1911.

WESTERN AUSTRALIA.

REPORT

OF THE

DEPARTMENT OF MINES

FOR THE YEAR

1910.

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

PERTH:
BY AUTHORITY: FRED. WM. SIMPSON, GOVERNMENT PRINTER.

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

1911

MAP OF
WESTERN AUSTRALIA

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

Prepared in the Geological Survey Office.

Scale of English statute miles.
50 40 30 20 10 0 50 100 150 200

REFERENCE

Towns ..... shown thus	◉ EUCLA
Railways	
Rabbit Proof Fences	
Goldfields	
Telegraph Lines & Stations	
Agricultural Areas	
Stock Routes	
Heights in feet	(285)
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
SALT	Na	NICKEL & COBALT	Ni Co

Longitude 121° East of Greenwich.

150

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

1911

ANNUAL REPORT OF THE DEPARTMENT OF MINES, WESTERN AUSTRALIA, 1910.

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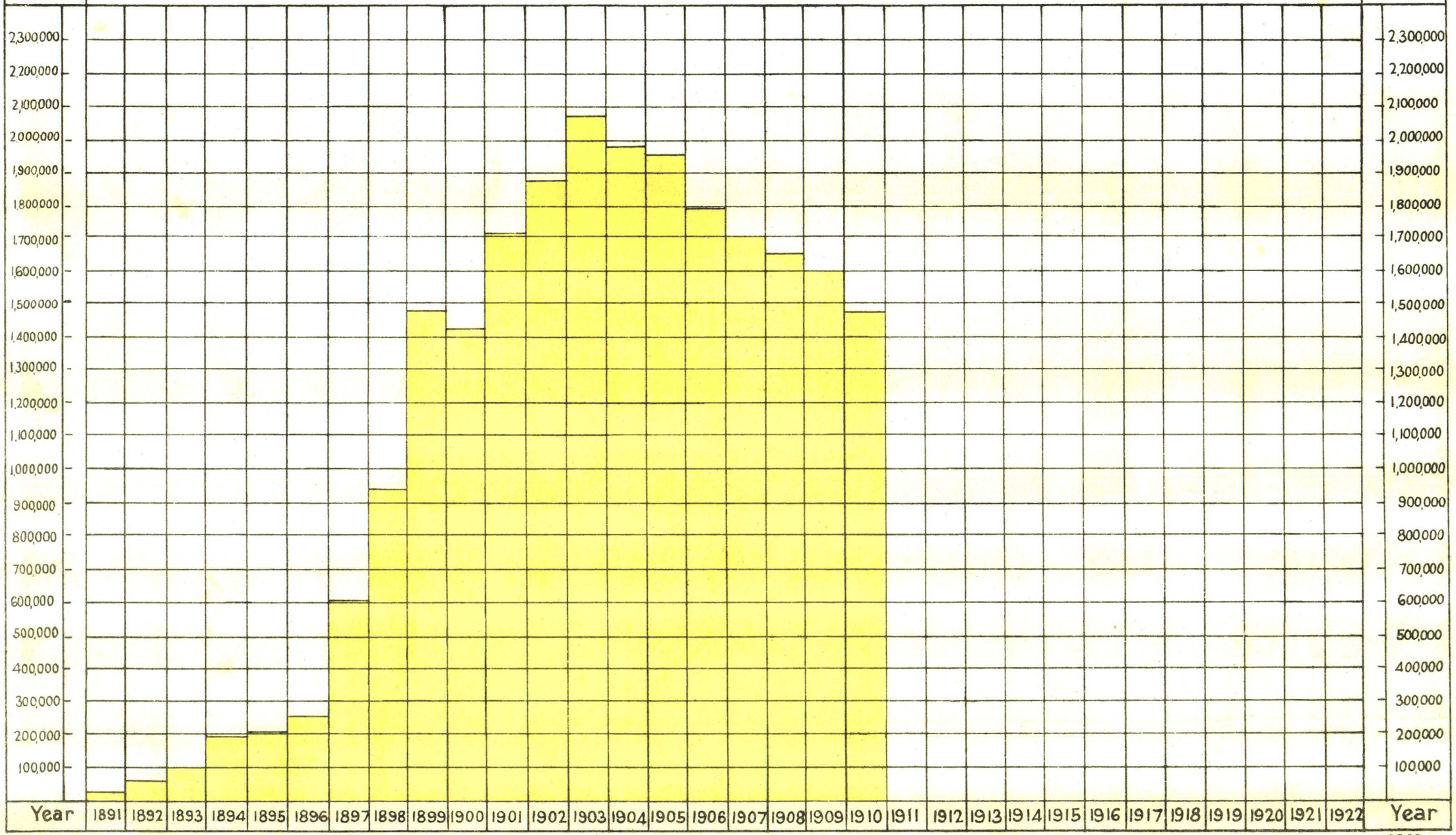
of Gold output showing the amount in fine ounces of Gold exported & received at the Perth Mint from the Year 1891 onwards



COMMONWEALTH OF AUSTRALIA.

STATE OF WESTERN AUSTRALIA.

Report of the Department of Mines for the State of Western Australia for the Year 1910.

To the Hon. the Minister for Mines.

Sir,

I have the honour to submit the Annual Report of the Department for the year 1910, 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, 1911.

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 1910 was £6,522,263, being £536,816 less than that for the previous year. The principal decreases were in gold and tin. Gold fell off to the extent of £529,426, and tin £20,860. The principal increase was in coal, amounting to £22,734. The value of the gold yield was £6,246,848, being 95.77 per cent. of the total output. The value of the copper output was £90,928, and of tin £45,129. The price of the latter improved during the year, and it is hoped that this will result in an improved output during the coming year. The dividends paid during the year by mining companies amounted to £1,028,393, a decrease of £330,722 as compared with the preceding year. To the end of 1910 the value of the total mineral production was £101,460,450, the total gold production £98,027,412, while the dividends amounted to £21,351,403.

