**	**383·85**	**7,702·57**	**5,076·92**	**314,076·18**	**267,232·57**	**1,104·76**

DAY DAWN DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1908.					Total Gold 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 ..	389D	(Crême D'Or)	..	..	..	..	..	..	..	150·00	175·18	..
Do. ..	389D, 421D, 422D	Crême D'Or leases	..	..	398·00	342·78	..	..	..	498·00	452·25	..
Do. ..	14D	(Crœsus)	..	..	..	..	..	..	..	1,138·00	1,640·41	..
Do. ..	(179D)	(Cue Gold Mining and Exploration Co., Ltd.)	..	..	..	..	..	..	..	1,773·00	594·33	..
Do. ..	26D, 264D, 265D, 319D, 323D, 344D, 352D, 411D	East Fingall G.Ms., Ltd.	..	..	..	..	..	..	..	1,208·00	773·29	..

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 1908.					Total Gold 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 ..	26D	(Eureka No. 5)	..	..	..	..	..	..	..	1,280·25	1,292·49	..
Do. ..	1D, 2D, 86D, 87D, 99D, 119D, 129D, 158D, 159D, 170D (179D), 185D 186D, 187D, 189D, 190D, 191D, 210D, 211D, 212D, 213D, 222D, 224D, 225D, 249D, 424D (433D, 435D, 436D, 437D), 449D, 453D, 455D	Great Fingall Consolidated, Ltd.	..	..	213,481·00	81,584·62	13,082·78	..	..	1,251,390·00	930,283·97	111,653·83
Do. ..	(179D)	(Kinsella)	..	..	..	..	..	..	2·97	106·50	153·39	..
Do. ..	(179D)	(Kinsella)	..	..	..	..	..	..	..	92·00	51·15	..
Do. ..	(179D, 342D) ..	(Kinsella leases)	..	..	..	..	..	..	..	3,365·00	862·00	..
Do. ..	(320D)	Mount Fingall	..	..	..	..	..	..	..	1,735·00	1,070·73	..
Do. ..	14D, 138D, 166D, 167D, 180D, 254D, 255D, 256D, 260D, 337D, 338D, 339D, 340D, 341D	Murchison Associated G.Ms., Ltd.	..	..	582·00	65·36	..	..	..	4,085·50	2,281·97	..
Do. ..	321D	Richmond	..	..	..	..	..	..	4·12	..	..	..
Do. ..	119D	(West Fingall No. 6)	..	..	..	..	..	..	..	43·00	15·32	..
Do. ..	..	Voided leases	..	..	..	..	..	123·81	307·11	21,753·45	16,433·08	·24
Do. ..	..	Sundry claims	..	77·36	61·00	11·79	..	..	125·32	693·25	727·79	..
Island	(9D)	(Eureka)	..	..	..	..	..	..	..	143·20	482·56	..
Do. ..	(9D)	(Eureka)	..	..	..	..	..	..	..	60·00	62·32	..
Do. ..	443D	Eureka	45·31	22·40	8·00	621·94	..	45·31	22·40	8·00	621·94	..
Do. ..	407D	First Chip	..	120·67	9·00	31·23	..	..	245·35	18·05	117·94	..
Do. ..	(5D, 9D, 142D) ..	(Island Eureka G.M. Co., N.L.)	..	..	..	..	..	411·66	50·51	13,911·20	17,629·61	..
Do. ..	(5D, 9D, 142D)	Island Queen leases	..	..	..	..	..	..	..	542·00	686·12	..
Do. ..	..	Voided leases	..	..	..	..	..	44·77	237·79	14,146·60	24,509·99	..
Do. ..	..	Sundry claims	..	122·36	8·50	42·02	..	17·74	130·01	8·50	42·02	..
Mainland ..	450D	Austin Hill	..	..	22·00	43·45	..	..	..	22·00	43·45	..
Do. ..	(451D)	Austin Hill South	..	..	5·50	8·96	..	..	..	5·50	8·96	..
Do. ..	(355D), 356D, (361D)	(Mainland Consols leases)	..	..	13·50	12·80	..	..	124·86	13·50	811·42	..
Do. ..	..	Voided leases	..	..	..	..	..	·41	1,696·60	7,007·40	22,067·86	..
Do. ..	..	Sundry claims	..	..	..	..	..	·82	7·64	22·00	59·35	..
Webb's Patch	(444D)	Gilbermas	..	..	11·50	18·70	..	..	..	11·50	18·70	..

Do. ..	370D	(Hill End)	..	..	..	..	..	..	·69	36·00	110·12	..
Do. ..	370D, 391D ..	Hill End leases	..	..	1,526·00	1,028·54	..	..	..	2,871·00	2,515·97	..
Do. ..	(346D)	Little Fingall	..	..	..	..	..	..	32·79	71·00	97·20	..
Do. ..	..	Voided leases	..	..	..	..	..	..	50·28	132·00	308·32	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	67·77	25·00	289·34	..
		From District generally :—										
	Sundry parcels treated at :											
	Various Works		..	..	..	..	..	..	16·61	940·75	1,537·30	..
	Reported by Banks and Gold Dealers		222·15	..	..	..	..	1,107·03	3·48	..	·77	..
		Total	**267·46**	**342·79**	**216,126·00**	**83,812·19**	**13,082·78**	**1,751·55**	**3,126·30**	**1,329,306·15**	**1,028,828·61**	**111,654·07**

MOUNT MAGNET DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1908.					Total Gold 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 ..	(867M)	Ard Patrick	..	..	..	..	..	..	..	88·00	12·33	..
Do. ..	573M, (591M, 610M)	(Brooklyn leases)	..	..	..	..	..	..	..	334·25	426·72	..
Do. ..	894M	Canterbury Cake	..	..	48·00	25·00	..	..	..	48·00	25·00	..
Do. ..	(865M)	Dunboyne	..	..	107·00	12·79	..	..	..	374·00	43·44	..
Do. ..	(869M)	Empress	..	..	46·00	97·93	..	..	..	46·00	97·93	..
Do. ..	767M	(Galtee Moore)	..	..	..	..	..	..	6·80	3,025·00	1,180·85	..
Do. ..	767M	Galtee Moore	..	..	11·00	14·60	..	..	..	11·00	14·60	..
Do. ..	767M, (807M) ..	(Galtee Moore leases)	..	..	469·00	136·01	..	..	..	578·00	171·97	..
Do. ..	(875M)	Gambier	..	..	..	..	..	..	..	14·00	6·78	..
Do. ..	874M	Gambier Extended	..	..	21·00	11·36	..	..	..	21·00	11·36	..
Do. ..	201M	Golden Gem	..	..	74·50	17·48	..	..	170·32	1,079·00	1,547·41	..
Do. ..	932M	Good Hope	..	..	29·00	5·14	..	..	..	29·00	5·14	..
Do. ..	(928M)	Haphazard	..	..	7·00	2·82	..	..	..	7·00	2·82	..
Do. ..	(858M)	Mistake	..	..	..	..	..	..	..	155·00	68·17	..
Do. ..	(879M)	Park	..	..	153·50	47·80	..	..	..	153·50	47·80	..
Do. ..	895M	Rangitira	..	..	11·00	1·51	..	..	..	11·00	1·51	..
Do. ..	421M	Splendour	..	..	..	..	..	..	..	824·25	717·86	..
Do. ..	876M	Turn of the Tide	..	..	63 50	39·80	..	..	..	71·50	91·45	..
Do. ..	877M	Victoria	..	·94	107·50	122·09	..	..	·94	116·50	125·76	..
Do. ..	(863M)	Wheel of Fortune	..	12·93	15·00	8·14	..	..	12·93	63·00	20·45	..
Do. ..	103M	Wheel of Fortune North	..	..	101·00	72·95	..	..	..	298·00	204·30	..
Do. ..	103M, (373M, 574M, 730M)	Wheel of Fortune North leases ..	..	..	..	..	..	..	..	25,475·00	30,129·11	458·82
Do. ..	151M	(Wheel of Fortune South Block) ..	..	..	..	..	..	..	..	2,586·15	6,691·90	..
Do. ..	151M	Wheel of Fortune South Block ..	..	..	33·00	16·88	..	..	..	33·00	16·88	..
Do. ..	151M, (452M) ..	(Wheel of Fortune South Block leases)	..	..	..	..	..	..	·47	191·00	149·08	..
Do. ..	..	Voided leases	..	..	..	..	..	..	2,508·30	87,967·72	65,754·66	..
Do. ..	..	Sundry claims	..	1·10	111·00	29·62	..	..	13·36	1,289·25	664·82	..
Mt. Magnet ..	(817M)	All Nations	..	..	33·00	73·85	..	..	85·27	83·00	255·18	..
Do. ..	317M	(Birthday)	..	..	..	..	..	..	..	184·50	29·11	..
Do. ..	(868M)	Boomer	..	..	..	..	..	..	..	37·50	7·77	..
Do. ..	507M	(Bronzewing)	..	..	..	..	..	..	43·48	..	..	..
Do. ..	(778M)	Brown Hill	..	..	..	..	..	..	..	457·00	89·17	..
Do. ..	(866M)	Brown Hill Extended	..	..	41·00	11·52	..	..	..	41·00	11·52	..
Do. ..	853M	(Brown Hill North)	..	..	418·00	196·29	..	..	..	771·02	417·40	..

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 1908.					Total Gold 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 ..	853M, 882M ..	Brown Hill North leases	..	..	247·50	89·73	..	..	..	247·50	89·73	..
Do. ..	942M	Coronet	..	..	154·00	39·43	..	..	..	154·00	39·43	..
Do. ..	490M	(Cushie Doo)	..	..	..	..	..	..	76·71	166·00	263·35	..
Do. ..	905M	Cushie Doo East	..	..	30·00	5·41	..	..	..	30·00	5·41	..
Do. ..	941M	Cushie Doo Extended	..	..	25·00	23·29	..	..	..	25·00	23·29	..
Do. ..	490M, 507M ..	Cushie Doo leases	..	..	1,191·00	352·05	..	..	73·65	1,489·50	600·90	3·05
Do ..	846M	Cushie Doo South	..	..	111·50	29·28	..	..	..	111·50	29·28	..
Do. ..	803M	Digger's Dab	..	..	31·00	6·28	..	..	56·87	144·00	339·60	..
Do. ..	885M	El Dorado	..	..	151·00	15·23	..	..	..	151·00	15·23	..
Do. ..	752M, 826M, 833M	Great Boulder No. 1, Ltd.	..	..	13,169·50	4,201·46	..	..	..	13,169·50	4,201·46	..
Do. ..	761M	Havelock	..	..	137·50	86·72	..	..	..	559·30	442·41	..
Do ..	463M	Hesperus Dawn	..	..	155·00	61·78	..	..	..	2,895·60	4,728·46	..
Do. ..	872M	Invercauld	..	..	865·00	102·94	..	..	..	865·00	102·94	..
Do. ..	771M	Jupiter	..	..	196·00	149·94	..	..	..	793·58	643·21	..
Do. ..	954M	Lady Muriel	..	..	43·00	7·53	..	..	..	43·00	7·53	..
Do. ..	811M	Last Call	..	..	84·50	8·61	..	..	..	94·50	9·64	..
Do. ..	(864M)	Lone Hand	..	4·00	..	..	..	..	39·21	38·00	73·68	..
Do. ..	945M	Lydeard St. Lawrence	..	..	59·00	24·53	..	..	..	59·00	24·53	..
Do. ..	(857M)	Magnet Mine	..	..	..	..	..	..	..	17·00	5·17	..
Do. ..	314M, 317M, 320M	(Morning Star leases)	..	..	..	..	..	..	..	63,938·00	35,059·35	..
Do. ..	314M, 317M, 320M	Morning Star Quartz Co., N.L.	..	..	766·50	444·69	..	..	..	44,660·50	25,107·14	655·73
Do. ..	445M	Neptune	..	..	170·00	161·47	..	..	797·14	1,490·16	2,282·12	..
Do. ..	(784M)	New Chum	..	..	36·50	17·83	..	..	..	436·00	169·56	..
Do. ..	(842M)	Nulli Secundus	..	..	..	..	..	..	..	73·00	31·33	..
Do. ..	(856M)	Paris	..	..	38·00	15·68	..	..	..	224·50	44·49	..
Do. ..	878M	Poseidon	..	..	31·00	8·52	..	..	..	31·00	8·52	..
Do. ..	892M	Revenue	..	..	62·50	226·71	..	..	..	62·50	226·71	..
Do. ..	(788M)	Saturn	..	..	104·50	26·51	..	..	..	789·50	166·88	..
Do. ..	696M	Sirdar	..	..	1,525·50	435·86	..	..	..	5,903·50	2,000·29	..
Do. ..	752M	(St. George)	..	..	..	..	..	..	..	3,335·00	1,439·07	..
Do. ..	806M	Tucker Bag	..	..	17·00	15·16	..	..	2·21	183·50	171·99	..
Do. ..	947M	Waratah	..	..	10·00	4·41	..	..	..	10·00	4·41	..
Do. ..	..	Voided leases	..	..	..	..	..	27·83	412·95	41,007·79	49,599·39	13·83
Do. ..	..	Sundry claims	..	75·07	648·27	397·69	..	..	190·72	8,555·41	5,218·31	..
Mt. Magnet East	..	Voided leases	..	..	..	..	..	63·29	753·94	5,506·25	2,798·49	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	37·22	209·50	140·25	..
Moyagee ..	..	Voided leases	..	..	..	..	..	..	..	1,510·00	973·62	..
Do ..	..	Sundry claims	..	7·17	33·00	42·37	..	..	84·93	133·25	187·41	..
Youanme ..	..	Sundry claims	..	..	..	..	..	..	..	33·00	44·58	..
		From District generally :—										
	Sundry parcels treated at :											
		State Battery—Boogardie	..	..	45·01	1,387·70	..	..	..	45·01	4,867·13	..
		State Battery—Lennonville	..	..	·05	422·40	..	..	..	18·05	5,928·62	..

Various Works	..	..	..	..	..	..	..	25·00	7,028·75	1·00
Reported by Banks and Gold Dealers	46·94	..	..	..	..	1,172·99	·35	..	..	..
Total	**46·94**	**101·21**	**22,038·33**	**9,754·79**	..	**1,264·11**	**5,367·77**	**325,696·54**	**264,183·91**	**1,132·43**

Yalgoo Goldfield.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease	Total for 1908.					Total Gold 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 ..	(557) ..	Murchison Reliance	..	..	22·00	12·65	..	..	..	56·00	32·61	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	891·32	492·11	3·30
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	114·00	71·96	..
Field's Find ..	414, 441, 442, 443	(Field's Find G.Ms., 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.	..	..	..	..	..	..	..	981·00	1,039·20	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	11·50	5·23	..
Do. ..	..	Sundry claims	..	..	10·50	10·84	..	..	42·13	133·75	105·94	..
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. ..	34, 53, 54, 445 ..	(Phœnix G.Ms., Ltd.)	..	..	..	..	..	..	..	11,633·50	10,613·00	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	923·00	546·26	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	61·50	21·71	..
Kirkalucka ..	..	Sundry claims	..	..	..	..	..	..	..	8·80	4·01	..
Melville ..	..	Voided leases	..	..	..	..	..	..	14·37	2,716·50	1,420·76	..
Do. ..	..	Sundry claims	..	..	..	..	..	11·55	..	238·00	158·11	..
Messenger's Patch	546	Caledonian	..	..	10·00	5·08	..	..	..	10·00	5·08	..
Do. ..	559	Iron Duke	..	..	20·00	17·05	..	..	..	20·00	17·05	..
Do. ..	548	Marloo	..	167·81	5·00	12·29	..	..	167·81	5·00	12·29	..
Do. ..	541	Mugs Blow	..	19·46	..	..	..	..	29·10	..	..	..
Do. ..	(547)	Triumph	..	..	8·00	5·41	..	..	..	53·00	24·85	..
Do. ..	..	Sundry claims	20·27	..	45·50	43·38	..	463·12	..	62·00	62·68	..
Nyounda ..	..	Voided leases	..	..	..	..	..	..	217·63	416·00	183·91	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	18·00	21·67	..
Pinyalling ..	501, 537	Baron Rothschild G.Ms., Ltd.	..	..	..	..	..	..	..	216·00	40·60	..
Do. ..	501	(Beryl)	..	..	..	..	..	..	..	432·00	249·01	..

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 1908.					Total Gold 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.
Pinyalling ..	..	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 ..	515	Wadgingarra Main Reef	..	..	22·50	11·16	..	..	..	37·50	20·86	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	485·11	576·94	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	71·50	38·21	..
Yalgoo ..	495	(Ivanhoe)	..	..	..	..	..	..	..	6·00	5·98	..
Do. ..	495, 518	Ivanhoe G.M. Co., N.L., Yalgoo	..	..	..	..	..	..	..	468·00	105·47	..
Do. ..	518	(Ivanhoe Extended: Ivanhoe G.M., Co., N.L., Yalgoo)	..	..	..	..	..	..	..	123·00	41·69	..
Do. ..	(540), 549 ..	(Prince Alfred leases)	..	..	39·50	25·80	..	..	..	39·50	25·80	..
Do. ..	(550)	Royal Blen	..	..	..	..	..	..	..	18·00	5·62	..
Do. ..	..	Voided leases	..	..	..	..	..	..	·36	4,617·00	9,349·10	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	216·70	101·56	..
Yuin	409, 469, 470	Royal Standard leases	..	..	29·50	11·81	..	..	..	19,103·50	10,860·04	..
Do. ..	556	Standard Grade	..	127·12	139·00	20·76	..	..	127·12	139·00	20·76	..
Do. ..	..	Sundry claims	..	..	193·50	33·56	..	..	4·70	253·50	51·45	..
												..
		From Goldfield generally:—										
		Sundry parcels treated at:										
		Various Works	..	..	..	..	..	9·42	..	664·00	961·86	..
		Reported by Banks and Gold Dealers	6·58	..	..	..	..	35·80	..	..	..	..
		Total	**26·85**	**314·39**	**545·00**	**209·79**	..	**519·89**	**604·58**	**92,664·18**	**63,760·05**	**3·30**

Mount Margaret Goldfield.

MOUNT MORGANS DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1908.					Total Gold 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	(244F)	Bow Bells	..	..	..	..	..	..	..	39·66	97·54	..
Do. ..	234F	Brilliant	..	..	..	..	..	..	182·34	27·25	86·28	..
Do. ..	187F	Central	..	..	91·00	242·70	..	..	..	382·75	554·97	..
Do. ..	95F	Lurline	..	..	54·00	56·71	1·76	..	11·99	251·53	654·90	1·76
Do. ..	(1F)	(Princess Iris)	..	..	..	..	..	..	3·33	516·00	1,246·92	..

Do. ..	(1F, 178F, 180F) ..	(Princess Iris leases)	..	..	..	..	..	..	..	3,790·00	3,055·86	..
Do. ..	..	Voided leases	..	..	..	..	..	..	1,678·62	10,826·00	17,478·43	..
Do. ..	..	Sundry claims	..	..	49·00	55·80	..	..	175·67	663·50	1,704·79	..
Federation Well	124F	Homeward Bound	..	..	218·00	238·67	..	..	..	1,109·00	1,636·67	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	63·50	33·20	..
Korong ..	(140F)	Alicia	..	..	398·00	373·86	..	..	..	1,902·00	2,219·25	..
Do. ..	252F	Alicia North	..	..	140·00	102·61	..	..	..	140·00	102·61	..
Do. ..	..	Voided leases	..	..	..	..	..	17·95	72·23	484·00	981·25	..
Do. ..	..	Sundry claims	..	..	10·00	8·26	..	..	34·97	134·00	106·15	..
Mt. Margaret ..	174F	Mt. Margaret Lake View	..	..	10·00	·99	..	..	..	36·00	8·19	..
Do. ..	66F	Mt. Morven	..	..	..	38·29	..	·37	..	880·00	784·78	12·55
Do. ..	..	Voided leases	..	..	..	..	..	..	..	1,504·00	961·11	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	111·50	67·57	..
Mt. Morgans ..	251F	Huon Belle	..	..	34·00	167·82	..	..	..	80·00	341·82	..
Do. ..	6F	Lily of the Valley South	..	..	322·50	161·13	..	..	..	322·50	161·13	..
Do. ..	8F	Millionaire : Millionaire, Ltd. ..	..	..	214·00	234·95	..	..	..	12,162·00	6,239·54	..
Do. ..	29F, 30F	Mt. Morgans Transvaal G.Ms., Ltd. ..	..	..	3,276·00	1,099·89	..	..	..	3,276·00	1,099·89	..
Do. ..	97F	(Ramornie)	..	..	..	..	..	..	..	334·00	327·78	..
Do. ..	97F, 121F ..	Ramornie leases	..	..	..	5·01	..	..	..	2,675·00	1,872·29	..
Do. ..	29F, 30F	(Transvaal leases)	..	..	279·00	318·35	..	..	..	2,309·00	3,605·48	..
Do. ..	100F	(Turn of the Tide)	..	..	..	..	..	..	..	214·00	84·52	..
Do. ..	5F, 6F, 10F, 19F, 22F, 32F, 73F	Westralia Mt. Morgans G.Ms., Co. Ltd. ..	..	..	60,309·00	16,316·63	..	..	..	513,602·00	275,377·34	5,552·63
Do. ..	7F, 20F, 21F ..	Westralia Mt. Morgans G.Ms. Co., Ltd. ..	..	..	..	..	..	..	..	18,261·00	8,033·52	..
Do. ..	6F	(Westralia Mt. Morgans Syndicate, Ltd.) ..	..	..	..	..	..	..	..	3,002·00	1,022·90	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	2,683·00	2,546·18	2·10
Do. ..	..	Sundry claims	..	..	251·50	197·84	..	6·61	..	858·25	771·17	..
Murrin Murrin	208F	(Alex Junior)	..	..	560·00	396·90	..	..	..	2,182·25	2,791·98	..
Do. ..	208F, 250F ..	Alex Junior leases	..	..	3,164·00	2,322·92	..	..	..	3,164·00	2,322·92	..
Do. ..	207F	Bound to Win	..	..	407·80	326·15	..	..	..	742·30	529·83	..
Do. ..	195F	(Elbe)	..	..	..	..	..	..	..	60·00	116·41	..
Do. ..	195F, 197F ..	Elbe leases	..	..	76·00	177·64	..	..	..	2,703·00	2,844·36	3·60
Do. ..	(189F, 190F, 191F, 192F)	Malcolm Mines, Ltd.	..	..	63·00	235·44	..	..	..	4,167·30	7,502·21	..
Do. ..	255F, 256F ..	Malcolm Mines, Ltd.	..	..	39·00	309·19	..	..	..	39·00	309.19	..
Do. ..	(189F, 190F, 191F, 192F)	(Mt. Malcolm Mines, Ltd.)	..	..	..	..	..	..	..	41,155·50	27,016·41	..
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, 213F ..	(Princess Alix G.M. Co., Ltd.)	..	..	..	..	..	..	..	1,090·00	890·65	..
Do. ..	200F, 213F ..	Princess Alix leases	..	..	341·25	807·37	..	..	44·33	911·25	1,757·69	..
Do. ..	203F	Princess Alix South	..	..	..	..	..	..	3·49	1,138·00	1,712·44	..
Do. ..	193F	(Proprietary Extended)	..	..	..	..	..	..	..	1,454·50	1,172·33	..
Do. ..	193F, 194F, 196F, 198F, 199F, 201F, 202F	Proprietary Extended leases	..	..	9,954·00	4,403·36	..	..	..	16,502·00	9,136·42	6·00
Do. ..	..	Voided leases	..	..	..	..	..	10·43	175·11	3,332·67	4,754·41	..
Do. ..	..	Sundry claims	..	12·75	145·50	120·00	..	..	118·38	676·75	656·57	..
Redcastle ..	(133F)	Castlemaine	..	..	..	..	..	..	324·76	29·00	74·02	..
Do. ..	..	Voided leases	..	..	..	..	..	4·49	111·78	2,480·95	2,095·61	..
Do. ..	..	Sundry claims	..	..	10·00	6·53	..	..	103·58	107·00	144·75	..
		From District generally :—										
		Sundry parcels treated at :										
		Various Works	..	..	..	..	..	..	..	788·50	2,995·91	84·03
		Reported by Banks and Gold Dealers	174·37	..	..	..	..	677·42	..	..	..	..
		Total	**174·37**	**12·75**	**80,416·55**	**28,725·01**	**1·76**	**717·27**	**3,040·58**	**680,097·91**	**421,588·16**	**5,682·67**

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

Mount Margaret Goldfield—*continued.*

MOUNT MALCOLM DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1908.					Total Gold 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	1,355·24	3,279·88	..
Diorite King ..	1247c	Full Moon	..	..	214·00	164·22	..	..	..	214·00	164·22	..
Do. ..	1172c	(Homeward Bound)	..	..	179·00	100·25	..	..	..	1,127·00	625·59	..
Do. ..	1179c	King of the Hills	..	..	319·00	325·17	..	..	..	960·00	843·15	..
Do. ..	(1221c)	King of the Hills West	..	..	32·00	20·96	..	..	..	271·00	143·28	..
Do. ..	1172c	Leeta G.M. Co., Ltd.	..	..	290·00	117·67	..	..	..	290·00	117·67	..
Do. ..	1220c	Mount Stirling	..	..	173·50	237·82	..	..	..	173·50	237·82	..
Do. ..	(1213c)	New Blue Jacket	..	..	..	..	..	..	..	30·00	31·23	..
Do. ..	1256c	New Chum	..	..	79·00	89·77	..	..	..	79·00	89·77	..
Do. ..	1260c	New Queen	..	..	34·00	82·38	..	..	..	34·00	82·38	..
Do. ..	1246c	Rose of Diorite	..	..	186·00	113·56	..	..	..	186·00	113·56	..
Do. ..	(1235c)	Warrigal	..	..	23·00	11·32	..	..	..	23·00	11·32	..
Do. ..	..	Voided leases	..	..	..	..	..	..	774·66	23,198·48	22,451·69	..
Do. ..	..	Sundry claims	..	..	379·00	310·76	..	..	59·84	2,012·25	2,548·15	..
Dodger's Well	1270c	Myrtle	..	..	65·50	267·12	..	..	..	65·50	267·12	..
Do. ..	..	Voided leases	..	..	..	..	..	..	54·97	537·80	970·87	..
Do. ..	..	Sundry claims	..	..	245·50	169·09	..	..	..	469·75	290·96	..
Leonora ..	1212c	Dawn of Hope	..	..	76·00	133·20	..	..	..	114·00	250·63	..
Do. ..	198c	(Eastern)	..	..	..	..	..	..	..	302·00	321·72	..
Do. ..	210c, 253c ..	(Forrest leases)	..	..	..	..	..	..	60·69	843·00	1,109·34	..
Do. ..	(1208c)	Good Luck	..	..	82·00	16·63	..	..	..	82·00	16·63	..
Do. ..	218c, 219c, 776c, 902c, 903c, 904c, 1106c, (1109c, 1110c), 1111c, 1142c, 1157c, 1167c	Great Tower Hill G.Ms., Ltd.	..	..	527·50	211·74	..	..	..	62,255·00	20,034·56	10·71
Do. ..	1056c	(Harbour Lights)	..	..	..	..	..	..	..	6,989·25	1,665·07	..
Do. ..	1056c, 1214c ..	Harbour Lights leases	..	..	2,356·00	402·82	..	..	..	4,462·00	919·00	..
Do. ..	195c, 196c ..	Leonora Gold Blocks leases	..	..	1,000·00	751·00	..	..	..	11,151·00	11,246·87	..
Do. ..	210c, 253c, (1187c), 1268c	Leonora Main Reefs, Ltd.	..	..	2,683·00	663·28	..	..	..	14,266·00	5,525·35	..
Do. ..	1282c	Mascotte	..	..	9·00	84·50	..	..	..	9·00	84·50	..
Do. ..	218c, 219c ..	(Octagon Explorers, Ltd.)	..	..	..	..	..	..	..	5,000·00	1,569·68	..
Do. ..	1217c	Ping Pong	..	..	233·00	392·97	..	..	..	428·00	905·22	..
Do. ..	1216c	Rajah	..	..	78·50	279·08	..	..	..	164·00	427·48	..

Do. ..	190c, 207c, 352c, 353c, 380c, 446c, 447c, 450c, 476c, 489c, 490c, (491c, 493c, 494c), 504c, 523c, 741c, 742c, (806c), 807c, (808c), 809c, (810c), 811c, 812c, 813c, 814c, 980c, 981c, 1225c, 1226c, 1227c, 1228c, 1229c, 1230c, 1231c, 1232c	Sons of Gwalia, Ltd.	...	..	139,965·00	55,587·04	4,277·72	..	..	995,825·50	558,800·55	19,888·8
Do. ..	198c, 1082c ..	(Sons of Gwalia South G.M. Co., N.L.) ..	...	..	..	..	..	..	..	631·00	903·61	..
Do. ..	198c, 1082c, 1257c, 1258c, 1259c	Sons of Gwalia South G.Ms., Ltd.	...	..	20,755·00	14,377·10	8·66	..	..	27,759·00	19,697·01	8·66
Do. ...	263c, 774c, 793c ..	Trump leases	...	..	943·10	909·67	..	..	..	21,766·20	15,847·21	..
Do. ..	(1249c)	Two Nations	...	..	24·50	26·56	..	..	..	24·50	26·56	..
Do. ..	(1218c)	Victor	...	..	6·00	4·48	..	..	28·63	22·50	60·19	..
Do. ..	..	Voided leases	..	..	..	..	..	..	345·59	8,096·60	5,374·83	..
Do. ..	..	Sundry claims	...	·57	423·50	281·75	..	..	·57	4,126·50	3,871·22	..
Malcolm ..	1058c	Alice	...	..	259·00	93·23	..	..	..	584·50	492·14	..
Do. ..	1175c	Malcolm Prospecting Co., N.L.	..	..	3,064·00	2,159·17	..	..	..	3,845·50	2,616·94	..
Do. ..	1183c	(Nine of Hearts)	..	..	..	..	..	..	..	196·00	32·96	..
Do. ..	1183c	Nine of Hearts	..	..	248·00	90·16	..	..	..	248·00	90·16	..
Do. ..	1183c	(Queen Margaret G.M. Co., Ltd.)	..	..	..	..	..	..	..	67·00	38·03	..
Do. ..	991c	Richmond Gem	..	..	790·00	400·62	..	..	..	6,605·00	6,008·66	..
Do. ..	1133c	Sunday	..	..	389·50	182·59	..	..	32·82	1,544·50	998·33	..
Do. ..	..	Voided leases	..	..	..	..	..	..	8·89	22,857·51	22,139·32	..
Do. ..	..	Sundry claims	..	..	527·00	316·50	..	..	6·64	2,235·60	1,618·79	..
Mertondale ..	648c	(Merton's Boulder, Ltd.)	..	..	..	..	..	..	..	160·00	117·64	..
Do. ..	645c	(Merton's Consols)	..	..	..	..	..	..	..	23·00	68·27	..
Do. ..	638c, 644c, 645c, 648c, 653c, 1146c, 1178c	Merton's Reward G.M. Co., Ltd.	..	..	5,718·00	2,202·54	104·41	..	..	68,788·00	32,137·27	1,492·88
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	..	..	..	..	..	..	..	524·00	427·81	..
Do. ..	..	Sundry claims	..	..	353·00	212·93	..	..	..	784·25	531·60	..
Mt. Clifford ..	1261c	Bannockburn	..	9·98	49·00	35·87	..	..	9·98	49·00	35·87	..
Do. ..	1244c	Blue Spec	..	40·41	25·00	39·92	..	..	40·41	25·00	39·92	..
Do. ..	1125c	Emancipator	..	..	41·00	123·21	..	..	..	548·50	792·01	..
Do. ..	(1209c)	Famous	..	1·98	19·00	99·69	..	..	14·70	37·00	112·99	..
Do. ..	(1208c)	Good Luck	..	..	..	..	..	..	..	95·50	47·97	..
Do. ..	1118c	Victory No. 1	..	..	22·00	243·40	..	..	..	1,055·50	3,589·27	..
Do. ..	..	Voided leases	..	..	..	..	..	..	11·25	1,216·00	1,668·17	..
Do. ..	..	Sundry claims	..	..	..	..	..	9·75	176·38	504·25	475·73	..
Pig Well ..	1271c	Ada Crossley	..	..	168·00	15·47	..	..	..	168·00	15·47	..
Do. ..	1250c	Ada H.	..	..	228·00	104·78	..	..	..	228·00	104·78	..
Do. ..	1089c	(Gambier Lass)	..	..	778·00	1,003·63	..	..	..	4,320·50	4,485·26	26·40
Do. ..	1089c, 1210c ..	Gambier Lass leases	..	..	560·00	483·12	..	..	..	560·00	483·12	..

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 1908.					Total Gold 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.
Pig Well ..	1203c	Gambier Lass North	..	..	54·00	12·48	..	..	..	54·00	12·48	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	3,683·07	5,308·85	37·28
Do. ..	..	Sundry claims	..	..	625·25	189·19	..	..	..	1,653·75	735·77	..
Randwick ..	1195c	Black Chief	..	..	78·00	58·67	..	..	..	207·00	232·38	..
Do. ..	1251c	English and Scottish	..	..	36·00	9·03	..	..	..	36·00	9·03	..
Do. ..	978c	Randwick	..	..	16·00	25·11	..	..	234·23	3,594·75	2,111·86	..
Do. ..	(1084c)	Toorakville	..	..	..	..	..	..	..	202·50	984·57	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	3,384·00	3,651·98	..
Do. ..	..	Sundry claims	29·59	30·26	158·00	150·02	..	52·78	30·26	677·75	479·12	..
Webster's Find	1262c	Carnegies	..	..	87·50	15·48	..	..	..	87·50	15·48	..
Do. ..	1254c	Handsworth	..	..	24·00	23·16	..	..	..	24·00	23·16	..
Do. ..	1273c	Mt. Blow Hard	..	..	9·00	6·74	..	..	..	9·00	6·74	..
Do. ..	1224c	Webster's	..	..	80·00	65·71	..	..	..	80·00	65·71	..
Do. ..	..	Voided leases	..	..	..	..	..	25·00	..	21,179·75	13,597·20	..
Do. ..	..	Sundry claims	..	..	138·30	88·88	..	..	15·73	1,188·30	785·52	..
Wilson's Creek	..	Voided leases	..	..	..	..	..	..	..	333·50	168·27	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	4·24	5·00	19·04	..
Wilson's Patch	1120c	(Great Western)	..	..	..	..	..	..	..	4,770·00	3,206·85	..
Do. ..	1120c, 1130c ..	Great Western leases	..	..	..	..	..	..	..	11,809·50	5,270·11	..
Do. ..	..	Voided leases	..	..	..	..	..	..	99·38	2,206·10	1,187·85	1·05
Do. ..	..	Sundry claims	..	1·50	44·00	24·46	..	..	1·50	255·50	168·65	..
		From District generally :—										
	Sundry parcels treated at :											
		Drew & Mason's Cyanide Works	..	..	..	64·19	..	..	..	..	93·97	..
		Lang's Cyanide Works	..	..	..	93·21	..	..	..	..	751·23	..
		Mt. Clifford Battery	..	..	..	211·20	..	..	..	..	506·57	..
		Orotava Works—Kalgoorlie	..	..	..	15·90	..	..	..	..	15·90	..
		State Battery—Leonora	..	..	12·00	482·45	..	..	..	45·50	4,509·97	72·90
		State Battery—Pig Well	..	..	4·00	429·70	..	..	..	13·00	1,494·50	..
		Various Works	..	..	..	..	..	..	..	349·50	1,456·13	..
	Reported by Banks and Gold Dealers		..	..	..	..	..	1,417·00	81·00	..	..	..
		Total	**29·59**	**84·70**	**185,986·15**	**85,904·32**	**4,390·79**	**1,504·53**	**3,660·65**	**1,379,981·15**	**827,086·32**	**21,538·70**

MOUNT MARGARET DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1908.					Total Gold 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 ..	1041T	(Away from Home)	..	..	..	..	..	..	68·26	570·50	1,829·72	..
Do. ..	1041T, 1087T ..	Away from Home leases	..	..	182·00	275·86	..	..	2·34	1,349·50	2,507·55	..
Do. ..	(944T)	(Carib)	..	..	..	..	..	..	..	382·00	356·68	..
Do. ..	(1751)	Clinker	..	..	..	..	..	..	..	137·00	204·38	..
Do. ..	1770T	(Dog Star)	..	..	..	..	..	..	..	10·00	2·21	..
Do. ..	1770T, 1778T ..	Dog Star leases	..	..	68·00	38·24	..	..	..	68·00	38·24	..
Do. ..	1553T	Golden Bell	..	..	678·50	1,634·15	..	..	..	2,237·00	6,457 53	..
Do. ..	1754T	Great Westralia	..	..	132·00	56·07	..	..	..	260·00	216·94	..
Do. ..	1010T	Karridale	..	..	475·00	551·81	..	..	..	3,488·08	10,894·99	200·00
Do. ..	1655T	Karridale South	..	..	..	..	..	..	..	17·00	17·20	..
Do. ..	(944T, 1375T) ..	Leviathan G.M., Ltd.	..	..	30·00	16·57	..	..	..	500·75	341·72	..
Do. ..	1782T	Maori King	..	..	51·00	112·91	..	..	..	51·00	112·91	..
Do. ..	943T	(Mikado)	..	..	..	..	..	..	..	342·00	206·14	..
Do. ..	943T, 1124T ..	Mikado G.M. Co., Ltd.	..	..	3,372·00	2,355·22	..	..	..	11,003·10	8,921·76	8·30
Do. ..	1750T	Mikado North	..	..	..	..	..	..	..	7·00	19·41	..
Do. ..	1805T	Mountain King	..	..	32·00	71·32	..	..	..	32·00	71·32	..
Do. ..	1044T	Nil Desperandum	..	..	516·00	860·35	..	..	..	2,659·00	5,318·58	..
Do. ..	(1490T)	Old Pioneer	..	..	..	..	..	..	..	..	144·31	..
Do. ..	1695T	Rock of Ages	..	..	313·00	469·96	..	..	..	408·50	669·96	..
Do. ..	781T	Sailor Prince	..	..	845·00	298·87	16·00	1·27	..	4,771·00	4,725·83	16·00
Do. ..	1089T	Savage Captain	..	..	80·00	88·01	..	..	..	1,655·70	5,006·43	..
Do. ..	(1763T)	Sons of Westralia	..	..	119·00	24·00	..	..	..	119·00	24·00	..
Do. ..	1644T	Specimen Hill	..	..	1,567·00	911·49	..	..	..	1,968·00	1,037·98	..
Do. ..	1787T	Sudden Jerk	..	..	10·50	12·96	..	..	..	10·50	12·96	..
Do. ..	1726T	Sunrise	..	..	67·00	122·85	..	..	..	103·00	146·27	..
Do. ..	1716T	Surprise	..	..	90·00	854·69	..	..	..	105·00	1,098·95	..
Do. ..	1766T	Swan	..	..	82·00	100·17	..	..	..	150·00	207·65	..
Do. ..	(1068T)	Tempus	..	..	..	..	..	..	..	1,124·50	3,489·82	..
Do. ..	1813T	Tempus	..	..	11·00	14.44	..	..	..	11·00	14·44	..
Do. ..	1817T	Waterloo	..	..	17·00	6·16	..	..	..	17·00	6·16	..
Do. ..	..	Voided leases	..	..	..	..	..	1·02	50·35	16,054·05	28,185·95	..
Do. ..	..	Sundry claims	..	7·26	444·50	463·40	..	..	54·75	1,621·65	1,624·99	..
Duketon ..	(1509T)	Famous Blue	..	..	349·00	359·44	..	..	7·65	10,107·00	4,695·22	..
Do. ..	(1046T)	Golden Spinnifex	..	..	..	..	..	..	..	2,642·00	1,847·92	..
Do. ..	1517T	(Mulga Queen)	..	..	..	..	..	..	..	2,910·00	2,560·48	..
Do. ..	1517T	Mulga Queen	..	..	24·00	22·51	..	..	..	4,328·00	3,228·75	..
Do. ..	1517T, (1550T, 1573T, 1589T)	(Mulga Queen leases)	..	..	..	..	..	..	..	2,987·00	2,611·94	..
Do. ..	(1643T)	Riccaboni	..	..	..	..	..	..	..	845·00	655·81	..
Do. ..	..	Voided leases	..	..	..	..	..	..	102·88	5,683·00	4,700·42	..
Eagle's Nest ..	..	Voided leases	..	..	..	..	..	..	145·34	331·00	1,215·78	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	55·00	42·21	..
Erlistoun ..	1809T	Annie	..	..	38·00	39·17	..	..	..	38·00	39·17	..
Do. ..	1808T	Baneygo North	..	..	25·00	65·25	..	..	..	25·00	65·25	..
Do. ..	(1707T)	Beckwith	..	..	..	..	..	..	..	141·00	267·41	..