GOLD.

The gold yield, as in the previous year, again shows a decrease, the output being 124,637 fine ounces less than that for 1909; while the output for that year was 52,642 ounces less than that for 1908.

The average value per ton of ore treated in the State as a whole has fallen from 42.60 shillings in 1909 to 41.48 shillings in 1910, and in the East Coolgardie field, from which comes over 50 per cent. of the State's yield, from 43.76 shillings to 40.32 shillings.

Comparing the tonnages of ore treated in 1909 and 1910, there is a decrease of 220,706 tons in the latter year, during which 2,884,298 tons were treated. The largest decreases were in the East Coolgardie, Peak Hill, East Murchison, Murchison, and Yilgarn fields, the tonnages being 104,233.99, 52,733.44, 41,071.90, 33,244.03, and 10,222.43 tons respectively, less than in the preceding year. The only fields showing increases were Coolgardie, Dundas, North-East Coolgardie, Phillips River, and West Pilbara, with 23,196.23, 7,537.75, 4,383.70, 2,030.57 and 191 tons respectively.

Working costs have risen, due in a large measure to the greater depths reached in most of the large mines, and to the ore at the deeper levels being usually much harder than at the surface.

The average working costs per ton were: in 1908, 19s. 3d.; in 1909, 19s. 11.5d.; and in 1910, 20s. 1d.

The ore value per ton in 1903 was 77.1s., and in 1909 it had dropped to 43.1s., and 1910 to 41.9s.

The profits per ton were in these years respectively 18.7s., 8.7s., and 7.1s.

As in previous years the fall in the gold production of most of the fields is entirely attributable to a decline in one or two mines; *e.g.*, the shortage recorded for the Peak Hill field is entirely attributable to the reduced output from the Peak Hill Mine. In the East Coolgardie the Golden Horseshoe, Great Boulder Perseverance, Associated and Oroya Links mines in themselves almost make up the deficiency; whilst in the East Murchison field it is attributable to the reduced outputs of the Bellevue and Vivien mines in the Lawlers District, the Oroya Black Range mine in the Sandstone District, and the Gwalia Consolidated mine in the Wiluna District. Seven fields show an increased yield, viz., Yilgarn, Mt. Margaret, Coolgardie, Phillips River, Kimberley, Dundas, and Gascoyne. In the others the yield has declined, the most marked decreases being in the East Coolgardie, East Murchison, Murchison, North Coolgardie, and Peak Hill fields.

The area held under mining lease for all minerals has increased from 59,245 acres in 1909 to 66,111 acres in 1910. The area leased for gold mining is greater by 5,625 acres than in 1909, and for minerals it has increased by 1,241 acres. The acreage held under prospecting areas is 60,317 acres, including 45,000 acres for coal and oil. This shows an increase on the area held in 1909 of 33,672 acres. The number of men engaged in all classes of mining is 17,711, a decrease of 625 as compared with the previous year. The number of men engaged in mining for minerals other than gold increased by 123, principally in copper and coal mines, tin mines showing a decrease. In gold mining there was a decrease of 748. The average value of gold produced per man employed on gold mines has decreased from £413.18 in 1909 to £386.63 in 1910. The average tonnage raised per man was 186.43 tons, and in the preceding year 193.98 tons. Throughout the East Murchison field vigorous prospecting has been pursued, but the State Battery erected at Mt. Sir Samuel has not been as great a benefit as was hoped, most of the shows in the locality having been abandoned. The plant at Youanmi has, however, been of considerable help to prospectors. The Wiluna district has been quiet, but it is expected that the companies owning mines there will shortly undertake extensive operations and thus give a fillip to the district. The output of gold shows a decrease on the preceding year, attributable

to the cessation of operations at two or three mines and the reduction in output of another.

In the Murchison Goldfield the Cue District shows a considerable decrease, and throughout its various centres mining has been very quiet. The Day Dawn District shows a slightly improved output, and developments at depth in the Great Fingall mine give promise of a brighter future. The output in the Nannine District was practically the same as in 1909, and the manner in which the mines in the immediate vicinity of Meekatharra are opening up is exceedingly satisfactory. The Mt. Magnet District shows an increased output, and its prospects are good. The production of the Mt. Margaret field was greater than in the previous year, due principally to the continuance of operations at the Lancefield mine and its correspondingly improved output. The Mt. Morgans District shows a falling off, and mining was very quiet throughout the year. The Mt. Malcolm District shows an increase, and the mines principally in the vicinity of Leonora have been developing excellently.

The Coolgardie field shows an increase, due principally to the improved output from the Burbanks Main Lode. The State Battery at Coolgardie has been fully employed practically the whole year. A find of amblygonite was made about 14 miles West of Coolgardie, which promises to become a payable proposition. In the outlying centres vigorous prospecting has been pursued.

The North Coolgardie Field records a decreased output, almost entirely owing to the falling off in the Ularring District, where, with the exception of one or two mines, things are almost at a standstill. In the vicinity of Menzies various shows, mostly locally owned, are opening up splendidly. In the other centres satisfactory progress is reported.

The North-East Coolgardie Goldfield, as in the preceding year, records a reduced output, and nothing has transpired to give hope for an improvement, mining being very dull throughout the various centres.

The Broad Arrow Goldfield shows a decrease, but this is wholly attributable to the cessation of operations at two mines. At Ora Banda there were excellent developments with a consequent increase of activity, and this centre promises to develop into a big mining district. In the neighbourhood of Broad Arrow itself there have been one or two promising developments, and the future of the field is brighter.

In the East Coolgardie Goldfield the number of men engaged in mining was 5,729, and in 1909 6,114. 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 778,480 fine ounces of gold, about 53 per cent. of the total gold yield. The tonnage treated during the year was 1,636,545 tons, being less than in 1909 by 104,234 tons. The average grade of the ore fell from 43.76 shillings in 1909 to 40.32 in 1910. The output shows a decrease, attributable to the falling off of three or four of the large mines, but the excellent developments in the deep levels of some of the others give great encouragement to all, and the outlook is very promising.