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

Mount Margaret Goldfield—*continued.*

MOUNT MARGARET DISTRICT—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1908.					Total Gold 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.
Erlistoun ..	(1735T)	Beckwith South	..	..	..	..	..	..	..	7·00	3·95	..
Do. ..	1812T	Bungarra	..	..	6·50	16·38	..	..	..	6·50	16·38	..
Do. ..	(1790T)	Bung Arrow	..	..	5·00	4·55	..	..	..	5·00	4·55	..
Do. ..	(1748T)	Caledonian	..	..	168·00	155·49	..	..	..	447·00	266·85	..
Do. ..	(1729T)	Erlistoun Queen No. 1	..	..	..	..	..	..	..	12·50	7·52	..
Do. ..	1794T	Great Derwent	..	..	3·00	7·77	..	..	..	16·00	23·58	..
Do. ..	1679T	Hootanui	..	..	40·00	447·53	..	..	..	367·00	1,876·23	..
Do. ..	1382T	King of Creation	..	..	207·00	46·79	..	..	11·66	649·00	237·38	..
Do. ..	(1736T)	Kirkpatrick's Reward	..	..	..	..	..	..	..	32·00	14·77	..
Do. ..	(771T)	Little Doris	..	..	..	..	..	..	..	1,072·00	1,501·43	..
Do. ..	(1414T)	Mistake	..	..	..	..	..	..	..	1,061·00	1,125·69	..
Do. ..	1712T	Rutherglen	..	..	..	..	..	..	..	·10	109·90	..
Do. ..	1708T	Stockwhip and Blanket	..	..	..	..	..	..	..	12·00	16·83	..
Do. ..	1760T	Tokai	..	..	..	..	..	..	..	·05	25·53	..
Do. ..	1665T	Westralia Tasmania	..	..	879·00	183·08	..	..	..	1,044·00	244·21	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	8,359·75	9,405·01	..
Do. ..	..	Sundry claims	..	..	78·00	85·78	..	1,164·13	..	803·90	654·13	..
Euro	1546T	(Euro)	..	..	..	..	..	..	..	352·00	289·24	..
Do. ..	1546T, 1625T ..	Euro leases	..	..	4,242·00	1,511·60	..	..	..	15,413·00	6,277·85	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	66,795·25	28,730·27	..
Do. ..	..	Sundry claims	..	..	9·00	7·30	..	..	..	149·00	80·56	..
Laverton ..	(1180T)	Alma Mater	..	..	..	..	..	..	87·43	661·00	603·69	..
Do. ..	371T	Augusta	..	..	2,928·00	1,991·93	..	..	..	10,739·00	11,417·81	..
Do. ..	1767T	British Flag	..	..	106·00	143·60	..	..	..	176·00	198·01	..
Do. ..	1788T	Comet	..	..	95·50	136·78	..	..	..	95·50	136·78	..
Do. ..	1779T	Constance	..	..	8·50	27·78	..	..	..	8·50	27·78	..
Do. ..	(1792T)	Cosmo	..	..	19·00	13·89	..	..	..	19·00	13·89	..
Do. ..	1797T, 1798T ..	Craiggiemore leases	..	..	2,433·00	619·76	..	..	..	2,433·00	619·76	..
Do. ..	(592T, 693T, 830T, 840T, 1094T)	Craiggiemore Proprietary, Ltd.	..	..	..	..	..	..	..	105,702·00	35,402·76	..
Do. ..	838T	(General Wabash)	..	..	..	..	..	..	..	100·00	288·72	..
Do. ..	371T	(Golden Rhine G.Ms. (W.A.) Ltd.) ..	..	..	..	..	..	..	..	15,497·50	11,031·75	..
Do. ..	829T	(Ida H.)	..	..	..	..	..	..	..	111·00	285·13	..
Do. ..	829T, 838T, 846T, 1219T, 1310T, 1671T	Ida H. G.M. Co., Ltd.	..	..	12,110·00	7,662·68	726·40	..	..	101,317·00	78,712·04	3,961·86
Do. ..	1783T	Just in Time	..	..	172·00	88·89	..	..	..	172·00	88·89	..
Do. ..	1783T, (1784T) ..	(Just in Time G.M. Co., N.L.)	..	..	..	..	..	..	..	469·00	180·50	..
Do. ..	1777T	Kiora	..	..	14·00	10·45	..	..	..	14·00	10·45	..

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.	..	..	38,284·00	14,460·23	1,754·14	..	..	153,829·00	58,842·47	5,824·39
Do. ..	1803T	Mount St. John	..	..	42·00	10·62	..	..	..	42·00	10·62	..
Do. ..	(1762T)	Sunshine	..	..	..	..	..	..	..	25·50	43·96	..
Do. ..	1795T	Wanda	..	..	6·00	3·95	..	..	..	6·00	3·95	..
Do. ..	1697T	Wheel of Fortune	..	..	3·00	7·14	..	..	138·44	8·00	42·61	..
Do. ..	..	Voided leases	..	..	..	..	..	..	876·59	5,502·50	4,607·85	..
Do. ..	..	Sundry claims	..	37·09	92·70	118·32	..	43·56	174·00	1,894·20	1,371·85	..
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 :											
	.Craiggiemore Works..		..	..	..	110·28	..	..	..	..	110·28	..
	State Battery—Burtville		..	..	7·00	910·31	..	..	..	62·00	2,252·77	..
	State Battery—Laverton		..	..	..	13·31	..	..	..	11·50	82·64	..
	Various Works		..	..	..	..	..	..	..	120·00	3,107·95	..
	Reported by Banks and Gold Dealers		..	..	..	..	..	23·62	..	..	..	..
		Total	..	**44·35**	**71,576·70**	**38,622·06**	**2,496·54**	**1,233·80**	**1,719·69**	**679,808·86**	**406,039·27**	**10,010·55**

North Coolgardie Goldfield.

MENZIES DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1908.					Total Gold 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 ..	5208z	(Comet Tunnel)	..	..	243·00	154·48	..	..	..	749·50	417·12	..
Do. ..	5148z	Coonega G.M. Co., Ltd.	..	54·32	8·50	134·16	..	..	54·32	607·50	775·50	..
Do. ..	5217z	Gladsome	..	..	5,404·50	3,747·00	54·83	..	..	9,139·50	6,771·87	69·11
Do. ..	5300z	Happy Jack	..	..	298·50	185·11	..	..	..	488·00	311·83	..
Do. ..	5148z	(Milparinka)	..	..	..	..	..	..	..	545·00	73·22	..
Do. ..	5326z	Post Town	..	..	10·00	16·88	..	..	..	10·00	16·88	..
Do. ..	5211z	(Sand Queen)	..	..	957·00	1,037·80	..	..	..	3,436·75	3,639·12	2·00
Do. ..	5208z, 5211z ..	Sand Queen G.Ms., Ltd.	..	..	69·50	41·41	..	..	..	69·50	41·41	..
Do. ..	..	Voided leases	..	..	..	..	..	..	355·38	7,995·60	4,169·28	2·00
Do. ..	..	Sundry claims	..	23·00	33·00	68·30	..	..	23·00	284·25	272·47	..

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

North Coolgardie Goldfield—*continued.*

MENZIES DISTRICT—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1908.					Total Gold 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.
Goongarrie ..	..	Voided leases	..	..	..	..	..	·94	329·39	14,666·14	9,290·87	..
Do. ..	..	Sundry claims	..	..	21·00	20·59	..	27·93	22·03	373·75	299·76	..
Menzies ..	(5317z)	Adventure	..	..	37·00	7·01	..	..	..	50·00	16·07	..
Do. ..	5253z	(Africander)	..	..	..	..	..	..	..	236·50	557·54	..
Do. ..	5253z, 5267z ..	Africander leases	..	..	249·00	232·94	..	..	..	546·00	570·00	..
Do. ..	3011z	Alpha	..	..	98·00	156·05	..	..	..	104·00	165·85	..
Do. ..	5327z	Better Luck	..	..	25·00	7·21	..	..	..	25·00	7·21	..
Do. ..	5319z	Black Jack	..	..	111·00	186·04	..	..	..	130·00	213·41	..
Do. ..	2823z, (3009z, 5017z, 5018z)	Crusoe Gold Claims, Ltd.	..	..	667·50	471·69	..	..	..	32,844·00	32,806·11	1,038·47
Do. ..	5294z	(Dreadnought)	..	..	263·00	185·19	..	..	..	465·00	408·35	..
Do. ..	5294z	Dreadnought G.M. Co., N.L.	..	..	332·00	201·73	..	..	..	332·00	201·73	..
Do. ..	5215z	Dublin Castle	..	..	89·50	61·65	..	..	69·16	498·00	528·23	..
Do. ..	5323z	Eaglehawk	..	..	171·00	92·91	..	..	..	171·00	92·91	..
Do. ..	(5263z)	Emu	..	2·35	..	..	..	..	8·90	200·00	544·43	..
Do. ..	(4965z), 4966z ..	(Etrenna and Aurelia)	..	..	..	..	..	..	..	655·25	371·14	..
Do. ..	2821z, 2829z, (5203)	Florence leases	..	..	685·50	356·34	..	..	..	8,542·00	7,430·68	4·01
Do. ..	5089z	Flying Fish	..	..	64·50	62·61	..	..	..	1,011·00	1,602·94	..
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	(Goodenough leases: Westralian Machinery Corporation, Ltd.)	..	..	169·00	219·03	..	..	..	169·00	219·03	..
Do. ..	(4295z, 5304z) ..	(Heart's Content leases)	..	..	..	..	..	..	..	79·00	51·91	..
Do. ..	5257z	Hill's View	..	..	22·50	18·82	..	..	2·37	67·50	81·49	..
Do. ..	5302z	Lady Harriet	..	..	778·00	405·14	..	..	4·74	1,318·00	685·66	..
Do. ..	2820z, 3006z ..	(Lady Shenton G.M., Ltd.)	..	..	..	..	..	..	..	96,611·00	132,656·24	..
Do. ..	(5297z)	Lady Sheritz	..	..	66·00	32·78	..	..	..	171·00	205·69	..
Do. ..	2835z	Lady Sherry	..	..	161·00	46·73	..	..	4·74	702·00	454·06	..
Do. ..	2835z, 3914z ..	(Lady Sherry leases)	..	..	..	..	..	..	60·77	904·25	683·88	3·11
Do. ..	5181z	(Lincoln)	..	..	..	..	..	..	9·72	116·00	237·15	..
Do. ..	5181z, 5256z ..	Lincoln leases	..	2·78	106·00	128·67	..	..	2·78	369·00	381·51	..
Do. ..	5244z	Lion	..	6·62	63·50	107·62	..	..	12·32	202·50	390·48	..
Do. ..	5230z	Lone Hand	..	..	94·50	126·10	..	..	..	374·50	771·93	..
Do. ..	4855z, 4901z, 4977z	Lusitania leases (late Goodenough leases)	..	..	153·50	150·35	170·94	..	..	153·50	150·35	170·94
Do. ..	4987z	Maori Chief	..	..	100·00	63·16	..	..	5·44	852·25	719·05	..
Do. ..	4895z, 4944z, 5251z, 5252z	Maranora leases	..	..	281·00	862·35	2·50	..	..	3,460·30	3,878·70	2·50
Do. ..	3011z, 3031z ..	(Menzies Alpha leases, Ltd.)	..	..	..	..	..	..	..	11,807·50	16,330·18	..

Do.	..	4931z, 4934z, 4935z, 4936z, 5074z, 5075z, 5260, 5261z, (5280z)	Menzies Consolidated G.Ms., Ltd.	..	..	20,143·00	10,691·98	..	..	..	156,131·00	95,998·71	78·67
Do.	..	2820z, 3006z ..	Menzies Gold Mine leases	..	..	8,214·00	3,162·97	253·08	..	..	22,663·25	11,351·62	500·11
Do.	..	(5017z, 5018z) ..	(Menzies Gold Reefs Proprietary, Ltd.) ..	..	..	..	..	..	..	..	6,024·00	11,181·37	..
Do.	..	2835z	(Menzies Lady Sherry G.M. Co., N.L.) ..	..	..	..	..	..	10·88	..	2,208·00	2,330·60	..
Do.	..	2829z	(Menzies Limited)	..	..	..	..	..	..	..	308·00	457·23	..
Do.	..	2832z, 2844z, 3100z, 3138z, (3151z), 4966z	Menzies Mining and Exploration Corporation, Ltd.	..	..	1,678·50	1,137·31	..	..	..	19,647·95	26,269·40	..
Do.	..	5236z	Menzies Proprietary	..	..	61·00	40·63	..	..	118·44	377·50	635·34	..
Do.	..	5258z, 5298z ..	Menzies Prospecting and Development Co., N.L.	..	..	..	..	..	..	..	62·00	31·38	..
Do.	..	3151z	(Menzies United Mines, Ltd.)	..	..	..	..	..	..	..	121·85	115·14	..
Do.	..	4960z	Meriyulah	..	..	56·00	18·35	..	..	9·08	499·00	424·48	·40
Do.	..	5266z	Olive Branch	..	..	27·00	38·96	..	..	..	196·00	105·16	..
Do.	..	5278z	Pride of the Hills	..	..	..	..	..	..	1·76	35·00	101·50	..
Do.	..	5273z	Queen's Birthday	..	..	20·00	74·76	..	..	..	58·00	170·78	..
Do.	..	2836z, 4855z, 4901z, 4977z, (5275z)	(Queensland Menzies G.M. Co., N.L.) ..	..	..	..	..	..	..	..	50,321·50	76,928·28	6,486·90
Do.	..	5232z	Secret	..	..	149·50	65·14	..	..	8·03	572·50	501·56	..
Do.	..	5081z	St. Albans	..	..	113·50	204·76	..	..	8·71	322·50	395·18	..
Do.	..	3031z	Stirling	..	..	245·00	78·54	..	..	..	369·00	139·08	..
Do.	..	5289z	Sun	..	..	16·00	23·92	..	..	..	46·00	67·75	..
Do.	..	5308z	Sunday Gift	..	..	24·00	17·12	..	..	..	24·00	17·12	..
Do.	..	5318z	Surprise	..	94·31	69·00	223·67	..	..	94·31	76·00	260·53	..
Do.	..	5316z	Two Dicks	..	..	632·00	404·73	..	..	..	782·00	720·36	..
Do.	..	5066z	Victory	..	..	36·00	56·51	..	..	..	405·10	892·34	..
Do.	..	3048z	Warrior	..	..	1,372·00	538·38	..	..	..	3,474·00	2,328·76	5·00
Do.	..	3048z	(Warrior Menzies G.M. Co., N.L.) ..	..	..	..	..	..	..	..	1,165·00	731·48	..
Do.	..	2826z	Wedderburn	..	..	20·00	44·70	..	..	..	20·00	44·70	..
Do.	..	2836z	(Wedderburn : Queensland Menzies G.M. Co., N.L.)	..	..	104·50	123·92	..	..	..	104·50	123·92	..
Do.	..	2836z	(Wedderburn : Westralian Machinery Corporation, Ltd.)	..	..	122·00	171·93	..	..	..	122·00	171·93	..
Do.	..	5299z	White Rock	..	..	53·00	154·28	..	..	..	124·00	492·95	..
Do.	..	..	Voided leases	..	..	..	..	..	34·54	187·96	23,524·55	25,471·39	33·98
Do.	..	..	Sundry claims	..	14·26	2,050·00	925·02	..	6·69	255·02	6,418·25	4,062·06	..
Mt. Ida	..	5307z	(Copperfield)	..	..	..	..	..	..	..	120·00	24·89	..
Do.	..	5307z	Copperfield	..	..	349·00	468·11	..	..	..	349·00	468·11	..
Do.	..	(5306z), 5307z ..	(Copperfield leases)	..	..	..	..	..	..	..	158·00	89·34	..
Do.	..	5035z	Federation	..	..	48·00	104·47	..	..	..	1,657·00	4,290·94	..
Do.	..	5250z	Forest Belle	..	..	235·00	148·45	..	..	..	1,066·00	730·26	..
Do.	..	5243z	Mt. Ida Meteor	..	..	2,919·00	2,435·10	39·00	..	..	4,715·00	4,319·18	39·00
Do.	..	5313z	Pactolus	..	..	102·00	46·15	..	..	..	102·00	46·15	..
Do.	..	5177z	Unexpected	..	..	809·00	1,859·72	..	..	..	1,667·00	4,697·41	..
Do.	..	5290z	Unexpected South	..	..	602·00	1,285·86	26·54	..	..	1,231·00	3,256·37	35·64
Do.	..	5292z	Wild Rose	..	..	31·00	18·51	..	..	..	141·00	72·73	..
Do.	..	..	Voided leases	..	..	..	..	..	..	77·07	22,422·58	27,461·90	23·74
Do.	..	..	Sundry claims	..	..	370·00	241·79	..	..	9·57	2,675·50	1,725·94	..

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

North Coolgardie Goldfield—*continued.*

MENZIES DISTRICT—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1908.					Total Gold 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.
		From District generally :—										
		Sundry parcels treated at :										
		Goongarrie Cyanide Works	..	..	..	43·49	..	..	..	..	43·49	..
		Mt. Ida Cyanide Works	..	..	..	514·31	..	..	..	..	2,267·90	..
		Orotava Works—Kalgoorlie	..	..	..	73·38	..	..	..	..	73·38	..
		State Battery—Menzies	..	..	63·50	1,764·84	..	..	..	792·00	5,017·98	..
		State Battery—Mt. Ida	..	..	137·00	36·12	..	..	..	1,690·25	1,567·52	..
		Various Works	..	..	..	..	..	..	..	1,253·05	2,970·69	122·93
		Reported by Banks and Gold Dealers	..	..	..	..	..	881·60	195·48	..	..	..
		Total	..	**197·64**	**52,704·50**	**36,825·73**	**546·89**	**962·58**	**1,930·49**	**542,222·32**	**557,360·18**	**8,644·22**

ULARRING DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1908.					Total Gold 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 ..	(866U)	Birchmont	..	..	..	..	..	..	..	18·00	3·92	..
Do. ..	860U	Callion Gold Mining Syndicate, N.L. ..	..	..	..	..	..	..	..	307·00	109·01	..
Do. ..	(891U)	Commonwealth	..	..	364·00	200·55	..	..	..	364·00	200·55	..
Do. ..	883U	Eileen	..	..	86·50	596·15	..	..	..	86·50	596·15	..
Do. ..	459U	(Golden Pole)	..	..	..	..	..	..	..	34·00	47·51	..
Do. ..	459U, 461U, 468U, 484U, 786U	Golden Pole G.Ms., Ltd.	..	..	11,585·00	7,873·58	..	..	..	65,051·00	64,186·67	..
Do. ..	459U, 461U, 468U, 484U	(Golden Pole G.Ms., N.L.)	..	..	..	..	..	..	..	970·00	2,321·69	..
Do. ..	613U	(Great Ophir)	..	..	..	..	..	..	..	161·00	96·79	..
Do. ..	613U	(Great Ophir G.Ms., Ltd.)	..	..	..	..	..	..	3·34	5[illegible]9·10	311·83	..
Do. ..	613U, 834U, 857U, 864U, 878U, 879U	Great Ophir Gold Corporation, Ltd. ..	..	..	1,500·00	213·23	..	..	..	3,000·00	408·43	..
Do. ..	(870U)	Great Pharoah	..	..	..	..	..	..	..	14·00	·97	..
Do. ..	440U	(Homeward)	..	..	..	..	..	..	..	418·50	681·40	..
Do. ..	814U	(Homeward Bound)	..	..	..	..	..	..	..	52·00	20·35	..
Do. ..	440U, 496U, 767U, 814U	Homeward G.M. Co., Ltd.	..	..	193·50	202·67	..	..	..	933·25	687·76	118·60

Do.	440U, 496U	(Homeward leases)									139·00	146·37	
Do.	897U	Iron Cross					24·50	7·94			24·50	7·94	
Do.	902U	Jack of Hearts					58·00	24·41			58·00	24·41	
Do.	882U	Lady Ellen					160·00	182·15			177·50	218·66	
Do.	(876U)	Lady Kate									19·00	23·77	
Do.	(858U)	Light of Israel					214·00	81·05		14·81	722·50	360·89	
Do.	877U	(Melrose)					29·00	11·27			29·00	11·27	
Do.	(868U)	North Callion									9·50	9·57	
Do.	874U	(Resurgam)					253·00	408·52			415·00	763·72	
Do.	438U	(Waihi)								4·51	243·50	851·09	
Do.	496U	(Waihi Consols)									95·00	153·55	
Do.	880U	Wendouree					27·50	11·06			39·00	15·16	
Do.	438U	(Westralia Waihi G.Ms., N.L.)									1,437·00	1,526·94	58·90
Do.	438U, 792U	Westralia Waihi G.Ms., N.L.					2,766·00	3,124·12	13·37		26,192·00	14,964·26	5,225·54
Do.		Voided leases							2·93	89·01	17,070·90	12,962·32	
Do.		Sundry claims					371·00	208·73		1·30	3,404·10	1,616·74	
Mulline	179U	Bella Maie					99·00	42·27		18·00	3,415·50	3,598·06	
Do.	840U	Cooladdie					252·50	85·02			683·50	329·84	
Do.	871U	Golden Horn					88·00	193·20	1·93		182·50	402·82	1·93
Do.	894U	Great Leviathan				27·53	43·00	60·65		27·53	43·00	60·65	
Do.	139U, 235U, 555U, 670U, 671U, 679U, 732U, 862U	Lady Gladys G.M. Co., N.L.					1,737·00	1,770·69			12,522·00	13,305·96	
Do.	670U	(Lady Gladys Junction)										52·78	
Do.	139U, 235U, 555U	(Lady Gladys leases)								170·89	7,741·00	15,025·05	
Do.	892U	Mount Woolhouse					61·50	65·78			61·50	65·78	
Do.	895U	Mulline Gift					60·00	153·53			60·00	153·53	
Do.	872U	Peachtree					62·00	89·61			108·50	143·01	
Do.	324U, 600U, 730U	Riverena South leases					1,892·00	1,543·20		43·87	9,950·50	7,583·68	
Do.	123U	Riverina					1,166·00	881·36			1,568·00	1,530·19	
Do.	123U, (773U)	(Riverina G.M. Co., N. L.)									11,254·00	7,096·21	
Do.	(889U)	Tasmanian					9·00	4·94			9·00	4·94	
Do.	(853U)	Victoria South									16·50	8·66	
Do.	763U	Young Australian					88·00	115·93			588·50	1,220·20	
Do.		Voided leases								13·80	15,312·97	15,950·10	·78
Do.		Sundry claims					630·50	358·40		18·01	2,424·00	2,058·79	·69
Mulwarrie	886U	Mulwarrie				1·13	268·50	69·02		1·13	268·50	69·02	
Do.	494U	Mulwarrie Main Reef					501·00	188·63			1,772·00	2,884·90	20·81
Do.	856U	Oakley					178·00	66·46		9·43	498·50	389·63	
Do.	855U	Ularring Westralia				3·06	368·00	135·69		3·06	897·00	428·33	
Do.		Voided leases								25·60	13,074·89	20,103·84	5·49
Do.		Sundry claims				·35	206·00	153·15		5·36	767·25	465·61	
Ularring	900U	Cardinal				333·20	178·00	351·37		333·20	178·00	351·37	
Do.	(89U)	London and Coolgardie Explorers, Ltd.									2,342·10	4,042·24	
Do.	766U	Off Chance					16·50	12·15			889·50	1,147·27	
Do.	888U	Shamrock				6·01	293·50	207·14		6·01	328·50	248·97	
Do.		Voided leases								1·86	4,044·25	5,643·09	
Do.		Sundry claims					25·50	14·26			126·00	103·69	
		From District generally :—											
		Sundry parcels treated at :											
		Orotava Works—Kalgoorlie						34·21				34·21	
		State Battery—Mulline						1,221·69			442·50	9,077·95	
		State Battery—Mulwarrie						263·91			579·45	2,211·43	
		Various Works								15·82	77·25	44·75	
		Reported by Banks and Gold Dealers							1·69	·77			
		Total				**371·28**	**25,855·50**	**21,227·69**	**15·30**	**4·62**	**807·31**	**214,270·51**	**219,172·24**	**5,432·74**

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

North Coolgardie Goldfield —*continued.*

NIAGARA DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1908.					Total Gold 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 ..	673G	Desdemona	..	..	2,047·00	2,354·47	12·04	..	..	3,889·00	4,237·00	12·04
Do. ..	685G	Othello	..	1·05	210·00	50·27	..	..	5·73	265·00	82·87	..
Do. ..	664G	Rising Sun	..	..	..	..	..	..	..	246·50	143·81	..
Do. ..	692G	Sunbeam	..	..	46·00	61·44	..	..	..	46·00	61·44	..
Do. ..	..	Sundry claims	..	..	132·00	45·55	..	..	8·99	328·00	168·56	..
Kookynie ..	27G	Altona: Cosmopolitan Proprietary, Ltd. ..	..	..	145·00	142·11	..	..	..	4,396·00	4,102·63	..
Do. ..	27G, 28G	(Altona leases: Cosmopolitan Proprietary, Ltd.)	..	..	..	..	..	..	..	538·00	423·30	..
Do. ..	(427G)	Altona North Extended: Cosmopolitan Proprietary, Ltd.	..	..	..	..	..	..	..	1,037·50	1,031·15	..
Do. ..	(246G)	Altona North-West: Cosmopolitan Proprietary, Ltd.	..	..	..	..	..	..	..	58·50	99·49	..
Do. ..	31G	Altona No. 1 North: Cosmopolitan Proprietary, Ltd.	..	..	..	..	..	..	..	565·50	409·45	..
Do. ..	28G	Altona No. 1 South: Cosmopolitan Proprietary, Ltd.	..	..	68·00	72·12	..	..	..	4,651·00	4,440·26	..
Do. ..	(677G)	Axe	..	..	36·00	10·08	..	..	..	120·50	32·06	..
Do. ..	265G, 269G ..	Battery leases. Cosmopolitan Proprietary, Ltd.	..	..	..	..	..	..	..	..	47·50	..
Do. ..	316G	Canadian: Cosmopolitan Proprietary, Ltd.	..	..	..	..	..	..	..	41·20	62·63	..
Do. ..	320G	Champion	..	..	1,907·00	1,031·41	..	..	..	3,094·00	1,904·12	..
Do. ..	320G, (335G, 349G)	(Champion: Guthrie & Co., Ltd.)	..	..	..	..	..	..	..	2,705·00	1,556·16	..
Do. ..	320G, (335G, 347G)	(Champion leases)	..	..	..	..	..	..	..	2,157·50	2,554·15	..
Do. ..	320G	(Champion Proprietary, Ltd.)	..	..	..	..	..	..	..	36,310·00	18,381·09	425·32
Do. ..	20G, 87G, (94G, 338G, 438G, 533G), 534G	(Cumberland Niagara G.Ms., Ltd.)	..	..	..	..	..	..	..	53,770·00	26,609·77	..
Do. ..	20G, 87G, (94G, 338G, 438G, 533G), 534G	(Cumberland Niagara G.Ms., Ltd.)	..	..	..	..	..	..	..	11,082·00	5,179·17	..
Do. ..	194G	(Diamontina)	..	..	..	..	..	..	..	117·05	118·02	..
Do. ..	194G	Diamontina: Cosmopolitan Proprietary, Ltd.	..	..	..	..	..	..	..	83·50	84·65	..
Do. ..	26G	Englishman: Cosmopolitan Proprietary, Ltd.	..	..	14,305·00	10,333·36	120·94	..	..	534,782·62	256,504·35	4,900·75
Do. ..	647G	(Happy-go-Lucky)	..	..	..	..	..	..	..	106·50	57·78	..
Do. ..	647G	Happy-go-Lucky: Mulwarrie Exploration Co., Ltd.	..	..	1,048·00	518·46	..	..	..	1,630·00	803·75	..
Do. ..	24G	Irishman: Cosmopolitan Proprietary, Ltd.	..	..	9·50	5·64	..	..	..	44·50	44·14	..
Do. ..	669G	Lubra	..	..	101·00	40·51	..	..	..	1,253·50	468·86	..
Do. ..	(662G)	May-be	..	..	..	..	..	..	..	2,170·00	752·34	..
Do. ..	25G	Scotchman: Cosmopolitan Proprietary, Ltd.	..	..	27·50	14·21	..	..	..	508·00	241·62	..
Do. ..	(663G)	Victoria	..	..	5·50	6·34	..	..	..	98·00	126·40	..
Do. ..	23G	Welchman: No. 1 Cosmopolitan Proprietary, Ltd.	..	..	..	..	..	..	..	50·50	78·12	..

Do.	22G	Welshman: Cosmopolitan Proprietary, Ltd.	..	..	..	..	..	..	..	202·50	179·54	..
Do.	(469G)	Whale	..	..	29·00	19·37	..	..	189·33	1,952·00	2,599·15	..
Do.	..	Voided leases	..	..	..	..	..	..	67·15	36,048·60	35,181·33	..
Do.	..	Sundry claims	11·90	..	146·00	38·30	..	30·59	74·79	2,583·75	1,722·42	..
Niagara	(686G)	Big Tom	..	..	..	..	..	..	..	20·00	11·90	..
Do.	586G	Challenge	..	..	77·50	117·60	..	..	..	969·50	812·70	..
Do.	518G, 529G, 577G	Eagle Hawk Heather Co., N.L.	..	..	596·00	233·51	..	..	..	6,650·00	2,423·32	..
Do.	419G, 461G	(Hannans Main Reef G.M. Co., Ltd.)	..	..	656·00	535·73	..	..	..	11,119·00	5,910·89	..
Do.	661G	Justice	..	..	84·00	114·27	..	..	..	348·00	259·17	..
Do.	(678G)	Latrobe	..	..	..	..	..	..	..	107·50	71·34	..
Do.	314G	Lily	..	..	21·00	32·79	..	..	13·90	580·00	1,224·22	..
Do.	(445G, 581G)	Mara Mines, Ltd.	..	..	33·00	43·20	..	..	..	33·00	43·20	..
Do.	571G	May	..	..	287·00	252·15	..	..	..	1,562·00	1,415·50	..
Do.	442G	Mikado	..	..	10·00	9·31	..	..	..	201·00	267·57	..
Do.	518G	(Missing Link)	..	..	..	..	..	..	23·93	431·00	563·27	..
Do.	419G	(Opal)	..	..	..	..	..	..	..	552·50	490·53	..
Do.	419G	(Opal: Hannans Main Reef G.M. Co., Ltd.)	..	..	..	..	..	..	..	119·00	70·99	..
Do.	419G, 461G, 679G, 688G, 699G	Orion Mines. Ltd.	..	..	3,373·00	2,535·61	..	..	..	3,373·00	2,535·61	..
Do.	461G	(Pearl: Hannans Main Reef G.M. Co., Ltd.)	..	..	..	..	..	..	..	398·00	224·38	..
Do.	693G	Perseverance	..	..	69·00	61·45	..	..	..	69·00	61·45	..
Do.	674G	Pine Lodge	..	..	138·00	153·94	..	..	..	291·00	269·95	..
Do.	(445G)	(Try Again)	..	..	..	..	..	..	..	653·50	536·15	..
Do.	(445G, 581G)	(Try Again leases)	..	..	..	..	..	..	..	159·00	295·41	..
Do.	606G	Waratah	..	..	41·00	28·99	..	..	..	338·00	548·84	..
Do.	505G, 611G	W. E. G. leases	..	..	955·00	273·17	..	..	..	5,933·00	4,847·45	..
Do.	611G	(W. E. G. Extended)	..	..	..	..	..	..	..	85·00	51·32	..
Do.	613G	White Cross	..	..	155·00	113·64	..	..	2·64	826·50	475·73	..
Do.	..	Voided leases	..	..	..	..	..	..	50·43	15,652·50	11,357·84	..
Do.	..	Sundry claims	..	..	938·00	534·94	..	..	25·30	5,145·75	3,180·50	..
Tampa	278G	(Fortuna)	..	..	..	..	..	..	..	109·00	187·42	..
Do.	278G, 349G	Fortuna leases	..	..	127·00	194·57	..	..	..	1,228·50	1,661·29	..
Do.	349G	(Grafter)	..	..	..	..	..	..	..	1,751·00	2,487·00	..
Do.	682G	Lady Helen	..	..	122·00	43·96	..	..	·94	284·00	136·98	..
Do.	692G	Sunbeam	..	..	30·00	66·79	..	..	..	30·00	66·79	..
Do.	..	Voided leases	..	..	..	..	..	..	13·92	13,328·05	8,735·51	..
Do.	..	Sundry claims	5·07	..	121·00	70·19	..	5·07	..	1,636·50	1,096·55	..
		From District generally :—										
	Sundry parcels treated at:											
	Cumberland Cyanide Works	..	..	..	74·13	..	..	..	53·00	569·04	..
	Eagle Hawk Heather Works	..	..	..	29·63	..	..	..	128·00	862·26	..
	Grafter Battery	..	..	..	85·09	..	..	..	82·00	209·74	..
	State Battery—Niagara	..	..	70·00	1,072·07	..	..	..	556·50	4,731·29	..
	Various Works	..	..	..	..	..	..	..	283·00	4,697·88	41·17
	Reported by Banks and Gold Dealers	..	39·51	..	..	..	919·74	775·74	..	..	..
	Total	..	**53·48**	**1·05**	**28,166·00**	**21,420·37**	**132·98**	**955·40**	**1,252·79**	**782,018·52**	**433,880·06**	**5,379·28**

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

North Coolgardie Goldfield—*continued.*

YERILLA DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1908.					Total Gold 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. ..	(892R)	Glory Quayle	..	..	15·00	7·96	..	..	..	15·00	7·96	..
Do. ..	(847R)	Jack Wren	..	..	93·00	91·50	..	..	..	271·50	250·88	..
Do. ..	401R	(Neta)	..	..	..	..	..	..	..	4,280·50	5,466·29	..
Do. ..	418R	(Neta Extended)	..	..	..	..	..	..	..	1,182·50	1,421·81	..
Do. ..	401R, 500R ..	Neta leases	..	..	430·00	629·18	..	..	..	5,217·00	9,968·12	34·58
Do. ..	(872R)	Old Edjudina	..	..	..	..	..	..	..	24·00	13·73	..
Do. ..	539R	Senate	..	..	847·00	1,037·04	..	..	..	3,672·00	6,875·93	..
Do. ..	..	Voided leases	..	..	..	..	..	..	3·65	7,751·25	6,645·46	3·21
Do. ..	..	Sundry claims	..	..	70·00	53·88	..	..	..	1,182·00	1,010·09	..
Eucalyptus ..	..	Voided leases	..	..	..	..	..	..	2,864·77	1,351·35	3,020·68	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	367·50	170·50	194·49	..
Linden ..	864R	Bell	..	..	108·50	39·45	..	..	..	108·50	39·45	..
Do. ..	901R	Carmen	..	..	126·00	39·27	..	..	..	126·00	39·27	..
Do. ..	871R	Democrat	..	..	92·50	598·17	..	..	..	92·50	598·17	..
Do. ..	915R	Devon Deep Levels	..	..	62·50	35·75	..	..	..	62·50	35·75	..
Do. ..	898R	Dreadnought	..	..	77·00	85·33	..	..	..	77·00	85·33	..
Do. ..	888R	Golden Ridge	..	..	29·00	11·20	..	..	..	29·00	11·20	..
Do. ..	914R	Green Hills	..	..	95·50	102·46	..	..	..	95·50	102·46	..
Do. ..	911R	Kangaroo	..	..	42·00	15·89	..	..	..	42·00	15·89	..
Do. ..	921R	Jack and Doris	..	..	28·00	66·65	..	..	..	28·00	66·65	..
Do. ..	917R	Keystone	..	..	52·00	23·34	..	..	..	52·00	23·34	..
Do. ..	861R	Lady Ethel	..	..	98·50	83·42	..	..	8·12	120·00	118·73	..
Do. ..	(877R)	Moree	..	..	10·00	6·17	..	..	..	10·00	6·17	..
Do. ..	881R	Oldfield Proprietary	..	..	33·00	129·22	..	..	..	33·00	129·22	..
Do. ..	869R	Rock	..	..	5·00	44·58	..	..	5·63	5·00	44·58	..
Do. ..	862R	Wimmera	..	..	47·00	36·19	..	..	..	47·00	36·19	..
Do. ..	..	Voided leases	..	..	..	..	..	..	453·65	6,214·40	10,095·36	..
Do. ..	..	Sundry claims	..	..	801·00	646·30	..	..	17·98	1,153·00	985·80	..
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	..	..	1,493·50	1,028·23	..	..	..	3,510·90	3,358·60	..
Do. ..	886R	Anglo-Saxon North	..	..	13·50	6·75	..	..	..	67·00	42·84	..
Do. ..	(878R)	Forgotten	..	..	33·50	26·08	..	..	..	61·50	45·35	..
Do. ..	(816R)	(Harbour Light)	..	..	..	..	..	..	..	123·70	187·84	..
Do. ..	(816R, 817R) ..	Harbour Light leases	..	..	92·50	59·53	..	..	..	222·00	92·56	..
Do. ..	906R	King Pin	..	..	337·50	495·35	..	..	..	337·50	495·35	..

Do.	(845R)	Lilly of Australia	..	..	..	..	..	..	2·60	300·50	244·24	..
Do.	(863R)	Pingin North	..	..	63·00	67·51	..	..	..	161·50	155·62	..
Do.	(754R)	Pinjin King	..	..	316·00	156·59	..	..	10·45	1,686·50	883·53	..
Do.	873R	Poverty Hill	..	..	22·50	13·10	..	..	..	36·00	21·42	..
Do.		Voided leases	..	..	..	..	..	..	33·94	1,989·20	1,408·47	..
Do.		Sundry claims	..	..	348·50	204·59	..	..	7·46	1,449·35	1,210·01	..
Yarri ..	788R	Dostmund	..	..	48·00	156·18	..	..	..	287·50	421·92	..
Do.	(857R)	Golden Dyke	..	..	27·00	19·54	..	..	..	158·00	94·28	..
Do.	(766R)	Hidden Treasure	..	..	34·50	5·45	..	..	..	698·50	325·12	..
Do.	882R	Quartz Ridge	..	..	25·50	20·40	..	..	..	38·50	45·36	..
Do.	581R	Wallaby	..	..	773·00	307·42	..	..	41·36	5,232·00	2,607·76	..
Do.	580R	(Wallaby Central)	..	..	..	..	..	..	..	2,411·00	2,335·30	..
Do.	580R	Wallaby Central : Lake View South, Ltd.	..	..	1,226·00	618·53	..	..	..	7,447·00	3,702·03	..
Do.	919R	Wallaby North	..	..	255·00	57·74	..	..	..	255·00	57·74	..
Do.	737R	Yarrie South	..	..	289·50	239·99	..	..	..	674·50	913·63	..
Do.		Voided leases	..	..	..	..	..	6·30	30·81	3,608·75	2,386·20	..
Do.		Sundry claims	..	..	1,032·50	524·27	..	..	3·31	2,366·00	1,350·13	..
Yerilla ..	850R	Central East	..	..	148·00	105·96	..	..	..	234·00	162·00	..
Do.	867R	Central West	..	4·59	..	..	..	..	4·59	..	..	..
Do.	860R	Rokewood	..	..	117·00	115·34	..	..	·88	117·00	115·34	..
Do.	900R	Roscommon	..	..	10·00	4·25	..	..	..	10·00	4·25	..
Do.	752R	Viola	..	..	25·00	6·80	..	..	..	376·00	222·31	2·82
Do.	684R	Yerilla Central	..	..	..	..	..	..	..	1,551·00	2,383·20	..
Do.	851R	Yerilla King	..	..	384·00	211·38	..	..	..	805·00	440·93	..
Do.		Voided leases	..	..	..	..	..	..	3,065·18	4,484·46	2,794·44	8·54
Do.		Sundry claims	..	..	103·50	70·16	..	19·30	8·98	1,411·00	795·71	..
Yilgangie ..	854R	Mount Yilgangie	..	..	..	..	..	..	..	15·00	7·25	..
Do.		Voided leases	..	..	..	..	..	..	..	203·75	288·20	..
Do.		Sundry claims	..	..	..	..	..	121·67	19·14	25·50	46·17	..
Yundamindera	(825R)	E. I. C.	..	..	..	..	..	..	..	33·00	37·16	..
Do.	479R	Golden Treasure South	..	..	475·00	260·16	..	..	..	475·00	260·16	..
Do.	908R	Great Bonaparte	..	..	383·00	205·93	..	..	..	383·00	205·93	..
Do.	457R, 479R, 493R	(London and Hamburg Gold Recovery Co., Ltd.)	..	..	..	..	..	..	..	1,942·00	943·02	..
Do.	541R	(Maori Queen)	..	..	..	..	..	..	..	1,063·00	1,569·26	..
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.)	..	..	902·00	1,088·03	..	..	..	40,693·85	21,307·98	..
Do.	450R, 456R, 457R	Potosi leases	..	..	87·00	245·89	..	..	..	87·00	245·89	..
Do.	899R	Queen of Sheba	..	..	134·00	93·35	..	..	..	134·00	93·35	..
Do.	466R	(Queen of the May)	..	..	..	..	..	..	..	1,810·60	1,719·92	..
Do.	466R	Queen of the May	..	..	202·00	143·86	..	..	..	202·00	143·86	..
Do.	889R	Success	..	..	..	..	..	..	..	28·00	28·78	..
Do.	493R, 541R	Treasure East leases	..	..	103·00	59·85	..	..	..	103·00	59·85	..
Do.		Voided leases	..	..	..	..	..	..	71·37	5,425·65	7,610·43	..
Do.		Sundry claims	..	..	134·00	102·77	..	..	1·37	1,645·00	1,340·61	..
	From District generally :—											
	Sundry parcels treated at :											
	State Battery—Linden	..	..	..	72·00	155·63	..	..	..	72·00	155·63	..
	State Battery—Pinjin	..	..	..	..	162·97	..	..	..	109·00	706·63	..
	State Battery—Yarri	..	..	..	21·00	324·23	..	..	..	218·00	1,595·67	3·50
	Various Works	..	..	..	..	..	..	2·17	..	732·85	3,300·52	..
	Reported by Banks and Gold Dealers	..	..	..	..	..	..	870·49	154·74	..	..	..
	Total	..	..	**4·59**	**12,894·50**	**11,146·76**	..	**1,019·93**	**7,195·22**	**142,515·78**	**125,913·54**	**52·65**

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 1908.					Total Gold 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 ..	1365w	Argyle	..	..	73·50	61·99	..	..	..	73·50	61·99	..
Do. ..	1278w	Baden Powell	..	..	60·00	26·84	..	..	..	451·50	578·34	..
Do. ..	(1329w)	Dulcie Maud	..	..	9·00	31·92	..	..	..	9·00	126·42	..
Do. ..	1369w	Eureka	..	..	117·00	22·85	..	..	..	117·00	22·85	..
Do. ..	(1337w)	Howden	..	..	..	..	..	..	..	..	192·83	..
Do. ..	1272w	Mt. Pleasant	..	..	..	1·40	..	..	..	..	1·40	..
Do. ..	(959w, 968w, 1045w)	New Slug Hill G.M., Co., Ltd.	..	..	200·00	341·11	..	..	..	12,850·97	9,374·71	105·36
Do. ..	(1327w)	Pearl	..	..	74·50	3·85	..	..	..	272·50	57·70	..
Do. ..	(959w, 968w, 1045w)	(Slug Hill (Pride of the Hill) G.M. Co., Ltd.)	..	..	..	..	..	..	6·24	13,265·00	10,632·96	98·24
Do. ..	(1270w)	(Windanya)	..	..	..	..	..	..	..	108·00	37·48	..
Do. ..	(1190w)	Wycheproof	..	..	34·10	35·65	..	..	..	573·35	793·68	..
Do. ..	1272w	(Zoroastrian, Ltd.)	..	..	139·00	19·61	..	..	..	946·00	417·85	..
Do. ..	..	Voided leases	..	..	..	..	..	..	250·44	41,853·34	26,993·55	..
Do. ..	..	Sundry claims	..	..	525·00	325·56	..	..	..	1,655·58	1,094·00	..
Black Flag ..	1331w	Federal Flag	..	..	12·00	11·53	..	..	..	70·00	60·72	..
Do. ..	1333w	First Chance	..	..	56·00	18·64	..	..	..	56·00	18·64	..
Do. ..	1177w	(King Edward)	..	..	..	..	..	..	..	172·00	429·74	..
Do. ..	1177w	King Edward	..	1·96	36·00	94·57	..	..	1·96	486·70	355·83	..
Do. ..	1177w, (1182w, 1208w)	(King Edward leases)	..	..	..	..	..	..	..	370·86	1,293·21	..
Do. ..	(47w, 48w, 49w)	Lady Bountiful G.M. Co., N.L.	..	..	..	..	..	..	..	7,559·15	10,543·09	..
Do. ..	1281w	Last Chance	..	..	234·00	98·06	..	..	..	431·00	344·52	..
Do. ..	..	Voided leases	..	..	..	..	..	27·81	340·64	29,776·16	10,294·54	..
Do. ..	..	Sundry claims	..	9·30	203·25	175·50	..	589·61	114·73	1,717·95	1,614·24	..
Broad Arrow	56w, 75w, 1259w	Broad Arrow Consols G.M. Co., N.L. ..	..	..	578·00	257·06	..	..	..	10,220·50	5,469·84	..
Do. ..	3w, 138w, 139w, 173w, 1334w	Claremont G.Ms., Ltd.	..	..	1,870·00	1,933·49	..	..	..	3,721·00	2,601·52	..
Do. ..	1334w	Claremont	..	..	118·00	33·50	..	..	..	118·00	33·50	..
Do. ..	1209w	Dixie	..	..	60·00	71·98	..	..	60·72	409·35	410·95	..
Do. ..	(1343w)	Duke	..	..	50·00	27·54	..	..	..	144·00	51·55	..
Do. ..	3w, 138w, 139w, 173w	(Golden Arrow Mine, Ltd.)	..	..	..	..	..	..	..	35,878·75	20,187·46	15·85
Do. ..	1342w	Golden Buckle North	..	..	145·50	57·92	..	..	..	145·50	57·92	..
Do. ..	56w, 75w ..	(Liberty leases)	..	..	..	..	..	..	..	298·90	375·35	..
Do. ..	1353w	New Devon	..	91·93	10·00	14·88	..	..	91·93	10·00	14·88	..
Do. ..	1256w	Talbot	..	..	146·00	225·67	..	..	..	800·00	893·33	..
Do. ..	1357w	Tara	..	..	24·00	41·20	..	..	..	24·00	41·20	..
Do. ..	643w	Victory	..	38·84	278·00	436·77	..	..	74·71	1,277·00	1,487·66	..
Do. ..	..	Voided leases	..	..	..	..	..	54·85	377·03	55,958·16	59,677·64	..
Do. ..	..	Sundry claims	111·99	29·13	639·00	255·82	..	596·45	213·11	5,220·00	2,870·36	..
Paddington ..	1355w	Golden Block	..	..	286·00	96·13	..	..	..	286·00	96·13	..

Do.	(1223w), 1262w	Kalgurli G.M. Syndicate, Ltd.	..	..	..	..	..	..	..	..	645·00	374·73	..
Do.	(1223w)	(Kalgurli Syndicate)	..	..	..	..	..	..	..	..	26·00	52·31	..
Do.	45w	Mount Corlic	..	4·37	1,188·00	335·29	..	17·00	4·37	8,230·75	3,711·55	..
Do.	53w, 57w, 60w, 61w, 128w, 1050w	New Standard Exploration Co., Ltd.	..	1·24	..	6,164·00	2,743·98	..	5,240·81	..	128,169·00	59,545·22	18·96
Do.	(1349w)	Octagon	..	..	..	149·50	23·98	..	..	..	149·50	23·98	..
Do.	(1221w)	Pakeha	..	..	..	..	..	..	..	..	674·50	378·54	..
Do.	1351w	Pakeha	..	..	..	226·00	28·09	..	..	..	226·00	28·09	..
Do.	1356w	Recovery	..	..	..	149·00	68·22	..	..	..	149·00	68·22	..
Do.	1047w	Star of W.A.	..	37·68	401·00	245·36	..	..	194·40	9,927·00	8,306·30	..
Do.	1352w	Unexpected	..	..	1,885·00	362·68	..	..	..	1,885·00	362·68	..
Do.	..	Voided leases	..	..	..	..	..	..	..	5,494·90	2,655·60	..
Do.	..	Sundry claims	..	..	115·00	28·61	..	1,570·88	..	8,406·79	5,147·82	..
Siberia	1316w	Band of Hope	..	..	24·00	4·23	..	..	..	45·00	18·07	..
Do.	1345w	Cave Hill	..	..	210·00	1,527·07	..	..	..	210·00	1,527·07	..
Do.	(1362w)	Colossus	..	..	140·00	14·42	..	..	..	140·00	14·42	..
Do.	(1284w)	Denver City	..	..	..	..	..	..	..	4·00	7·08	..
Do.	1347w	Expectation	..	..	74·00	85·95	..	..	..	74·00	85·95	..
Do.	(1344w)	Gimblet Extended	..	..	17·00	3·35	..	..	..	17·00	3·35	..
Do.	1338w	Gimblet West	..	..	357·00	245·73	..	..	..	428·00	294·60	..
Do.	1286w	Golden	..	31·95	21·50	44·48	..	..	35·71	89·76	204·57	..
Do.	1358w	Golden Mount	..	4·26	129·00	77·62	..	..	4·26	129·00	77·62	..
Do.	1292w	Invincible	..	..	317·00	81·86	..	..	..	971·00	282·54	..
Do.	1289w, 1308w	Lady Evelyn leases	..	..	893·25	730·49	..	..	..	1,698·25	1,375·63	..
Do.	1367w	Lochiel	..	8·55	..	..	..	..	8·55	..	..	..
Do.	1322w	Lone Hand	..	..	37·00	25·64	..	..	20·66	165·00	99·50	..
Do.	1293w	Mexico	..	..	112·00	230·01	..	..	..	236·00	507·66	..
Do.	1291w	Missouri	..	3·80	220·50	73·86	..	..	8·64	612·50	208·47	..
Do.	1348w	Old Identities	..	..	94·00	79·69	..	..	..	94·00	79·69	..
Do.	(1335w)	Ora Banda Boulder	..	..	..	..	..	..	..	8·00	1·77	..
Do.	1288w, (1303w)	Orabanda leases	..	..	1,733·00	245·54	..	..	..	8,201·00	1,771·77	..
Do.	(1295w)	Ora Banda Nellie	..	..	170·00	43·30	..	..	..	638·00	174·31	..
Do.	1294w	Palmerston	..	..	..	..	..	..	24·20	..	..	..
Do.	1299w	Palmerston North	..	..	437·00	55·43	..	..	..	505·00	61·18	..
Do.	1300w	Pole	..	..	12·00	208·16	..	..	..	102·00	639·21	..
Do.	(1306w)	Port Arthur	..	..	..	..	..	..	..	37·50	19·66	..
Do.	1336w	Slippery Gimblet	..	..	2,963·00	832·93	..	..	..	3,566·50	1,166·24	..
Do.	(1332w)	Try Again	..	..	..	..	..	..	32·23	..	..	..
Do.	1283w	Waverley	..	..	481·00	107·58	..	..	..	851·00	264·57	..
Do.	..	Voided leases	..	..	..	..	..	..	..	369·50	102·07	..
Do.	..	Sundry claims	..	16·03	972·00	1,556·85	..	35·48	18·04	2,162·75	2,719·62	..
Smithfield	..	Voided leases	..	..	..	..	..	..	..	1,027·00	200·90	..
Do.	..	Sundry claims	..	..	..	..	..	..	..	20·00	9·54	..
		From District generally :—										
	Sundry parcels treated at :											
		Allsopp & Howell's Works	..	..	..	6·70	271·76	..	..	..	6·70	271·76
		Braybrook's Cyanide Works	..	..	..	202·28	..	..	..	..	427·54	..
		Broad Arrow Consols Works	..	..	..	77·88	..	..	..	..	77·88	..
		Carter's Venture Works	..	·91	81·50	412·60	..	·91	..	81·50	1,372·82	..
		New Arrow Proprietary Works	..	..	..	325·16	..	299·35	..	5,229·08	4,534·23	..
		Ora Banda Works	..	..	..	420·49	..	..	..	77·00	562·66	..
		Paddington Consols Works	..	..	9·75	775·43	..	..	..	9·75	5,866·89	..
		Regan's Works	..	..	27·00	16·42	..	..	..	27·00	58·75	..
		Vettersburg Cyanide Works	..	..	..	19·40	..	..	..	..	19·40	..
		Zoroastrian Works	..	..	35·00	457·46	..	..	..	53·00	457·89	..
		Various Works	..	..	..	..	..	1,970·91	..	11,288·85	11,041·33	7·09
	Reported by Banks and Gold Dealers		..	492·77	..	..	..	6,653·05	..	..	..	..
		Total	..	**606·91**	**277·80**	**25,822·85**	**17,545·26**	**271·76**	**17,057·11**	**1,882·57**	**430,478·10**	**286,607·77**	**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 1908.					Total Gold 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	..	..	1,075·00	200·01	..	..	3·53	2,415·00	1,103·70	..
Do. ..	878x	Camellia Extended	..	..	286·00	321·06	..	..	..	522·00	565·30	..
Do. ..	(1181x)	Gem	..	..	..	48·50	..	..	..	122·50	188·10	..
Do. ..	(1188x)	North Brilliant	..	..	..	..	..	..	..	143·00	76·85	..
Do. ..	..	Voided leases	..	..	..	..	..	..	35·20	961·00	706·98	·07
Do. ..	..	Sundry claims	..	..	..	..	..	24·70	245·94	858·75	662·21	..
Gindalbie ..	1047x	Eclipse	..	..	100·00	70·10	..	..	..	523·00	539·35	..
Do. ..	1123x	Gindalbie	..	..	31·00	14·08	..	..	..	101·00	36·97	..
Do. ..	1191x	Jubilee	..	..	..	..	..	..	..	141·00	45·26	..
Do. ..	(1127x)	Monkland	..	..	..	..	..	..	..	436·00	319·01	..
Do. ..	(1236x)	Myrtle	..	..	4·00	16·13	..	..	..	4·00	16·13	..
Do. ..	1192x	Occidental	..	..	24·00	70·33	..	..	..	105·50	282·62	..
Do. ..	392x, 394x, 396x, 1048x, 1207x	Queen Margaret G.M. Co., Ltd.	..	..	4,583·78	2,929·60	38·31	..	..	24,800·03	24,248·06	38·31
Do. ..	392x, 394x, 396x	(South Gippsland leases)	..	..	..	..	..	..	..	3,697·00	3,805·05	..
Do. ..	1174	United	..	..	375·50	311·34	..	..	..	763·50	1,415·00	..
Do. ..	..	Voided leases	..	..	..	..	..	..	19·94	2,467·55	2,457·78	..
Do. ..	..	Sundry claims	..	..	103·00	56·97	..	..	674·82	727·75	818·28	..
Gordon ..	891x	(Sirdar)	..	..	62·00	146·93	..	..	32·60	168·50	1,319·35	..
Do. ..	891x	Sirdar G.M. Co., Ltd.	..	..	34·00	43·83	..	..	..	34·00	43·83	..
Do. ..	..	Voided leases	..	..	..	..	..	..	205·17	1,145·80	932·67	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	54·65	586·50	525·61	..
Kanowna ..	35x, 64x, (345x) ..	Ballarat and Prince Oscar Co., Ltd. ..	..	6·95	595·00	335·59	..	3·59	42·37	5,776·00	2,182·58	204·84
Do. ..	35x, 64x, (345x) ..	(Ballarat and Prince Oscar Syndicate, Ltd.)	..	..	..	..	..	..	47·79	5,497·00	2,926·09	..
Do. ..	(1193x)	Budgerie	..	..	..	..	..	..	33·15	13·50	37·42	..
Do. ..	1160x	Bulong United	..	25·82	59·00	24·88	..	..	40·51	204·00	213·31	..
Do. ..	367x	(Commonwealth G.Ms., Ltd.)	..	..	..	..	..	..	..	4,266·00	1,685·13	..
Do. ..	1151x	Evelyn Amalgamated	..	8·23	646·50	107·33	..	..	18·22	2,105·50	359·61	..
Do. ..	(1206x)	Gentle Annie	..	..	..	..	..	..	1·58	..	..	..
Do. ..	1062x	Gentle Polly	..	1·31	1,282·50	2,043·03	93·00	..	23·82	3,930·75	9,998·13	359·00
Do. ..	83x, (180x, 200x), 201x	(Golden Cement claims)	..	..	..	..	..	..	..	5,848·00	2,570·51	..
Do. ..	55x	Golden Crown	..	..	628·50	389·45	..	..	290·71	1,956·75	1,477·58	..
Do. ..	367x, (1036x, 1042x)	(Golden Valley leases)	..	..	..	..	..	..	..	213·00	80·31	..

Do.	..	367x, (1036x, 1042x)	(Golden Valley Mines of W.A., Ltd.)	..	..	..	..	..	..	..	..	..	7,602·00	4,688·97	..
Do.	..	(1139x)	Golden Wonder	..	..	3·97	352·50	100·91	..	..	11·91	1,024·00	578·12	..
Do.	..	(1024x)	Havilah	..	..	..	113·50	16·98	..	..	5·54	762·50	314·77	..
Do.	..	(1186x) ..	Home Signal	..	..	..	..	..	..	..	91·85	..	..	..
Do.	..	(1219x)	Kangaroo	..	..	..	24·00	7·88	..	..	..	24·00	7·88	..
Do.	..	1019x	Kanowna	..	..	..	484·00	255·70	..	..	561·91	3,947·00	7,089·06	..
Do.	..	153x, (807x) ..	(Kanowna Acquisition Syndicate, Ltd.)	..	..	..	..	..	..	..	..	3,326·50	1,469·83	..
Do.	..	153x, (807x) ..	(Kanowna Consolidated G.Ms., Ltd.)	..	..	..	..	..	..	..	..	1,164·00	784·38	..
Do.	..	1194x	Kanowna Low Grade	..	..	..	4,900·00	215·33	..	..	..	5,341·00	263·36	..
Do.	..	1055x	Kintore	..	..	..	183·00	204·49	..	..	..	1,167·75	1,901·75	..
Do.	..	1217x	Lady Syble	..	..	..	104·00	25·51	..	..	..	104·00	25·51	..
Do.	..	52x	Lake View South G.M. (W.A.), Ltd.	..	..	..	1,087·50	525·42	..	..	..	23,330·15	10,016·33	24·33
Do.	..	18x, 19x	(Lily Australis G.Ms., Ltd.)	..	..	..	..	..	..	..	..	197·00	119·18	..
Do.	..	(187x, 456x) ..	London and Coolgardie Explorers, Ltd.	..	..	..	28·50	11·74	..	..	17·69	25,189·16	9,329·40	..
Do.	..	(1226x)	Lydon's Dream	..	..	..	10·00	5·05	..	..	..	10·00	5·05	..
Do.	..	1231x	Lydon's Dream	..	..	..	14·50	7·00	..	..	..	14·50	7·00	..
Do.	..	1076x	Madame Melba	..	..	34·43	383·00	329·11	..	..	35·87	1,610·50	2,614·50	18·00
Do.	..	1154x	Minerva	..	..	..	262·50	118·44	..	..	26·01	1,229·00	341·78	..
Do.	..	1202x	Monte Christo	..	..	..	236·50	166·74	..	..	5·56	370·50	270·03	..
Do.	..	55x	(New Standard Exploration Co., Ltd.)	..	..	..	..	..	..	..	11·49	2,128·50	2,740·13	..
Do.	..	1196x	North Lead Lode	..	..	..	9·00	3·58	..	..	..	244·00	52·53	..
Do.	..	1152x	North Lead Lode Consols ..	..	..	..	416·00	78·42	..	..	5·64	1,769·50	334·53	..
Do.	..	3x, 18x, 19x, 46x, 60x, 81x, 938x, 974x, 1035x, 1132x, 1135x	North White Feather G.Ms., Ltd. ..	..	..	..	24,426·00	9,775·89	..	..	..	115,787·75	62,244·82	159·19
Do.	..	153x	Q.E.D.	..	..	..	863·50	335·81	..	..	12·21	1,882·00	785·81	..
Do.	..	1209x	Red Streak	..	..	42·81	556·00	172·31	..	..	83·90	758·00	237·22	..
Do.	..	1220x	Red, White, and Blue	..	..	88·98	196·00	49·31	..	..	88·98	196·00	49·31	..
Do.	..	52x	(Robinson G.Ms., Ltd.)	..	..	..	..	..	..	..	..	16,478·75	16,213·33	..
Do.	..	1214x	Rollo's Reward	..	..	..	..	..	..	..	..	2·00	·44	..
Do.	..	(1083x)	Scotia	..	..	..	..	..	..	..	..	59·00	9·90	..
Do.	..	1242x	Scotia	..	..	..	22·00	10·07	..	..	..	22·00	10·07	..
Do.	..	(1208x)	Signal No. 3	..	..	..	..	..	..	..	..	45·00	16·94	..
Do.	..	1121x	Sunbeam	..	..	..	374·50	213·80	..	..	..	1,365·50	1,197·57	..
Do.	..	(1240x)	Swift	..	..	..	10·00	·84	..	..	..	10·00	·84	..
Do.	..	1232x	Try Again	..	..	..	157·00	43·54	..	..	..	157·00	43·54	..
Do.	..	153x	(Waldon's Find G.M., Ltd.)	..	..	..	..	..	..	..	..	1,076·05	904·43	..
Do.	..	9x, 10x, 12x, 13x, 14x, 15x, 72x, 83x, (180x, 200x), 201x, (431x), 855x, 1001x, 1012x, 1103x, (1107x), 1108x, (1109x), 1249x	White Feather Main Reefs (1906), Ltd. ..	..	..	12·09	5,107·50	2,162·71	..	..	12·09	13,697·50	4,122·76	..
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, 72x, 83x, (180x, 200x), 201x, (431x),	(White Feather Reward, Ltd.) ..	..	..	..	..	..	..	..	..	42,767·75	22,255·23	14·80
Do.	..	367x	Wood's Find	..	..	..	501·00	225·09	..	..	..	1,947·50	963·41	..
Do.	..	..	Voided leases	..	..	..	..	..	..	..	588·39	27,231·10	18,145·26	..
Do.	..	..	Sundry claims	..	..	170·27	315·50	199·93	..	88·57	496·60	8,939·86	4,612·51	..

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 1908.					TOTAL GOLD 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 ..	1228x	Lady Pratt	..	78·43	10·00	26·24	..	..	78·43	10·00	26·24	..
Do. ..	1213x	Mount Jewell	..	15·74	9·00	10·10	..	..	15·74	9·00	10·10	..
Do. ..	..	Voided leases	..	..	..	..	..	..	977·20	3,002·50	1,661·43	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	13·29	106·00	160·20	..
Six Mile ..	..	Voided leases	..	..	..	..	..	..	1,590·37	559·00	767·72	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	31·44	105·50	83·08	..
		From District generally :—										
		Sundry parcels treated at :										
		Last Chance Cyanide Works	..	..	..	715·34	..	..	..	..	787·34	..
		Middleton's Cyanide Works	..	..	..	225·12	..	..	..	..	1,765·01	..
		Morrison's Cyanide Works	..	..	..	363·67	..	..	..	..	363·67	..
		North White Feather Filter Press Plant	..	..	..	797·46	..	..	..	..	797·46	..
		Old Cement Works	..	..	52·00	483·63	..	..	..	52·00	2,030·11	..
		Riedel and Norton's Works	..	..	15·00	43·27	..	..	..	15·00	46·71	..
		Robinson's Cyanide Works	..	..	..	360·22	..	..	..	..	5,516·71	..
		Various Works	..	..	..	..	..	25·01	..	903·10	8,244·57	..
		Total for Leases and Quartz Claims	..	489·03	51,113·28	25,415·81	131·31	141·87	6,532·11	520,011·36	344,847·70	2,494·22
		Cement from Alluvial Claims :—										
		Reported by owners	..	3·19	90·00	50·02	..	305·41	867·52	25,088·40	12,527·30	..
		Treated locally (not reported by owners) at :										
		Old Cement Works	..	..	310·00	52·92	..	..	..	5,520·50	2,312·69	..
		Riedel and Norton's Works	..	..	795·50	110·73	..	..	..	1,876·00	256·63	..
		State Battery—Kalpini	..	..	260·00	22·69	..	..	..	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	210·83	..	..	..	..	103,423·84	·86	..	84·69	..
		Total	**210·83**	**492·22**	**52,568·78**	**25,652·17**	**131·31**	**103,871·12**	**7,400·49**	**657,651·02**	**451,658·69**	**2,494·22**

KURNALPI DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1908. Alluvial. Fine ozs.	Dollied and Specimens. Fine ozs.	Ore Treated. Tons (2,240lbs.)	Gold therefrom. Fine ozs.	Silver. Fine ozs.	Total Gold Production. Alluvial. Fine ozs.	Dollied and Specimens. Fine ozs.	Ore treated. Tons (2,240lbs.)	Gold therefrom. Fine ozs.	Silver. Fine ozs.
Jubilee ..	..	Voided leases	..	..	..	..	..	..	145·13	1,810·50	1,400·54	..
Do. ..	..	Sundry claims	..	..	..	..	..	18·87	..	46·00	28·91	..
Kurnalpi ..	(314K)	Lady of the Lake	15·98	..	..	..	..	371·18	..	..	..	1·27
Do. ..	316K	Spion Kop	..	131·28	..	16·71	..	..	131·28	..	16·71	..
Do. ..	..	Voided leases	..	..	..	..	..	..	8·66	2,675·05	1,626·76	5·00
Do. ..	..	Sundry claims	..	..	15·00	11·24	..	217·92	33·81	68·50	64·85	..
Mulgabbie ..	263K	Cables	..	..	·50	34·36	..	..	309·79	1·50	308·47	..
Do. ..	303K	Hope	..	..	..	..	..	..	111·52	7·00	867·82	..
Do. ..	312K	Mulgabbie Perseverance	..	..	·10	67·32	..	..	..	5·90	361·86	..
Do. ..	..	Voided leases	..	..	..	..	..	..	50·67	7·00	629·67	..
Do. ..	..	Sundry claims	..	4·31	..	..	..	6·50	1,362·28	80·75	612·38	..
		From District generally :—										
		Sundry parcels treated at : Various Works	..	..	..	..	..	..	..	56·50	187·39	..
		Reported by Banks and Gold Dealers	436·30	..	..	..	..	10,365·01	..	..	..	..
		Total	**452·28**	**135·59**	**15·60**	**129·63**	..	**10,979·48**	**2,153·14**	**4,758·70**	**6,105·36**	**6·27**

East Coolgardie Goldfield.

EAST COOLGARDIE DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1908. Alluvial. Fine ozs.	Dollied and Specimens. Fine ozs.	Ore Treated. Tons (2,240lbs.)	Gold therefrom. Fine ozs.	Silver. Fine ozs.	Total Gold Production. Alluvial. Fine ozs.	Dollied and Specimens. Fine ozs.	Ore treated. Tons (2,240lbs.)	Gold therefrom. Fine ozs.	Silver. Fine ozs.
Binduli ..	..	Voided leases	..	..	..	..	..	..	..	120·00	76·93	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	25·00	24·60	..
Boorara ..	4297E	Golden Ridge	..	132·74	8·00	160·67	..	..	132·74	128·00	166·96	..
Do. ..	3908E, 3910E, 3912E, 4033E	Golden Ridge G.M. Co., Ltd.	..	..	22,582·00	14,424·45	..	..	..	40,820·00	25,707·07	..
Do. ..	4314E	Pearl	..	..	45·00	9·12	..	..	..	45·00	9·12	..
Do. ..	4298E	Reclaimed	..	20·26	..	..	..	..	74·61	..	..	..
Do. ..	3908E, 3910E, 3912E, 4033E	(Waterfall leases)	..	..	..	..	..	..	..	2,849·00	2,389·48	..
Do. ..	..	Voided leases	..	..	..	..	..	..	60·93	55,461·78	30,663·89	..

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 1908.					Total Gold 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 ..	392E	(Acrobat: Paringa Consolidated Mines, Ltd.)	..	..	.. ..	.. ..	..	..	..	10·25	37·15	..
Do. ..	38E, 52E, 53E, 71E, 72E, 101E, 263E	Associated G.Ms. of W.A., Ltd.	..	..	109,620·00	60,480·63	655·48	..	·25	778,140·70	638,746·09	23,287·05
Do. ..	49E	Associated Northern Blocks (W.A.), Ltd. ..	..	..	39,830·00	25,015·49	516·75	..	524·18	212,565·12	334,019·79	656·70
Do. ..	4308E	Boko	..	..	215·00	61·68	..	..	..	215·00	61·68	..
Do. ..	890E	Boomerang	..	..	167·00	28·97	..	..	..	167·00	28·97	..
Do. ..	(682E), 902E, 923E, 986E, (1064E), 1124E, 1196E, 4075E	(Boulder Deep Levels, Ltd.)	..	..	309·00	41·40	..	..	..	3,043·00	1,778·10	26·71
Do. ..	902E, 923E, 986E, 1124E, 1196E, 4075E	Boulder Deep Levels (1907), Ltd.	..	..	24·50	15·65	..	..	..	24·50	15·65	..
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.	..	..	2,204·00	876·78	..	..	..	24,632·75	40,634·56	..
Do. ..	4310E	Captain Wallace	..	..	7,000·00	770·96	..	..	..	7,000·00	770·96	..
Do. ..	24E, 888E, 949E, 1168E	Central and West Boulder G.Ms., Ltd. ..	..	..	950·00	358·24	..	..	..	29,621·70	18,143·17	..
Do. ..	352E	(Chaffer's G.M. Co., Ltd.)	..	..	..	..	..	..	..	4,256·00	1,299·03	161·50
Do. ..	352E	Chaffer's G.M. Co., Ltd.	..	..	10,858·50	4,590·70	..	..	..	11,742·50	4,935·59	..
Do. ..	4307E	Confidence	..	..	70·00	78·82	..	..	8·20	70·00	78·82	..
Do. ..	238E	Crœsus North No. 1, Ltd.	..	..	..	..	..	..	..	10,495·25	3,997·24	..
Do. ..	1621E	(Crœsus Proprietary G.M. Co)	..	..	..	..	..	..	..	79·00	45·87	..
Do. ..	13E, 90E, 302E, 989E	Crœsus South G.Ms., Ltd.	..	..	4,796·50	1,413·05	..	..	..	46,118·50	19,139·58	..
Do. ..	(4330E)	Glenartney	..	..	95·00	42·31	..	..	..	95·00	42·31	..
Do. ..	351E, 1001E, 1002E, 1085E, 1113E, 1219E, 1326E, 1397E	Golden Horseshoe Estates Co., Ltd. ..	..	..	247,740·00	145,469·75	30,953·37	..	..	1,641,229·00	1,573,112·56	130,432·86
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.	..	..	25,103·00	14,055·39	19·06	..	..	73,578·00	37,240·29	19·06
Do. ..	947E, 1294E, 3469E	Golden Pike and Lake View East Mines, Ltd.	..	..	40·00	6·26	..	..	..	490·50	131·44	..
Do. ..	4290E	Great Boulder Consols leases	..	..	25·00	3·12	..	..	..	25·00	3·12	..
Do. ..	873E	Great Boulder Main Reef, Ltd.	..	..	3,261·00	736·95	..	..	..	143,021·89	119,499·62	761·98
Do. ..	50E	Great Boulder No. 1, Ltd.	..	..	1,962·00	2,584·63	..	..	..	9,326·50	8,889·64	..
Do. ..	66E	Great Boulder Perseverance G.M. Co., Ltd. ..	..	..	182,507·00	71,025·63	9,426·58	..	..	1,270,991·23	1,062,335·35	70,249·89
Do. ..	16E, 51E, 61E, 102E, 280E, 1109E	Great Boulder Proprietary G.Ms., Ltd. ..	..	..	165,428·00	136,579·03	18,971·00	..	..	1,214,309·00	1,457,268·75	86,915·66

Do.	..	902E, 1124E	(Great Boulder South G.M. Co., Ltd.)	..	..	..	..	..	..	..	..	437·00	122·11	..
Do.	..	3643E	Hainault G.Ms., Ltd.	..	..	..	63,970·00	19,084·60	..	..	..	274,180·70	105,717·12	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.M., Ltd.)	..	..	..	..	..	..	..	..	6,098·00	3,360·33	..
Do.	..	739E	(Hannan's Crœsus 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 Crœsus G.M. Co., Ltd.)	..	..	..	..	..	..	..	..	50·00	13·21	..
Do.	..	15E, 60E, 1116E	(Hannan's Star G.Ms., Ltd.)	..	..	..	..	..	..	..	..	85,652·75	40,438·85	2,142·59
Do.	..	15E, 60E, 1116E	Hannan's Star. Ltd.	..	..	..	1,451·00	402·78	..	..	..	10,591·00	4,145·42	191·22
Do.	..	(4227E)	Hill End Consols	..	..	..	65·00	235·74	..	91·48	..	5,123·00	9,346·04	..
Do.	..	(189E, 220E, 4066E)	Idaho leases	..	..	..	1,060·00	605·35	..	..	915·50	1,530·00	2,766·18	..
Do.	..	4317E, 4318E	Idaho leases	..	142·29		2,266·00	1,314·93	..	..	142·29	2,266·00	1,314·93	..
Do.	..	946E	Ironsides North (late West Queen of the West)	..	..		2,602·50	2,697·92	..	..	..	5,096·50	3,537·57	..
Do.	..	946E	(Ironsides North G.M. Co., Ltd.)	..	..	..	..	..	..	..	..	1,348·00	807·48	..
Do.	..	31E, 1357E, 1412E, 1413E	Ivanhoe Gold Corporation, Ltd.	..	..	..	203,481·00	117,855·76	20,554·93	..	..	1,487,985·00	1,231,821·64	148,231·87
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.	..	..	..	15,479·00	3,473·16	..	..	..	23,002·00	5,437·57	..
Do.	..	33E	(Kalgoorlie Bank of England G.M. Co., Ltd.)	..	..	..	..	..	..	..	..	11,775·50	7,080·49	..
Do.	..	73E	(Kalgoorlie Mint and Iron King Gold Estates, Ltd.)	..	..	..	..	..	..	..	..	3,020·00	1,762·00	..
Do.	..	73E	(Kalgoorlie Mint and Iron King G.Ms., Ltd.)	..	..	..	..	..	..	..	..	3,647·00	7,454·80	..
Do.	..	22E, 34E	Kalgurli G.Ms., Ltd.	..	..	..	112,803·00	81,970·70	..	..	..	570,374·98	473,804·33	..
Do.	..	1004E	Kalgurli Golden Eagle	..	..	..	1,170·00	337·18	..	..	..	3,929·50	1,094·22	..
Do.	..	25E, 32E, 2325E, 2326E	Lake View Consols, Ltd.	..	..	..	95,688·00	36,115·51	13,069·31	..	..	1,014,518·85	956,791·99	25,380·17
Do.	..	75E	Lake View South G.M. (W.A.), Ltd.	..	..	..	362·50	81·70	..	..	..	10,537·98	11,343·09	..
Do.	..	4301E	(Lily)	..	..	..	176·50	65·49	..	..	..	176·50	65·49	..
Do.	..	4301E	Lilly G.M. Co., N.L.	..	..	..	104·00	21·91	..	..	..	104·00	21·91	..
Do.	..	(4209E)	Lucey	..	..	..	..	..	..	..	..	333·00	44·07	..
Do.	..	(4257E)	Never be forgotten	..	..	..	141·00	25·71	..	..	..	1,755·00	433·21	..
Do.	..	(4264E)	Never Despair	..	..	..	..	..	..	..	..	489·00	103·65	..
Do.	..	(189E, 220E)	(New Standard Exploration Co., Ltd.)	..	..	..	..	..	..	..	..	108·00	73·36	..
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.	..	..	..	1,245·50	1,415·70	..	..	..	4,444·50	4,172·02	·63
Do.	..	52E, 53E, 263E	(Northern Blocks Syndicate, Ltd.)	..	..	..	..	..	..	..	..	1,148·00	209·99	..
Do.	..	281E, 287E, 444E	North Kalgurli Co., Ltd.	..	..	..	15,581·00	4,868·16	..	43·99	..	53,159·55	33,408·06	7,147·23
Do.	..	890E, (912E)	(North-Western Associated G.Ms. (W.A.), Ltd.)	..	..	..	..	..	..	..	..	459·00	264·55	..
Do.	..	890E, (912E)	North-Western Associated G.M. (W.A.), Ltd.	..	..	..	85·50	11·15	..	..	..	1,657·00	859·11	..
Do.	..	73E, 410E, 448E, 532E, 578E, 698E, 944E, 1395E, 3031E, 4180E	Oroya Brownhill Co., Ltd.	..	..	..	139,083·00	45,194·41	4,944·43	..	..	916,790·80	1,078,971·28	55,962·16
Do.	..	4211E	(Oroya East (Hannan's) G.M., Ltd.)	..	..	..	..	..	..	..	..	625·00	288·39	..
Do.	..	4E	(Paringa Consolidated Mines, Ltd.)	..	..	..	..	..	..	..	..	216·00	157·80	..