The Yilgarn Field shows an increased output consequent on the rich finds in the Bullfinch mine. The resultant boom and enormous amount of prospecting in progress at the close of the year will, it is expected, be the means of discovering other payable mines, and of the opening up of the large ore bodies of low grade which are known to exist throughout this field.

The Dundas Field shows an improved output, and vigorous prospecting has been pursued by the companies operating there. Developments promise increased prosperity in the future.

The Phillips River Field, as in 1909, again shows an increased yield, but the want of an ample and reliable fresh water supply has been a great restriction. The Government has done everything possible to relieve the position, but the season has been an unusually dry one, and although the storage now provided by tanks and dams is considered ample to tide over any ordinary drought, little or no water has been conserved since August, 1909.

In the Northern Goldfields, Kimberley, Pilbara, West Pilbara, Ashburton, and Gascoyne, nothing of any importance transpired. The railway from Port Hedland to Marble Bar has been completed, but there has not been sufficient time to judge whether it will have the beneficial effect on mining that was predicted. The year saw the erection of a State Battery at Marble Bar, which is expected to be of considerable benefit to prospectors.

TIN.

The quantity of tin exported was less than in 1909 by 198 tons, valued at £20,860. The Greenbushes Tinfield produced 317.71 tons, valued at £27,974, and the Pilbara field 153.50 tons, valued at £12,899, both being a decrease on the preceding year. It was expected that the improvement in the price of this metal would have caused an increase in the output, but such was not the result.

TANTALITE.

None of this mineral was reported as exported, presumably on the continued absence of any market.

COPPER.

The value of copper exported was £95,928 being £8,713 less than that for 1909. The quantity raised in the West Pilbara field was 8,479.80 tons, valued at £64,861, an increase of 1,344.30 tons, valued at £2,414, and in the Phillips River field 25,871.65 tons, valued at £96,745, an increase of 18,540.95 tons, valued at £66,930. There was no production reported from any other field. The average number of men engaged in copper mining was 559, and in 1909 497.

COAL.

Six collieries are working on the Collie Coalfield, and the output for the year was 262,166 tons, being 47,864 tons in excess of the production for 1909, and the record output to date. During the year the Proprietary mine began operations in opening up a new colliery about one mile East of their present workings. The number of men employed, 521, is greater by 128 than in 1909, and the output per man was, in 1909, 544 tons, in 1910, 503 tons.

OTHER MINERALS.

The quantity of silver obtained as a by-product and exported was 176,139 ounces, valued at £18,777, and for the preceding year 176,843 ounces, valued at £18,778. No asbestos or mica was exported. Forty-two tons of wolfram, valued at £115, were reported to the Department.

MINING GENERALLY.

Again, as in the preceding year, Western Australia is not singular in its reduced output, the

whole of the other States, and also New Zealand, showing decreases. The territory of Papua records an increase. Notwithstanding the falling output, the industry at the close of the year looked most promising. The rich discoveries in the Yilgarn field had caused a boom with resultant inflow of capital, which it is sincerely hoped will have happy results. The discovery of new and promising mines in other districts also tends to make the year noteworthy. The Meekatharra, Black Range, Youanmi, and Ora Banda Districts have been shown to contain mines of considerable promise. Deep sinking on the Great Fingall mine has shown improving ore at depth, also on the Lancefield, Ida H, and Hills Proprietary mines. Good developments were reported from the Sons of Gwalia mine. The discoveries at depth in the Great Boulder and adjacent mines will give great encouragement for the pursuance of a bold policy of prospecting on the part of the other mines of the Kalgoorlie field whose prospects of late have not been too bright. The Government continues to render encouragement and assistance to *bona fide* prospectors by the loans of equipment and means of transport, and at the close of the year the whole of the Department's plant was in use by different parties. The area held as prospecting areas for gold and minerals, viz., 15,317 acres, is an indication that the prospector is not idle.

The continued assistance under the provisions of the Mining Development Act, details of which are given in the report of the State Mining Engineer, and which is intended to assist the development of partly opened up mines, principally by their equipment with machinery, is a further proof of the anxiety of the Government to assist the industry. The oft repeated assertion that the goldfields of the State are to a large extent practically unprospected was strikingly exemplified by the discoveries during the year in Yilgarn, the oldest of the Eastern goldfields. The encouragement offered to prospectors to explore the remote and largely unknown portions of the State may at any time result in the disclosure of further evidence of its mineral wealth.

PART II.—MINERALS RAISED.

TABLE 1.

Quantity and Value of all the Minerals produced during 1909 and 1910.

Description of Minerals.	1909.		1910.		Increase or Decrease for Year compared with 1909.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
		£		£		£
1. Asbestos (raised), statute tons	3	154	...	...	− 3	− 154
2. Coal (raised) do.	214,302	90,965	262,166	113,699	+ 47,864	+ 22,731
3. Copper { Ore (exported), statute tons	6,959	59,541	6,309	27,271	− 650	− 32,270
3. Copper { Ingot, Matte, etc. (exported), statute tons	833	45,100	1,281	68,657	+ 448	+ 23,557
4. Gold (exported and minted), fine ounces	1,595,269	6,776,274	1,470,632	6,246,848	− 124,637	− 529,426
5. Ironstone (reported), statute tons	...	...	10	12	+ 10	+ 12
6. Silver (exported), fine ounces	176,843	18,778	176,139	18,777	− 704	− 1
7. Silver Lead Ore (exported), statute tons	211	1,199	248	1,433	+ 37	+ 234
8. Tin, Ore and Ingot (exported), statute tons	698	65,989	500	45,129	− 198	− 20,860
9. Wolfram (exported), statute tons	1	100	2	190	+ 1	+ 90
10. Zinc, Spelter, etc. (exported), statute tons	19	244	12	147	− 7	− 97
Unenumerated (exported)	...	735	...	100	...	− 635
Total Values £	...	7,059,079	...	6,522,263	...	− 536,816

TABLE 2.

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

Year.	Total Exports.	Mineral Exports (exclusive of Coal.)	Percentage.
	£	£	
1901	8,515,623	6,920,118	81·27
1902	9,051,358	7,530,319	83·20
1903	10,324,732	8,727,060	84·53
1904	10,271,489	8,625,676	83·98
1905	9,871,019	7,731,954	78·33
1906	9,832,679	7,570,305	76·99
1907	9,904,860	7,544,992	76·17
1908	9,518,020	7,151,317	75·13
1909	8,860,494	5,906,673	66·66
1910	7,844,781	4,204,968	53·60
10 Years Total	93,995,055	71,913,382	76·51

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 1910.

Fig. 1

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

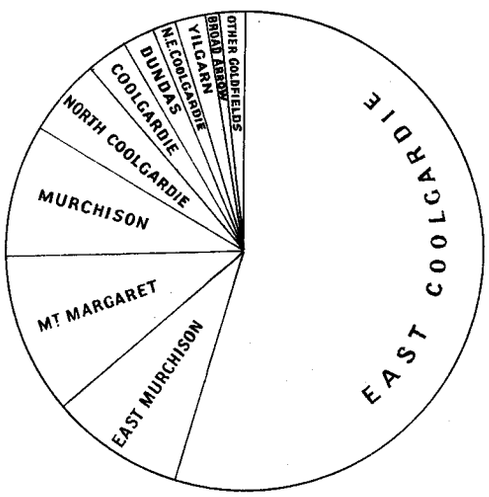


Fig. 2

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

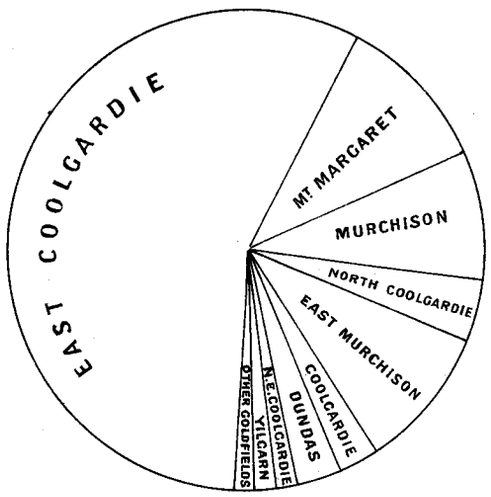


Fig. 3

Value of Gold and other Minerals.

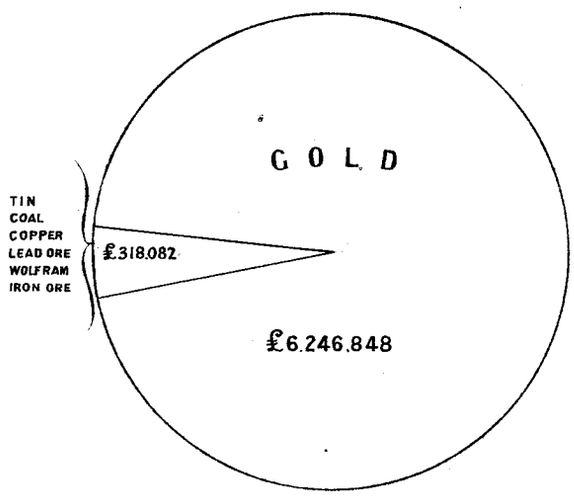


Fig. 4

Value of Minerals other than Gold.

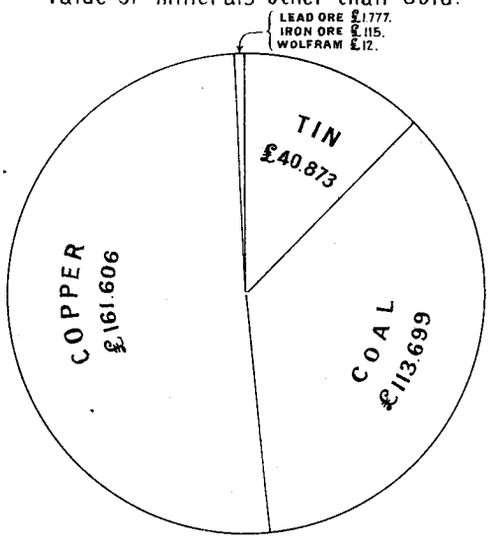


Fig. 5

Areas of Land leased for Goldmining on various Goldfields.

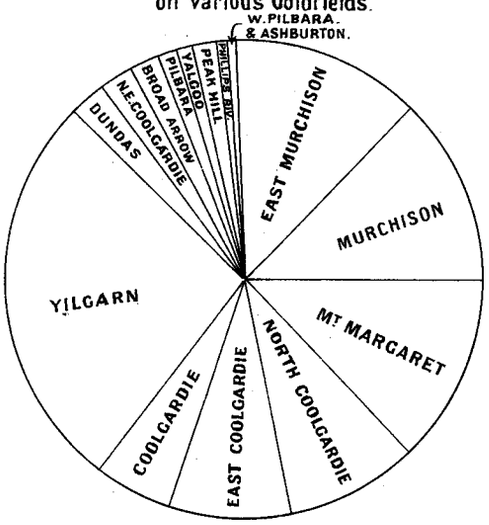


Fig. 6

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

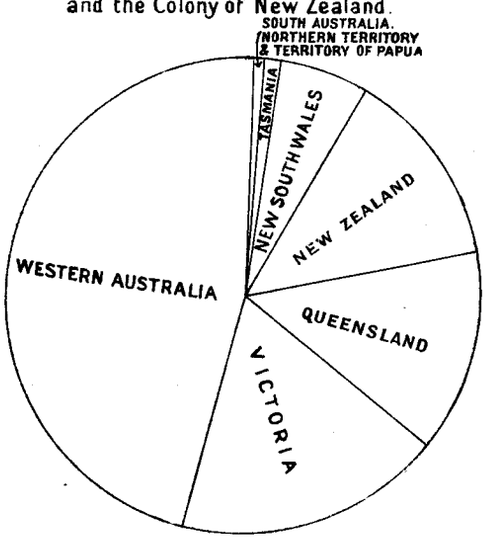


TABLE 3.