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 1908.					Total Gold 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 ..	1208E, 3612E ..	South Kalgurli G.Ms., Ltd.	..	..	95,398·00	34,948·38	1,494·91	..	..	386,843·00	198,564·21	8,918·07
Do. ..	(4074E)	Star of Abadare	..	..	792·00	22·64	..	..	..	1,946·00	555·37	..
Do. ..	3031E	(Trafalgar G.M. (W.A.), Ltd.)	..	..	..	..	..	..	..	189·95	56·84	..
Do. ..	(4269E)	Tramway	..	..	45·00	9·68	..	..	..	223·00	50·18	..
Do. ..	4187E	Trurant	..	..	4,344·00	6,753·60	..	..	640·28	8,053·50	9,544·45	..
Do. ..	535E	Union Jack	..	..	13·00	3·37	..	..	..	13·00	3·37	..
Do. ..	(4066E)	(Wendouree)	..	..	..	..	..	..	2,127·12	137·00	370·20	..
Do. ..	..	Voided leases	..	..	..	..	..	..	1,013·73	12,927·75	8,514·89	..
Do. ..	..	Sundry claims	..	..	..	..	..	18·34	..	519·00	762·53	..
Feysville ..	Block 48	Hampton Plains Estate, Ltd.	..	..	..	..	..	4,565·62	..	20,562·00	2,371·95	..
Do. ..	Block 50	(Hampton Plains Estate (1906), Ltd.) ..	..	..	60·00	70·19	..	..	..	85·00	108·82	..
Do. ..	Block 45	Hampton Properties, Ltd.	..	38·63	27·75	41·71	..	..	38·63	27·75	41·71	..
Do. ..	Block 50	(Hampton Properties, Ltd.)	..	..	..	..	..	..	7·26	6,348·00	3,956·22	..
Do. ..	Block 50	Hampton Properties, Ltd.	..	..	45·00	55·14	..	..	..	45·00	55·14	..
Do. ..	..	Voided leases	..	..	..	..	..	..	22·86	214·85	106·88	..
Kalgoorlie ..	1101E, 4051E, 4070E, 4230E, 4275E, 4281E, 4302E	A.W.A. United leases	..	..	15,849·00	2,625·34	..	..	..	54,325·00	11,480·30	8·57
Do. ..	4070E	(Badra)	..	..	..	..	..	..	..	30·00	10·15	..
Do. ..	(4235E)	Blue Mountain	..	..	..	..	..	..	..	67·00	5·70	..
Do. ..	796E, 1228E ..	Bonnie Lass leases	..	..	982·00	643·74	..	..	160·69	4,558·00	4,336·45	..
Do. ..	4088E	Bonnie Play	..	..	..	..	..	..	..	6·00	3·01	..
Do. ..	1101E	(Brown Hill Junction G.M. Co., N.L.) ..	..	..	..	..	..	..	..	1,122·00	327·15	..
Do. ..	4283E	Criterion	..	..	38·00	8·20	..	..	..	38·00	8·20	..
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. ..	4321E	Devon Consols West	..	..	30·00	4·53	..	..	..	30·00	4·53	..
Do. ..	3770E	Eagle Hawk United	..	..	152·00	148·86	..	..	467·92	1,018·00	1,358·10	..
Do. ..	4052E, 4063E ..	Fair Play leases	..	..	284·25	606·18	..	..	4·77	1,386·60	2,181·14	..
Do. ..	4331E	Gem	..	..	57·00	10·40	..	..	..	57·00	10·40	..
Do. ..	1694E	(Golden Zone)	..	..	..	..	..	..	..	5,614·50	2,639·52	..
Do. ..	1694E	Golden Zone	..	216·04	4,012·00	7,164·82	..	..	517·75	4,431·00	7,480·45	..
Do. ..	4124E	Great Secret	..	201·53	165·00	54·79	..	..	201·53	191·00	56·73	..
Do. ..	14CE, 415E, 1163E	Hannan's Consols leases	..	..	553·00	90·51	..	..	..	773·00	150·28	..
Do. ..	14CE, 415E, 1163E	(Hannan's Consols, Ltd.)	..	..	..	..	..	..	..	6,584·00	3,806·65	..
Do. ..	4056E	Hannan's Find	..	..	244·00	29·72	..	..	..	1,070·00	217·13	..
Do. ..	983E	(Hannan's Golden Group, Ltd.)	..	..	..	..	..	..	..	6·00	17·27	..
Do. ..	4273E, 4274E ..	Hannan's North G.Ms., Ltd.	..	..	525·00	166·87	..	..	..	1,244·00	392·72	..
Do. ..	943E	(Hannan's Proprietary Development Co., Ltd.)	..	..	..	..	..	..	..	26,965·50	11,440·78	208·00

Do. ..	943E, 4222E, 4223E, 4224E, 4225E, 4226E	Hannan's Proprietary, Ltd.	..	..	544·50	93·71	..	..	12·10	6,819·50	1,188·30	..
Do. ..	97E, 160E, 211E, 212E, 213E, 1653E	(Hannan's Reward and Mt. Charlotte, Ltd.)..	..	..	28,633·00	3,150·40	..	..	2·58	121,605·10	47,203·84	..
Do. ..	97E, 160E, 211E, 212E, 213E, 1653E	Hannan's Reward, Ltd.	..	..	24,817·00	3,149·81	..	..	..	24,817·00	3,149·81	..
Do. ..	796E, 1226E ..	(Hannan's Reward North G.M. Co., N.L.) ..	..	..	..	..	..	..	16·87	334·00	247·34	..
Do. ..	(4333E)	Henrietta	..	5·86	100·00	27·57	..	..	5·86	100·00	27·57	..
Do. ..	4001E, 4035E, 4036E	Hidden Secret leases	..	..	205·00	442·48	..	..	..	2,255·80	12,363·41	42,514·26
Do. ..	4107E	Hidden Secret West	..	..	55·00	7·13	..	..	..	55·00	7·13	..
Do. ..	3991E	Hird's Lease	..	..	38·00	72·75	..	..	42·85	641·50	977·36	..
Do. ..	4256E	Homeward Bound	..	..	1,004·50	133·52	..	..	..	1,460·50	236·72	..
Do. ..	983E	Isabel	..	..	942·50	198·63	..	..	98·63	3,032·50	797·53	..
Do. ..	(4216E)	Lady Alice	..	..	37·00	7·37	..	..	12·55	109·00	41·03	..
Do. ..	(4295E)	Lady Wallace	..	..	..	..	..	..	..	114·00	6·41	..
Do. ..	4346E	Little Wonder	..	..	161·00	158·94	..	..	..	161·00	158·94	..
Do. ..	4103E ..	(Lucknow)	..	..	..	..	..	..	1·38	324·00	84·41	..
Do. ..	4103E	(Lucknow G.M. Co., N.L.)	..	..	..	..	..	..	..	17·50	2·61	..
Do. ..	2E, 279E ..	Maritana G.M. Co., N.L.	..	..	457·00	300·84	..	..	5·15	4,273·50	3,336·05	..
Do. ..	4293E	Milanese	..	..	21·00	3·56	..	..	..	269·00	47·81	..
Do. ..	4347E	Mystery	..	..	304·00	82·04	..	..	..	304·00	82·04	..
Do. ..	4025E	Napoleon	..	..	411·00	259·97	..	..	..	2,543·00	1,257·58	..
Do. ..	1694E	(New Golden Zone Co., N.L.)	..	..	..	..	..	..	..	344·00	175·61	..
Do. ..	4284E	(New Reefers)	..	..	75·50	47·12	..	..	..	196·50	79·11	..
Do. ..	983E	(New Standard Exploration Co., Ltd.) ..	..	..	..	..	..	..	..	213·00	86·76	..
Do. ..	4323E	North End Boulder	..	..	8·00	1·02	..	..	..	8·00	1·02	..
Do. ..	4037E, 4039E, 4054E	(North End Mines, Ltd.)	..	..	..	..	..	..	..	5,876·00	2,425·03	4·00
Do. ..	4037E, 4039E, 4054E	(North End Mines, Ltd.)	..	..	42·00	69·58	..	..	..	1,812·00	883·27	..
Do. ..	4282E	Northern Promise	..	..	10·00	2·78	..	..	..	82·00	28·78	..
Do. ..	535E	(Octagon Explorers, Ltd.)	..	..	57·00	13·69	..	..	..	3,180·00	1,069·29	..
Do. ..	4277E	Off Chance	..	48·95	233·00	109·88	..	..	81·23	338·00	156·58	..
Do. ..	4E, 392E	Paringa Mines, Ltd.	..	..	3,409·00	953·97	..	..	..	18,338·98	13,242·52	..
Do. ..	4329E	Patience	..	..	12·00	1·54	..	..	..	12·00	1·54	..
Do. ..	4309E	Poseidon	..	63·66	44·00	163·70	..	..	63·66	44·00	163·70	..
Do. ..	4039E	(Rising Sun)	..	..	..	..	..	..	..	170·00	28·50	..
Do. ..	4039E	Rising Sun	..	..	16·00	1·88	..	..	..	16·00	1·88	..
Do. ..	4121E	Royal	..	..	..	..	..	..	..	10·00	2·80	..
Do. ..	4303E	Sir John Forrest	..	31·92	89·50	52·75	..	..	35·14	132·50	69·28	..
Do. ..	3771E	Sons of Gwalia, Kalgoorlie	..	..	233·00	92·40	..	..	..	1,203·00	700·88	..
Do. ..	(4188E)	Triumph	..	..	..	..	..	..	..	30·00	5·39	..
Do. ..	4289E	(Union Club)	..	..	305·00	110·76	..	..	..	700·00	257·45	..
Do. ..	4289E, 4320E ..	Union Club leases	..	..	360·00	107·26	..	..	..	360·00	107·26	..
Do. ..	3880E, 4146E ..	Westralian Machinery Corporation, Ltd. ..	..	..	554·00	251·16	..	..	..	696·00	305·69	..
Do. ..	..	Voided leases	..	..	..	..	..	4·21	416·60	53,844·54	41,564·41	370·07
Wombola ..	[985Y], (4239E) ..	Black Cat..	..	..	..	..	..	..	312·37	13·68	34·25	..
Do. ..	4342E, 4343E ..	Cutter's Luck leases	..	..	52·00	68·30	..	..	..	52·00	68·30	..
Do. ..	[948Y], (4238E) ..	Inverness	..	..	..	..	..	..	..	1,044·00	388·38	..
Do. ..	[368Y], (4255E) ..	Just-in-time	..	..	33·50	19·54	..	..	..	358·50	191·60	..
Do. ..	4254E	Kalgoorlie and Boulder Firewood Co., Ltd. ..	..	..	266·70	175·11	..	..	..	960·20	444·00	..
Do. ..	4294E	Knight St. George	..	..	32·00	11·69	..	..	..	62·00	17·66	..
Do. ..	4336E	Lady Agnes	..	..	664·50	186·45	..	..	..	664·50	186·45	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	634·90	205·20	..

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 1908.					Total Gold 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.
		From District generally :—										
		Sundry claims	2,656·68	125·84	1,903·00	484·69	..	10,856·72	431·95	5,112·00	1,541·42	..
		Sundry parcels treated at :										
		Barnes' Works	..	..	..	632·63	..	..	..	..	924·62	..
		Bonnie Lass Works	..	..	55·00	676·87	..	..	..	55·00	1,052·07	..
		Boulder Puddling Works	2·54	..	..	6·34	..	2·54	..	..	67·82	..
		Brown Hill Consols Works	..	..	512·00	6,262·02	..	..	..	673·00	17,504·01	..
		Crœsus South Works	..	..	..	2,097·63	..	..	..	9,230·35	10,935·26	..
		Eureka Works	..	..	..	3,918·72	217·30	..	..	..	6,285·03	379·04
		Glenartney Works	..	..	..	677·48	..	..	..	..	704·86	..
		Golden Zone Works	..	..	..	264·03	..	..	..	..	264·03	..
		Great Boulder No. 1 Works	..	..	..	147·59	..	..	..	..	147·59	..
		Hacke's Works	16·49	..	..	5·43	..	16·49	..	5·00	18·62	..
		Hannan's Central Works	..	..	100·00	5,806·80	..	..	..	100·00	10,055·52	..
		Hannan's Proprietary Works	..	..	..	2,227·41	..	..	..	..	2,456·96	..
		Ironsides North Works (late West Queen of the West Works)	..	..	..	2,821·86	..	..	..	23·00	4,324·58	..
		Orotava Works	..	..	..	15·59	..	..	..	..	1,320·14	..
		South Boulder Metallurgical Works	..	..	..	3·67	..	..	..	..	15·52	..
		Various Works	..	..	..	..	..	365·33	15·15	29,472·55	36,832·77	24·33
		Reported by Banks and Gold Dealers	7·67	..	..	..	..	7,017·83	9,013·32	..	4·57	..
		Total	**2,743·38**	**1,027·72**	**1,672,068·20**	**884,644·27**	**100,823·12**	**22,982·55**	**18,665·36**	**11,063,701·73**	**9,962,621·90**	**604,106·92**

BULONG DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1908.					Total Gold 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 ..	(1045Y)	Croagh Patrick	..	..	..	..	..	..	9·18	53·00	27·98	..
Do. ..	1055Y	Lady Molly	..	..	19·00	136·73	..	..	48·35	19·00	136·73	..
Do. ..	..	Voided leases	..	..	..	..	..	..	1,718·11	483·00	856·47	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	82·50	43·21	..

Bulong ..	(1029Y, 1043Y) ..	Barton leases	..	..	132·00	30·19	..	..	..	1,317·00	303·13	..
Do. ..	(1056Y)	Bend Or	..	7·44	14·00	21·02	..	..	7·44	14·00	21·02	..
Do. ..	(1053Y)	Brilliant	..	..	7 00	4·25	..	..	14·65	40·00	23·98	..
Do. ..	1062Y	Bulong Proprietary	..	..	392·00	115·82	..	..	..	392·00	115·82	..
Do. ..	(1052Y)	Christmas Box	..	..	2·00	3·71	..	..	..	147·00	108·71	..
Do. ..	(1057Y)	Eastern Extended	..	..	100·00	18·83	..	..	..	100·00	18·83	..
Do. ..	(862Y)	Golden West	..	..	..	..	..	..	..	905·50	887·38	..
Do. ..	1009Y	Little Wonder	..	..	..	..	..	..	..	159·50	84·84	..
Do. ..	11Y	(Melbourne United G.M. Co., N.L.) ..	..	..	..	..	..	..	..	236·20	200·79	..
Do. ..	957Y	Oversight	..	..	43·00	168·43	..	..	5·64	68·50	267·87	..
Do. ..	74Y, 564Y	(Princess Margaret G.M. Co., N.L.) ..	..	..	..	..	..	..	..	632·00	969·09	..
Do. ..	(979Y)	Queen Margaret Central	..	..	..	..	..	..	1,441·57	34·00	189·23	..
Do. ..	9Y, 11Y, 14Y, 74Y, 142Y, 564Y, 693Y, 1020Y	Queen Margaret G.M. Co., Ltd.	..	106·16	28·50	68·33	..	·79	2,807·07	62,707·05	61,895·42	..
Do. ..	1054Y	Queen Margaret South	..	..	..	..	..	..	6·17	..	..	..
Do. ..	(1058Y)	Sinn Fein	..	..	63·50	53·50	..	..	..	83·50	108·72	..
Do. ..	1059Y	Storm King	..	23·66	98·00	30·56	..	..	23·66	98·00	30·56	..
Do. ..	14Y	(White Horse)	..	..	..	..	..	..	730·72	336·50	745·65	..
Do. ..	14Y	(White Horse: Queen Margaret G.M. Co., Ltd.)	..	..	..	..	..	..	..	2,230·00	1,623·61	..
Do. ..	..	Voided leases	..	..	..	..	..	106·75	3,031·43	13,182·65	11,703·03	..
Do. ..	..	Sundry claims	..	..	..	..	..	1,628·30	911·09	6,059·90	13,831·28	..
Hogan's Find ..	..	Voided leases	..	..	..	..	..	..	908·82	309·50	276·51	..
Majestic ..	1030Y	Majestic	..	..	745·75	222·48	..	..	..	828·75	260·62	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	41·50	28·30	..
Mt. Monger ..	(948Y)	Inverness	..	..	..	..	..	..	..	57·50	42·61	..
Do. ..	..	Voided leases	..	..	..	..	..	..	1,862·57	1,063·85	927·08	..
Do. ..	..	Sundry claims	..	..	..	..	..	215·60	..	345·00	218·37	..
Randalls ..	910Y	Agnes	..	..	235·00	71·62	..	..	..	1,426·25	466·11	..
Do. ..	805Y, 892Y, 990Y	New Santa Claus G.M. Co., Ltd.	..	..	1,370·00	845·82	..	..	..	6,118·80	3,343·73	..
Do. ..	805Y, 892Y ..	(Santa Claus G.M. Co., Ltd.)	..	..	..	..	..	..	..	50·00	41·29	..
Do. ..	..	Voided leases	..	..	..	..	..	..	60·04	2,240·05	1,192·28	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	445·05	123·28	..
Sudden Jerk ..	(985Y)	Black Cat	..	..	..	..	..	..	18·54	10·00	20·78	..
Do. ..	..	Voided leases	..	..	..	..	..	..	45·37	4·25	32·89	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	·15	10·23	..
Taurus ..	..	Voided leases	..	..	..	..	..	2·06	3·70	1,678·15	760·83	..
Do. ..	..	Sundry claims	..	..	..	..	..	112·69	..	260·00	346·86	..
Woodline ..	(1005Y)	Unknown	..	..	20·00	17·87	..	..	..	792·75	610·57	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	39·33	61·57	..
		From District generally:— Sundry claims	3·34	41·85	790·75	284·26	..	3·34	41·85	790·75	284·26	..
	Sundry parcels treated at: Barton's Works	..	..	11·10	9·22	..	..	..	11·10	9·22	..
	Green Harp Mill	..	..	86·00	14·99	..	..	..	106·00	28·99	..
	State Battery—Randalls	..	..	..	23·88	..	..	..	..	23·88	..
	Various Works	..	..	..	..	..	..	..	5,985·05	5,562·77	..
	Reported by Banks and Gold Dealers	31·97	1·40	..	..	..	24,373·18	52·39	..	..	..
	Total	**35·31**	**180·51**	**4,157·60**	**2,141·51**	..	**26,442·71**	**13,748·36**	**111,924·58**	**108,866·38**	..

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 1908.					Total Gold 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 ..	(4177)	Black Cat	..	..	..	..	..	..	..	61·00	35·62	..
Do. ..	595, 1405, 1741 ..	Gem leases	..	..	261·00	98·60	..	..	..	7,550·00	5,715·18	..
Do. ..	1741	(Golden Drop)	..	..	..	..	..	..	..	283·50	240·83	..
Do. ..	595, 1405, 1741 ..	(New Victoria Consols G.M. Co., N.L.) ..	..	..	..	..	..	..	..	12,725·50	5,096·84	..
Do. ..	4313	New Victoria South	..	..	442·00	204·08	..	..	..	442·00	204·08	..
Do. ..	1552, 3947 ..	Vale of Coolgardie G.Ms., Ltd.	..	..	2,252·00	1,042·48	..	..	..	74,065·00	38,771·69	..
Do. ..	144, 1151, 1639, 2146, 2266, 3572, 3575, 4012, 4099, (4113), 4314	Westralia and East Extension Mines, Ltd.	..	..	10,190·00	5,353·19	..	..	..	226,030·65	115,527·98	..
Do. ..	..	Voided leases	..	..	..	..	..	..	2·26	19,874·70	17,662·89	..
Do. ..	..	Sundry claims	..	..	19·00	29·04	..	..	..	336·00	215·18	..
Bulla Bulling..	..	Voided leases	..	..	..	..	..	..	..	426·50	281·51	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	12·82	213·00	163·37	..
Burbanks ..	4324	Another Try	..	..	106·50	124·28	..	..	..	131·50	160·60	..
Do. ..	4029	Boshter	..	..	53·00	22·52	..	..	..	1,107·50	675·12	..
Do. ..	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.Ms., Ltd.	..	..	2,706·00	3,110·81	110·72	..	..	27,770·00	20,419·76	276·10
Do. ..	4344	Burbanks Extended	..	..	188·75	216·13	..	..	..	188·75	216·13	..
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. ..	..	..	16,763·40	7,987·57	..	..	..	45,182·10	25,874·06	..
Do. ..	1705	(Burbanks North G.M., Ltd.)	..	..	..	..	..	..	..	22·50	7·70	..
Do. ..	4168	Glenloth South	..	..	79·00	94·07	..	..	79·67	257·50	399·20	..
Do. ..	4310	Grosmont	..	..	611·00	179·49	..	..	..	826·00	250·33	..
Do. ..	2160	(Lady Robinson)	..	..	..	..	..	..	..	5,315·40	3,327·12	..
Do. ..	2160, 3950, 4125 ..	Lady Robinson G.M. Co., N.L.	..	..	1,068·00	322·26	..	..	..	16,137·50	7,623·47	..
Do. ..	4241	(Lord Bobs)	..	..	..	..	..	..	..	1,264·00	2,829·90	..
Do. ..	4241, 4286, 4287 ..	Lord Bobs G.M. Syndicate	..	..	903·00	811·72	..	..	..	1,555·00	1,849·17	..
Do. ..	3939	Shamrock Ale	..	..	159·50	72·37	..	..	40·81	815·50	675·44	..
Do. ..	4296	Sunbeam	..	..	35·00	51·70	..	..	..	35·00	51·70	..
Do. ..	(4320)	Wallsend	..	..	22·50	4·82	..	..	..	22·50	4·82	..
Do. ..	..	Voided leases	..	..	..	..	..	13·36	64·43	12,811·88	12,479·40	80·73
Do. ..	..	Sundry claims	..	12·33	588·75	353·22	..	..	54·93	1,323·50	695·85	..

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		164·50	765·00	597·16			164·50	1,832·00	4,591·59	
Do.	133, 139, 142	(Bayley's Mines, Ltd.)						15·10	10·59	2,319·74	2,323·66	
Do.	(4229)	Bayley's North-East			32·00	3·67				32·00	3·67	
Do.	(4230)	Bayley's Sulphide Lode							8·56	102·00	29·57	
Do.	4261	Big Blow		27·66	241·00	79·11			27·66	963·00	354·80	
Do.	(3972)	Brilliant			20·00	15·10				885·00	1,399·48	
Do.	4093, 4117, 4345, 4347	Coolgardie Prospecting Development and Mining Co., N.L.			200·00	37·92				200·00	37·92	
Do.	3918	(Coolgardie Redemption)							1,257·62	4,419·00	3,747·28	
Do.	4094	Coolgardie Redemption Extended			68·00	61·44				242·00	192·70	
Do.	4305	Coolgardie Surprise			144·00	51·52				230·00	192·10	
Do.	1865	Empress of Coolgardie			135·00	44·31				931·50	408·67	
Do.	1865	(Empress of Coolgardie G.M. 1896, Ltd.)								2,868·00	950·53	
Do.	(1604)	Ethel			35·00	32·21				153·00	109·00	
Do.	4359	Excelecon			29·00	8·62				29·00	8·62	
Do.	(1604)	(Flagstaff G.Ms., Ltd.)								10,846·50	4,565·56	
Do.	(4056)	Gambier							17·89	151·00	47·83	
Do.	4189	(Garden Gully)								129·00	24·89	
Do.	4189, 4197	(Garden Gully G.M. Co., N.L.)								44·00	4·56	
Do.	4189, 4197	(Garden Gully leases)								428·00	90·95	
Do.	4189, 4197, 4334	Garden Gully leases			1,134·00	113·49				1,134·00	113·49	
Do.	3827	Garfield		71·25	104·00	158·78			439·67	795·00	1,256·18	
Do.	4267	Glueck Auf		45·08	112·00	24·81			148·79	177·00	58·00	·96
Do.	(4192)	Golden Bar								457·00	305·56	
Do.	4329	Golden Square			28·00	4·48				28·00	4·48	
Do.	(3319, 3624)	Great Hanover Central Corporation 1904, Ltd.								230·00	110·66	
Do.	(4177)	Great Porphyry								22·00	12·97	
Do.	(1604)	(Greenmount Mines, N.L.)								963·00	455·34	
Do.	73, 1902, 3556, 3701, 3811, 3813, 3998	Griffith's leases			1,754·00	238·84				27,884·00	12,092·76	
Do.	Block 53	Hampton Plains Estate, Ltd.							358·42	67·00	112·49	
Do.	Block 59	Hampton Plains Estate, Ltd.			351·00	307·03				4,926·00	5,034·97	
Do.	4234	Hettie May							2·79	141·50	63·29	
Do.	4288, 4294	Indicator leases		4·03	60·00	64·17			81·52	98·00	114·85	
Do.	4122	(King's Cross)								792·00	561·39	
Do.	4297	King Solomon			63·00	127·30				105·00	160·44	
Do.	(4221, 4222)	(King Solomon leases)								275·00	215·37	
Do.	(4222)	King Solomon South			238·00	57·80			24·76	2,087·00	614·93	
Do.	(4307)	Lady Mary			23·00	40·99			1·58	133·00	63·23	
Do.	(4202)	Lady Olive			68·00	18·34				204·00	110·06	
Do.	3556	(Lily)								342·75	217·64	
Do.	4360	Little Lena			10·00	8·21				10·00	8·21	
Do.	(4182)	Lizard Extended								55·00	103·99	
Do.	3701	(Morning Star South)								250·00	30·63	
Do.	4306	New Australasian			66·00	85·57				95·00	157·54	
Do.	4067, 4122	New Bayley's Mines, Ltd.			30·00	9·23				30·00	9·23	
Do.	(3319)	(New Central Investment Corporation, Ltd.)								944·00	571·65	
Do.	4318	New Hopeful			521·00	217·38				611·00	263·09	
Do.	1865	(Phœnix G.Ms., Ltd.)								12,028·50	4,524·96	
Do.	(4311)	Possum				3·94				176·00	71·05	
Do.	4152, 4153	Queen's Cross leases			4,495·00	308·63			26·20	25,356·00	3,192·68	
Do.	4295, 4319	Richmond leases			48·00	81·10				48·00	81·10	
Do.	(4303)	Star			126·00	38·23				126·00	38·23	
Do.	73	(Star of the South)								975·00	819·75	
Do.	4354	Thistle			20·00	17·99				20·00	17·99	
Do.	33, 3824, 3830, 4227, 4323	Tindal's Coolgardie G.M. Co., N.L.			5,963·00	2,448·12				65,292·25	15,591·57	

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 1908.					Total Gold 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.
Coolgardie ..	4328	Tindal's South	..	..	20·00	4·75	..	..	..	20·00	4·75	..
Do. ..	(4316)	Turning Point	..	..	17·00	78·66	..	..	188·08	32·00	172·11	..
Do. ..	4093	(Undaunted)	..	..	..	..	..	..	..	565·81	156·39	..
Do. ..	4093, 4117 ..	(Undaunted leases)	..	..	..	..	..	..	..	1,737·00	462·21	..
Do. ..	4260	W.A. Mint	..	·96	66·00	7·67	..	..	36·85	339·00	101·41	..
Do. ..	4067, 4122 ..	(W.A. Sluicing Syndicate, Ltd.)	..	..	..	..	..	..	..	742·00	373·22	..
Do. ..	..	Voided leases	..	..	..	..	..	389·14	302·81	170,660·87	111,921·00	..
Do. ..	..	Sundry claims	..	31·13	2,064·00	745·16	..	..	500·29	9,104·45	4,105·61	..
Eundynie ..	4255	Brilliant Syndicate	..	..	375·00	147·60	..	..	..	581·00	258·43	..
Do. ..	4302	Hidden Secret Central	..	..	94·00	22·42	..	..	..	94·00	22·42	..
Do. ..	..	Sundry claims	..	..	26·00	7·87	..	..	..	26·00	7·87	..
Gibraltar ..	4356	Portland	..	..	15·50	3·06	..	..	..	15·50	3·06	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	212·00	67·14	..
Do. ..	..	Sundry claims	..	..	17·00	8·56	..	..	..	29·00	16·64	..
Gnarlbine ..	..	Voided leases	..	..	..	..	..	..	10·94	1,627·75	1,014·50	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	1·31	36·00	21·50	..
Higginsville ..	(4321)	Brilliant South	..	..	24·00	28·18	..	..	..	24·00	28·18	..
Do. ..	4309	Fair Play	..	..	340·00	57·37	..	..	..	350·00	61·78	..
Do. ..	(4217)	Harp of Erin	..	..	..	..	..	..	..	313·00	75·26	..
Do. ..	4253	(Hidden Secret North)	..	..	..	..	..	..	..	68·00	60·72	..
Do. ..	4184, 4185 ..	Red Hill Westralia G.Ms., Ltd.	..	..	7,957·00	2,575·25	84·45	..	..	14,059·00	4,852·61	127·78
Do. ..	(4312)	Shoe	..	..	18·00	7·16	..	..	..	18·00	7·16	..
Do. ..	4184, 4185 ..	(Sons of Erin G.M. Co., N.L.)	..	..	..	..	..	..	285·20	4,742·00	2,938·77	..
Dc. ..	4191	Sons of Erin North Extended: Red Hill Westralia G.Ms., Ltd.	..	..	63·00	14·50	..	..	..	235·00	208·94	..
Do. ..	(4257)	Sons of Erin South Extended ..	..	..	..	..	..	..	..	91·00	63·05	..
Do. ..	..	Voided leases	..	..	..	..	..	..	2·06	132·00	62·49	..
Do. ..	..	Sundry claims	..	..	93·00	56·06	..	..	16·52	383·00	249·07	..
Londonderry ..	3834	Cheapside	..	..	228·00	117·01	..	..	..	2,501·25	1,491·57	..
Do. ..	..	Voided leases	..	..	..	..	..	..	46·25	13,680·66	12,776·16	..
Do. ..	..	Sundry claims	..	..	59·00	11·36	..	..	..	557·85	279·68	..
Mungari ..	..	Voided leases	..	..	..	..	..	..	17·71	715·50	328·88	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	106·00	32·72	..
Red Hill ..	(3408)	Boomer	..	..	16·50	11·88	..	..	35·33	251·50	1,390·52	..
Do. ..	(3404, 3426) ..	(Red Hill (W.A.) Gold Syndicate, Ltd.)	..	..	..	..	..	..	1,389·32	6,470·00	9,640·15	..
Do. ..	(3404, 3426) ..	Red Hill Westralia G.Ms., Ltd.	..	..	..	565·99	..	..	..	33,062·10	19,532·68	..

Do. ..	..	Voided leases	..	..	..	..	..	..	2·97	992·10	452·05	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	·50	110·00	6·29	..
Widgiemooltha	4342	Finniss	..	59·32	..	..	..	..	59·32	..	..	..
Do. ..	4028	Flinders	..	..	19·50	273·45	..	..	23·11	251·50	1,420·95	..
Do. ..	4282	Independence	..	..	126·00	32·15	..	..	..	385·00	120·61	..
Do. ..	4317	Last Shot	..	..	4·00	46·44	..	..	..	26·00	86·44	..
Do. ..	3906	Yorkshire Lass	..	..	219·50	124·05	..	..	..	1,468·25	892·11	..
Do. ..	(4308)	Yorkshire Lass Extended	..	..	41·50	7·42	..	..	..	41·50	7·42	..
Do. ..	..	Voided leases	..	..	..	..	..	..	379·86	5,975·90	1,965·02	·17
Do. ..	..	Sundry claims	..	..	589·00	249·34	..	1·22	2·88	1,299·15	595·70	..
		From District generally :—										
	Sundry parcels treated at :											
		Allsop & Howell's Works—Kalgoorlie	..	..	..	72·91	..	..	..	..	72·91	..
		Burbanks Main Lode Works	..	..	..	2·25	..	2·77	..	15·50	12·38	..
		Griffith's Works	..	..	..	61·13	..	..	..	..	61·13	..
		Highgate Works	..	..	..	35·58	..	..	..	100·00	247·70	..
		Kalgoorlie Gold Recovery Works—Kalgoorlie ..	..	..	..	18·14	..	..	..	..	18·14	..
		King Solomon Works	..	..	..	130·54	..	..	..	..	130·54	..
		Lady Robinson Cyanide Works	..	..	..	68·78	..	..	..	..	68·78	..
		Moss' Cyanide Works	..	..	..	870·85	..	..	..	..	2,205·23	..
		New Victoria Consols Cyanide Works	..	..	..	14·89	..	..	..	..	14·89	..
		Orotava Works—Kalgoorlie	..	..	..	62·50	..	..	..	..	62·50	..
		State Battery—Coolgardie	..	..	41·50	321·88	..	..	..	647·50	1,059·54	..
		State Battery—Widgiemooltha	..	..	..	53·29	..	..	..	38·50	176·36	..
		Various Works	..	..	..	..	..	4·98	..	3,657·11	10,164·81	108·89
	Reported by Banks and Gold Dealers		104·41	..	..	..	..	4,188·93	543·04	..	..	..
		Total	**104·41**	**416·26**	**65,865·40**	**32,299·94**	**195·17**	**5,497·64**	**6,759·23**	**1,126,188·94**	**750,745·58**	**594·63**

KUNANALLING DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease	Total for 1908.					Total Gold 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	..	..	245·00	85·57	..	..	8·53	736·50	367·45	..
Do. ..	565s	Zuleika	..	..	..	..	..	..	..	628·50	1,773·98	1·38
Do. ..	..	Voided leases	..	..	..	..	..	10·94	65·31	2,902·25	2,262·94	..
Do. ..	..	Sundry claims	..	..	76·00	22·78	..	..	18·57	912·25	358·01	..
Carbine ..	33s	Carbine	..	..	2,044·00	1,657·26	..	..	687·98	11,651·50	6,254·15	..
Do. ..	758s	(Carbine South)	..	..	..	..	..	..	..	22·00	10·29	..
Do. ..	776s	Spearmint	..	..	60·00	91·50	..	..	..	174·00	271·86	..
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 1908.					Total Gold 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 ..	(607s)	Denver City	..	..	..	..	..	22·41	310·94	4·00	40·67	..
Do. ..	716s	Lady Evelyn	..	..	..	..	..	..	..	241·75	479·81	..
Do. ..	715s	Orabanda	..	..	..	..	..	..	..	689·50	333·75	..
Do. ..	739s	Ora Banda Nellie	..	..	..	..	..	..	..	101·00	56·46	..
Do. ..	..	Voided leases	..	..	..	..	..	45·10	482·50	6,393·40	5,964·45	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	6·16	116·00	67·61	..
Dunnsville ..	796s	Herbert	..	..	86·50	96·74	..	..	..	86·50	96·74	..
Do. ..	17s	(New Standard Exploration Co., Ltd.)	..	..	..	..	..	..	..	13,681·00	5,788·52	..
Do. ..	17s	North Coolgardie G.Ms., Ltd. ..	..	..	247·00	213·48	..	..	..	566·50	710·81	..
Do. ..	17s	(Wealth of Nations)	..	..	..	..	..	..	..	1,695·00	513·11	..
Do. ..	(782s)	Wealth of Nations South	..	..	..	..	..	..	..	37·00	23·61	..
Do. ..	..	Voided leases	..	..	..	..	..	..	178·14	1,053·50	683·94	..
Do. ..	..	Sundry claims	..	..	11·00	2·70	..	..	..	239·58	182·55	..
Jourdie Hills ..	789s	Derry's Own	..	7·54	278·00	134·46	..	..	7·54	542·00	243·47	..
Do. ..	801s	Halifax	..	..	64·00	27·44	..	..	..	64·00	27·44	..
Do. ..	793s	Jourdie Enterprise Extended	..	..	..	..	..	..	..	115·00	135·36	..
Do. ..	773s, 786s ..	Jourdie Enterprise leases	..	..	809·00	608·85	..	..	..	1,646·00	1,061·09	..
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.	..	..	285·00	141·97	..	..	..	325·00	270·41	..
Do. ..	798s	O.K.	..	..	..	..	..	..	..	64·00	18·63	..
Do. ..	514s	Pride of Jaudie North	..	..	262·50	399·31	..	..	..	1,533·00	1,130·99	..
Do. ..	369s	(Pride of the Jourdies)	..	..	..	..	..	..	..	410·74	465·47	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	481·00	183·89	..
Do. ..	..	Sundry claims	..	..	228·00	107·34	..	..	..	718·00	362·30	..
Kandana ..	..	Voided leases	..	..	..	..	..	..	..	465·00	68·12	..
Kintore ..	802s	Last Chance	..	..	11·00	69·99	..	..	..	11·00	69·99	..
Do. ..	740s	London	..	..	182·00	70·51	..	..	..	724·00	864·32	..
Do. ..	797s	Sugarloaf	..	..	118·00	155·12	..	..	..	118·00	155·12	..
Do. ..	..	Voided leases	..	..	..	..	..	..	143·66	41,565·81	29,914·00	...
Do. ..	..	Sundry claims	..	..	13·00	5·68	..	..	..	640·50	701·16	...
Siberia ..	674s	Golden	..	..	..	..	..	..	82·17	22·40	120·37	...
Do. ..	720s	Invincible	..	..	..	..	..	..	..	185·00	368·63	..
Do. ..	728s	Mexico	..	..	..	..	..	..	..	216·50	427·07	..
Do. ..	718s	Missouri	..	..	..	..	..	..	..	196·00	79·88	..
Do. ..	736s	Palmerston	..	..	..	..	..	..	1·84	159·00	25·10	..
Do. ..	746s	Pole	..	..	..	..	..	..	..	100·00	79·87	...
Do. ..	(754s)	Port Arthur	..	..	..	..	..	..	..	29·00	24·31	..

Do. ..	124s	Waverley	..	..	..	..	..	..	496·67	1,466·80	1,873·81	..
Do. ..	..	Voided leases	..	..	..	..	..	1·07	977·13	5,842·15	7,531·10	..
Do. ..	..	Sundry claims	..	..	..	..	..	30·91	..	196·00	135·15	..
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	..	..	212·00	396·02	..	..	..	1,079·00	1,065·83	..
Do. ..	777s	Bow's Mine No. 1	..	..	102·50	86·46	..	..	..	741·09	269·22	..
Do. ..	795s	Eureka Extended	..	..	30·50	54·62	..	..	..	30·50	54·62	..
Do. ..	783s	Hopeful	..	..	108·00	177·58	..	..	..	213·00	238·45	..
Do. ..	757s	Inkermann	..	..	127·00	238·40	..	..	..	760·00	1,488·71	..
Do. ..	803s	Lady Agnes	..	..	8·00	6·80	..	..	..	8·00	6·80	..
Do. ..	79s	Premier	..	..	22·00	17·13	..	..	..	32·00	22·16	..
Do. ..	79s	(Premier G.M. Co., N.L.)	..	..	..	..	..	..	..	62,214·00	46,930·06	18·84
Do. ..	586s, 602s ..	Shamrock leases	..	..	359·00	745·80	..	..	192·12	2,947·35	3,702·14	..
Do. ..	645s	Star of Fremantle	..	..	255·00	202·83	..	..	..	4,508·00	2,923·14	..
Do. ..	603s	Sydney Mint	..	59·45	160·00	371·61	..	..	169·74	701·75	2,053·21	..
Do. ..	..	Voided leases	..	..	..	..	..	..	251·06	14,686·35	9,492·49	..
Do. ..	..	Sundry claims	..	..	268·50	122·56	..	..	85·45	2,290·35	1,174·47	..
		From District generally :—										
	Sundry parcels treated at :											
		Bow's Works	7·04	..	39·00	167·54	..	9·22	..	239·00	232·76	..
		Carswell's Cyanide Works	..	..	..	320·47	..	..	..	..	320·47	..
		Hepburn Cyanide Works	..	..	5·00	171·02	..	..	..	5·00	171·02	..
		Jourdie United Works	..	..	..	93·31	..	..	..	..	93·31	..
		Kalgoorlie Gold Recovery Works—Kalgoorlie ..	..	..	..	12·00	..	..	..	..	12·00	..
		Orotava Works—Kalgoorlie	..	..	..	24·61	..	..	..	..	59·30	..
		Pride of Jourdie North Works	..	..	15·50	9·73	..	..	..	33·50	24·74	..
		Regan's Works—Broad Arrow	..	..	27·00	15·65	..	..	..	27·00	15·65	..
		Stanley Battery	..	..	10·00	8·49	..	..	..	62·50	116·47	..
		Various Works	..	..	..	..	..	14·86	..	1,266·16	1,023·16	..
	Reported by Banks and Gold Dealers		1·42	..	..	..	..	20·56	1·10	..	..	..
		Total	**8·46**	**66·99**	**6,769·00**	**7,133·33**	..	**331·11**	**4,835·61**	**206,643·18**	**156,754·7**	**20·22**

Yilgarn Goldfield.

Mining Centre.	Number of Lease	Registered Name of Company or Lease.	Total for 1908.					Total Gold 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	..	..	..	..	..	..	..	796·00	226·88	..
Golden Valley	(740)	Last Try	..	..	..	..	..	..	..	7·00	2·44	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	130·00	218·32	..
Do. ..	..	Sundry claims	..	..	15·50	30·40	..	..	..	15·50	30·40	..
Greenmount ..	(793)	Bulletin	..	..	42·00	7·42	..	..	..	42·00	7·42	..
Do. ..	(756)	Golden Fleece	..	..	130·00	16·98	..	..	..	355·00	62·50	..
Do. ..	(713)	Great Surprise	..	..	..	..	..	31·99	3·38	..	..	..