Summary of Gold Exported and received at the Perth Branch of the Royal Mint during 1909 and 1910, 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.	
	1909.	1910.	1909.	1910.	1909.	1910.	1909.	1910.
	fine ozs.	fine ozs.	fine ozs.	fine ozs.			shillings.	shillings.
1. Kimberley	169	**487**	135	**265**	·01	**·02**	...	...
2. Pilbara	5,529	**5,894**	6,764	**5,370**	·43	**·38**	134·33	**119·32**
3. West Pilbara	1,396	**1,451**	1,540	**1,484**	·10	**·10**	...	**248·42**
4. Ashburton	228	**173**	436	**248**	·03	**·02**	...	...
5. Gascoyne	7	**26**	...	**26**	...	...	...	...
6. Peak Hill	7,322	**3,057**	7,919	**4,327**	·51	**·30**	9·25	**19·48**
7. East Murchison	148,237	**138,748**	155,909	**130,371**	9·89	**9·17**	39·30	**37·42**
8. Murchison	131,850	**130,983**	133,106	**124,351**	8·45	**8·74**	41·81	**45·16**
9. Yalgoo	627	**726**	1,805	**1,333**	·12	**·09**	44·29	**59·30**
10. Mt. Margaret	160,038	**160,483**	155,865	**160,281**	9·89	**11·27**	38·30	**40·41**
11. North Coolgardie	73,021	**62,776**	79,399	**72,748**	5·04	**5·11**	61·95	**59·01**
12. Broad Arrow	11,575	**322**	17,122	**15,482**	1·09	**1·09**	40·80	**43·25**
13. North-East Coolgardie ...	26,341	**19,082**	25,462	**23,027**	1·62	**1·62**	38·97	**32·12**
14. East Coolgardie	927,074	**832,274**	899,289	**778,480**	57·05	**54·74**	43·76	**40·32**
15. Coolgardie	36,663	**38,264**	34,135	**37,911**	2·11	**2·67**	46·95	**37·46**
16. Yilgarn	21,163	**24,049**	20,909	**27,858**	1·33	**1·96**	40·01	**69·19**
17. Dundas	35,895	**43,261**	29,549	**29,627**	1·88	**2·08**	49·74	**44·94**
18. Phillips River	7,632	**8,304**	6,714	**8,195**	·43	**·58**	88·34	**81·70**
State generally	502	**272**	348	**847**	·02	**·06**	...	...
Totals and averages ...	1,595,269	**1,470,632**	1,576,406	**1,422,231**	100·00	**100·00**	42·60	**41·48**

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

The Coolgardie, Dundas, Gascoyne, Kimberley, Mount Margaret, Phillips River, and Yilgarn fields each show an increase; the others decreases. The average value per ton of ore treated is 41.48 shillings as against 42.60 shillings in 1909.

TABLE 4.

Number of Gold-producing Mines in the several Goldfields and Districts during 1909 and 1910.

Goldfield.	District.	1909.		1910.		Increase or Decrease.
		District.	Goldfield.	District.	Goldfield.	
Kimberley	... ...	...	...	...	...	...
Pilbara	Marble Bar ...	10	29	**16**	**27**	− **2**
	Nullagine ...	19		**11**		
West Pilbara	... ...	...	5	...	**5**	=
Ashburton	... ...	...	...	...	...	...
Gascoyne	... ...	...	...	...	...	...
Peak Hill	... ...	...	9	...	**8**	− **1**
East Murchison ...	Lawlers	46	119	**40**	**123**	+ **4**
	Wiluna	*		**26**		
	Black Range ...	73		**57**		
Murchison	Cue	62	200	**61**	**186**	− **14**
	Nannine	80		**78**		
	Day Dawn ...	12		**8**		
	Mt. Magnet ...	46		**39**		
Yalgoo	... ...	...	14	...	**12**	− **2**
Mt. Margaret ...	Mt. Morgans ...	18	110	**15**	**91**	− **19**
	Mt. Malcolm ...	49		**43**		
	Mt. Margaret ...	43		**33**		
North Coolgardie ...	Menzies	54	167	**46**	**140**	− **27**
	Ularring	39		**33**		
	Niagara	30		**28**		
	Yerilla	44		**33**		
Broad Arrow	... ...	...	48	...	**48**	=
North-East Coolgardie	Kanowna	47	53	**34**	**38**	− **15**
	Kurnalpi	6		**4**		
East Coolgardie ...	East Coolgardie ...	94	112	**79**	**85**	− **27**
	Bulong	18		**6**		
Coolgardie	Coolgardie	67	89	**58**	**83**	− **6**
	Kunanalling ...	22		**25**		
Yilgarn	... ...	...	48	...	**58**	+ **10**
Dundas	... ...	...	44	...	**39**	− **5**
Phillips River	... ...	...	25	...	**24**	− **1**
Totals		...	1,072	...	**967**	− **105**

* Included in Lawlers.

TABLE 5.

Gold Yield from Registered Gold Mining Companies and Gold Mining Leases for the Years 1907, 1908, 1909, and 1910.