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 1908.					Total Gold 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.
Greenmount ..	503, 535, 555 ..	(Greenmount G.Ms., Ltd.)	..	..	..	..	..	..	..	5·00	2·11	..
Do. ..	503, 535, 555, (757)	Greenmount Mines, N.L.	..	..	15,681·00	3,131·39	..	..	..	56,157·00	12,907·52	306·67
Do. ..	565	(Royal George)	..	..	..	..	..	..	..	1,806·00	602·41	..
Do. ..	550	(Sunbeam)	..	..	..	..	..	14·00	..	4,472·00	1,427·25	..
Do. ..	550, 565	Sunbeam leases	..	..	1,835·00	402·78	..	..	..	3,083·00	784·03	..
Do. ..	536	Transvaal	..	..	750·00	387·88	221·70	..	..	30,173·00	7,298·99	579·78
Do. ..	503	(United Australia)	..	..	..	..	..	..	..	410·00	120·15	..
Do. ..	..	Voided leases	..	..	..	..	..	..	18·24	3,437·00	866·42	..
Do. ..	..	Sundry claims	..	..	20·00	2·82	..	..	..	197·00	90·74	..
Hope's Hill ..	795	Hope's Hill	..	..	33·00	12·41	..	..	..	33·00	12·41	..
Do. ..	801	Pryoress	..	..	104·00	62·55	..	..	..	104·00	62·55	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	125,246·35	31,790·83	..
Do. ..	..	Sundry claims	..	..	93·50	55·24	..	..	·62	150·50	68·61	..
Jaccoletti ..	(774)	Alpha	..	..	34·00	26·19	..	..	..	34·00	26·19	..
Do. ..	819	Christmas Gift	..	..	49·00	16·76	..	..	..	49·00	16·76	..
Do ..	768	(Donovan's Find)	..	..	1,433·00	1,479·72	..	..	..	1,768·00	1,999·43	..
Do. ..	768	Donovan's Find: Greenmount Mines, N.L.	..	..	237·00	140·09	..	..	..	237·00	140·09	..
Do. ..	(717)	Eveless Eden	..	..	..	..	..	..	..	622·00	349·17	..
Do. ..	(753)	Exhibition	..	..	443·00	175·17	..	..	..	859·00	278·64	..
Do. ..	779	Frances Firness	..	..	632·00	344·11	..	..	..	674·00	380·02	..
Do. ..	825	Geelong	..	..	53·00	53·91	..	..	..	53·00	53·91	..
Do. ..	820	Gentle Annie	..	..	110·00	33·83	..	..	..	110·00	33·83	..
Do. ..	490, 517, 558, 804	Jacoletti G.Ms., Ltd.	..	..	1,264·00	739·83	..	..	..	1,992·00	1,145·54	..
Do. ..	821	Lady Agnes	..	..	77·00	14·72	..	..	..	77·00	14·72	..
Do. ..	490, 517, 558 ..	(Lady Loch Mines, Ltd.)	..	..	..	..	..	..	..	2,091·00	674·01	..
Do. ..	714	(Marvel Loch)	..	..	..	..	..	..	..	500·00	316·81	..
Do. ..	714, 723	Marvel Loch G.M. Co., N.L.	..	..	1,348·00	1,182·50	37·21	..	..	2,209·00	1,824·92	63·08
Do. ..	739	Marvel Loch North	..	..	58·00	117·70	..	..	..	58·00	117·70	..
Do. ..	792	Mountain King	..	..	323·00	188·89	..	..	..	323·00	188·89	..
Do. ..	803	Mountain Queen	..	..	176·00	65·25	..	..	..	176·00	65·25	..
Do. ..	807	Queen Mab	..	..	61·00	40·80	..	..	..	61·00	40·80	..
Do. ..	490, 517	(Turnbull leases)	..	..	..	..	..	..	..	2,143·00	1,481·72	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	452·00	325·83	..
Do. ..	..	Sundry claims	..	..	518·00	224·00	..	..	15·78	1,138·25	553·22	..
Kennyville ..	813	Catherine	..	..	20·50	12·42	..	..	..	20·50	12·42	..
Do. ..	776	Cornishman	..	..	195·00	269·41	..	..	..	227·00	328·70	..
Do. ..	570	(Great Leviathan)	..	..	..	..	..	..	..	3,821·85	2,948·67	..
Do. ..	570	Great Leviathan	..	..	246·00	132·59	..	..	..	246·00	132·59	..
Do. ..	570	(Northern Blocks Syndicate, Ltd.)	..	..	..	..	..	..	..	10,705·00	2,974·64	..
Do. ..	..	Voided leases	..	..	..	..	..	..	5·58	225·00	78·56	·09
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	24·00	26·57	..

Koolyanobbing	641	Chadwick's Reward	..	..	..	..	..	..	..	..	6·00	2·65	..
Do.	783	St. Clair No. 2 South	..	..	..	23·00	16·07	..	..	..	23·00	16·07	..
Mt. Jackson	212, (217, 397)	(Mt. Jackson G.Ms. Ltd., 1897)	..	..	..	..	..	..	..	..	9,537·00	6,201·61	..
Do.	212, (217, 397)	(Mt. Jackson G.Ms., Ltd.)	..	..	..	..	..	..	..	..	15,054·00	9,806·22	2,045·50
Do.	212, (217, 397), 658, 659	(Mt. Jackson G.Ms., Ltd.)	..	..	..	..	..	..	..	..	4,506·00	3,297·25	259·78
Do.	212, (217), 658, 659	Mt. Jackson leases	..	..	..	100·00	31·53	..	..	..	100·00	31·53	..
Do.	..	Voided leases	..	..	..	..	..	..	..	..	801·50	224·71	..
Mt. Rankin	..	Voided leases	..	..	..	..	..	..	3·84	5·20	252·00	69·50	..
Parker's Range	508	Australia	..	..	..	223·00	104·14	..	..	..	2,171·00	1,380·29	..
Do.	771	Battler's Hill	..	..	..	..	..	..	..	..	6·00	5·97	..
Do.	(520)	Blue Hill	..	..	..	..	..	..	..	..	1,071·00	1,627·94	..
Do.	830	Brilliant	..	..	..	54·50	48·48	..	..	..	54·50	48·48	..
Do.	746	Dulcie Jean	..	..	..	49·00	44·06	..	..	..	108·75	161·35	..
Do.	(751)	Ell Ess Dee	..	..	..	..	..	..	..	..	26·00	28·61	..
Do.	(736)	Garibaldi	..	..	..	..	..	..	..	..	70·50	38·98	..
Do.	707	Golden Cube	..	..	..	210·00	53·76	..	..	12·85	1,206·00	422·57	..
Do.	(761)	Golden Rod	..	..	..	..	..	..	..	..	137·00	62·10	..
Do.	(668)	Gordon Highlander	..	..	..	..	..	..	..	14·37	117·00	30·05	..
Do.	719	Great Victoria	..	..	..	440·00	104·77	..	..	..	1,356·00	281·53	..
Do.	797	McIntosh	..	..	..	110·00	81·27	..	..	..	110·00	81·27	..
Do.	665	Never Never	..	..	..	16,900·00	4,369·94	..	..	..	19,550·00	5,132·43	..
Do.	769	Piemonte	..	..	5·96	130·00	19·16	..	..	5·96	259·50	38·97	..
Do.	724	Spring Hill	..	..	..	1,980·00	481·82	..	..	..	2,274·00	560·43	..
Do.	760	Spring Hill North	..	..	..	..	..	..	..	..	20·00	5·56	..
Do.	..	Voided leases	..	..	..	..	..	..	..	19·12	2,586·00	2,240·84	..
Do.	..	Sundry claims	..	..	..	..	..	..	..	..	327·75	97·42	..
Southern Cross	13, 29, 279, 505, 506	British and Foreign Development Syndicate, Ltd.		..	..	7,576·00	4,550·19	82·00	..	..	75,047·75	54,204·09	176·57
Do.	279	(Central)	..	..	..	..	..	..	..	..	44,958·00	19,702·85	..
Do.	749	Central Extended	..	..	7·85	262·75	227·10	6·00	..	28·39	299·82	390·28	6·00
Do.	13	(Fraser's G.M. Co., N.L.)	..	..	..	..	..	..	..	..	151,771·00	67,870·33	..
Do.	29	(Fraser's South G.M. Co., N.L.)	..	..	..	..	..	..	..	..	48,233·00	20,013·23	..
Do.	(552)	(Haddon)	..	..	..	..	..	..	..	..	680·00	145·01	..
Do.	(552)	Haddon	..	..	..	..	8·64	..	..	..	..	8·64	..
Do.	(64, 552)	(Haddon leases)	..	..	..	..	..	..	..	..	7,178·00	1,396·90	..
Do.	(737)	Reward	..	..	..	..	..	..	..	10·59	46·00	53·51	..
Do.	..	Voided leases	..	..	..	..	..	..	..	172·24	80,158·38	31,451·97	·06
Do.	..	Sundry claims	..	..	..	..	..	..	3·73	592·81	853·25	215·75	..
		From District generally :—											
		Sundry parcels treated at :											
		Allsop and Howell's Works—Kalgoorlie	..	..	..	..	132·54	..	..	..	..	132·54	..
		British and Foreign Development Works	..	..	..	..	193·25	..	..	..	..	193·25	..
		Fraser's South Extended Tailings Works	..	..	..	..	1,263·78	2·64	..	..	..	1,443·31	2·64
		Fremantle Smelting Works	..	..	..	..	17·35	..	..	..	21·28	555·44	33·90
		Higgins Cyanide Works	..	..	..	..	34·14	..	..	..	..	34·14	..
		Jacoletti Works	..	..	..	..	260·97	..	..	..	..	260·97	..
		Jones' Cyanide Works	..	..	..	..	127·39	..	..	..	..	127·39	..
		Layther's Cyanide Works	..	..	..	..	225·19	..	..	..	..	265·76	..
		Orotava Works—Kalgoorlie	..	..	..	..	173·61	..	..	..	..	238·22	..
		Spring Hill Works	..	..	..	..	43·65	..	..	..	..	43·65	..
		Sunbeam Works	..	..	..	8·00	168·50	..	..	..	8·00	168·50	..
		Various Works	..	..	..	..	..	..	..	..	59·00	4,610·30	..
		Reported by Banks and Gold Dealers	..	..	..	..	..	..	17·01	..	..	..	..
		Total	..	..	**13·81**	**54,047·75**	**22,149·06**	**349·55**	**70·57**	**905·13**	**728,558·93**	**308,540·94**	**3,474·07**

TABLE IV.—*Production of Gold and Silver from all Sources, etc.*—continued.

Dundas Goldfield.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1908.					Total Gold 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 ..	..	Voided leases	..	..	..	..	..	..	..	497·55	504·95	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	88·00	74·05	..
Dundas ..	..	Voided leases	..	..	..	..	..	..	..	4,531·23	2,202·21	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	385·37	64·00	37·80	..
Killaloe ..	..	Voided leases	..	..	..	..	..	..	..	20·65	6·88	..
Norseman ..	1044	Acme	..	..	133·50	40·49	..	..	..	133·50	40·49	..
Do. ..	987	After Years	..	..	39·00	61·01	..	..	..	39·00	61·01	..
Do. ..	39, (97)	(All Nations G.Ms., Ltd.)	..	..	..	..	..	..	..	200·00	47·74	..
Do. ..	999	(Austral Mararoa)	..	..	545·00	145·88	..	..	..	605·00	169·42	..
Do. ..	1018	Bandit King	..	..	121·60	75·76	..	..	..	121·60	75·76	..
Do. ..	1061	Bohemian	..	..	21·50	5·77	..	..	..	21·50	5·77	..
Do. ..	42, 43, 53, 579, 690, 889, 898, 1011	Cumberland G.M. Co., N.L.	..	..	8,299·00	7,137·61	..	..	..	36,805·10	38,110·30	..
Do. ..	966	Esperanza No. 2	..	..	111·50	152·85	..	..	..	379·50	607·91	..
Do. ..	1003	Glory	..	12·63	351·00	191·80	..	..	12·63	430·00	229·35	..
Do. ..	938, 945, 988 ..	Hampton Plains Estate (1906), Ltd. ..	..	..	4,101·00	988·30	..	..	..	8,493·00	1,951·81	..
Do. ..	(1022)	Hill View	..	..	10·00	4·99	..	..	..	10·00	4·99	..
Do. ..	(863)	Hit or Miss	..	..	..	..	..	..	18·53	120·50	93·54	..
Do. ..	1005	Hopetoun	..	..	165·00	72·27	..	..	..	209·00	92· 2	..
Do. ..	908	(Iris)	..	..	..	..	..	..	..	70·00	23·14	..
Do. ..	1008	Iron King	..	..	45·00	10·29	..	..	..	176·50	41·82	..
Do. ..	53	(John Bull)	..	..	..	..	..	..	..	314·00	281·93	..
Do. ..	(1010)	Kembally Grant	..	..	..	..	..	..	..	11·50	112·73	..
Do. ..	956	Kirkpatrick West	..	..	27·00	49·49	..	..	3·68	214·00	329·54	..
Do. ..	1002	Lady Gladys Gwendolen	..	..	82·50	21·19	..	..	..	155·00	54·62	..
Do. ..	(864, 961) ..	Lady Mary G.M. Co., N.L.	..	..	255·50	124·41	..	..	..	6,848·50	2,882·04	10·00
Do. ..	945	(Lady Miller South)	..	..	..	..	..	..	..	17·00	4·36	..
Do. ..	(978)	Little Gladys	..	14·31	..	..	..	..	95·94	13·00	63·13	..
Do. ..	(984)	Lucky Call No. 2	..	86·35	121·00	90·53	..	..	87·57	197·00	122·73	..
Do. ..	852	(Mararoa)	..	..	..	..	..	..	..	9,167·00	4,484·90	..
Do. ..	992	(Mararoa Extended)	..	..	54·50	8· 5	..	..	..	169·50	24·08	..
Do. ..	852, 912, 977, 979, 980, 985	Mararoa G.M. Co., N.L.	..	..	12,718·00	8,188·08	4, 75·83	..	..	17,676·50	10,794·17	4,275·83
Do. ..	991	(Mararoa North No. 1)	..	..	..	..	..	..	..	17·00	13·35	..
Do. ..	(1019)	Melrose	..	23·35	..	..	..	..	23·35	..	..	..
Do. ..	53	(Midas G.M. Co., N.L.)	..	..	..	..	..	..	..	416·00	204·15	..
Do. ..	42, 43, 53 ..	(Mt. Benson G.M. Co., N.L.)	..	..	..	..	..	..	..	4,797·40	4,181·00	..
Do. ..	(981)	Nellie May	..	..	27·00	5·63	..	..	..	27·00	5·63	..
Do. ..	1036	Nellie May	..	17·48	9·00	28·84	..	..	17·48	9·00	28·84	..
Do. ..	964	(New Moon)	..	..	377·00	330·48	32·06	..	..	983·00	940·25	64·27
Do. ..	964, 1017, 1025 ..	New Moon leases	..	..	313·50	278·48	31·60	..	..	313·50	278·48	31·60
Do. ..	821	Northern Star	..	..	46·50	80·36	..	..	355·36	705·50	1,113·37	..
Do. ..	903	O.K.	..	..	100·50	116·06	..	..	21·23	828·25	940·21	..

Do.	995	O.K. Extended	..	..	..	371·50	237·63	..	..	..	523·50	422·69	..
Do.	914	(Oversight)	..	..	..	45·50	54·34	..	..	..	373·00	534·12	..
Do.	914, 1020	Oversight leases	..	..	..	546·50	633·54	..	..	..	546·50	633·54	..
Do.	1033	Plain Bill	..	..	..	363·00	18·94	..	..	..	363·00	18·94	..
Do.	106, 187, 587, 840, 972	Princess Royal G.M. Co., N.L.	..	..	..	8,639·00	3,221·58	389·38	..	..	152,231·50	136,043·06	8,976·08
Do.	634, 687, 745	Princess Royal North G.M. Co., N.L.	..	..	..	..	..	..	..	..	2,150·00	1,629·68	27·00
Do.	1021	Princess Royal North G.M. Co., N.L.	..	..	..	1,101·00	,037·01	..	..	..	1,101·00	1,037·01	..
Do.	187	(Princess Royal South)	..	..	..	..	..	..	..	..	358·00	568·05	..
Do.	849	St. Patrick	..	..	..	157·50	428·87	..	..	160·91	868·00	2,228·11	..
Do.	989	Surprise	..	..	..	70·00	29·23	..	..	..	180·00	136·84	..
Do.	(997)	Up and Down	..	..	..	..	..	..	..	..	67·00	34·57	..
Do.	1016	Valkyrie	..	..	..	110·10	40·50	204·00	..	110·10	72·50	419·67	4.90
Do.	(936)	Valkyrie Consolidated	..	..	..	..	..	..	..	..	209·00	448·02	..
Do.	986	Veni, Vidi, Vici	..	..	..	409·55	46·50	232·20	..	470·58	55·50	260·62	..
Do.	990	Viking No. 1	..	..	..	..	577·00	1,623·39	..	..	1,274·00	3,095·95	..
Do.	..	Voided leases	..	..	..	..	..	..	4·23	2,479·42	139,929·85	101,790·32	91·58
Do.	..	Sundry claims	..	..	..	35·84	1,069·00	582·04	·59	992·11	309·25	7,902·40	4,148·11	·59
Peninsula	..	Voided leases	..	..	..	..	..	..	..	..	17·61	7,764·00	4,705·10	..
		From District generally :—												
		Sundry parcels treated at :												
		Break-o'-Day Cyanide Works	..	..	..	..	..	105·32	..	..	..	105·32	..
		Little Wonder Cyanide Works	..	..	..	..	..	111·59	..	..	..	174·54	..
		Mararoa Crushing and Cyaniding Works	..	..	..	..	..	139·67	..	..	80·00	409·67	..
		State Battery—Norseman	..	..	..	..	..	1,050·11	..	..	225·50	6,570·16	885·41
		Various Works	..	..	..	..	..	..	..	54·52	255·50	4,708·35	646·45
		Reported by Banks and Gold Dealers	..	..	..	15·74	..	..	880·96	..	..	..	..
		Total	..	..		**15·74**	**709·61**	**41,102·10**	**27,918·28**	**4,729·46**	**1,877·30**	**4,623·53**	**412,425·03**	**341,363·81**	**15,013·71**

Phillips River Goldfield.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1908.					Total Gold 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	(130)	Alice	..	..	..	..	..	..	..	17·00	9·97	..
Do.	(143)	Alice	..	..	36·50	4·86	..	..	..	36·50	4·86	..
Do.	99	Alice Mary	..	10·61	..	..	..	..	10·61	20·00	3·83	..
Do.	107	Ard Patrick	..	..	163·50	121·85	..	..	..	295·00	253·74	..
Do	132	Charmion	..	..	27·00	8·42	..	..	..	27·00	8·42	..
Do.	M.L. 184	Christmas Gift	..	..	253·00	72·48	..	..	..	819·00	433·23	..
					..	*31·55						
Do.	136, 137, 138, (late 139 M.L. 60)	Flag Gold and Copper Mining Co., Ltd.	..	..	1,110·00	806·51	..	..	..	1,110·00	1,127·82	..
					..	*321·31						
Do.	65	(Gem)	..	..	..	..	..	..	..	687·50	613·34	..
Do.	65, 79	Gem leases	..	..	2,255·00	793·27	..	..	..	3,098·35	1,192·49	..
Do.	(M.L. 294)	Great Britain	..	..	..	..	..	..	..	13·00	5·93	..

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 1908.					Total Gold 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.Ls. 52, 94 ..	(Harbour View leases)	..	..	..	..	..	..	379·86	3,619·25	1,560·86	61·41
Do. ..	M.Ls. 52, 94 ..	Harbour View leases	..	..	..	*103·04	..	..	..	500·00	196·37	..
Do. ..	81	Harbour View North	..	..	74·00	28·06	..	..	..	155·00	75·81	..
Do. ..	98	Hillsborough	..	..	176·75	104·26	..	..	..	461·84	862·40	..
					..	*295·38						
Do. ..	(133)	Kundip	..	..	..	..	..	..	..	161·00	43·82	..
Do. ..	150	Kundip	..	..	33·50	15·83	..	..	..	33·50	15·83	..
Do. ..	(104)	Lilly	..	..	113·00	41·34	..	..	..	330·00	115·76	..
Do. ..	66	Medic	..	..	57·56	34·62	..	..	6·85	677·46	591·13	..
Do. ..	(M.L. 291) ..	Mosaic	..	..	..	*3·18	84·33	..	..	..	6·79	248·95
Do. ..	(M.L. 108) ..	Mt. Stennett	..	..	..	..	..	..	3·74	..	20·94	..
Do. ..	129	Queen of the Earth	52·00	..	..	..	..	63·00	..	..	..	..
Do. ..	M.Ls. 52, 94 ..	(Ravensthorpe G.M. Syndicate, N.L.) ..	..	..	..	..	..	..	..	1,124·00	433·94	164·98
Do. ..	(M.L. 60)	(Red, White, and Blue)	..	..	..	..	..	..	..	1,005·60	1,122·15	107·29
Do. ..	(M.L. 60)	Red, White, and Blue: Flag Gold and Copper Mining Co., Ltd.	..	..	268·00	125·64	..	..	..	933·00	597·49	..
					..	*63·55						
Do. ..	106	Stowaway	41·02	..	15·50	7·44	..	50·28	..	29·50	21·09	..
Do. ..	74	Two Boys	..	..	1,525·00	964·09	..	..	3·90	1,913·12	1,968·42	..
Do. ..	80	Western Gem	..	..	107·67	76·33	..	..	..	177·67	134·66	..
Do. ..	.. ..	Voided leases	..	..	..	..	..	..	91·12	655·74	617·65	1,527·24
Do. ..	.. ..	Sundry claims	6·75	..	127·00	75·11	..	48·68	15·50	219·54	200·57	..
Mt. Desmond	M.L. 203	(British Flag)	..	..	..	..	..	..	..	..	7·76	..
Do. ..	M.L. 208	(Desmond)	..	..	..	..	..	..	..	..	·77	..
Do. ..	M.L. 95	(Elverdton: Phillips River Options Syndicate, N.L.)	..	..	..	..	..	..	..	..	9·63	..
Do. ..	M.L. 95	Elverdton: Phillips River Gold and Copper Co., Ltd.	..	..	..	*31·52	..	..	..	..	44·44	..
Do. ..	M.L. 275	Ironclad	..	..	..	*13·18	..	..	..	..	13·78	..
Do. ..	M.L. 109	(Mt. Desmond)	..	..	..	..	..	..	1·40	..	36·97	..
Do. ..	M.L. 109	Mt. Desmond: Phillips River Gold and Copper Co., Ltd.	..	..	..	..	..	..	..	..	123·98	14·10
Do. ..	M.L. 199	P.L.P.	..	..	..	..	..	..	..	..	10·91	..
Do. ..	M.L. 257	Thistle and Shamrock	..	..	..	*5·14	..	..	..	..	6·00	..
Do. ..	.. ..	Voided leases	..	..	..	..	..	..	..	9·00	17·61	..
Do. ..	.. ..	Sundry claims	..	..	..	..	..	..	..	..	·56	..
Mt. Purchas ..	89	Mt. Agnes Reward	..	..	10·00	1·89	..	..	..	184·00	130·65	..
Do. ..	.. ..	Voided leases	..	..	..	..	..	..	4·38	17·05	30·45	..
Do. ..	.. ..	Sundry claims	..	..	..	..	..	..	..	4·75	4·68	..
Ravensthorpe ..	M.L. 207	Andante	..	..	..	..	..	..	..	17·00	6·60	..
Do. ..	(134)	Annabelle	..	..	..	1·59	..	..	..	..	1·59	..

Do.	(M.L. 259)	Birthday	..	..	..	..	..	..	..	..	..	·31	..
Do.	(115)	Bobby Dazzler	..	..	..	..	..	..	..	..	18·00	38·59	..
Do.	(M.L. 196)	Contest	..	..	..	..	..	..	..	..	..	·21	..
Do.	82	Gilbert G.M., Ltd.	..	..	..	..	..	..	..	..	236·00	148·47	..
Do.	(M.L. 202)	Grafter	..	..	..	..	..	..	..	..	..	14·43	..
Do.	M.L. 116	Last Chance	..	..	..	..	..	..	..	..	..	5·31	..
Do.	M.L. 16	(Marion Martin)	..	..	..	..	..	..	..	..	..	20·09	..
Do.	M.L. 16	Marion Martin: Phillips River Gold and Copper Co., Ltd.	..	..	..	* 21·66	..	..	..	..	..	57·46	..
Do.	M.L. 7	Mary	..	..	..	..	..	..	..	..	..	9·47	..
Do.	M.L. 175	(Mount Benson)	..	..	..	..	..	..	..	..	..	287·88	..
Do.	(M.L. 195)	Mt. Benson Extended	..	..	..	..	..	..	..	..	..	11·88	..
Do.	M.L. 175	Mt. Benson: Phillips River Gold and Copper Co., Ltd.	..	..	..	* 15·51	..	..	..	..	..	231·15	36·48
Do.	M.L. 15	(Mt. Cattlin)	..	..	..	..	..	..	·49	200·00	85·50	..	
Do.	M.L. 15	Mt. Cattlin: Mt. Cattlin Copper Mining Co., Ltd.	..	..	..	..	..	..	..	..	1,483·37	12·15	
Do.	M.L. 15	(Mt. Cattlin: Phillips River Gold and Copper Co., Ltd.)	..	..	..	..	..	..	..	..	..	387·33	..
Do.	M.L. 219	Mt. Cattlin West	..	..	..	..	..	..	..	..	..	·59	..
Do.	M.L. 204	New Moon	..	..	..	..	..	..	..	..	..	·70	..
Do.	..	Voided leases	..	..	..	..	..	..	114·35	20,117·44	16,560·06	..	
Do.	..	Sundry claims	..	..	167·00 / ..	105·43 / * ·27	..	134·79	..	290·00	187·91	4·15	
West River	(M.L. 252)	Pick and Shovel	..	..	..	..	..	..	..	..	..	·21	..
Do.	..	Sundry claims	..	..	..	..	..	..	..	..	1·69	3·44	
		From Goldfield generally :—											
		Sundry parcels treated at:											
		Various Works	..	..	..	..	..	..	..	..	13·77	..	
		Reported by Banks and Gold Dealers	..	..	..	..	..	111·90	..	..	..	..	
		Total	..	..	**6,519·98**	**4,294·31**	**84·33**	**408·65**	**632·20**	**39,212·81**	**32,232·07**	**2,180·19**	

* From Copper Ore.

Donnybrook Goldfield.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1908.					Total Gold 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**	..

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 1908.					Total Gold 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	..	..	..	..	69·13	..
		Fremantle Smelter, Ltd.	..	..	..	20·82	..	..	..	..	1,127·88	481·77
		Hacke's Works—Boulder	..	..	..	15·62	..	..	..	..	22·16	..
		Hannan's Proprietary Works—Kalgoorlie	..	..	10·00	·90	..	..	..	10·00	·90	..
		Orotava Works—Kalgoorlie	..	..	..	43·46	..	..	..	..	164·67	..
		Rasmussen's Works—Boulder	..	..	..	121·20	..	..	..	..	1,082·21	..
		Various Works	..	..	..	..	..	..	..	17·00	1,596·10	..
		Sundry specimens	..	..	..	..	..	..	2·87	..	..	..
		Reported by Banks and Gold Dealers	..	..	..	..	..	124·89	153·03	..	..	..
		Total	..	..	**10·00**	**271·13**	..	**124·89**	**155·90**	**27·00**	**4,063·05**	**481·77**

TABLE V.

COMPARATIVE RETURN OF GOLD BULLION ENTERED FOR EXPORT AND RECEIVED AT THE PERTH BRANCH OF THE ROYAL MINT, DURING THE YEARS 1906, 1907, AND 1908, SHOWING IN FINE OUNCES THE QUANTITY RECORDED EACH MONTH, AND ITS VALUE.

MONTHS AND QUARTERS.	1906.						1907.						1908.					
	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	40,909·09	113,455·95	154,365·04	655,701	0	2¾	45,337·32	116,900·96	162,238·28	689,144	8	2¼	35,246·82	114,572·09	149,818·91	636,390	5	6¾
FEBRUARY	49,456·20	92,970·40	142,426·60	604,989	14	10	34,538·33	99,654·82	134,193·15	570,016	5	4½	29,629·79	101,865·97	131,495·76	558,558	9	8¼
MARCH	59,373·43	96,201·19	155,574·62	660,838	19	7¼	33,663·00	96,062·63	129,725·63	551,039	9	0	20,476·89	108,849·37	129,326·26	549,343	0	8¼
1st January to 31st March ...	149,738·72	302,627·54	452,366·26	1,921,529	14	8	113,538·65	312,618·41	426,157·06	1,810,200	2	6¾	85,353·50	325,287·43	410,640 93	1,744,291	15	11¼
APRIL	47,759·22	104,457·26	152,216·48	646,574	10	2	38,768·04	91,317·91	130,085·95	552,569	19	10¼	32,497·52	113,217·14	145,714·66	618,956	10	7¾
MAY	47,621·59	109,399·52	157,021·11	666,983	5	7	40,448·34	105,042·78	145,491·12	618,006	19	11	34,143·82	99,811·37	133,955·19	569,005	9	7¼
JUNE	39,893·26	103,366·30	143,259·56	608,527	18	7½	39,721·27	96,800·61	136,521·88	579,908	1	8½	28,802·38	107,905·66	136,708·04	580,698	16	10¼
1st January to 30th June ...	285,012·79	619,850·62	904,863·41	3,843,615	9	0½	232,476·30	605,779·71	838,256·01	3,560,685	4	0½	180,797·22	646,221·60	827,018·82	3,512,952	13	0½
JULY	43,764·18	106,098·07	149,862·25	636,574	7	6	26,848·64	101,706·68	128,555·32	546,068	5	9⅓	27,365·04	106,058·47	133,423·51	566,747	0	11
AUGUST	64,657·27	92,253·07	156,910·34	666,512	15	2	41,090·45	98,051·65	139,142·10	591,038	1	5⅓	32,904·49	103,783·24	136,687·73	580,612	11	5¼
SEPTEMBER	50,893·24	83,127·13	134,020·37	569,282	6	11¼	27,560·29	113,642·71	141,203·00	599,792	4	4⅓	26,400·06	111,840·80	138,240·86	587,209	16	11½
1st January to 30th September	444,327·48	901,328·89	1,345,656·37	5,715,984	18	7⅓	327,975·68	919,180·75	1,247,156·43	5,297,583	15	8	267,466·81	967,904·11	1,235,370·92	5,247,522	2	4¼
OCTOBER	45,208·56	111,326·85	156,535·41	664,920	3	1⅔	37,367·25	112,749·57	150,116·82	637,655	14	4⅔	30,695·67	105,684·54	136,380 21	579,306	6	2¼
NOVEMBER	36,244·52	109 913·58	146,158·10	620,840	2	11	25,171·43	120,653·60	145,825·03	619,425	7	1	31,443·67	105,556·62	137,000·29	581,940	4	10
DECEMBER	36,470·03	109,726·69	146,196·72	621,004	3	10½	41,288·78	113,166·53	154,455·31	656,084	9	1	26,747·81	112,411·90	139,159·71	591,112	17	6
Total	**562,250·59**	**1,232,296·01**	**1,794,546·60**	**7,622,749**	**8**	**7**	**431,803·14**	**1,265,750·45**	**1,697,553·59**	**7,210.749**	**6**	**2¾**	**356,353·96**	**1,291,557·17**	**1,647,911·13**	**6,999,881**	**10**	**10½**

TABLE

TOTAL OUTPUT OF GOLD BULLION ENTERED FOR EXPORT, AND RECEIVED AT THE PERTH BRANCH OF THE 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
Total ...	**22,422·06**	**3,852·36**	**26,274·42**	**147,284·08**	**68,022·10**	**215,306·18**	**4,165·01**	**15,369·13**	**19,534·14**	**4,104·96**	**1,189·98**	**5,294·94**
1908 ...	...	338·00	338·00	...	8,172·26	8,172·26	...	1,076·68	1,076·68	...	45·87	45·87
Total ...	**22,422·06**	**4,190·36**	**26,612·42**	**147,284·08**	**76,194·36**	**223,478·44**	**4,165·01**	**16,445·81**	**20,610·82**	**4,104·96**	**1,235·85**	**5,340·81**

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 ...	...	4,883·17	4,883·17	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
Total ...	**11,346·58**	**42,147·70**	**53,494·28**	**507,143·49**	**1,004,495·41**	**1,511,638·90**	**244,603·15**	**1,031,941·63**	**1,276,544·78**	**111,033·84**	**135,858·87**	**246,897·71**
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
Total ...	**11,346·58**	**42,604·13**	**53,950·71**	**526,467·51**	**1,152,375·31**	**1,678,842·82**	**251,304·43**	**1,108,642·40**	**1,359,946·83**	**114,652·48**	**143,805·22**	**258,457·70**

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	4,048·86	1,514·90	5,558·76	...	...	...	799·48	285·47	1,084·95
Total ...	**113,895·09**	**220,837·80**	**334,732·89**	**13,069·35**	**16,324·20**	**29,393·55**	**282·21**	**557·53**	**839·74**	**7,077·08**	**12,624·19**	**19,711·27**
1908 ...	...	41,203·39	41,203·39	969·00	3,631·02	4,600·02	...	...	...	15·91	1,953·56	1,969·47
Total ...	**113,895·09**	**262,041·19**	**375,936·28**	**14,038·35**	**19,955·22**	**33,993·57**	**282·21**	**557·53**	**839·74**	**7,092·99**	**14,587·75**	**21,680·74**

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, 1908, 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
Total ...	**304·55**	**427·98**	**732·53**	**41,099·08**	**146,275·19**	**187,374·27**	**204,022·34**	**558,212·59**	**762,234·93**	**1,304,439·65**	**570,628·70**	**1,875,068·35**
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
Total ...	**304·55**	**459·80**	**764·35**	**41,099·08**	**156,139·55**	**197,238·63**	**214,723·58**	**695,240·73**	**909,964·31**	**1,349,922·70**	**682,169·24**	**2,032,091·94**

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	14,819·20	...	14,819·20
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
Total ...	**231,853·96**	**302,486·91**	**534,340·87**	**5,686.000·43**	**3,974,638·40**	**9,660.638·83**	**659,909·24**	**537,442·86**	**1,197,352·10**	**196,828·65**	**209,553 74**	**406,382·39**
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
Total ...	**232,779·40**	**326,389·35**	**559,168·75**	**5,953,749·05**	**4,632,575·29**	**10,586,324·34**	**660,781·00**	**578,425·51**	**1,239,206·51**	**196,828·65**	**230,419·84**	**427,248·49**

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 6½
1888	3,124·82	...	3,124·82	13,273 7 10
1889	13,859·52	...	13,859·52	58,871 9 11¾
1890	20,402·42	...	20,402·42	86,663 19 5¼
1891	27,116·14	...	27,116·14	115,182 0 10
1892	53,271·65	...	53,271·65	226,283 11 8½
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	519,973·59	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	1,265,750·44	1,697,553·59	7,210,749 6 2¾
Total	9,510,889·80	8,852,897·27	18,363,787·07	78,004,409 5 0¼
1908	356,353·96	1,291,557·17	1,647,911·13	6,999,881 10 10½
TOTAL	9,867,243·76	10,144,454·44	20,011,698·20	85,004,290 15 10¾

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 1908.

MONTH.	UNITED KINGDOM.			VICTORIA.			GERMANY.			**TOTALS.**			Minted Gold Exported.*
	Bullion.	Furnace Products.	Ore.	Bullion.	Furnace Products.	Ore.	Bullion.	Furnace Products.	Ore.	**Bullion.**	**Furnace Products.**	**Ore.**	
1908.	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	32,726·38	270·63	1,076·25	1,173·56	...	...	...	...	...	**33,899·94**	**270·63**	**1,076·25**	13,036·43
February	26,058·85	2,558·63	...	1,012·31	...	...	...	...	...	**27,071·16**	**2,558·63**	...	13,034·27
March	18,202·37	537·32	592·78	1,021·72	...	...	...	...	122·70	**19,224·09**	**537·32**	**715·48**	10,681·66 † 119·33
April	30,229·93	81·83	253·43	1,932·33	...	...	...	...	...	**32,162·26**	**81·83**	**253·43**	7,124·46 † 120·00
May	32,836·38	40·90	250·00	1,016·54	...	...	...	...	...	**33,852·92**	**40·90**	**250·00**	...
June	24,594·25	2,160·19	400·00	1,647·94	...	...	...	...	...	**26,242·19**	**2,160·19**	**400·00**	4,737·36 ‡ 7,104·02
July	25,241·70	607·86	...	1,515·48	...	...	...	...	...	**26,757·18**	**607·86**	...	2,370·36 ‡ 7,130·14
August	30,919·97	252·00	320·00	1,412·52	...	...	...	...	...	**32,332·49**	**252·00**	**320·00**	9,481·01 † 140·85 ‡ 7,122·36
September ...	23,621·47	918·71	...	1,859·88	...	...	...	...	...	**25,481·35**	**918·71**	...	4,753·77
October	28,484·39	375·00	...	1,836·28	...	...	...	...	...	**30,320·67**	**375·00**	...	11,845·34
November ...	29,556·31	2·00	2·00	1,883·36	...	...	...	...	...	**31,439·67**	**2·00**	**2·00**	20,129·92
December... ...	23,698·47	982·35	...	2,066·99	...	...	...	...	...	**25,765·46**	**982·35**	...	9,488·56 † 98·46
TOTALS	326,170·47	8,787·42	2,894·46	18,378·91	...	...	...	...	122·70	**344,549·38**	**8,787·42**	**3,017·16**	128,518·30

* When considering the total production of gold for the State, these amounts must be disregarded, having been already recorded in the total receipts of gold at the Mint.
† To United Kingdom. ‡ To Germany. 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, 1908, 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
Total	**4,878·69**	**89,183·04**	**19,473·00**	**1,420·56**	**533·38**	**181,159·55**	**822·523·57**	**805,571·04**	**51,211·96**	**1,356,549·28**	**1,299,014·70**	**168,308·97**	**381,058·46**

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
Total ...	**5,483,160·43**	**676,653·96**	**267,770·22**	**306,931·95**	**23,620·81**	**630·96**	**16,781·78**	**11,956,436·31**	**42.388,854 16 0**	**3,681·31**	**10,049 19 4**	**11,960,117·62**	**42,398,904 15 4**

* 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 1908, AND PREVIOUS YEARS.

Period.	BLACK TIN.											
	Pilbarra 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	403·33	30,636	13·90	562·43	576·33	41,046	44·90	934·46	979·36	71,682
Total ...	**171·72**	**3,995·51**	**4,167·23**	**345,907**	**80·48**	**6,779·05**	**6,859·53**	**475,896**	**252·20**	**10,774·56**	**11,026·76**	**821,803**

Period.	TANTALITE.											
	Pilbara Goldfield—Marble Bar District.				Greenbushes Mineral Field.				Total.			
	Quantity.			Total.	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 ...	...	...	...	...	...	...	...	...	...	...	...	...
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	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	**1·80**	**83·80**	**85·60**	**11,569**	**...**	**2·34**	**2·34**	**1,590**	**1·80**	**86·14**	**87·94**	**13,159**

Period.	COPPER ORE.															
	Pilbara Gf.		West Pilbara Gf.		Ashburton Gf.		E. Murchison Gf.		Murchison Gf.				Yalgoo Gf.		Northampton Mf.	
	Marble Bar D.						Lawlers D.		Nannine D.		Day Dawn D.					
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Qu'ntity.	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	...	...	...	...	...	...	...	...	...	...	98·00	1,715
1900 ...	...	...	1,605·00	12,139	...	...	...	...	...	...	5·15	91	...	...	...	...
1901 ...	...	...	1,162·00	15,891	...	...	...	...	...	...	10·50	76	...	...	38·50	277
1902 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1903 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1904 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1905 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1906 ...	...	...	...	...	...	...	...	...	133·50	2,816	...	...	31·91	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	...	...
Total ...	**7·77**	**190**	**17.191·50**	**194,017**	**188·00**	**2.311**	**6·77**	**69**	**133·50**	**2,816**	**47·36**	**441**	**51·41**	**318**	**136·50**	**1,992**

TABLE IX.—*Minerals other than Gold, etc.*—continued.

Period.	COPPER ORE—*continued.*															
	YANDANOOKA MF.		MT. MARGARET GOLDFIELD.				NORTH COOLGARDIE GOLDFIELD.		EAST COOLGARDIE GOLDFIELD.		PHILLIPS RIVER GOLDFIELD.		STATE GENERALLY.		TOTAL.	
			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	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7,018·00	55,270
1899 ...	38·00	407	273·00	4,338	...	...	...	...	...	...	...	...	...	...	2,964·00	35,938
1900 ...	...	...	4,539·00	30,718	...	...	...	...	...	...	34·00	725	...	...	6,183·15	43,673
1901 ...	...	...	7,660·00	40,738	...	...	...	...	...	...	1,089·14	12,918	...	...	9,960·14	69,900
1902 ...	...	...	1,954·00	6,852	...	...	...	...	...	...	308·25	1,238	...	...	2,262·25	8,090
1903 ...	...	...	18,965·00	45,557	...	...	...	...	...	...	1,561·33	10,984	...	...	20,526·33	56,541
1904 ...	...	...	500·00	900	...	...	...	...	...	...	3,468·89	24,280	...	...	3,968·89	25,180
1905 ...	...	...	60·00	674	...	...	...	...	...	...	2,329·04	15,592	...	...	2,389·04	16,266
1906 ...	...	...	4,361·05	21,934	...	...	4·70	33	...	...	2,885·00	25,270	13·50	193	7,429·65	50,337
1907 ...	...	...	5,141·52	58,888	2·85	26	1·42	18	...	...	10,414·57	57,273	3·08	40	18,978·42	180,387
1908 ...	133·55	1,482	4,404·10	20,221	...	...	...	...	50·67	330	2,015·71	9,233	...	...	8,294·30	51,434
Total	**171·55**	**1,889**	**47,857·67**	**230,820**	**2·85**	**26**	**6·12**	**51**	**50·67**	**330**	**24,105·93**	**157,513**	**16·58**	**233**	**89,974·18**	**593,016**

Period.	IRONSTONE.								LEAD ORE.		SILVER LEAD ORE.		COAL.	
	W. PILBARA GF.		E. COOLGARDIE GF. E. Coolgardie D.		STATE GENERALLY.		TOTAL.		NORTHAMPTON MF.		ASHBURTON GF.		COLLIE RIVER COAL MF.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	tons.	£	tons.	£	tons.	£	tons.	£	tons.	£	tons.	£	tons.	£
Previous to 1899	100·00	300	...	...	...	...	100·00	300	...	...	...	...	3,508·00	1,761
1899 ...	...	...	...	...	12,852·00	8,939	12,852·00	8,939	82·75	912	...	...	54,336·00	25,951
1900 ...	...	...	...	...	12,251·00	9,258	12,251·00	9,258	268·00	533	...	...	118,410·10	54,835
1901 ...	...	...	450·00	247	20,119·00	12,999	20,569·00	13,246	...	...	21·05	152	117,835·80	68,561
1902 ...	...	...	...	...	4,800.00	2,040	4,800·00	2,040	...	...	35·85	277	140,883·90	86,188
1903 ...	...	...	...	...	220·00	88	220·00	88	...	...	...	...	133,426·62	69,128
1904 ...	...	...	...	...	1,441·50	577	1,441·50	577	...	...	...	...	138,550·04	67,174
1905 ...	...	...	...	...	3,212·60	1,285	3,212·60	1,285	...	...	...	...	127,364·06	55,312
1906 ...	...	...	...	...	1,279·87	512	1,279·87	512	...	...	...	...	149,755·27	57,998
1907 ...	...	...	...	...	1,093·53	438	1,093·53	438	10·00	128	...	...	142,372·54	55,158
1908 ...	...	...	...	...	...	...	...	...	57·00	461	727·25	6,914	175,247·92	75,694
Total	**100·00**	**300**	**450·00**	**247**	**57,269·50**	**36,136**	**57,819·50**	**36,683**	**417·75**	**2,034**	**784·15**	**7,343**	**1,301,690·25**	**617,760**

Period.	ASBESTOS.		LIMESTONE.								DIAMONDS.	
	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.
	tons.	£	tons.	£	tons.	£	tons.	£	tons.	£	carats.	£
Previous to 1899	...	...	...	...	...	...	...	...	...	...	...	...
1899	...	...	...	...	...	...	17,593·00	2,838	17,593·00	2,838	*	24
1900	...	...	...	...	269·85	273	15,657·00	3,321	15,926·85	3,594	...	...
1901	...	...	...	...	1,642·00	919	16,568·00	3,429	18,210·00	4,348	...	...
1902	...	...	...	...	535·00	340	4,545·35	1,000	5,080·35	1,340	...	...
1903	...	...	...	...	102·00	75	1,177·50	103	1,279·50	178	...	...
1904	...	...	...	...	...	...	13,397·20	1,699	13,397 20	1,699	...	...
1905	...	...	...	...	...	...	9,144·60	1,220	9,144·60	1,220	...	...
1906	...	...	...	...	...	...	9,472·28	1,691	9,472·28	1,691	...	...
1907	...	...	298·00	772	...	...	3,303·95	610	3,601·95	1,382	...	...
1908	40·00	1,600	...	...	...	...	...	...	...	...	...	...
Total	**40·00**	**1,600**	**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 XX., pages 234-7. * Weight unknown.

TABLE X.

QUANTITY AND VALUE OF BLACK TIN REPORTED TO THE MINES DEPARTMENT DURING 1908, AND TOTALS TO DATE.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1908.				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	..	114·45	114·45	8,772	..	1,176·34	1,176·34	91,974
Mills Find ..	..	Sundry claims	..	..	..	..	..	·85	·85	69
Moolyella ..	..	Voided leases	..	..	..	..	..	330·53	330·53	21,340
Do. ..	..	Sundry claims	..	251·78	251·78	19,252	..	2,202·55	2,202·55	195,614
Old Shaw ..	..	Voided leases	..	..	..	..	..	6·75	6·75	424
Do. ..	..	Sundry claims	..	..	..	..	..	214·04	214·04	14,525
Wodgina ..	88 ..	Chamberlain	..	..	..	..	·35	..	·35	60
Do. ..	85 ..	Commonwealth	..	..	..	..	2·95	..	2·95	348
Do. ..	84 ..	Mt. Cassiterite	31·00	..	31·00	2,225	146·02	13·85	159·87	14,996
Do. ..	93 ..	Mt. Cassiterite North ..	..	..	..	..	9·67	..	9·67	971
Do. ..	89 ..	Tinstone	..	..	..	..	11·95	..	11·95	1,170
Do. ..	..	Voided leases	..	..	..	..	..	6·10	6·10	461
Do. ..	..	Sundry claims	..	5·80	5·80	387	·78	44·50	45·28	3,955
		Totals	**31·00**	**372·03**	**403·03**	**30,636**	**171·72**	**3,995·51**	**4,167·23**	**345,907**
GREENBUSHES MINERAL FIELD.										
Greenbushes ..	357, 359, 360, (367, 408)	Aurora leases	..	18·05	18·05	1,244	..	19·95	19·95	1,472
Do. ..	(361) ..	Baronia	..	..	..	..	..	16·87	16·87	1,588
Do. ..	496 ..	Birthday	..	1·50	1·50	98	..	1·50	1·50	98
Do. ..	296 ..	(Central)	..	..	..	..	..	100·16	100·16	9,728
Do. ..	484 ..	Champion	..	1·45	1·45	120	..	1·45	1·45	120
Do. ..	357, 359, 360, (367, 408)	(Consolidated Tin Sluicing and Mining Co., N.L.)	..	..	..	..	..	36·85	36·85	3,429
Do. ..	356 ..	Cornwall	2·41	..	2·41	152	17·49	13·63	31·12	2,789
Do. ..	422 ..	Cornwall Extended ..	..	..	..	..	·50	..	·50	55
Do. ..	(388) ..	Dixie	·25	..	·25	17	8·67	·72	9·39	959
Do. ..	(382) ..	Dreamland	·15	·20	·35	28	1·61	1·92	3·53	368
Do. ..	369 ..	Enterprise	..	..	..	..	..	3·67	3·67	284
Do. ..	(491) ..	(Excelsior Tin Mining Co., Ltd.)	..	·45	·45	36	..	·45	·45	36
Do. ..	497 ..	Excelsior Tin Mining Co., Ltd.	..	1·85	1·85	135	..	1·85	1·85	135
Do. ..	(466) ..	Forget me not	..	..	..	..	..	·40	·40	40
Do. ..	337 ..	Gladstone	..	7·76	7·76	580	..	49·97	49·97	4,360
Do. ..	375 ..	(Glasgow)	..	..	..	..	·93	·61	1·54	150
Do. ..	(419) ..	Great Boulder	..	..	..	..	·15	·25	·40	40
Do. ..	35, 169, 218, 272, 287, 295, 296, 331, 375, 395, 421, (428, 432, 448, 453)	Greenbushes Development Co., Ltd.	..	170·53	170·53	11,612	..	320·90	320·90	25,279
Do. ..	357, 359, 360, (367)	(Greenbushes Sluicing Co., Ltd.)	..	..	..	..	..	25·33	25·33	2,234
Do. ..	147 ..	Haphazard	·20	..	·20	14	·28	8·64	8·92	564
Do. ..	35 ..	(Horan's)	..	..	..	..	..	188·35	188·35	11,605
Do. ..	169 ..	(Horan's No. 1 North) ..	..	..	..	..	..	9·50	9·50	684
Do. ..	(469) ..	I.O.U.	..	1·00	1·00	67	..	1·55	1·55	119
Do. ..	(456) ..	Ironclad	..	..	..	..	·95	..	·95	82
Do. ..	73, 233, 271	King Tin leases	..	3·65	3·65	263	1·95	15·85	17·80	1,886
Do. ..	331 ..	(Lady Esther)	..	..	..	..	..	10·00	10·00	744
Do. ..	454 ..	(Legado)	..	..	..	..	..	5·60	5·60	555
Do. ..	470 ..	Little Wonder	..	5·70	5·70	496	..	5·70	5·70	496
Do. ..	374 ..	Lost and Found	1·50	..	1·50	125	8·35	·85	9·20	937
Do. ..	393 ..	Lost and Found North ..	6·09	..	6·09	434	9·32	..	9·32	796
Do. ..	73 ..	(Nelson)	..	..	..	..	..	22·40	22·40	1,675
Do. ..	73, 233	(Nelson leases)	..	..	..	..	..	61·01	61·01	4,164

TABLE X.—*Quantity and Value of BLACK TIN, etc.*—continued.

Locality.	Number of Lease, Claim, or Area.	Registered Name of Company or Lease.	1908. Quantity. Lode.	1908. Quantity. Stream.	1908. Quantity. Total.	1908. Value.	Totals to Date. Quantity. Lode.	Totals to Date. Quantity. Stream.	Totals to Date. Quantity. Total.	Totals to Date. Value.
			tons.	tons.	tons.	£	tons.	tons.	tons.	£
GREENBUSHES MINERAL FIELD—*continued.*										
Greenbushes ..	(413), 423, (424), [425, 470], 471	Nickel Kramer Tin Mining Co., Ltd.	..	7·09	7·09	591	..	8·69	8·69	686
Do. ..	(401) ..	Nil Desperandum	..	..	..	..	1·55	..	1·55	162
Do. ..	396, 397, 460, 461, 479, 480	Norilup Tin Mining and Dredging Co., Ltd.	..	1·69	1·69	140	..	3·82	3·82	291
Do. ..	399 ..	North Cornwall	..	..	..	..	1·72	..	1·72	184
Do. ..	(394) ..	North Junction	..	..	..	..	·10	·05	·15	17
Do. ..	(400) ..	Old Sport	..	..	..	..	1·45	·05	1·50	150
Do. ..	271 ..	(Pioneer)	..	..	..	..	..	1·84	1·84	117
Do. ..	300 ..	South Cornwall	..	..	..	..	4·55	15·09	19·64	1,564
Do. ..	450, 458, 485, 486, 487, 488, 489	Stanhope United leases ..	..	67·72	67·72	5,401	..	78·44	78·44	6,229
Do. ..	(410) ..	Tairua	..	..	..	..	3·88	..	3·88	390
Do. ..	218 ..	(W.A. Mt. Bischoff) ..	..	..	..	..	..	5·38	5·38	342
Do. ..	391, 454	Westralia and Legado leases	..	11·87	11·87	869	..	17·84	17·84	1,419
Do. ..	381, 435, 436, 472, 478	Westralian Gully Tin Co., Ltd.	..	22·93	22·93	1,800	..	33·53	33·53	2,646
Do. ..	(392) ..	Westralia North	..	..	..	..	..	1·77	1·77	155
Do. ..	35, 169, 218, 272, 287, 295	Westralian Stanneries, Ltd. ..	..	..	..	..	..	109·33	109·33	8,171
Do. ..	(370) ..	Wills	..	..	..	..	2·52	2·10	4·62	378
Do. ..	..	Voided leases	..	..	..	..	3·07	202·62	205·69	14,415
Do. ..	Loc. 289, 290	Freehold ground, (Clarth and others)	..	31·80	31·80	2,440	..	307·49	307·49	28,299
Do. ..	..	Sundry claims	3·30	207·19	210·49	14,384	11·44	5,065·08	5,076·52	332,840
		Totals	**13·90**	**562·43**	**576·33**	**41,046**	**80·48**	**6,779·05**	**6,859·53**	**475,896**

TABLE XI.

QUANTITY AND VALUE OF TANTALITE REPORTED TO THE MINES DEPARTMENT DURING 1908, AND TOTALS TO DATE.

Locality.	Number of Lease, Claim, or Area	Registered Name of Company or Lease.	1908. Quantity. Lode.	1908. Quantity. Stream.	1908. Quantity. Total.	1908. 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	H.M. and Anchorite leases	..	..	..	..	1·80	32·30	34·10	5,445
Do. ..	..	Sundry claims ..	..	..	..	..	..	51·50	51·50	6,124
		Totals	..	..	..	..	**1·80**	**83·80**	**85·60**	**11,539**
GREENBUSHES MINERAL FIELD.										
Greenbushes	369 ..	Enterprise	..	..	..	..	..	2·34	2·34	1,590
		Totals	..	..	..	..	..	**2·34**	**2·34**	**1,590**

TABLE XII.

QUANTITY AND VALUE OF COPPER ORE REPORTED TO THE MINES DEPARTMENT DURING 1908, AND TOTALS TO DATE.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1908.			TOTALS TO DATE.		
			Quantity.		Value.	Quantity.		Value.
			Ore.	Metallic Copper.		Ore.	Metallic Copper.	
			tons.	tons.	£	tons.	tons.	£
PILBARA GOLDFIELD.								
MARBLE BAR DISTRICT.								
North Shaw ..	147 ..	Roy Hill	..	..	..	7·77	1·90	190
		Totals	..	..	..	**7·77**	**1·90**	**190**
WEST PILBARA GOLDFIELD.								
Croydon ..	31 ..	Evelyn: British Exploration of Australasia, Ltd.	42·00	8·10	470	519·00	..	6,363
Do. ..	(103) ..	(Quamby)	..	..	..	15·00	4·05	275
Do. ..	..	Voided leases	..	..	..	40·00	..	595
Egina	91 ..	Egina	..	..	..	12·00	1·20	72
Do.	..	Voided leases	..	..	..	530·00	..	6,571
Roebourne ..	65 ..	(Carlow Castle)	..	..	..	6·00	1·00	100
Do.	65 ..	Carlow Castle: Roebourne Copper and Gold Mines (W.A.) N.L.	..	..	..	81·00	19·88	1,415
Do. ..	73 ..	Ena Extended	..	..	..	6·50	·77	55
Do. ..	118 ..	Ena Reward	20·00	2·87	150	20·00	2·87	150
Do. ..	64 ..	Fortune	10·00	2·50	145	10·00	2·50	145
Do.	77 ..	Lilly Blanche	..	..	..	997·00	186·99	17,541
Do. ..	..	Voided leases	..	..	..	181·00	..	2,746
Whim Creek ..	34 ..	(Balla Balla Copper Mines, Ltd.) ..	.. ..	..	..	2,009·00	..	12,036
Do. ..	Loc. 71 ..	Whim Well Copper Mines, Ltd. ..	1,414·00	292·81	16,926	12,735·00	..	145,703
Do. ..	..	Voided leases	..	..	..	30·00	..	250
		Totals	**1,486·00**	**306·28**	**17,691**	**17,191·50**	..	**194,017**
ASHBURTON GOLDFIELD.								
Red Hill ..	62 ..	Cane	175·50	33·85	2,126	175·50	33·85	2,126
Uaroo	60 ..	Pedan	6·00	1·00	71	6·00	1·00	71
Do.	52 ..	Phœnix	6·50	1·94	114	6·50	1·94	114
		Totals	**188·00**	**36·79**	**2,311**	**188·00**	**36·79**	**2,311**
EAST MURCHISON GOLDFIELD.								
LAWLERS DISTRICT.								
Kathleen Valley	12 ..	Shepherd	6·77	1·32	69	6·77	1·32	69
		Totals	**6·77**	**1·32**	**69**	**6·77**	**1·32**	**69**
MURCHISON GOLDFIELD.								
NANNINE DISTRICT.								
Gabanintha ..	4N ..	Lady Alma	..	..	..	6·50	..	135
Do. ..	G. M. Ls. 379N, 504N, 505N	Mountain View leases	..	..	..	127·00	..	2,681
		Totals	..	..	..	**133·50**	..	**2,816**
DAY DAWN DISTRICT.								
Day Dawn ..	G.M.L. 14D	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	..	167
		Totals	..	..	..	**47·36**	..	**441**

TABLE XII.—*Quantity and Value of COPPER ORE, etc.*—continued.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1908.			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.)	9·50	1·49	97	19·50	3·49	227
Wadgingarra ..	6 ..	Olive Queen	..	..	..	31·91	..	91
		Totals	**9·50**	**1·49**	**97**	**51·41**	..	**318**
NORTHAMPTON MINERAL FIELD.								
Geraldine ..	..	Voided leases	..	..	..	136·50	..	1,992
		Totals	..	..	..	**136·50**	..	**1,992**
YANDANOOKA MINERAL FIELD.								
Arrino	..	Sundry claims	126·05	18·48	1,386	126·05	18·48	1,386
Yandanooka ..	Freehold ground	Muggawa Copper Mine	7·50	1·20	96	7·50	1·20	96
Do. ..	..	Voided leases	..	..	..	38·00	..	407
		Totals	**133·55**	**19·68**	**1,482**	**171·55**	..	**1,889**
MOUNT MARGARET GOLDFIELD.								
MOUNT MORGANS DISTRICT.								
Eulaminna ..	[10c, 11c], (12c, 37c)	(Mt. Malcolm Copper Mine) ..	..	..	..	13,516·00	..	70,754
Do. ..	[10c, 11c] 4f, 5f,	(Mt. Malcolm Copper Mine) ..	..	..	..	3,839·00	..	17,065
Do. ..	[10c, 11c], (12c, 37c)	(Murrin Copper Mines, Ltd.) ..	..	..	..	19,165·00	..	45,817
Do. ..	4f, 5f, 11f, 12f	West Australian Copper Co., Ltd...	4,397·30	665·38	20,061	9,794·05	..	80,199
Murrin Murrin ..	G.M.L. 207f	Bound to Win	..	..	..	8·12	3·55	156
Do. ..	6f, 7f [48c]	Murrin Murrin Nangeroo leases ..	..	..	..	291·97	..	3,707
Do. ..	18f ..	Nangeroo	6·80	3·00	160	6·80	3·00	160
Do.	13f ..	Trafalgar	..	..	..	15·20	..	267
Do. ..	..	Voided leases	..	..	..	1,210·00	..	12,532
Mt. Margaret ..	G.M.L. 66f	Mt. Morven	..	..	..	11·53	..	163
		Totals	**4,404·10**	**668·38**	**20,221**	**47,857·67**	..	**230,820**
MOUNT MARGARET DISTRICT.								
Burtville ..	16t ..	Dreadnought	..	..	..	2·85	·29	26
		Totals	..	..	..	**2·85**	**·29**	**26**
NORTH COOLGARDIE GOLDFIELD.								
MENZIES DISTRICT.								
Goongarrie ..	13z ..	(Providence Copper Mining Co., N.L.)	..	..	..	4·70	..	33
Do. ..	..	Sundry claims	..	..	..	1·42	·40	18
		Totals	..	..	..	**6·12**	..	**51**
EAST COOLGARDIE GOLDFIELD.								
EAST COOLGARDIE DISTRICT.								
Boorara ..	100e ..	Premier	50·67	6·22	330	50·67	6·22	330
		Totals	**50·67**	**6·22**	**330**	**50·67**	**6·22**	**330**

TABLE XII.—*Quantity and Value of COPPER ORE, etc.*—continued.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1908.			TOTALS TO DATE.		
			Quantity.		Value.	Quantity.		Value.
			Ore.	Metallic Copper.		Ore.	Metallic Copper.	
			tons.	tons.	£	tons.	tons.	£
PHILLIPS RIVER GOLDFIELD.								
Kundip ..	G.M.L. 99	Alice Mary	2·51	·24	12	10·53	..	97
Do. ..	184 ..	Christmas Gift	44·71	5·34	275	113·71	..	958
Do. ..	G.M.Ls. 136, 137, 138, (M.L. 60)	Flag Gold and Copper Mining Co., Ltd.	347·12	26·24	1,323	387·18	29·00	1,462
Do. ..	52, 94 ..	(Harbour View leases)	..	..	..	604·36	..	4,524
Do. ..	52, 94 ..	Harbour View leases	313·48	33·62	1,669	366·22	42·59	2,141
Do. ..	G.M.L. 81	Harbour View North	..	..	..	2·92	..	29
Do. ..	G.M.L. 98	Hillsborough	140·61	2·26	114	211·18	5·33	384
Do. ..	(291) ..	Mosaic	7·06	·65	36	17·10	1·61	87
Do. ..	(108) ..	Mt. Stennett	..	..	..	298·97	..	2,672
Do. ..	52, 94 ..	(Ravensthorpe G.M. Syndicate, N.L.)	..	..	..	132·56	..	1,382
Do. ..	(60) ..	(Red, White, and Blue) ..	..	..	..	449·44	..	3,032
Do. ..	..	Voided leases	..	..	..	119·43	..	942
Do. ..	..	Sundry claims	..	..	..	18·34	..	343
Mt. Desmond ..	95 ..	(Elverdton)	..	..	..	130·00	..	570
Do. ..	95 ..	(Phillips River Options Syndicate, N.L.)	..	..	..	2,946·02	..	22,657
Do. ..	95 ..	Phillips River Gold and Copper Co., Ltd.	730·19	63·69	3,257	1,272·16	94·92	5,845
Do. ..	168 ..	(Elverton South)	..	..	..	18·48	..	119
Do. ..	(266) ..	Fairlie	..	..	..	8·81	..	103
Do. ..	275 ..	Ironclad	68·78	9·13	451	73·77	10·38	518
Do. ..	109 ..	(Mt. Desmond)	..	..	..	198·87	..	1,640
Do. ..	109 ..	Mt. Desmond: Phillips River Gold and Copper Co., Ltd.	..	..	..	1,285·91	..	13,775
Do.	199 ..	P.L.P.	14·29	2·15	113	193·83	..	2,126
Do. ..	(257) ..	Thistle and Shamrock	35·33	5·76	298	70·08	11·82	737
Do. ..	..	Voided leases	..	..	..	202·87	..	2,137
Do. ..	..	Sundry claims	..	..	..	34·10	..	433
Ravensthorpe ..	205 ..	Ballarat	..	..	..	120·31	..	1,384
Do. ..	(259) ..	Birthday	3·31	·34	17	5·00	·51	34
Do. ..	(196) ..	Contest	..	..	..	15·69	..	129
Do. ..	124 ..	Emily Hale	..	..	..	132·27	..	1,192
Do. ..	(202) ..	Grafter	..	..	..	68·35	..	182
Do. ..	210 ..	Great Oversight	..	..	..	73·28	..	524
Do. ..	116 ..	Last Chance	..	..	..	874·99	..	8,448
Do. ..	200 ..	Last Chance Proprietary ..	..	..	..	238·07	..	2,257
Do. ..	16 ..	(Marion Martin)	..	..	..	865·69	..	6,650
Do. ..	16 ..	Marion Martin: Phillips River Gold and Copper Co., Ltd.	130·37	17·52	899	696·98	51·10	3,861
Do. ..	7 ..	Mary	..	..	..	795·74	..	5,627
Do. ..	175 ..	(Mount Benson)	..	..	..	605·19	..	3,702
Do. ..	175 ..	Mount Benson: Phillips River Gold and Copper Co., Ltd.	73·57	4·73	228	791·37	..	3,822
Do. ..	(195) ..	Mt. Benson Extended	..	..	..	22·77	..	130
Do. ..	15 ..	(Mt. Cattlin)	..	..	..	281·56	..	1,716
Do. ..	15 ..	Mt. Cattlin: Mount Cattlin Copper Mining Co., Ltd.	..	..	..	6,357·67	322·35	28,167
Do. ..	15 ..	(Mt. Cattlin: Phillips River Gold and Copper Co., Ltd.)	..	..	..	1,263·76	80·26	7,646
Do. ..	219 ..	Mt. Cattlin West (late Puzzler)	14·26	1·04	52	49·48	..	362
Do. ..	(271) ..	Mt. Garrity	2·44	·42	23	9·37	1·62	85
Do. ..	204 ..	New Moon	7·04	1·16	58	52·55	..	557
Do. ..	(276) ..	Our Selection	..	..	..	10·89	·98	80
Do. ..	115 ..	Sunset	46·26	2·86	143	553·70	..	3,460
Do. ..	114 ..	Surprise	..	..	..	466·46	..	3,553
Do. ..	(221) ..	Who Can Tell	..	..	..	1·45	·16	15
Do. ..	..	Voided leases	..	..	..	376·90	..	2,618
Do. ..	..	Sundry claims	5·44	1·29	68	73·39	..	496
West River ..	293 ..	Last Venture	13·45	2·30	109	13·45	2·30	109
Do. ..	(252) ..	Pick and Shovel	..	..	..	4·47	·68	68
Do. ..	..	Sundry claims	15·49	1·77	88	118·29	..	1,698
..	..	From Goldfield generally	..	..	..	..	3·14	228
		Totals	**2,015·71**	**182·51**	**9,233**	**24,105·93**	..	**157,513**
STATE GENERALLY.								
Jerramungup ..	59 ..	Netty Copper Mine	..	..	..	3·08	1·26	40
Twin Peaks ..	P.A. 105H	(Tibbets, W. H.)	..	..	..	13·50	..	193
		Totals	..	..	..	**16·58**	..	**233**

TABLE XIII.

QUANTITY AND VALUE OF IRONSTONE REPORTED TO THE MINES DEPARTMENT DURING 1908, AND TOTALS TO DATE.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1908.		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			...	...	7,481·00	4,629
Werribee			...	...	4,600·00	3,200
		Totals	...	...	**57,269·50**	**36,136**

TABLE XIV.

QUANTITY AND VALUE OF LEAD ORE REPORTED TO THE MINES DEPARTMENT DURING 1908, AND TOTALS TO DATE.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1908.			TOTALS TO DATE.		
			Lead Ore.	Metal therefrom.	Value.	Lead Ore.	Metal therefrom.	Value.
			tons.	tons.	£	tons.	tons.	£
NORTHAMPTON MINERAL FIELD.								
Geraldine ...	112	Kingdom Come	57·00	41·61	461	57·00	41·61	461
Narra Tarra ...	...	Sundry claims ...	...	...	...	225·00	...	185
Northampton ...	80	Ethel Maude	...	...	...	10·00	6·50	128
Do. ...	...	Voided leases ...	...	...	...	106·75	...	1,048
Victoria	...	Voided leases ...	...	...	...	19·00	...	212
		Totals	**57·00**	**41·61**	**461**	**417·75**	...	**2,034**

TABLE XV.

QUANTITY AND VALUE OF SILVER-LEAD ORE REPORTED TO THE MINES DEPARTMENT DURING 1908, AND TOTALS TO DATE.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1908.		TOTALS TO DATE.	
			Quantity.	Value.	Quantity.	Value.
			tons.	£	tons.	£
ASHBURTON GOLDFIELD.						
Ashburton ...	...	Voided leases	...	...	56·90	429
Uaroo	43, 49	Uaroo Silver Lead Mines	727·25	6,914	727·25	6,914
		Totals	**727·25**	**6,914**	**784·15**	**7,343**

TABLE XVI.

QUANTITY AND VALUE OF COAL REPORTED TO THE MINES DEPARTMENT DURING 1908, AND TOTALS TO DATE.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1908.		TOTALS TO DATE.	
			Quantity.	Value.	Quantity.	Value.
			tons.	£	tons.	£
		COLLIE RIVER MINERAL FIELD.				
Collie ...	197, etc.	Cardiff Coal Mining Co., Ltd.	24,248·74	10,741	175,539·63	75,931
Do. ...	151, etc.	(Collie-Boulder Coal Co., Ltd.)	...	...	71,512·70	26,197
Do. ...	244, etc.	Collie Co-operative Collieries, Ltd.	31,493·18	15,251	108,099·62	46,439
Do. ...	88 (part of)	Collie Proprietary Coalfields of W.A., Ltd. (No. 1 Pit)	36,427·00	16,733	425,949·55	217,111
Do. ...	85–100	Collie Proprietary Coalfields of W.A., Ltd. (No. 2 Pit)	35,326·00	16,255	414,968·40	211,100
Do. ...	151, etc.	Scottish Collieries Company	47,753·00	16,714	80,050·50	28,016
Do. ...	...	Voided leases	...	...	25,569·85	12,930
		Totals	**175,247·92**	**75·694**	**1,301,690·25**	**617,760**

TABLE XVII.

QUANTITY AND VALUE OF LIMESTONE REPORTED TO THE MINES DEPARTMENT DURING 1908, AND TOTALS TO DATE.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1908.		TOTALS TO DATE.	
			Quantity.	Value.	Quantity.	Value.
			tons.	£	tons.	£
		MURCHISON GOLDFIELD.				
		CUE DISTRICT.				
Cuddingwarra	3	Linella	...	...	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 XVIII.

QUANTITY AND VALUE OF DIAMONDS REPORTED TO THE MINES DEPARTMENT DURING 1908, AND TOTALS TO DATE.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1908.		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 XIX.

QUANTITY AND VALUE OF ASBESTOS REPORTED TO THE MINES DEPARTMENT DURING 1908, AND TOTALS TO DATE.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1908.		TOTALS TO DATE.	
			Quantity.	Value.	QUANTITY.	VALUE.
			tons.	£	tons.	£
		PILBARA GOLDFIELD.				
		MARBLE BAR DISTRICT.				
Soansville ...	155, etc.	Pilbara Asbestos Co., Ltd.	40·00	1,600	40·00	1,600
		Totals	**40·00**	**1,600**	**40·00**	**1,600**

TABLE

RETURN OF ORE AND MINERALS OTHER THAN GOLD

YEAR.	COPPER.												
	COPPER ORE.										COPPER INGOT, MATTE, ETC.		Total Value of Copper Eported.
	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
Total	...	...	...	..	...	...	...	...	**24,499**	**401,528**	**5,699**	**372,310**	**773,838**

[1] † *See* Woodward's Mining Handbook, Perth: By Authority, 1895; page 123. [2] † Weight not stated.

XX.

ENTERED FOR EXPORT FROM 1850 TO 1908, INCLUSIVE.

TIN.											
BLACK TIN (Dressed Tin).								TIN INGOT. (White tin.)		Total Value of Tin Exported.	Year.
Pilbarra Gf.		Greenbushes Mf.		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
...	...	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	[3]† 379	20,797	467	27,118	129	16,155	43,273	4
188	16 853	119	8,177	[3]† 666	51,748	973	76,778	...	1	76,779	5
329	28,375	444	46,254	[3]† 624	64,005	1.397	138,634	45	8,746	147,380	6
...	...	...	...	[3]†1,424	151,414	1,424	151,414	78	14,725	166,139	7
...	...	...	...	[3]†1,093	83,294	1,093	83,594	[2]†	1	83,595	8
...	...	...	...	...	...	8,948	700,025	867	117,214	817,239	Total

[3]† Probably the produce of Pilbara Goldfield and Greenbushes Mineral Field.

TABLE XX.—*Return of Ore and Minerals other than Gold*

YEAR.	SILVER.		LEAD ORE.		SILVER-LEAD ORE.		PIG LEAD.	
	State generally.		Northampton Mf.		State generally.		State generally.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	ozs.	£	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	...	...
8 ...	168,455	18,877	...	...	518	5 006	...	...
Total ...	**1,739,823**	**211,607**	**33,644**	**364,756**	**729**	**6,872**	**684**	**13,306**

[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.

entered for EXPORT from 1850 to 1908, inclusive—continued.

NON-METALLIC MINERALS.						MINERALS NOT ELSEWHERE INCLUDED.		Total Value of Minerals other than Gold, Exported to Date.	Year.
ASBESTOS.		COAL.		MICA.					
State generally.		Collie River Coal Mf.		State generally.					
Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.		
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	... 9
...	...	...	...	...	...	...	...	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
...	...	1,473	1,166	...	...	[9]† 173	4,977	402.206	... 7
[2]†	1.242	9,625	7,758	[2]†	10	[10]†	400	176 827	... 8
						[11]†53	2,848		
...	1.253	13.550	11.314	...	304	...	15.563	2.216.052	Total.

[7]† Antimony ore.

[8]† Includes Tantalite, 18 tons, valued at £5,729.

[9]† Includes Antimony ore, 25 tons ... ... = £630.
Scheelite, 4 tons ... ... = 140
Spelter, 73 tons ... ... = 3,390
N.E.I., 71 tons ... ... = 817
Total ... £4,977

[10]† Tantalite, weight not stated.

[11]† Includes Spelter, 11 tons, valued at £98
N.E.I., 42 tons ... = £2,750
Total ... £2,848

PART III.—ALL MINES.

TABLE XXI.

MILLING AND CYANIDING PLANTS ERECTED IN THE RESPECTIVE GOLDFIELDS, DISTRICTS, AND MINERAL FIELDS ON THE 31ST DECEMBER, 1908, AND THE TOTAL VALUE OF MINING MACHINERY.

Mining Centre and Lease or Area on which erected.	Name of Mine, Company, or Works.	Milling.											Cyaniding.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.													
		Number of Heads of Stampers.	Prospecting.	Ball.	Krupp.	Griffin.	Huntington.	Salford.	Treusaix.	Flint.	Other Crushers.	Puddlers.	Leaching Vats.	Agitating Vats.	Filter Presses.	
	KIMBERLEY GOLDFIELD.															
Ruby Creek. 61, M.A. 9	Ruby Queen	20	..	..	..	..	..	..	..	..	..	..	..	..	..	..
The Brockman 141 A.C., M.A. 8	Mt. Bradley Tunnelling Claim ..	25	..	..	..	..	1	..	..	..	..	..	..	..	..	..
The Mary. M.A. 15	Mary River Works	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**50**	..	..	..	..	**1**	..	..	..	..	..	..	..	..	**£6,412**
	PILBARA GOLDFIELD.															
	Marble Bar District.															
Bamboo Creek. 161, etc.	Bulletin leases	10	..	..	..	..	..	..	..	..	..	..	3	..	..	..
Lallarookh. R.C., 112	British Exploration of Australasia, Ltd.	..	..	..	..	..	..	..	..	..	..	..	10	..	..	..
Marble Bar. 615, etc.	British Exploration of Australasia, Ltd. / Stray Shot Battery	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Warrawoona. 843, etc.	British Exploration of Australasia, Ltd.	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
505 M.A., 18	Bow Bells Battery .. .. / Klondyke Battery	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
M.A. 27	Salgash Public Crushing Works ..	15	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Yandicoogina. M.A. 26	Lady Adelaide Battery	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
	Total	**55**	..	..	..	..	..	..	..	..	..	..	**17**	..	..	**£16,949**
	Nullagine District.															
Eastern Creek. M.A. 11 L.	Doherty & Garland's Works ..	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Middle Creek. 106 L.	Barton	10	..	..	..	..	..	..	..	..	..	..	2	2	..	..
M.A. 6L	Royer's Public Crushing Works ..	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Nullagine. M.A. 10L	Enterprise	..	1	..	..	..	..	..	..	..	..	..	4	..	..	..
20-mile Sandy. A9718	State Battery	10	..	..	..	..	..	..	..	..	..	..	3	..	..	..
	Total	**40**	**1**	..	..	..	..	..	..	..	..	..	**9**	**2**	..	**£10,200**
													11			
	WEST PILBARA GOLDFIELD.															
Lower Nicol. 106, etc.	Ninety-nine leases	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Station Peak. (117)	(Pilgrim's Rest)	20	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Weereanna. 135, etc.	Roebourne Copper and Gold Mines, W.A., N.L.	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**30**	**1**	..	..	..	..	..	..	..	..	..	**4**	..	..	**£4,200**

TABLE XXI.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area on which erected.	Name of Mine, Company, or Works.	Milling.											Cyaniding.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.													
		Number of Heads of Stampers.	Prospecting.	Ball.	Krupp.	Griffin.	Huntington.	Salford.	Tremain.	Flint.	Other Crushers.	Puddlers.	Leaching Vats.	Agitating Vats.	Filter Presses.	
	PEAK HILL GOLDFIELD.															
Peak Hill.																
1P, etc.	Peak Hill Goldfield, Ltd.	40	1	..	..	..	..	..	..	..	..	2	8	3	9	..
Ravelstone.																
⋀10258	State Battery	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
	Total	**50**	**1**	..	..	..	..	..	..	..	..	**2**	**12**	**3**	**9**	**£75,870**
													15			
	EAST MURCHISON GOLDFIELD.															
	LAWLERS DISTRICT.															
Cork Tree.																
(535)	(Kingston)	..	..	..	..	..	..	..	..	..	..	..	2	..	..	...
Kathleen Valley.																
113	Nil Desperandum	10	..	..	..	..	..	..	..	..	..	..	..	..	..	...
387	Yellow Aster G.M. Co., N.L. ..	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Lake Darlot.																
633, 823	Zangbar leases	10	..	..	..	..	..	..	..	..	..	..	6	2	..	..
⋀11723	State Battery	10	..	..	..	..	..	..	..	..	..	..	4	..	..	...
Lawlers.																
532	Brilliant	5	..	..	..	..	..	..	..	..	..	..	6	..	..	..
M.A. 24	Cinderella Battery	5	..	..	..	..	..	..	..	..	..	..	7	..	..	..
M.A. 11	Lawlers Public Battery	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
37, etc.	Northern Mines, Ltd.	40	..	..	..	..	..	..	..	..	..	1	6	2	V.2	..
408, etc.	Vivien G.M. Co., Ltd...	20	..	..	..	..	..	..	..	..	..	..	9	5	V.2	..
															1	
New England.																
(797)	(Auckland)	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Sir Samuel.																
21, etc.	Bellevue, Ltd.	40	..	..	..	..	..	..	..	..	..	..	..	..	..	..
M.A. 17	Condor Battery	5	..	..	..	..	..	..	..	..	..	..	5	..	..	..
Wiluna.																
946	Bulletin	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
140	Golden Age	20	..	..	..	..	..	..	..	..	..	..	..	8	..	..
149, 542, etc.	Gwalia Consolidated, Ltd.	20	..	..	..	..	..	..	..	..	..	..	16	4	4	..
162	Lake Way	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
W.R. 73	Wilks Bros. Cyanide Works	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..
⋀9909	State Battery	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Urquhart's Cyanide Works ..	..	..	..	..	..	..	..	..	..	..	..	6	..	..	..
	Total	**220**	**2**	..	..	..	..	..	..	..	..	**1**	**77**	**21**	**9**	**£197,273**
													98			
	BLACK RANGE DISTRICT.															
Birrigrin.																
128B, etc.	Pelerin leases	5	..	..	..	..	..	..	..	..	..	..	4	..	..	..
8B	Reply Battery	5	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Maninga Marley.																
203B, etc.	Havilah G.M. Co., N.L.	10	..	..	..	..	..	..	..	..	..	..	6	..	..	..
53B, etc.	Maninga Marley leases	10	..	..	..	..	..	..	..	..	..	..	5	..	..	..
Montagu.																
M.A. 5B	El Dorado Customs Mill	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Nunngarra.																
⋀5254	State Battery	10	..	..	..	..	..	..	..	..	..	..	3	..	..	..
Sandstone.																
4B, etc.	Black Range Mining Co., N.L. ..	20	..	..	..	..	..	..	..	..	..	..	12	..	..	..
5B	Black Range Mining Co., N.L. ..	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
6B, etc.	Oroya Black Range, Ltd.	20	..	..	..	..	..	..	..	..	..	..	8	8	V. 1	..
	Total	**90**	..	..	..	..	..	..	**1**	..	..	..	**42**	**8**	**1**	**£82,300**
													50			