Goldfield.	Registered Companies producing over 12,000ozs.								Registered Companies producing under 12,000ozs.								Leases, exclusive of Sundry Claims and Treatments.							
	1907.		1908.		1909.		1910.		1907.		1908.		1909.		1910.		1907.		1908.		1909.		1910.	
	No.	Fine ozs.	No.	Fine ozs.	No.	Fine ozs.	No.	Fine ozs.	No.	Fine ozs.	No.	Fine ozs.	No.	Fine ozs.	No.	Fine ozs.	No.	Fine ozs.	No.	Fine ozs.	No.	Fine ozs.	No.	Fine ozs.
Kimberley	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	157	1	59	...	...	...	...
Pilbara	...	...	...	...	...	...	...	...	2	22	1	31	4	128	2	133	18	3,264	24	4,164	26	3,095	5	3,209
West Pilbara ...	...	...	...	...	...	...	...	...	...	...	1	274	1	29	...	...	3	169	5	86	4	1,109	5	1,269
Peak Hill	...	...	...	...	...	...	...	...	2	7,414	2	7,200	2	7,136	2	3,189	6	573	8	582	6	664	6	883
East Murchison ...	2	25,360	5	99,324	4	97,632	3	70,628	13	42,660	10	19,619	8	33,986	9	35,717	99	45,523	88	21,419	109	19,670	110	16,397
Murchison	1	99,253	1	81,585	1	41,269	1	44,895	6	20,624	10	17,420	12	21,834	11	24,433	175	43,665	178	50,058	184	64,924	174	49,420
Yalgoo	...	...	...	...	...	...	...	...	5	1,765	...	...	2	629	3	808	6	2,579	10	544	12	1,175	9	403
Mt. Margaret ...	3	102,499	4	100,741	4	107,252	2	102,400	11	27,616	9	17,268	11	16,876	9	27,484	110	36,937	66	33,083	66	28,193	80	23,966
N. Coolgardie ...	...	...	...	...	...	...	...	...	19	31,210	21	42,572	18	35,657	19	26,083	144	39,615	143	42,785	149	37,592	121	31,524
Broad Arrow	...	...	...	...	...	...	...	...	9	10,860	5	5,296	3	2,352	2	1,078	41	11,046	46	13,133	45	14,770	46	9,307
N.E. Coolgardie ...	..	...	...	...	...	...	...	...	8	17,438	7	15,804	9	14,781	6	11,517	46	10,796	40	7,394	44	7,803	32	5,119
E. Coolgardie ...	11	849,922	13	802,220	13	811,789	15	703,705	37	43,843	30	30,449	31	31,120	18	25,180	72	24,741	70	28,776	69	36,673	52	33,163
Coolgardie	1	12,375	...	...	...	...	...	...	19	24,374	15	24,141	14	15,966	11	19,310	75	22,322	74	13,240	72	15,723	72	13,796
Yilgarn	...	...	...	...	...	...	...	...	6	12,807	5	9,744	5	10,526	5	9,782	24	6,039	34	9,779	40	8,312	53	16,449
Dundas	...	...	...	...	1	12,750	1	13,626	6	14,824	6	20,627	7	6,017	7	9,011	26	5,522	31	6,524	36	7,577	31	4,537
Phillips River ...	...	...	...	...	...	...	...	...	5	2,272	4	1,386	4	3,266	6	4,695	33	2,033	21	3,019	19	3,445	18	3,018
Total	18	1,089,409	23	1,083,870	23	1,070,692	22	935,254	148	257,729	126	211,831	131	200,303	110	198,420	879	254,981	839	234,645	881	250,725	834	212,460

TABLE 6.

Increase or Decrease in Output of certain producing Gold Mines in 1910, as compared with 1909.

Goldfield.	District.	Name of Mine.	Gold Production.		Increase or Decrease for Year, compared with 1909.
			1909.	1910.	
			Fine ozs.	Fine ozs.	Fine ozs.
Peak Hill ...	... ...	1. Peak Hill Goldfield, Ltd.	7,097·70	3,130·20	− 3,967·50
East Murchison ...	Lawlers ...	2. Northern Mines, Ltd.	21,600·98	23,467·71	+ 1,866·73
Do.	do. ...	3. Vivien G.M. Co., Ltd.	10,602·10	11,311·33	+ 709·43
Do.	do. ...	4. Bellevue, Ltd.	11,835·78	1,985·18	− 9,850·60
Do.	do. ...	5. Gwalia Consolidated, Ltd.	21,994·46	9,964·21	−12,030·25
Do.	Black Range ...	6. Black Range Kohinoor G.M. Co., N.L. ...	1,078·73	1,389·81	+ 311·08
Do.	do. ...	7. Havilah G.M. Co., N.L.	4,965·23	3,662·64	− 1,302·59
Do.	do. ...	8. Black Range Mining Co., N.L.	22,054·45	21,805·47	− 248·98
Do.	do. ...	9. Oroya Black Range, Ltd.	31,982·37	25,558·90	− 6,423·47
Do.	do. ...	10. Sandstone Development G.M. Co., N.L. ...	4,232·12	5,769·41	+ 1,537·29
Murchison	Cue	11. Barrambie Ranges G.M. Co., N.L. ...	3,256·08	1,009·02	− 2,247·06
Do.	do. ...	12. Princess Royal leases	3,078·04	568·62	− 2,509·42
Do.	Nannine ...	13. Fenian leases	14,510·05	14,954·38	+ 444·33
Do.	do. ...	14. Ingliston Extended G.Ms., Ltd.	4,025·94	6,260·67	+ 2,234·73
Do.	do. ...	15. Marmont	7,015·98	4,179·24	− 2,836·74
Do.	do. ...	16. Karangahaki	3,963·87	466·96	− 3,496·91
Do.	Day Dawn ...	17. Great Fingall Consolidated, Ltd.	41,269·16	44,895·33	+ 3,626·17
Do.	Mt. Magnet ...	18. Black Hill Development Co., Ltd. ...	1,303·38	6,405·00	+ 5,101·62
Do.	do. ...	19. Great Boulder No. 1, Ltd.	6,123·80	7,693·64	+ 1,569·84
Mt. Margaret ...	Mt. Morgans ...	20. Westralia Mt. Morgans G.Ms. Co., Ltd. ...	14,993·18	3,099·08	−11,894·10
Do.	do. ...	21. Proprietary Extended leases	5,402·49	5,331·02	− 71·47
Do.	Mt. Malcolm ...	22. Sons of Gwalia, Ltd.	61,266·25	67,099·67	+ 5,833·42
Do.	do. ...	23. Sons of Gwalia South G.Ms., Ltd.	11,534·51	10,555·68	− 978·83
Do.	do. ...	24. Malcolm Prospecting Co., N.L.	3,186·15	2,093·41	− 1,092·74
Do.	Mt. Margaret ...	25. Ida H. G.M. Co., Ltd.	8,447·25	7,826·23	− 621·02
Do.	do. ...	26. Lancefield G.M. Co., Ltd.	19,458·08	35,299·63	+15,841·55
Do.	do. ...	27. Craiggiemore leases	1,794·92	1,800·65	+ 5·73
North Coolgardie ...	Menzies	28. Menzies Consolidated G.Ms., Ltd.	10,875·70	11,542·20	+ 666·50
Do.	do. ...	29. Menzies G.M. leases	2,325·91	1,996·99	− 328·92
Do.	do. ...	30. Mt Ida Meteor	669·14	1,742·84	+ 1,073·70
Do.	Ularring... ...	31. Golden Pole G.Ms., Ltd.	5,914·41	1,265·14	− 4,649·27
Do.	do. ...	32. Lady Gladys G.M. Co., N.L....	2,438·47	1,658·61	− 779·86
Do.	Niagara	33. Englishman: Cosmopolitan Proprietary, Ltd.	5,592·54	1,893·31	− 3,699·23
Do.	do. ...	34. Orion Mines, Ltd.	3,859·96	2,232·87	− 1,627·09
Do.	do. ...	35. Champion	1,795·41	2,838·04	+ 1,042·63
Do.	Yerilla	36. Gawler G.M. Co., Ltd.	228·94	1,493·81	+ 1,264·87
Broad Arrow ...	... ...	37. Slippery Gimblet	2,675·40	4,376·15	+ 1,700·75
Do.	... ...	38. Siberia Consols	1,134·59	233·27	− 901·32
Do.	... ...	39. Gimblet South	610·98	1,229·62	+ 618·64
N.E. Coolgardie ..	Kanowna ...	40. North White Feather G.Ms., Ltd. ...	9,874·68	6,545·99	− 3,328·69
Do.	do. ...	41. Sirdar G.M. Co., Ltd.	1,176·40	2,708·39	+ 1,531·99
Do.	do. ...	42. White Feather Main Reef (1906), Ltd. ...	2,144·75	1,812·87	− 331·88
East Coolgardie ...	East Coolgardie	43. Associated G.Ms. of W.A., Ltd.	58,967·87	41,351·08	−17,616·79
Do.	do. ...	44. Associated Northern Blocks (W.A.), Ltd....	17,187·65	12,126·93	− 5,060·72
Do.	do. ...	45. Chaffers G.M. Co., Ltd.	12,390·71	17,040·61	+ 4,649·90
Do.	do. ...	46. Golden Horseshoe Estates Co., Ltd. ...	142,872·93	97,885·44	−44,987·49
Do.	do. ...	47. Golden Ridge G.M. Co., Ltd.	16,126·59	18,021·37	+ 1,894·78
Do.	do. ...	48. Great Boulder Perseverance G.M. Co., Ltd.	70,680·87	26,832·39	−43,848·48
Do.	do. ...	49. Great Boulder Proprietary G.Ms., Ltd. ...	140,828·78	138,707·05	− 2,121·73
Do.	do. ...	50. Hainault G.Ms., Ltd.	20,206·90	21,651·15	+ 1,444·25
Do.	do. ...	51. Ivanhoe Gold Corporation, Ltd.	117,589·26	116,147·68	− 1,441·58
Do.	do. ...	52. Kalgurli G.Ms., Ltd.	78,936·74	78,595·23	− 341·51
Do.	do. ...	53. Lake View Star, Ltd.	39,933·42	45,176·97	+ 5,243·55
Do.	do. ...	54. Oroya Links, Ltd.	63,821·73	56,082·14	− 7,739·59
Do.	do. ...	55. South Kalgurli G.Ms., Ltd.	35,401·70	34,086·47	− 1,315·23
Do.	do. ...	56. Golden Zone leases	13,730·49	9,855·17	− 3,875·32
Do.	do. ...	57. Hannan's Reward, Ltd.	6,380·61	4,078·54	− 2,302·07
Do.	do. ...	58. North Kalgurli Co., Ltd.	4,024·24	8,105·13	+ 4,080·89
Coolgardie	Coolgardie ...	59. Burbanks Birthday G.Ms., Ltd.	1,725·87	2,000·94	+ 275·07
Do.	do. ...	60. Burbanks Main Lode (1904), Ltd.	6,676·30	9,698·36	+ 3,022·06
Do.	do. ...	61. Tindal's Coolgardie G.M. Co., N.L. ...	4,332·27	5,311·25	+ 978·98
Do.	Kunanalling ...	62. Carbine	531·00	1,534·55	+ 1,003·55
Yilgarn	... ...	63. Bullfinch Proprietary (W.A.), Ltd. ...	...	10,958·88	+10,958·88
Do.	... ...	64. British and Foreign Development Syndicate, Ltd.	5,332·55	2,935·13	− 2,397·42
Do.	... ...	65. Never Never	2,161·76	360·40	− 1,801·36
Do.	... ...	66. Greenmount Mines, N.L.	1,490·94	469·92	− 1,021·02
Do.	... ...	67. Marvel Loch G.M. Co., N.L.	2,728·26	5,696·33	+ 2,968·07
Dundas	... ...	68. Cumberland G.M. Co., N.L.	3,428·91	3,475·94	+ 47·03
Do.	... ...	69. Mararoa G.M. Co., N.L.	12,749·79	13,626·39	+ 876·60
Do.	... ...	70. Princess Royal G.M. Co., N.L.	2,164·47	2,015·13	− 149·34
Do.	... ...	71. Westralia Waihi G.Ms., N.L.	79·60	2,780·54	+ 2,700·94
Phillips River ...	... ...	72. Flag Gold and Copper Mining Co., Ltd. ...	2,060·69	1,541·02	− 519·67
		Totals	1,283,933·23	1,159,301·32	−124,631·91

Of the above 72 gold mines, 33 produced 87,125·35 fine ounces more, and 39 produced 211,757·26 fine ounces less than in 1909, being a net decrease of fine ounces 124,631·91.