TABLE XXI.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area on which erected.	Name of Mine, Company, or Works.	Milling.											Cyaniding.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.													
		Number of Heads of Stampers.	Prospecting.	Ball.	Krupp.	Griffin.	Huntington.	Salford.	Tremain.	Flint.	Other Crushers.	Puddlers.	Leaching Vats.	Agitating Vats.	Filter Presses.	
	MURCHISON GOLDFIELD.															
	CUE DISTRICT.															
Barrambie.																
1458, etc.	Barrambie Ranges G.M. Co., N.L. ..	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Cuddingwarra.																
M.A. 24	Chesson & Heydon's Battery ..	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
595, etc.	Victory United G.M. Co., N.L. ..	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
T.A. 19	(Heydon, E. R.)	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Cue.																
203, etc.	Cue No. 1	20	..	..	..	..	..	..	..	..	..	..	8	..	..	..
1694	Cue Victory	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
1020	Gem of Cue Extended	15	..	..	..	..	..	..	..	..	..	..	5	..	..	..
1374	Salisbury	10	..	..	..	..	..	..	..	..	..	..	8	..	..	..
T.A. 20	(McIntyre, John)	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Erroll's.																
1531, etc.	Wha Gold Mines, Ltd.	10	..	..	..	..	..	..	..	..	..	..	8	..	..	..
Mindoolah.																
1661	Golden Gate	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1609	Mindoolah Main Reef	10	..	..	..	..	..	..	..	..	..	..	3	..	..	..
Tuckanarra.																
⩚10256	State Battery	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
	Total	**113**	..	..	..	..	..	..	..	..	..	..	**53**	..	..	**£65,535**
	NANNINE DISTRICT.															
Abbotts.																
171N	Mt. Vranizan	10	..	..	..	..	..	..	..	..	..	..	3	..	..	..
172N, etc.	New Murchison King G.Ms.	10	..	..	..	..	..	..	..	..	..	..	5	..	..	..
Burnakura.																
238N	Alliance	4	..	..	..	..	..	..	..	..	..	..	3	..	..	..
509N, etc.	Federal City leases	10	..	..	..	..	..	..	..	..	..	..	5	..	..	..
408N, etc.	New Alliance leases	5	..	..	..	..	..	..	..	..	..	..	5	..	..	..
Chesterfield.																
361N	Margueritta	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Gabanintha.																
379N, etc.	Mountain View leases	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
32N, etc.	Nannine Goldfield, Ltd.	10	..	..	..	..	..	..	..	..	..	..	3	..	..	..
Jillawarra.																
455N	Jillawarra	5	..	..	..	..	..	..	..	..	..	..	3	..	..	..
Meekatharra.																
477N	Fenian	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
398N, etc.	Ingliston Extended G.Ms., Ltd. ..	10	..	..	..	..	..	..	..	..	..	3	5	3	1	..
533N	Marmont	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
⩚9142	State Battery	10	..	..	..	..	..	..	..	..	..	..	6	..	..	..
Nannine.																
P.A. 292N	Champion Cyanide Works ..	..	..	..	..	..	..	..	..	..	..	..	6	..	..	..
(685N)	Champion Extended Cyanide Works	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..
16N, 25N	Mt. Hall, Royalist Consolidated and Nannine leases	13	..	..	..	..	..	..	..	..	..	..	3	..	..	..
⩚10910	State Battery	5	..	..	..	..	..	..	..	..	..	..	3	..	..	..
Quinn's.																
622N	Phoenix	5	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Stake Well.																
593N, etc.	Kohinoor South G.M. Co., Ltd. ..	20	..	..	..	..	..	..	..	..	..	..	6	..	..	..
Star of the East.																
174N	Star of the East, Ltd.	20	..	..	..	..	..	..	..	..	..	..	6	..	..	..
Yallowgindat.																
666N	Karangahaki	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**182**	..	..	..	..	..	..	..	..	..	**3**	**80**	**3**	**1**	**£90,000**
													83			
	DAY DAWN DISTRICT.															
Day Dawn.																
389D, etc.	Crème D'Or leases	5	..	..	..	..	..	..	..	..	..	..	2	3	..	..
26D, etc.	East Fingall G.Ms., Ltd.	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1D, etc.	Great Fingall Consolidated, Ltd. ..	100	..	..	..	..	..	..	..	..	..	..	24	..	6	..
(32D)	Mount Fingall	5	..	..	..	..	..	..	..	..	..	..	4	..	..	..
14D, etc.	Murchison Associated G.Ms., Ltd. ..	10	..	..	..	..	..	..	..	..	..	..	4	2	..	..
Island.																
443D	Eureka	5	..	..	..	..	..	..	..	..	..	..	..	5	..	..
Webb's Patch.																
370D, 391D	Hill End leases	5	..	..	..	..	..	..	..	..	..	..	4	..	..	..
	Total	**135**	..	..	..	..	..	..	..	..	..	..	**38**	**10**	**6**	**£267,300**
													48			

TABLE XXI.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area on which erected.	NAME OF MINE, COMPANY, OR WORKS.	MILLING.											CYANIDING.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.													
		Number of Heads of Stampers.	Prospecting.	Ball.	Krupp.	Griffin.	Huntington.	Salford.	Tremain.	Flint.	Other Crushers.	Puddlers.	Leaching Vats.	Agitating Vats.	Filter Presses.	
	MURCHISON GOLDFIELD—*continued.*															
	MOUNT MAGNET DISTRICT.															
Lennonville.																
(30M)	(Long Reef)	20	..	..	..	..	..	..	..	..	..	..	2	..	..	..
(693M)	(Piedmont)	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(57M)	(Welcome)	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
A7499	State Battery	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Mt. Magnet.																
953M	Brittannia	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
752M, etc.	Great Boulder No. 1, Ltd.	10	..	..	..	..	..	..	..	..	..	1	..	3	V. 1	..
314M, etc.	Morning Star Quartz Co., N.L.	10	..	..	..	..	..	..	..	..	..	..	7	..	..	..
(784M)	(New Chum)	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(M.A., 2M)	(New Chum Cyanide Works)	..	..	..	..	..	..	..	..	..	..	..	12	..	..	..
(856M)	(Paris)	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
A9769	State Battery	10	..	..	..	..	..	..	..	..	..	..	7	..	..	..
Moyagee.																
(766M)	(Ophir)	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**85**	..	..	..	..	**1**	..	**2**	..	..	**1**	**32**	**3**	**1**	**£43,085**
													35			
	YALGOO GOLDFIELD.															
Field's Find.																
414, etc.	Reward G.Ms., Ltd.	20	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Gullewa.																
(34, etc.)	(Christmas Gift leases)	10	..	..	..	..	..	..	..	..	..	..	7	..	..	..
170/1, 174	Monarch leases	10	..	..	..	..	..	..	..	..	..	..	3	..	..	..
Pinyalling.																
501, etc.	Baron Rothschild G.Ms., Ltd.	10	..	..	..	..	..	..	..	..	..	..	..	5	..	..
(P.A. 119)	(Gloster, A. B.)	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Rothesay.																
(192, etc.)	(Woodley's G.Ms., Ltd.)	20	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Yalgoo.																
495, 518	Ivanhoe G.M. Co., N.L., Yalgoo	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Yuin.																
409, etc., M.A. 8	Royal Standard leases	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
556	Standard Grade	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**90**	**1**	..	..	..	..	..	..	..	..	..	**14**	**5**	..	**£24,750**
													19			
	MT. MARGARET GOLDFIELD.															
	MT. MORGANS DISTRICT.															
Australia United.																
(216F)	(Australia United)	..	..	..	..	..	..	..	..	..	..	..	5	..	..	..
Korong.																
(254F)	Alicia	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Mt. Margaret.																
66F	Mt. Morven	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
174F	Mt. Margaret, Lake View	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mt. Morgans.																
8F	Millionaire, Ltd.	5	..	..	..	..	..	..	..	..	..	..	3	..	..	..
29F, etc.	Transvaal leases	10	..	..	..	..	..	..	..	..	..	..	4	3	..	..
5F, etc.	Westralia Mt. Morgans G.Ms., Co., Ltd.	60	..	..	..	..	..	..	..	..	..	..	36	..	3	..
7F	Westralia Mt. Morgans G.Ms., Co., Ltd. (Guest's Battery)	20	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Murrin Murrin.																
208F, etc.	Alex Junior leases	5	..	..	..	..	..	..	..	..	..	..	6	2	..	..
255F, etc.	Malcolm Mines, Ltd.	30	..	..	..	..	..	..	..	..	..	..	4	4	..	..
200F, etc.	Princess Alix leases	5	..	..	..	..	..	..	..	..	..	..	7	..	..	..
193F, etc.	Proprietary Extended leases	20	..	..	..	..	..	..	..	..	..	..	12	..	..	..
	Total	**172**	..	..	..	..	..	..	..	..	..	..	**81**	**9**	**3**	**£200,990**
													90			

TABLE XXI.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area on which erected.	NAME OF MINE, COMPANY, OR WORKS.	MILLING.											CYANIDING.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.													
		Number of Heads of Stampers.	Prospecting.	Ball.	Krupp.	Griffin.	Huntington.	Salford.	Tremain.	Flint.	Other Crushers.	Puddlers.	Leaching Vats.	Agitating Vats.	Filter Presses.	
	MT. MARGARET GOLDFIELD—*continued.*															
	MT. MALCOLM DISTRICT.															
Dodger's Well.																
(1237c)	(Golden Champion)	5	..	..	..	..	..	..	..	..	..	..	3	..	..	..
Diorite King.																
1179c	King of the Hills	5	..	..	..	..	..	..	..	..	..	..	3	..	..	..
1172c	Leeta G.M. Co., Ltd.	5	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Leonora.																
218/9c	Great Tower Hill G.Ms., Ltd. ..	40	..	..	..	..	..	..	..	..	..	..	12	..	..	..
1083c	Katie	..	..	..	..	..	..	..	..	..	..	..	5	..	..	..
195/6c	Leonora Gold Block leases ..	10	..	..	..	..	..	..	..	..	..	..	5	..	..	..
210c, etc.	Leonora Main Reefs, Ltd.	10	..	..	..	..	..	..	..	..	..	..	5	..	..	..
190c, etc.	Sons of Gwalia, Ltd.	50	..	..	..	..	..	..	..	..	..	..	16	11	V.2 2	..
198c, etc.	Sons of Gwalia South G.Ms., Ltd. ..	10	..	..	..	..	..	..	..	..	..	..	6	..	..	..
263c, etc.	Trump leases	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
⅄7121	State Battery	10	..	..	..	..	..	..	..	..	..	..	5	..	..	..
Malcolm.																
1175c	Malcolm Prospecting Co., N.L. ..	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
991c	Richmond Gem	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
W.R. 84	(Hill & party)	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Mertondale.																
638c, etc.	Merton's Reward G.M. Co., Ltd. ..	15	..	..	..	..	..	..	..	..	..	..	8	2	1	..
(1040c)	(Workman)	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mt. Clifford.																
M.A. 9c	Mt. Clifford Battery	10	..	..	..	..	..	..	..	..	..	..	3	..	..	..
Pig Well.																
⅄9681	State Battery	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Randwick.																
(987c)	(Anglo-Saxon)	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
978c	Randwick	10	..	..	..	..	..	..	..	..	..	..	..	4	..	..
Webster's Find.																
1224c	Webster's	15	..	..	..	..	..	..	..	..	..	..	10	..	..	..
Wilson's Patch.																
1120c, etc.	Great Western leases	10	..	..	..	..	..	..	..	..	..	..	6	..	..	..
	Total	**260**	..	..	..	..	..	..	**1**	..	..	..	**107**	**17**	**5**	**£229,851**
													124			
	MT. MARGARET DISTRICT.															
Burtville.																
943T, etc.	Mikado G.M. Co., Ltd.	5	..	..	..	..	..	..	..	..	..	..	2	..	..	..
781T, etc.	Sailor Prince leases	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1644T	Specimen Hill	5	..	..	..	..	..	..	..	..	..	..	5	..	..	..
1726T	Sunrise	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..
⅄8914	State Battery	10	..	..	..	..	..	..	..	..	..	..	3	..	..	..
Erlistoun.																
(1748T)	(Caledonia)	..	1	..	..	..	..	..	..	..	..	..	4	..	..	..
1816T	Golden Spinnifex	5	..	..	..	..	..	..	..	..	..	..	4	..	..	..
(771T)	(Little Doris)	5	..	..	..	..	..	..	..	..	..	..	4	..	..	..
1818T	Mistake	10	..	..	..	..	..	..	..	..	..	..	3	..	..	..
1517T	Mulga Queen	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
1665T	Westralia Tasmania	5	..	..	..	..	..	..	..	..	..	..	2	..	..	..
Euro.																
1546T, etc.	Euro leases	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Laverton.																
371T	Augusta	10	..	..	..	..	..	..	..	..	..	..	3	..	..	..
1797T, etc.	Craiggiemore leases	10	..	..	..	..	..	..	..	..	..	..	6	4	..	..
829T, etc.	Ida H. G.M. Co., Ltd.	10	..	..	..	..	..	..	..	..	..	..	5	2	..	..
1783T	Just-in-Time	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
715T	Lancefield G.M. Co., Ltd.	50	..	4	..	..	..	..	..	..	..	..	..	8	6	..
⅄8386	State Battery	10	..	..	..	..	..	..	..	..	..	..	3	..	..	..
	Total	**173**	**1**	**4**	..	..	..	..	..	..	..	..	**152**	**14**	**6**	**£191,040**
													66			

TABLE XXI.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area on which erected.	NAME OF MINE, COMPANY, OR WORKS.	MILLING.											CYANIDING.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.													
		Number of Heads of Stampers.	Prospecting.	Ball.	Krupp.	Griffin.	Huntington.	Salford.	Tremain.	Flint.	Other Crushers.	Puddlers.	Leaching Vats.	Agitating Vats.	Filter Presses.	
	NORTH COOLGARDIE GOLDFIELD.															
	MENZIES DISTRICT.															
Comet Vale.																
5148z	Coonega G.M. Co., Ltd.	10	..	..	..	..	..	..	..	..	..	..	6	..	..	..
5217z	Gladsome	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Goongarrie.																
..	Goongarrie Cyanide Works ..	..	..	..	..	..	..	..	..	..	..	..	5	..	..	..
Menzies.																
2823z	Crusoe Gold Claims, Ltd.	10	..	..	..	..	..	..	..	..	..	..	3	..	..	..
T.A. 37z	Crusoe Gold Claims, Ltd.	20	..	..	..	..	..	..	..	..	..	..	..	..	1	..
2821z, etc.	Florence leases	10	..	..	..	..	..	..	..	..	..	..	3	..	..	..
(5304z)	(Heart's Content South)	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5302z	Lady Harriet	5	..	..	..	..	..	..	..	..	..	..	2	..	..	..
2835z	Lady Sherry	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4855z, etc.	Lusitania leases	10	..	..	..	..	..	..	..	..	..	..	6	..	1	..
4895z, etc.	Maranora leases	5	..	..	..	..	..	..	..	..	..	..	2	..	..	..
4931z, etc.	Menzies Consolidated G.Ms., Ltd. ..	20	..	..	..	..	..	..	..	..	..	..	29	..	..	..
2820z, 3006z	Menzies Gold Mine leases.. ..	10	..	..	..	..	..	..	..	..	..	..	5	..	..	..
2832z, etc.	Menzies Mining and Exploration Corporation, Ltd.	10	..	..	..	..	..	..	..	..	..	..	7	3	1	..
⅄10253	State Battery	10	..	..	..	..	..	..	..	..	..	..	5	..	..	..
Mount Ida.																
..	Mt. Ida Cyanide Works	..	..	..	..	..	..	..	..	..	..	..	6	..	..	..
5243z	Mt. Ida Meteor	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
⅄10173	State Battery	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**153**	..	..	..	..	..	..	..	..	..	..	**83**	**3**	**3**	**£66,001**
													86			
	ULARRING DISTRICT.															
Davyhurst.																
459U, etc.	Golden Pole G.Ms., Ltd.	20	..	..	..	..	..	..	..	..	..	..	11	3	1	..
613U, etc.	Great Orphir Gold Corporation, Ltd.	..	..	..	..	..	..	..	..	..	2	2	44	..	..	..
438U, etc.	Westralia Waihi G.Ms., N.L. ..	10	..	..	..	..	..	..	..	..	..	..	6	1	..	..
Mulline.																
123U	Riverina	10	..	..	..	..	..	..	..	..	..	..	6	..	..	..
324U, etc.	Riverina South leases	5	..	..	..	..	..	..	..	..	..	..	3	..	..	..
⅄7250	State Battery	20	..	..	..	..	..	..	..	..	..	..	5	2	1	..
Mulwarrie.																
⅄8045	State Battery	10	..	..	..	..	..	..	..	..	..	..	5	..	..	..
	Total	**75**	..	..	..	..	..	..	..	..	**2**	**2**	**80**	**6**	**2**	**£61,240**
													86			
	NIAGARA DISTRICT.															
Desdemona.																
673G	Desdemona	5	..	..	..	..	..	..	..	..	..	..	..	5	..	..
685G	Othello	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kookynie.																
20G	Cumberland Cyanide Works ..	..	..	..	..	..	..	..	..	..	..	..	5	..	..	..
26G	Englishman: Cosmopolitan Proprietary, Ltd.	50	..	..	..	..	..	..	..	..	..	..	14	4	2 V.1	..
Niagara.																
T.A. 30G	Challenge Cyanide Works ..	..	..	..	..	..	..	..	..	..	..	..	5	..	..	..
518G, etc.	Eaglekawk Heather Co., N.L. ..	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
419G, etc.	Orion Mines, Ltd.	10	..	..	..	..	..	..	..	..	..	..	6	..	..	..
505G, etc.	W.E.G. leases	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
⅄7494	State Battery	10	..	..	..	..	..	..	..	..	..	..	6	..	..	..
Tampa.																
349G	Grafter Battery	5	..	..	..	..	..	..	..	..	..	..	3	..	..	..
M.A. 44G	Tampa Cyanide Works	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..
	Total	**105**	..	..	..	..	..	..	..	..	..	..	**47**	**9**	**3**	**£78,008**
													56			

TABLE XXI.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area on which erected.	Name of Mine, Company, or Works.	Milling.											Cyaniding.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.													
		Number of Heads of Stampers.	Prospecting.	Ball.	Krupp.	Griffin.	Huntington.	Salford.	Tremain.	Flint.	Other Crushers.	Puddlers.	Leaching Vats.	Agitating Vats.	Filter Presses.	
	NORTH COOLGARDIE GOLDFIELD—*continued.*															
	YERILLA DISTRICT.															
Edjudina.																
401R, etc.	Neta leases	5	..	..	..	..	..	..	..	..	..	..	5	..	..	..
M.A. 3R	Pauley and McCoy's Battery	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
539R	Senate	5	..	..	..	..	..	..	..	..	..	..	5	..	..	..
Linden.																
904R	Devon	5	..	..	..	..	..	..	..	..	..	..	5	..	..	..
928, (406R)	Great Carbine: Greenhills G.M. Co., Ltd.	..	1	..	..	..	..	..	..	..	..	..	2	..	..	..
⩚11295	State Battery	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pingin.																
⩚10190	State Battery	5	..	..	..	..	..	..	..	..	..	..	3	..	..	..
Yarri.																
P.A. 234R	(Clan Donachaich)	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
⩚10255	State Battery	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Yerilla.																
W.R. 28R	State Battery	5	..	..	..	..	..	..	..	..	..	..	3	..	..	..
Yundamindera.																
450R, etc.	Potosi leases	10	..	..	..	..	..	..	..	..	..	..	12	..	..	..
493R, etc.	Treasure East leases	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
	Total	**67**	**1**	..	..	..	..	..	**1**	..	..	..	**47**	..	..	**£31,000**
	BROAD ARROW GOLDFIELD.															
Bardoc.																
(1329w)	(Dulcie Maud)	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..
T.A. 28w	Vettersburg Cya ide Works	..	..	..	..	..	..	..	..	..	..	..	6	..	..	..
M.A. 21w	Zoroastrian Battery	10	..	..	..	..	..	..	..	..	..	..	6	..	..	..
Black Flag.																
(43w, etc.)	Black Flag Proprietary Co., Ltd.	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
M.A. 19w	Milne's Battery	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Broad Arrow.																
75w, etc.	Broad Arr w Consols G.M. Co., N.L.	10	..	..	..	..	..	..	..	..	..	..	5	..	..	..
3w, etc.	Claremont G.M., Ltd.	20	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Carnage.																
M.A. 22w	Regan's Carnage Battery	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Paddington.																
W.R. 68w	Carter's Venture Mill	10	..	..	..	..	1	..	..	..	..	..	6	..	..	..
45w	Mount Corlic	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
M.A. 14w	New Arrow Proprietary Battery	10	..	..	..	..	..	..	..	..	..	..	5	..	..	..
53, etc.	New Standard Exploration Co., Ltd. (Paddington Consols)	10	..	..	..	..	..	..	..	..	..	..	12	..	..	..
Siberia.																
1286w	Golden	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
M.A. 23w	Ora Banda Battery	15	..	..	..	..	..	..	..	..	..	..	6	..	..	..
1300w	Pole	5	..	..	..	..	..	..	..	..	..	1	5	..	..	..
⩚10254	State Battery	5	..	..	..	..	..	..	..	..	..	..	3	..	..	..
	Total	**130**	**1**	..	..	..	**1**	..	..	..	..	**1**	**61**	..	..	**£40,903**
	NORTH-EAST COOLGARDIE GOLDFIELD. KANOWNA DISTRICT.															
Gambier.																
434x	Kalpini State Battery	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Gindalbie.																
1047x	Eclipse	5	..	..	..	..	..	..	..	..	..	..	6	..	..	..
1123x	Gindalbie	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
392x, etc.	Queen Margaret G.M. Co., Ltd. (now Melton G.M. Co., N.L.)	15	..	..	..	..	..	..	..	..	..	..	9	..	..	..
1174x	United	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Gordon.																
891x, etc.	Sirdar G.M. Co., Ltd.	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kanowna.																
52x	Lake View South G.M. (W.A.), Ltd. Robinson Cyanide Plant	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..
(187x)	Last Chance Cyanide Works	..	..	..	..	..	..	..	..	..	..	..	8	..	..	..
3x, etc.	North White Feather G.Ms., Ltd.	20	..	..	..	..	..	..	..	..	..	..	10	..	..	..
	North White Feather Filter Press Works	..	..	..	..	..	..	..	..	..	..	..	..	3	2	..

TABLE XXI.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area on which erected.	NAME OF MINE, COMPANY, OR WORKS.	MILLING.											CYANIDING.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.													
		Number of Heads of Stampers.	Prospecting.	Ball.	Krupp.	Griffin.	Huntington.	Salford.	Tremain.	Flint.	Other Crushers.	Puddlers.	Leaching Vats.	Agitating Vats.	Filter Presses.	
	NORTH-EAST COOLGARDIE GOLDFIELD—*continued.*															
	KANOWNA DISTRICT—*continued.*															
Kanowna.																
(1214x)	Rollo's Reward	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..
9x, etc.	White Feather Main Reefs (1906), Ltd.	40	..	..	..	..	..	..	..	..	..	..	18	..	..	..
(M.A. 45x)	Donnan's Works	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
M.A. 48x	Irving's Works	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
M.A. 43x	Monmouth Works	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..
M.A. 39x	Mudlark Works	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
M.A. 19x	Old Cement Works (Martin's) / Morrison's Cyanide Plant	15	..	..	..	..	..	..	..	..	..	..	8	..	..	..
L.C. 57x	Riedel and Norton's Works	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mulgarrie.																
(149x)	(Hit or Miss South)	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**153**	**1**	..	..	..	..	..	..	..	..	**2**	**71**	**3**	**2**	**£49,000**
													74			
	KURNALPI DISTRICT.															
Kurnalpi.																
M.A. 2K	Success Battery (Billy Billy)	5	..	..	..	..	..	..	..	..	..	..	4	..	..	..
(314K)	(Lady of the Lake)	..	..	..	..	..	..	..	..	..	..	1	..	4	..	..
Mulgabbie.																
M.A. 3K	Glover's Works	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**5**	**1**	..	..	..	..	..	..	..	..	**1**	**4**	**4**	..	**£1,330**
													8			
	EAST COOLGARDIE GOLDFIELD.															
	EAST COOLGARDIE DISTRICT.															
Boorara.																
T.L. 36H	Barnes' Works	..	..	..	..	..	..	..	..	..	..	..	13	..	..	..
3908E, etc.	Golden Ridge G.M. Co., Ltd.	20	..	..	..	..	..	..	..	..	..	..	6	..	..	..
Boulder.																
38E, etc.	Associated G.Ms. of W.A., Ltd.	10	..	..	13	..	..	..	..	..	..	2	..	5	9	..
49E, etc.	Associated Northern Blocks (W.A.), Ltd.	..	..	..	3	..	..	..	..	..	..	1	..	6	3	..
S.L. 545/152	Boulder Puddling Works	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
13E, etc.	Crœsus South G.Ms., Ltd.	20	..	..	..	..	..	..	..	..	..	..	8	..	..	..
M.A. 50E	Glenartney Works	10	..	..	..	..	..	..	..	..	..	..	3	..	..	..
351E, etc.	Golden Horseshoe Estates Co., Ltd.	150	..	..	..	..	..	..	..	10	..	1	24	22	20	..
750E, etc.	Golden Links, Ltd.	..	..	..	..	..	..	..	..	..	..	..	6	..	..	..
873E	Great Boulder Main Reef, Ltd.	..	..	..	3	..	..	..	..	..	..	..	..	4	5	..
50E	Great Boulder No. 1, Ltd.	10	..	..	..	..	..	..	..	..	..	1	14	..	..	..
66E	Great Boulder Perseverance G.M. Co., Ltd.	..	..	..	..	16	..	..	..	..	..	..	..	24	13	..
16E, etc.	Great Boulder Proprietary G.Ms., Ltd.	..	..	..	3	12	..	..	..	..	..	4	..	13	13 / V.10	..
364E	Hainault G.Ms., Ltd.	40	..	..	..	..	..	..	..	..	..	1	40	..	2	..
Mach. L. 4	Hannan's Central	15	..	..	..	..	..	..	..	..	..	..	11	3	2	..
M.A. 11E	Hannan's Central Lake-side Works	20	..	..	..	..	..	..	..	..	..	..	4	5	2	..
15E, etc.	Hannan's Star, Ltd.	..	..	..	2	..	..	..	..	1	..	1	2	4	..	..
1317E, etc.	Idaho leases	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
946E	Ironsides North	10	..	..	..	..	..	..	..	..	..	..	5	..	..	..
31E, etc.	Ivanhoe Gold Corporation, Ltd.	100	..	..	..	..	..	..	..	..	..	..	32	11	8 / V.1	..
6E, etc.	Kalgoorlie Amalgamated (new), Ltd.	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
22E, etc.	Kalgoorlie G.Ms., Ltd.	..	..	..	9	..	..	..	..	..	..	1	..	20	7	..
25E, etc.	Lake View Consols, Ltd.	75	..	..	..	..	..	..	..	6	..	..	6	20	13 / V.1	..
(4209E)	(Lucey)	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
33E, etc.	North Boulder G.Ms., Ltd.	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
281E, etc.	North Kalgoorlie Co., Ltd.	10	..	..	..	..	..	..	..	..	..	..	7	3	1	..
73E, etc.	Oroya Brownhill Co., Ltd.	50	..	..	2	..	..	..	..	6	..	4	..	25	6 / V.2	..
	Rasmussen's Works	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..
1208E, etc.	South Kalgurli G.Ms., Ltd.	..	..	..	4	..	..	..	..	..	..	..	..	5	9	..
4187E	Trurant	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..

TABLE XXI.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area on which erected.	Name of Mine, Company, or Works.	Milling.											Cyaniding.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.													
		Number of Heads of Stampers.	Prospecting.	Ball.	Krupp.	Griffin.	Huntington.	Salford.	Tremain.	Flint.	Other Crushers.	Puddlers.	Leaching Vats.	Agitating Vats.	Filter Presses.	
	EAST COOLGARDIE GOLDFIELD—*continued.*															
	EAST COOLGARDIE DISTRICT—*continued.*															
Boulder.																
1507E, etc.	Westralian Machinery Corporation, Ltd. (Ivanhoe Junction)	10	..	..	..	..	.	..	..	..	..	..	4	..	..	..
Feysville.																
Block 50	Hampton Properties, Ltd.	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kalgoorlie.																
1101E, etc.	A.W.A. United leases	10	..	..	..	..	..	..	..	..	..	..	7	..	..	..
796E, etc.	Bonnie Lass leases	5	..	..	..	..	..	..	..	..	..	..	6	..	..	..
Mach. L. 5	Brown Hill Consols, Ltd.	20	..	..	..	..	..	..	..	..	..	..	16	3	2	..
1694E, etc.	Golden Zone	15	..	..	..	..	..	..	..	..	..	..	8	..	..	..
943E, etc.	Hannan's Proprietary, Ltd.	..	..	..	..	..	3	..	..	..	..	..	8	..	..	..
97E, etc.	Hannan's Reward, Ltd.	30	..	..	..	..	..	..	..	..	..	..	20	..	..	..
4001E, etc.	Hidden Secret leases	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
983E	Isabel	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mach. L. 2	Kalgoorlie Gold Recovery Co., Ltd. ..	..	..	..	..	..	..	..	..	..	..	..	10	..	2	..
4039E	Rising Sun (late 4037E, etc., North End Mines, Limited.)	15	..	..	..	..	..	..	..	..	..	..	5	..	..	..
4273E, etc.	Star leases	10	..	..	..	..	..	..	..	..	..	..	12	..	..	..
3880E, etc.	Westralian Machinery Corporation, Ltd.	20	..	..	..	..	..	..	..	..	..	..	12	..	..	..
4146E	(Devon Consols leases)															
	Total	**715**	..	..	**40**	**28**	**3**	..	..	**23**	..	**18**	**289**	**175**	**117** V.14	**£1,741,400**
													464		**131**	
	BULONG DISTRICT.															
Bulong.																
(1062Y, etc.)	Bulong Proprietary leases ..	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(1043Y)	Hilda Mill	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
Randalls.																
(W.R. 24Y)	Berry's Works	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
A9535	State Battery	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
	Total	**25**	..	..	..	..	**1**	..	..	..	..	..	**4**	..	..	**£5,500**
	COOLGARDIE GOLDFIELD.															
	COOLGARDIE. DISTRICT															
Bonnievale.																
595, etc.	Gem leases	15	..	..	..	..	..	..	..	..	..	..	2	..	..	..
1552, etc.	Vale of Coolgardie G.Ms., Ltd. ..	10	..	..	..	..	..	..	..	..	..	..	5	..	..	..
144, etc.	Westralia and East Extension Mines, Ltd.	40	..	..	..	..	..	..	..	..	..	..	30	4	2	..
Burbanks.																
134, etc.	Burbanks Birthday G.Ms., Ltd. ..	60	..	..	..	..	..	..	..	..	..	..	7	..	..	..
2985, etc.	Burbanks Main Lode (1904), Ltd. ..	20	..	..	..	..	..	..	..	..	..	..	12	..	..	..
2160	Lady Robinson G.M. Co., N.L. ..	10	..	..	..	..	..	..	..	..	..	..	9	..	..	..
Coolgardie.																
133, etc.	Bayley's leases	10	..	..	..	..	..	..	..	..	..	..	6	..	..	..
3918	Coolgardie Redemption G.M. Co., N.L.	10	..	..	..	..	..	..	..	..	..	..	6	..	..	..
4189, etc.	Garden Gully leases	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
73, etc.	Griffiths leases	10	..	..	..	..	..	..	..	..	..	..	10	..	..	..
4297	King Solomon	10	..	..	..	..	..	..	..	..	..	..	3	..	..	..
(3415)	(Perseverance G.Ms., Ltd.) ..	..	..	..	..	..	..	..	..	..	..	..	10	..	..	..
4152/3	Queen's Cross leases	11	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Moss's Cyanide Works	..	..	..	..	..	..	..	..	..	..	..	6	..	..	..
33, etc.	Tindal's Coolgardie G.M. Co., N.L. ..	10	..	..	..	..	..	..	..	..	..	..	8	..	..	..
A9435	State Battery	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Gibraltar.																
P.A. 312	(Clayton L.F.)	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Higginsville.																
4184, etc.	Red Hill Westralia G.Ms., Ltd. ..	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Red Hill.																
4331	Edquist (Perkins and Truman) ..	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Widgiemooltha.																
M.A. 63	Highgate Works	3	..	..	..	..	..	..	..	..	..	..	2	..	..	..
A7497	State Battery	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**274**	..	..	..	..	..	..	..	..	..	..	**120**	**4**	**2**	**£131,724**
													124			

TABLE XXI.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area on which erected.	Name of Mine, Company, or Works.	Milling.											Cyaniding.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.													
		Number of Heads of Stampers.	Prospecting.	Ball.	Krupp.	Griffin.	Huntington.	Salford.	Tremain.	Flint.	Other Crushers.	Puddlers.	Leaching Vats.	Agitating Vats.	Filter Presses.	
	PEAK HILL GOLDFIELD.															
Peak Hill.																
1D, etc.	Peak Hill Goldfield, Ltd.	40	1	..	..	..	..	..	..	..	..	2	8	3	9	..
Ravelstone.																
M10258	State Battery	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
	Total	**50**	**1**	..	..	..	..	..	..	..	..	**2**	**12**	**3**	**9**	**£75,870**
													15			
	EAST MURCHISON GOLDFIELD.															
	LAWLERS DISTRICT.															
Cork Tree.																
(535)	(Kingston)	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..
Kathleen Valley.																
113	Nil Desperandum	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
387	Yellow Aster G.M. Co., N.L. ..	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Lake Darlot.																
633, 823	Zangbar leases	10	..	..	..	..	..	..	..	..	..	..	6	2	..	..
M11723	State Battery	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Lawlers.																
532	Brilliant	5	..	..	..	..	..	..	..	..	..	..	6	..	..	..
M.A. 24	Cinderella Battery	5	..	..	..	..	..	..	..	..	..	..	7	..	..	..
M.A. 11	Lawlers Public Battery	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
37, etc.	Northern Mines, Ltd.	40	..	..	..	..	..	..	..	..	..	1	6	2	V.2	..
408, etc.	Vivien G.M. Co., Ltd...	20	..	..	..	..	..	..	..	..	..	..	9	5	V.2 1	..
New England.																
(797)	(Auckland)	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Sir Samuel.																
21, etc.	Bellevue, Ltd.	40	..	..	..	..	..	..	..	..	..	..	..	..	..	..
M.A. 17	Condor Battery	5	..	..	..	..	..	..	..	..	..	..	5	..	..	..
Wiluna.																
946	Bulletin	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
140	Golden Age	20	..	..	..	..	..	..	..	..	..	..	..	8	..	..
149, 542, etc.	Gwalia Consolidated, Ltd.	20	..	..	..	..	..	..	..	..	..	..	16	4	4	..
162	Lake Way	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
W.R. 73	Wilks Bros. Cyanide Works	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..
M9909	State Battery	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Urquhart's Cyanide Works ..	..	..	..	..	..	..	..	..	..	..	..	6	..	..	..
	Total	**220**	**2**	..	..	..	..	..	..	..	..	**1**	**77**	**21**	**9**	**£197,273**
													98			
	BLACK RANGE DISTRICT.															
Birrigrin.																
128B, etc.	Pelerin leases	5	..	..	..	..	..	..	..	..	..	..	4	..	..	..
8B	Reply Battery	5	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Maninga Marley.																
203B, etc.	Havilah G.M. Co., N.L.	10	..	..	..	..	..	..	..	..	..	..	6	..	..	..
53B, etc.	Maninga Marley leases	10	..	..	..	..	..	..	..	..	..	..	5	..	..	..
Montagu.																
M.A. 5B	El Dorado Customs Mill	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Nunngarra.																
5254	State Battery	10	..	..	..	..	..	..	..	..	..	..	3	..	..	..
Sandstone.																
4B, etc.	Black Range Mining Co., N.L. ..	20	..	..	..	..	..	..	..	..	..	..	12	..	..	..
5B	Black Range Mining Co., N.L. ..	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
6B, etc.	Oroya Black Range, Ltd.	20	..	..	..	..	..	..	..	..	..	..	8	8	V. 1	..
	Total	**90**	..	..	..	..	..	..	**1**	..	..	..	**42**	**8**	**1**	**£82,300**
													50			

TABLE XXI.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area on which erected.	NAME OF MINE, COMPANY, OR WORKS.	MILLING.											CYANIDING.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.													
		Number of Heads of Stampers.	Prospecting.	Ball.	Krupp.	Griffin.	Huntington.	Salford.	Tremain.	Flint.	Other Crushers.	Puddlers.	Leaching Vats.	Agitating Vats.	Filter Presses.	
	MURCHISON GOLDFIELD. CUE DISTRICT.															
Barrambie.																
1458, etc.	Barrambie Ranges G.M. Co., N.L. ..	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Cuddingwarra.																
M.A. 24	Chesson & Heydon's Battery ..	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
595, etc.	Victory United G.M. Co., N.L. ..	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
T.A. 19	(Heydon, E. R.)	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Cue.																
203, etc.	Cue No. 1	20	..	..	..	..	..	..	..	..	..	..	8	..	..	..
1694	Cue Victory	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
1020	Gem of Cue Extended	15	..	..	..	..	..	..	..	..	..	..	5	..	..	..
1374	Salisbury	10	..	..	..	..	..	..	..	..	..	..	8	..	..	..
T.A. 20	(McIntyre, John)	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Erroll's.																
1531, etc.	Wha Gold Mines, Ltd.	10	..	..	..	..	..	..	..	..	..	..	8	..	..	..
Mindoolah.																
1661	Golden Gate	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1609	Mindoolah Main Reef	10	..	..	..	..	..	..	..	..	..	..	3	..	..	..
Tuckanarra.																
⩚10256	State Battery	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
	Total	**113**	..	..	..	..	..	..	..	..	..	..	**53**	..	..	**£65,535**
	NANNINE DISTRICT.															
Abbotts.																
171N	Mt. Vranizan	10	..	..	..	..	..	..	..	..	..	..	3	..	..	..
172N, etc.	New Murchison King G.Ms.	10	..	..	..	..	..	..	..	..	..	..	5	..	..	..
Burnakura.																
238N	Alliance	4	..	..	..	..	..	..	..	..	..	..	3	..	..	..
509N, etc.	Federal City leases	10	..	..	..	..	..	..	..	..	..	..	5	..	..	..
408N, etc.	New Alliance leases	5	..	..	..	..	..	..	..	..	..	..	5	..	..	..
Chesterfield.																
361N	Margueritta	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Gabanintha.																
379N, etc.	Mountain View leases	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
32N, etc.	Nannine Goldfield, Ltd.	10	..	..	..	..	..	..	..	..	..	..	3	..	..	..
Jillawarra.																
455N	Jillawarra	5	..	..	..	..	..	..	..	..	..	..	3	..	..	..
Meekatharra.																
477N	Fenian	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
398N, etc.	Ingliston Extended G.Ms., Ltd. ..	10	..	..	..	..	..	..	..	..	..	3	5	3	1	..
533N	Marmont	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
⩚9142	State Battery	10	..	..	..	..	..	..	..	..	..	..	6	..	..	..
Nannine.																
P.A. 292N	Champion Cyanide Works ..	..	..	..	..	..	..	..	..	..	..	..	6	..	..	..
(685N)	Champion Extended Cyanide Works	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..
16N, 25N	Mt. Hall, Royalist Consolidated and Nannine leases	13	..	..	..	..	..	..	..	..	..	..	3	..	..	..
⩚10910	State Battery	5	..	..	..	..	..	..	..	..	..	..	3	..	..	..
Quinn's.																
622N	Phoenix	5	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Stake Well.																
593N, etc.	Kohinoor South G.M. Co., Ltd. ..	20	..	..	..	..	..	..	..	..	..	..	6	..	..	..
Star of the East.																
174N	Star of the East, Ltd.	20	..	..	..	..	..	..	..	..	..	..	6	..	..	..
Yallowgindat.																
666N	Karangahaki	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**182**	..	..	..	..	..	..	..	..	..	**3**	**80**	**3**	**1**	**£90,000**
													83			
	DAY DAWN DISTRICT.															
Day Dawn.																
389D, etc.	Crême D'Or leases	5	..	..	..	..	..	..	..	..	..	..	2	3	..	..
26D, etc.	East Fingall G.Ms., Ltd.	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1D, etc.	Great Fingall Consolidated, Ltd. ..	100	..	..	..	..	..	..	..	..	..	..	24	..	6	..
(32 D)	Mount Fingall	5	..	..	..	..	..	..	..	..	..	..	4	..	..	..
14D, etc.	Murchison Associated G.Ms., Ltd. ..	10	..	..	..	..	..	..	..	..	..	..	4	2	..	..
Island.																
443D	Eureka	5	..	..	..	..	..	..	..	..	..	..	..	5	..	..
Webb's Patch.																
370D, 391D	Hill End leases	5	..	..	..	..	..	..	..	..	..	..	4	..	..	..
	Total	**135**	..	..	..	..	..	..	..	..	..	..	**38**	**10**	**6**	**£267,300**
													48			

TABLE XXI.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area on which erected.	NAME OF MINE, COMPANY, OR WORKS.	MILLING.											CYANIDING.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.													
		Number of Heads of Stampers.	Prospecting.	Ball.	Krupp.	Griffin.	Huntington.	Salford.	Tremain.	Flint.	Other Crushers.	Puddlers.	Leaching Vats.	Agitating Vats.	Filter Presses.	
	MURCHISON GOLDFIELD—*continued.*															
	MOUNT MAGNET DISTRICT.															
Lennonville.																
(30M)	(Long Reef)	20	..	..	..	..	..	..	..	..	..	..	2	..	..	..
(693M)	(Piedmont)	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(57M)	(Welcome)	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
⋀7499	State Battery	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Mt. Magnet.																
953M	Brittannia	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
752M, etc.	Great Boulder No. 1, Ltd.	10	..	..	..	..	..	..	..	..	..	1	..	3	V. 1	..
314M, etc.	Morning Star Quartz Co., N.L.	10	..	..	..	..	..	..	..	..	..	..	7	..	..	..
(784M)	(New Chum)	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(M.A., 2M)	(New Chum Cyanide Works)	..	..	..	..	..	..	..	..	..	..	..	12	..	..	..
(856M)	(Paris)	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
⋀9769	State Battery	10	..	..	..	..	..	..	..	..	..	..	7	..	..	..
Moyagee.																
(766M)	(Ophir)	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**85**	..	..	..	..	**1**	..	**2**	..	..	**1**	**32**	**3**	**1**	**£43,085**
													35			
	YALGOO GOLDFIELD.															
Field's Find.																
414, etc.	Reward G.Ms., Ltd.	20	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Gullewa.																
(34, etc.)	(Christmas Gift leases)	10	..	..	..	..	..	..	..	..	..	..	7	..	..	..
170/1, 174	Monarch leases	10	..	..	..	..	..	..	..	..	..	..	3	..	..	..
Pinyalling.																
501, etc.	Baron Rothschild G.Ms., Ltd.	10	..	..	..	..	..	..	..	..	..	..	..	5	..	..
(P.A. 119)	(Gloster, A. B.)	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Rothesay.																
(192, etc.)	(Woodley's G.Ms., Ltd.)	20	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Yalgoo.																
495, 518	Ivanhoe G.M. Co., N.L., Yalgoo	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Yuin.																
409, etc., M.A. 8	Royal Standard leases	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
556	Standard Grade	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**90**	**1**	..	..	..	..	..	..	..	..	..	**14**	**5**	..	**£24,750**
													19			
	MT. MARGARET GOLDFIELD.															
	MT. MORGANS DISTRICT.															
Australia United.																
(216F)	(Australia United)	..	..	..	..	..	..	..	..	..	..	..	5	..	..	..
Korong.																
(254F)	Alicia	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Mt. Margaret.																
66F	Mt. Morven	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
174F	Mt. Margaret, Lake View	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mt. Morgans.																
8F	Millionaire, Ltd.	5	..	..	..	..	..	..	..	..	..	..	3	..	..	..
29F, etc.	Transvaal leases	10	..	..	..	..	..	..	..	..	..	..	4	3	..	..
5F, etc.	Westralia Mt. Morgans G.Ms., Co., Ltd.	60	..	..	..	..	..	..	..	..	..	..	36	..	3	..
7F	Westralia Mt. Morgans G.Ms., Co., Ltd. (Guest's Battery)	20	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Murrin Murrin.																
208F, etc.	Alex Junior leases	5	..	..	..	..	..	..	..	..	..	..	6	2	..	..
255F, etc.	Malcolm Mines, Ltd.	30	..	..	..	..	..	..	..	..	..	..	4	4	..	..
200F, etc.	Princess Alix leases	5	..	..	..	..	..	..	..	..	..	..	7	..	..	..
193F, etc.	Proprietary Extended leases	20	..	..	..	..	..	..	..	..	..	..	12	..	..	..
	Total	**172**	..	..	..	..	..	..	..	..	..	..	**81**	**9**	**3**	**£200,990**
													90			

TABLE XXI.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area on which erected.	Name of Mine, Company, or Works.	Milling.											Cyaniding.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.													
		Number of Heads of Stampers.	Prospecting.	Ball.	Krupp.	Griffin.	Huntington.	Salford.	Tremain.	Flint.	Other Crushers.	Puddlers.	Leaching Vats.	Agitating Vats.	Filter Presses.	
	MT. MARGARET GOLDFIELD—*continued.*															
	MT. MALCOLM DISTRICT.															
Dodger's Well.																
(1237c)	(Golden Champion)	5	..	..	..	..	..	..	..	..	..	..	3	..	..	..
Diorite King.																
1179c	King of the Hills	5	..	..	..	..	..	..	..	..	..	..	3	..	..	..
1172c	Leeta G.M. Co., Ltd.	5	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Leonora.																
218/9c	Great Tower Hill G.Ms., Ltd. ..	40	..	..	..	..	..	..	..	..	..	..	12	..	..	..
1083c	Katie	..	..	..	..	..	..	..	..	..	..	..	5	..	..	..
195/6c	Leonora Gold Block leases ..	10	..	..	..	..	..	..	..	..	..	..	5	..	..	..
210c, etc.	Leonora Main Reefs, Ltd.	10	..	..	..	..	..	..	..	..	..	..	5	..	..	..
190c, etc.	Sons of Gwalia, Ltd.	50	..	..	..	..	..	..	..	..	..	..	16	11	V.2 2	..
198c, etc.	Sons of Gwalia South G.Ms., Ltd. ..	10	..	..	..	..	..	..	..	..	..	..	6	..	..	..
263c, etc.	Trump leases	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
A7121	State Battery	10	..	..	..	..	..	..	..	..	..	..	5	..	..	..
Malcolm.																
1175c	Malcolm Prospecting Co., N.L. ..	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
991c	Richmond Gem	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
W.R. 84	(Hill & party)	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Mertondale.																
638c, etc.	Merton's Reward G.M. Co., Ltd. ..	15	..	..	..	..	..	..	..	..	..	..	8	2	1	..
(1040c)	(Workman)	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mt. Clifford.																
M.A. 9c	Mt. Clifford Battery	10	..	..	..	..	..	..	..	..	..	..	3	..	..	..
Pig Well.																
A9681	State Battery	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Randwick.																
(987c)	(Anglo-Saxon)	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
978c	Randwick	10	..	..	..	..	..	..	..	..	..	..	..	4	..	..
Webster's Find.																
1224c	Webster's	15	..	..	..	..	..	..	..	..	..	..	10	..	..	..
Wilson's Patch.																
1120c, etc.	Great Western leases	10	..	..	..	..	..	..	..	..	..	..	6	..	..	..
	Total	**260**	..	..	..	..	..	..	**1**	..	..	..	**107**	**17**	**5**	**£229,851**
													124			
	MT. MARGARET DISTRICT.															
Burtville.																
943T, etc.	Mikado G.M. Co., Ltd.	5	..	..	..	..	..	..	..	..	..	..	2	..	..	..
781T, etc.	Sailor Prince leases	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1644T	Specimen Hill	5	..	..	..	..	..	..	..	..	..	..	5	..	..	..
1726T	Sunrise	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..
A8914	State Battery	10	..	..	..	..	..	..	..	..	..	..	3	..	..	..
Erlistoun.																
(1748T)	(Caledonia)	..	1	..	..	..	..	..	..	..	..	..	4	..	..	..
1816T	Golden Spinnifex	5	..	..	..	..	..	..	..	..	..	..	4	..	..	..
(771T)	(Little Doris)	5	..	..	..	..	..	..	..	..	..	..	4	..	..	..
1818T	Mistake	10	..	..	..	..	..	..	..	..	..	..	3	..	..	..
1517T	Mulga Queen	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
1665T	Westralia Tasmania	5	..	..	..	..	..	..	..	..	..	..	2	..	..	..
Euro.																
1546T, etc.	Euro leases	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Laverton.																
371T	Augusta	10	..	..	..	..	..	..	..	..	..	..	3	..	..	..
1797T, etc.	Craiggiemore leases	10	..	..	..	..	..	..	..	..	..	..	6	4	..	..
829T, etc.	Ida H. G.M. Co., Ltd.	10	..	..	..	..	..	..	..	..	..	..	5	2	..	..
1783T	Just-in-Time	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
715T	Lancefield G.M. Co., Ltd.	50	..	4	..	..	..	..	..	..	..	..	..	8	6	..
A8386	State Battery	10	..	..	..	..	..	..	..	..	..	..	3	..	..	..
	Total	**173**	**1**	**4**	..	..	..	..	..	..	..	..	**52**	**14**	**6**	**£191,040**
													66			

TABLE XXI.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area on which erected.	NAME OF MINE, COMPANY, OR WORKS.	MILLING.											CYANIDING.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.													
		Number of Heads of Stampers.	Prospecting.	Ball.	Krupp.	Griffin.	Huntington.	Salford.	Tremain.	Flint.	Other Crushers.	Puddlers.	Leaching Vats.	Agitating Vats.	Filter Presses.	
	NORTH COOLGARDIE GOLDFIELD.															
	MENZIES DISTRICT.															
Comet Vale.																
5148z	Coonega G.M. Co., Ltd.	10	..	..	..	..	..	..	..	..	..	..	6	..	..	..
5217z	Gladsome	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Goongarrie.																
..	Goongarrie Cyanide Works ..	..	..	..	..	..	..	..	..	..	..	..	5	..	..	..
Menzies.																
2823z	Crusoe Gold Claims, Ltd.	10	..	..	..	..	..	..	..	..	..	..	3	..	..	..
T.A. 37z	Crusoe Gold Claims, Ltd.	20	..	..	..	..	..	..	..	..	..	..	..	..	1	..
2821z, etc.	Florence leases	10	..	..	..	..	..	..	..	..	..	..	3	..	..	..
(5304z)	(Heart's Content South)	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5302z	Lady Harriet	5	..	..	..	..	..	..	..	..	..	..	2	..	..	..
2835z	Lady Sherry	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4855z, etc.	Lusitania leases	10	..	..	..	..	..	..	..	..	..	..	6	..	1	..
4895z, etc.	Maranora leases	5	..	..	..	..	..	..	..	..	..	..	2	..	..	..
4931z, etc.	Menzies Consolidated G.Ms., Ltd. ..	20	..	..	..	..	..	..	..	..	..	..	29	..	..	..
2820z, 3006z	Menzies Gold Mine leases.. ..	10	..	..	..	..	..	..	..	..	..	..	5	..	..	..
2832z, etc.	Menzies Mining and Exploration Corporation, Ltd.	10	..	..	..	..	..	..	..	..	..	..	7	3	1	..
⩚10253	State Battery	10	..	..	..	..	..	..	..	..	..	..	5	..	..	..
Mount Ida.																
..	Mt. Ida Cyanide Works	..	..	..	..	..	..	..	..	..	..	..	6	..	..	..
5243z	Mt. Ida Meteor	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
⩚10173	State Battery	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**153**	..	..	..	..	..	..	..	..	..	..	**83**	**3**	**3**	**£66,001**
													86			
	ULARRING DISTRICT.															
Davyhurst.																
459U, etc.	Golden Pole G.Ms., Ltd.	20	..	..	..	..	..	..	..	..	..	..	11	3	1	..
613U, etc.	Great Orphir Gold Corporation, Ltd.	..	..	..	..	..	..	..	..	..	2	2	44	..	..	..
438U, etc.	Westralia Waihi G.Ms., N.L. ..	10	..	..	..	..	..	..	..	..	..	..	6	1	..	..
Mulline.																
123U	Riverina	10	..	..	..	..	..	..	..	..	..	..	6	..	..	..
324U, etc.	Riverina South leases	5	..	..	..	..	..	..	..	..	..	..	3	..	..	..
⩚7250	State Battery	20	..	..	..	..	..	..	..	..	..	..	5	2	1	..
Mulwarrie.																
⩚8045	State Battery	10	..	..	..	..	..	..	..	..	..	..	5	..	..	..
	Total	**75**	..	..	..	..	..	..	..	..	**2**	**2**	**80**	**6**	**2**	**£61,240**
													86			
	NIAGARA DISTRICT.															
Desdemona.																
673G	Desdemona	5	..	..	..	..	..	..	..	..	..	..	..	5	..	..
685G	Othello	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kookynie.																
20G	Cumberland Cyanide Works ..	..	..	..	..	..	..	..	..	..	..	..	5	..	..	..
26G	Englishman: Cosmopolitan Proprietary, Ltd.	50	..	..	..	..	..	..	..	..	..	..	14	4	2 V.1	..
Niagara.																
T.A. 30G	Challenge Cyanide Works ..	..	..	..	..	..	..	..	..	..	..	..	5	..	..	..
518G, etc.	Eaglekawk Heather Co., N.L. ..	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
419G, etc.	Orion Mines, Ltd.	10	..	..	..	..	..	..	..	..	..	..	6	..	..	..
505G, etc.	W.E.G. leases	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
⩚7494	State Battery	10	..	..	..	..	..	..	..	..	..	..	6	..	..	..
Tampa.																
349G	Grafter Battery	5	..	..	..	..	..	..	..	..	..	..	3	..	..	..
M.A. 44G	Tampa Cyanide Works	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..
	Total	**105**	..	..	..	..	..	..	..	..	..	..	**47**	**9**	**3**	**£78,008**
													56			

TABLE XXI.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area on which erected.	Name of Mine, Company, or Works.	Milling.										Cyaniding.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.												
		Number of Heads of Stampers.	Prospecting.	Ball.	Krupp.	Griffin.	Huntington.	Salford.	Tremain.	Flint.	Other Crushers.	Puddlers.	Leaching Vats.	Agitating Vats.	Filter Presses.	
	NORTH COOLGARDIE GOLDFIELD—*continued.*															
	YERILLA DISTRICT.															
Edjudina.																
401R, etc.	Neta leases	5	..	..	..	..	..	..	..	..	..	..	5	..	..	..
M.A. 3R	Pauley and McCoy's Battery	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
539R	Senate	5	..	..	..	..	..	..	..	..	..	..	5	..	..	..
Linden.																
904R	Devon	5	..	..	..	..	..	..	..	..	..	..	5	..	..	..
928, (406R)	Great Carbine: Greenhills G.M. Co., Ltd.	..	1	..	..	..	..	..	..	..	..	..	2	..	..	..
⋀11295	State Battery	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pingin.																
⋀10190	State Battery	5	..	..	..	..	..	..	..	..	..	..	3	..	..	..
Yarri.																
P.A. 234R	(Clan Donachaich)	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
⋀10255	State Battery	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Yerilla.																
W.R. 28R	State Battery	5	..	..	..	..	..	..	..	..	..	..	3	..	..	..
Yundamindera.																
450R, etc.	Potosi leases	10	..	..	..	..	..	..	..	..	..	..	12	..	..	..
493R, etc.	Treasure East leases	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
	Total	**67**	**1**	..	..	..	..	..	**1**	..	..	..	**47**	..	..	**£31,000**
	BROAD ARROW GOLDFIELD.															
Bardoc.																
(1329w)	(Dulcie Maud)	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..
T.A. 28w	Vettersburg Cya ide Works	..	..	..	..	..	..	..	..	..	..	..	6	..	..	..
M.A. 21w	Zoroastrian Battery	10	..	..	..	..	..	..	..	..	..	..	6	..	..	..
Black Flag.																
(43w, etc.)	Black Flag Proprietary Co., Ltd.	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
M.A. 19w	Milne's Battery	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Broad Arrow.																
75w, etc.	Broad Arr w Consols G.M. Co., N.L.	10	..	..	..	..	..	..	..	..	..	..	5	..	..	..
3w, etc.	Claremont G.M., Ltd.	20	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Carnage.																
M.A. 22w	Regan's Carnage Battery	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Paddington.																
W.R. 68w	Carter's Venture Mill	10	..	..	..	..	1	..	..	..	..	..	6	..	..	..
45w	Mount Corlic	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
M.A. 14w	New Arrow Proprietary Battery	10	..	..	..	..	..	..	..	..	..	..	5	..	..	..
53, etc.	New Standard Exploration Co., Ltd. (Paddington Consols)	10	..	..	..	..	..	..	..	..	..	..	12	..	..	..
Siberia.																
1286w	Golden	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
M.A. 23w	Ora Banda Battery	15	..	..	..	..	..	..	..	..	..	..	6	..	..	..
1300w	Pole	5	..	..	..	..	..	..	..	..	..	1	5	..	..	..
⋀10254	State Battery	5	..	..	..	..	..	..	..	..	..	..	3	..	..	..
	Total	**130**	**1**	..	..	..	**1**	..	..	..	..	**1**	**61**	..	..	**£40,903**
	NORTH-EAST COOLGARDIE GOLDFIELD.															
	KANOWNA DISTRICT.															
Gambier.																
434x	Kalpini State Battery	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Gindalbie.																
1047x	Eclipse	5	..	..	..	..	..	..	..	..	..	..	6	..	..	..
1123x	Gindalbie	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
392x, etc.	Queen Margaret G.M. Co., Ltd. (now Melton G.M. Co., N.L.)	15	..	..	..	..	..	..	..	..	..	..	9	..	..	..
1174x	United	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Gordon.																
891x, etc.	Sirdar G.M. Co., Ltd.	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kanowna.																
52x	Lake View South G.M. (W.A.), Ltd. Robinson Cyanide Plant	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..
(187x)	Last Chance Cyanide Works	..	..	..	..	..	..	..	..	..	..	..	8	..	..	..
3x, etc.	North White Feather G.Ms., Ltd.	20	..	..	..	..	..	..	..	..	..	..	10	..	..	..
	North White Feather Filter Press Works	..	..	..	..	..	..	..	..	..	..	..	..	3	2	..

TABLE XXI.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area on which erected.	NAME OF MINE, COMPANY, OR WORKS.	MILLING.											CYANIDING.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.													
		Number of Heads of Stampers.	Prospecting.	Ball.	Krupp.	Griffin.	Huntington.	Salford.	Tremain.	Flint.	Other Crushers.	Puddlers.	Leaching Vats.	Agitating Vats.	Filter Presses.	
	NORTH-EAST COOLGARDIE GOLDFIELD—*continued.*															
	KANOWNA DISTRICT—*continued.*															
Kanowna.																
(1214X)	Rollo's Reward	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..
9X, etc.	White Feather Main Reefs (1906), Ltd.	40	..	..	..	..	..	..	..	..	..	..	18	..	..	..
(M.A. 45X)	Donnan's Works	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
M.A. 48X	Irving's Works	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
M.A. 43X	Monmouth Works	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..
M.A. 39X	Mudlark Works	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
M.A. 19X	Old Cement Works (Martin's) / Morrison's Cyanide Plant	15	..	..	..	..	..	..	..	..	..	..	8	..	..	..
L.C. 57X	Riedel and Norton's Works	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mulgarrie.																
(149X)	(Hit or Miss South)	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**153**	**1**	..	..	..	..	..	..	..	..	**2**	**71**	**3**	**2**	**£49,000**
													74			
	KURNALPI DISTRICT.															
Kurnalpi.																
M.A. 2K	Success Battery (Billy Billy)	5	..	..	..	..	..	..	..	..	..	..	4	..	..	..
(314K)	(Lady of the Lake)	..	..	..	..	..	..	..	..	..	..	1	..	4	..	..
Mulgabbie.																
M.A. 3K	Glover's Works	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**5**	**1**	..	..	..	..	..	..	..	..	**1**	**4**	**4**	..	**£1,330**
													8			
	EAST COOLGARDIE GOLDFIELD.															
	EAST COOLGARDIE DISTRICT.															
Boorara.																
T.L. 36H	Barnes' Works	..	..	..	..	..	..	..	..	..	..	..	13	..	..	..
3908E, etc.	Golden Ridge G.M. Co., Ltd.	20	..	..	..	..	..	..	..	..	..	..	6	..	..	..
Boulder.																
38E, etc.	Associated G.Ms. of W.A., Ltd.	10	..	..	13	..	..	..	..	..	..	2	..	5	9	..
49E, etc.	Associated Northern Blocks (W.A.), Ltd.	..	..	..	3	..	..	..	..	..	..	1	..	6	3	..
S.L. 545/152	Boulder Puddling Works	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
13E, etc.	Crœsus South G.Ms., Ltd.	20	..	..	..	..	..	..	..	..	..	..	8	..	..	..
M.A. 50E	Glenartney Works	10	..	..	..	..	..	..	..	..	..	..	3	..	..	..
351E, etc.	Golden Horseshoe Estates Co., Ltd.	150	..	..	..	..	..	..	..	10	..	1	24	22	20	..
750E, etc.	Golden Links, Ltd.	..	..	..	..	..	..	..	..	..	..	..	6	..	..	..
873E	Great Boulder Main Reef, Ltd.	..	..	..	3	..	..	..	..	..	..	..	..	4	5	..
50E	Great Boulder No. 1, Ltd.	10	..	..	..	..	..	..	..	..	..	1	14	..	..	..
66E	Great Boulder Perseverance G.M. Co., Ltd.	..	..	..	..	16	..	..	..	..	..	..	..	24	13	..
16E, etc.	Great Boulder Proprietary G.Ms., Ltd.	..	..	..	3	12	..	..	..	..	..	4	..	13	13 / V.10	..
264E	Hainault G.Ms., Ltd.	40	..	..	..	..	..	..	..	..	..	1	40	..	2	..
Mach. L. 4	Hannan's Central	15	..	..	..	..	..	..	..	..	..	..	11	3	2	..
M.A. 11E	Hannan's Central Lake-side Works	20	..	..	..	..	..	..	..	..	..	..	4	5	2	..
15E, etc.	Hannan's Star, Ltd.	..	..	..	2	..	..	..	..	1	..	1	2	4	..	..
4317E, etc.	Idaho Leases	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
946E	Ironsides North	10	..	..	..	..	..	..	..	..	..	..	5	..	..	..
31E, etc.	Ivanhoe Gold Corporation, Ltd.	100	..	..	..	..	..	..	..	..	..	..	32	11	8 / V.1	..
6E, etc.	Kalgoorlie Amalgamated (new), Ltd.	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
22E, etc.	Kalgoorlie G.Ms., Ltd.	..	..	..	9	..	..	..	..	..	..	1	..	20	7	..
25E, etc.	Lake View Consols, Ltd.	75	..	..	..	..	..	..	..	6	..	..	6	20	13 / V.1	..
(4209E)	(Lucey)	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
33E, etc.	North Boulder G.Ms., Ltd.	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
281E, etc.	North Kalgoorlie Co., Ltd.	10	..	..	..	..	..	..	..	..	..	..	7	3	1	..
73E, etc.	Oroya Brownhill Co., Ltd.	50	..	..	2	..	..	..	..	6	..	4	..	25	6 / V.2	..
	Rasmussen's Works	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..
1208E, etc.	South Kalgurli G.Ms., Ltd.	..	..	..	4	..	..	..	..	..	..	..	..	5	9	..
4187E	Trurant	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..

TABLE XXI.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area on which erected.	NAME OF MINE, COMPANY, OR WORKS.	MILLING.											CYANIDING.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.													
		Number of Heads of Stampers.	Prospecting.	Ball.	Krupp.	Griffin.	Huntington.	Salford.	Tremain.	Flint.	Other Crushers.	Puddlers.	Leaching Vats.	Agitating Vats.	Filter Presses.	
	EAST COOLGARDIE GOLDFIELD—*continued.*															
	EAST COOLGARDIE DISTRICT—*continued.*															
Boulder.																
1507E, etc.	Westralian Machinery Corporation, Ltd. (Ivanhoe Junction)	10	..	..	..	..	.	..	..	..	..	..	4	..	..	..
Feysville.																
Block 50	Hampton Properties, Ltd.	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Kalgoorlie.																
1101E, etc.	A.W.A. United leases	10	..	..	..	..	..	..	..	..	..	..	7	..	..	..
796E, etc.	Bonnie Lass leases	5	..	..	..	..	..	..	..	..	..	..	6	..	..	..
Mach. L. 5	Brown Hill Consols, Ltd.	20	..	..	..	..	..	..	..	..	..	..	16	3	2	..
1694E, etc.	Golden Zone	15	..	..	..	..	..	..	..	..	..	..	8	..	..	..
943E, etc.	Hannan's Proprietary, Ltd.	..	..	..	..	..	3	..	..	..	..	..	8	..	..	..
97E, etc.	Hannan's Reward, Ltd.	30	..	..	..	..	..	..	..	..	..	..	20	..	..	..
4001E, etc.	Hidden Secret leases	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
983E	Isabel	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mach. L. 2	Kalgoorlie Gold Recovery Co., Ltd. ..	..	..	..	..	..	..	..	..	..	..	..	10	..	2	..
4039E	Rising Sun (late 4037E, etc., North End Mines, Limited.)	15	..	..	..	..	..	..	..	..	..	..	5	..	..	..
4273E, etc.	Star leases	10	..	..	..	..	..	..	..	..	..	..	12	..	..	..
3880E, etc.	Westralian Machinery Corporation, Ltd.	20	..	..	..	..	..	..	..	..	..	..	12	..	..	..
4146E	(Devon Consols leases)															
	Total	**715**	..	..	**40**	**28**	**3**	..	..	**23**	..	**18**	**289**	**175**	**117** V.14	**£1,741,400**
													464		**131**	
	BULONG DISTRICT.															
Bulong.																
(1062Y, etc.)	Bulong Proprietary leases ..	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(1043Y)	Hilda Mill	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
Randalls.																
(W.R. 24Y)	Berry's Works	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
⋀9535	State Battery	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
	Total	**25**	..	..	..	..	**1**	..	..	..	..	..	**4**	..	..	**£5,500**
	COOLGARDIE GOLDFIELD. COOLGARDIE. DISTRICT															
Bonnievale.																
595, etc.	Gem leases	15	..	..	..	..	..	..	..	..	..	..	2	..	..	..
1552, etc.	Vale of Coolgardie G.Ms., Ltd. ..	10	..	..	..	..	..	..	..	..	..	..	5	..	..	..
144, etc.	Westralia and East Extension Mines, Ltd.	40	..	..	..	..	..	..	..	..	..	..	30	4	2	..
Burbanks.																
134, etc.	Burbanks Birthday G.Ms., Ltd. ..	60	..	..	..	..	..	..	..	..	..	..	7	..	..	..
2985, etc.	Burbanks Main Lode (1904), Ltd. ..	20	..	..	..	..	..	..	..	..	..	..	12	..	..	..
2160	Lady Robinson G.M. Co., N.L. ..	10	..	..	..	..	..	..	..	..	..	..	9	..	..	..
Coolgardie.																
133, etc.	Bayley's leases	10	..	..	..	..	..	..	..	..	..	..	6	..	..	..
3918	Coolgardie Redemption G.M. Co., N.L.	10	..	..	..	..	..	..	..	..	..	..	6	..	..	..
4189, etc.	Garden Gully leases	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
73, etc.	Griffiths leases	10	..	..	..	..	..	..	..	..	..	..	10	..	..	..
4297	King Solomon	10	..	..	..	..	..	..	..	..	..	..	3	..	..	..
(3415)	(Perseverance G.Ms, Ltd.) ..	..	..	..	..	..	..	..	..	..	..	..	10	..	..	..
4152/3	Queen's Cross leases	11	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Moss's Cyanide Works	..	..	..	..	..	..	..	..	..	..	..	6	..	..	..
33, etc.	Tindal's Coolgardie G.M. Co., N.L. ..	10	..	..	..	..	..	..	..	..	..	..	8	..	..	..
⋀9435	State Battery	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Gibraltar.																
P.A. 312	(Clayton L.F.)	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Higginsville.																
4184, etc.	Red Hill Westralia G.Ms., Ltd. ..	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Red Hill.																
4331	Edquist (Perkins and Truman) ..	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Widgiemooltha.																
M.A. 63	Highgate Works	3	..	..	..	..	..	..	..	..	..	..	2	..	..	..
⋀7497	State Battery	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**274**	..	..	..	..	..	..	..	..	..	..	**120**	**4**	**2**	**£131,724**
													124			

TABLE XXI.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area on which erected.	NAME OF MINE, COMPANY, OR WORKS.	MILLING.											CYANIDING.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.													
		Number of Heads of Stampers.	Prospecting.	Ball.	Krupp.	Griffin.	Huntington.	Salford.	Tremain.	Flint.	Other Crushers.	Paddlers.	Leaching Vats.	Agitating Vats.	Filter Presses.	
	COOLGARDIE GOLDFIELD—*contd.*															
	KUNANALLING DISTRICT.															
Balgarrie.																
M.A. 13s	Stanley Battery	5	..	..	..	..	..	..	..	..	..	..	6	..	..	..
Carbine.																
33s	Carbine	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dunnsville.																
17s	North Coolgardie G.Ms., Ltd. ..	20	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Jourdie Hills.																
369s, etc.	Jourdie United G.Ms., Ltd.	10	..	..	..	..	..	..	..	..	..	..	6	..	..	..
514s	Pride of Jourdie North	5	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Kintore.																
M.A. 14s	(Berliner and Besta)	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
25-Mile.																
696s, etc.	Blue Bell leases	5	..	..	..	..	..	..	..	..	..	..	7	..	..	..
M.A. 18s	(Bow's Battery)	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Carswell's Cyanide Plant ..	..	..	..	..	..	..	..	..	..	..	..	7	..	..	
586s, etc.	Shamrock leases	5	..	..	..	..	..	..	..	..	..	..	4	..	..	..
645s	Star of Fremantle	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**85**	..	..	..	..	..	..	..	..	..	..	**38**	..	..	**£15,250**
	YILGARN GOLDFIELD.															
Greenmount.																
503, etc.	Greenmount Mines, N.L.	10	..	..	..	..	..	..	..	..	..	..	6	..	..	..
550, etc.	Sunbeam leases	5	..	..	..	..	..	..	..	..	..	..	6	..	..	..
536	Transvaal	20	..	..	..	..	..	..	..	..	..	..	8	..	..	..
Hope's Hill.																
(480)	Higgin's Cyanide Works	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..
Jacoletti.																
490, etc.	Jacoletti G.Ms., Ltd.	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Kennyville.																
570	Great Leviathan	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mt. Jackson.																
212, etc.	Mt. Jackson leases	10	..	..	..	..	..	..	..	..	..	..	7	..	..	..
Parker's Range.																
T.A. 32	Andre's Cyanide Works	..	..	..	..	..	..	..	..	..	..	..	6	..	..	..
508	Australia	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
(520)	(Blue Hill)	5	..	..	..	..	..	..	..	..	..	..	4	..	..	..
665	Never Never	10	..	..	..	..	..	..	..	..	..	..	10	..	..	..
724	Spring Hill	5	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Southern Cross.																
T.A. 23	Allsop and Howell's Cyanide Works	..	..	..	..	..	..	..	..	..	..	1	..	5	1	..
13, etc.	British and Foreign Development Syndicate, Ltd. ..	30	..	..	..	..	..	..	..	..	..	..	6	..	..	..
(552)	(Haddon)	10	..	..	..	..	..	..	..	..	..	..	9	..	..	..
⩚8901	Layther's Cyanide Works.. ..	..	..	..	..	..	..	..	..	..	..	..	6	..	..	..
	Total	**130**	..	..	..	..	..	..	..	..	..	**1**	**78**	**5**	**1**	**£60,000**
													83			
	DUNDAS GOLDFIELD.															
Buld nia.																
(T.A. 21)	Liquid Gem Cyaniding Works ..	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..
(M.A. 28)	Pathway Battery	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
Norseman.																
(M.A. 30)	Break-o'-Day Battery	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
M.A. 32	Break-o'-Day Cyanide Works ..	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..
42, etc.	Cumberland G.M. Co., Ltd.	10	..	..	..	..	..	..	..	..	..	..	12	..	..	..
938, etc.	Hampton Plains Estate (1906), Ltd. (Lady Milles' leases)	10	..	..	..	..	..	..	..	..	..	..	8	..	..	..
M.A. 33	(Lady Mary G.M. Co., N.L.).. ..	20	..	..	..	..	..	..	..	..	..	..	5	..	..	..
852, etc.	Mararoa G.M. Co., N.L.	20	..	..	..	..	..	..	..	..	..	..	16	..	..	..
M.A. 18	Mararoa Crushing and Cyaniding Works	10	..	..	..	..	..	..	..	..	..	..	4	..	..	..
106, etc.	Princess Royal G.M. Co., N.L. ..	20	..	..	..	..	..	..	..	..	..	..	5	3	2	..
1021	Princess Royal North	10	..	..	..	..	..	..	..	..	..	..	2	2	..	..
(88)	(Three Colonies)	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..
⩚10257	State Battery	10	..	..	..	..	..	..	..	..	..	..	5	2	1	..
	Total	**120**	..	..	..	..	..	**1**	..	..	**1**	..	**65**	**7**	**3**	**£51,300**
													72			

TABLE XXI.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area on which erected.	NAME OF MINE, COMPANY, OR WORKS.	MILLING.											CYANIDING.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.													
		Number of Heads of Stampers.	Prospecting.	Ball.	Krupp.	Griffin.	Huntington.	Salford.	Tremain.	Flint.	Other Crushers.	Puddlers.	Leaching Vats.	Agitating Vats.	Filter Presses.	
	PHILLIPS RIVER GOLDFIELD.															
Kundip.																
136, etc.	Flag Gold and Copper Mining Co., Ltd.	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
65, 79, T.A. 3	Gem leases	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..
M.Ls. 52, 94	Harbour View leases	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
74	Two Boys	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mount Purchas.																
W.R. 19	Mount Agnes Reward	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
	Mount Purchas Prospecting Plant															
Ravensthorpe.																
82	Gilbert Gold Mines, Ltd.	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..
L.C. 15	Maori Queen Battery	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**40**	2	..	..	..	..	..	..	..	..	..	..	..	..	£26,370
	STATE GENERALLY	..	..	..	..	1	..	..	..	..	..	3	..	..	..	..	£58,000
	Total	..	..	..	..	1	..	..	..	..	..	3	..	..	..	..	£58,000
TOTAL GOLD MINING MACHINERY		3,822	13	4	41	28	7	1	5	23	6	32	1609	311	188	£3,922,781
	TIN.															
	GREENBUSHES TINFIELD.															
Leases.																
752	Dream	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
423, etc.	Dumpling Gully Dredging leases ..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..
369	Enterprise	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
73, etc.	King Tin leases	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
485, etc.	Spring Gully Dredging leases ..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
381, etc.	Westralian Gully Tin Co., Ltd. ..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
Claims.																
730	(Kreitmayer, A. B.)	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
762	Agent General	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
788	Kanowna	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
839	Scandinavian	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
M.A. 20	Floyd's Gully Claim 801 (Astle, T.) ..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..
M.A. 22	Greenbushes Co-operative Mines, Ltd.	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
	State Tin Dressing Plant (Bunbury End)	5	..	..	..	..	1	..	..	..	..	..	..	..	..	..
	State Tin Dressing Plant (North End)	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
	Total	**5**	..	..	..	..	3	..	..	..	..	13	..	..	..	£22,000
	PILBARA GOLDFIELD.															
	MARBLE BAR DISTRICT	..	..	..	..	..	..	..	..	..	..	..	..	..	..	£1,000
	COPPER.															
	WEST PILBARA GOLDFIELD ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	£30,866
	MURCHISON GOLDFIELD ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	£2,000
	MT. MARGARET GOLDFIELD ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	£3,600
	PHILLIPS RIVER GOLDFIELD ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	£46,051
	COAL.															
	COLLIE RIVER COALFIELD ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	£50,501
TOTAL MACHINERY OTHER THAN GOLD		**5**	..	..	..	..	3	..	..	..	..	13	..	..	..	£156,018
TOTAL ALL MINING MACHINERY		3,827	13	4	41	28	10	1	5	23	6	45	1609	311	188	£4,078,799

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 are 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.

Table of Rates fixed by the Commissioner of Police.

From	To	Period.	Rate per Ounce.	Remarks.
			d.	
Abbotts	Nannine	Monthly ...	1	
Australia United Mine	Malcolm	Do. ...	1½	
Burbanks	Coolgardie	Fortnightly	0½	
Burtville	Malcolm	Monthly ...	0¾	Not less than 1,000ozs.
Do.	Laverton	Every two months	...	Actual cost: 19s. 3d.
Coolgardie	Perth	Fortnightly	0¼	On all gold for the Mint.
Cork Tree	Lawlers	Monthly ...	1	Or, if escort is specially provided, cost £4 6s. 6d.
Cosmopolitan Proprietary, Ltd. ...	Kalgoorlie	Do. ...	1	
Cue	Geraldton	Do. ...	1	
Davyhurst	Menzies	Do. ...	...	Actual cost.
Field's Find	Yalgoo	Do. ...	3½	
Geraldton	Perth	Do. ...	2	
Kalgoorlie	Do.	Fortnightly	0¼	Special for Mint only.
Kanowna	Kalgoorlie	Do. ...	0½	
Kathleen Valley	Lawlers	Monthly ...	0½	
King of the Hills	Kalgoorlie	Do. ...	2	
Laverton	Malcolm	Do. ...	0¾	Not less than 2,900ozs.
Lawlers	Leonora or Malcolm	Do. ...	1⅝	4,000ozs. to 4,500ozs.
Do.	Do. do.	Do. ...	1½	Exceeding 4,500ozs.
Leinster G.M. Co.	Lawlers	...	...	Actual cost: £2 10s. 4d.
Meekatharra	Nannine	Do. ...	...	Actual cost.
Mt. Jackson	Southern Cross ...	Do. ...	...	Actual cost.
Mt. Sir Samuel	Do.	Do. ...	0½*	Not less than 1,600ozs. or actual cost if under minimum quantity.
Malcolm	Kalgoorlie	Do. ...	0⅛	Not less than 7,800ozs.
Morgans	Malcolm	Do. ...	0½	Not less than 4,300ozs.
Munara Gully	Nannine	Do. ...	0½	
Nannine	Cue	Do. ...	1	Under 2,000ozs.
Do.	Do.	Do. ...	0½	2,000ozs. and upwards.
Norseman	Coolgardie	Do. ...	2	
Peak Hill	Nannine	Do. ...	2¼†	2,000ozs. and not exceeding 2,500ozs.
Do.	Do.	Do. ...	2 †	2,500ozs. and not exceeding 3,000ozs.
Do.	Do.	Do. ...	1¾†	Over 3,000ozs.
	When quantity under minimum, actual cost charged.			
Ravensthorpe	Hopetoun	Monthly ...	...	Under 500ozs.: Actual cost.
Do.	Do.	Do. ...	1¼	Not less than 500ozs.
Do.	Do.	Do. ...	0⅝	Not less than 1,000ozs.
Sandstone	Magnet	Do. ...	...	Actual cost.
Wiluna	Malcolm	Do. ...	3⅜	Not less than 2,000ozs.
Do.	Lawlers	Do. ...	...	Actual cost: £19 4s.
Do.	Nannine	Do. ...	...	Actual cost.
Yalgoo	Geraldton	Do. ...	0½	
Yerilla	Kalgoorlie	Do. ...	1½	

* If gold conveyed by regular escort from Wiluna, the rate per hour of pay, etc., of constable in charge will be collected.
† When quantity under minimum actual cost charged.

Rates for carriage of gold on Government Railways :—

	Distance not over—							
	25 miles.	50 miles.	100 miles.	150 miles.	200 miles.	250 miles.	3 0 miles.	350 miles.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Gold dust and bullion per 100ozs.	1 0	2 0	3 0	3 9	4 6	5 0	5 6	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.

31st December, 1908.

By Authority: Fred. Wm. Simpson, Government Printer, Perth.