TABLE 7.

Averages of Gold Ore raised and treated, and Gold produced therefrom, per man employed on the several Goldfields of the State, during 1909 and 1910.

Goldfield.	1909.				1910.			
	Tons of Gold Ore raised and treated.		Fine Ounces of Gold produced therefrom.		Tons of Gold Ore raised and treated.		Fine Ounces of Gold produced therefrom.	
	Per man employed under ground.	Per man employed above and under ground.	Per man employed under ground.	Per man employed above and under ground.	Per man employed under ground.	Per man employed above and under ground.	Per man employed under ground.	Per man employed above and under ground.
	tons.	tons.	fine ozs.	fine ozs.	tons.	tons.	fine ozs.	fine ozs.
1. Kimberley	...	...	...	...	...	...	...	...
2. Pilbara	43·16	20·49	68·24	32·39	**44·50**	**22·25**	**62·50**	**31·25**
3. West Pilbara	128·30	21·38	504·42	84·07	**149·20**	**44·76**	**436·29**	**130·89**
4. Ashburton	...	...	...	...	...	...	...	...
5. Gascoyne	...	...	...	...	...	...	...	...
6. Peak Hill	2,001·71	680·58	217·85	74·07	**547·31**	**204·33**	**125·55**	**46·87**
7. East Murchison	314·38	174·97	145·44	80·94	**293·01**	**165·37**	**129·07**	**72·85**
8. Murchison	266·63	153·57	131·22	75·57	**210·92**	**112·83**	**112·13**	**59·99**
9. Yalgoo	114·04	55·05	59·45	28·70	**60·73**	**31·41**	**42·40**	**21·93**
10. Mt. Margaret	314·89	177·38	141·99	79·97	**336·81**	**196·84**	**160·27**	**93·67**
11. North Coolgardie	115·81	66·85	84·45	48·75	**125·57**	**73·74**	**87·22**	**51·22**
12. Broad Arrow	184·56	115·76	88·63	55 59	**191·52**	**116·00**	**97·51**	**59·06**
13. North-East Coolgardie ...	186·97	116·91	85·76	53 62	**226·63**	**137·62**	**85·40**	**51·86**
14. East Coolgardie	511·09	288·26	263·27	148·48	**515·28**	**289·04**	**244·59**	**137·20**
15. Coolgardie	132·18	73·61	73·05	40·68	**165·03**	**101·57**	**72·77**	**44·79**
16. Yilgarn	187·87	96·39	88·47	45 30	**101·83**	**53·56**	**82·94**	**43·62**
17. Dundas	213·98	127·25	125·27	74·49	**215·16**	**142·05**	**132·85**	**75·13**
18. Phillips River	123·49	67·59	128·40	70·28	**143·25**	**81·28**	**137·78**	**78·17**
Total Averages ...	343·70	193·98	172·36	97·27	**330·20**	**186·43**	**161·21**	**91·02**

The average value of gold produced per man employed above and below ground was £413.18 in 1909, and £386.63 in 1910. The average tonnage of ore raised shows a decrease from 193.98 tons to 186.43 tons. The average tonnage raised per man is, as in the preceding year, highest in the East Coolgardie and Peak Hill Goldfields, viz., 289.04 tons, average value £583 in the former, and 204.33 tons, average value £199, in the latter.

TABLE 8.

Output of Gold from the several States of Australia, the Territory of Papua, and the Dominion of New Zealand during 1910.

State.	Output of Gold.	Value.	Percentage of total Output of Australasia.
	Fine ozs.	£	
1. Western Australia	**1,470,632·02**	**6,246,848**	46·31
2. Victoria	**570,383·00**	**2,422,745**	17·96
3. Queensland	**441,400·00**	**1,874,955**	13·90
4. New South Wales	**188,857·00**	**802,211**	5·95
5. Tasmania	**37,048·05**	**157,370**	1·17
6. South Australia and Northern Territory ...	**6,603·00**	**28,000**	·21
7. Territory of Papua	**13,990·30**	**59,427**	·44
8. New Zealand	**446,433·27**	**1,896,328**	14·06
Total	**3,175,346·64**	**13,487,884**	100·00

TABLE 9.

Dividends paid by Western Australian Gold Mining Companies during 1910 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 1910. No.	Paid in 1910. Total Amount.	Grand Total paid to end of 1910.
		£		£ s. d.	£ s. d.		£	£
Peak Hill	Various Companies	...	...	...	...	...	...	160,666
East Murchison	Black Range G.M. Co., N.L.	80,000	72,500	1 0 0	1 0 0	13	35,344	168,499
Do.	Oroya Black Range, Ltd.	200,000	200,000	1 0 0	1 0 0	1	10,000	65,000
Do.	Other Companies	...	...	...	...	...	...	68,000
Murchison	Great Fingall Consolidated, Ltd.	125,000	250,000	0 10 0	0 10 0	2	25,000	1,721,875
Do.	Other Companies	...	...	...	...	...	...	77,945
Mt. Margaret	Sons of Gwalia, Ltd.	350,000	325,000	1 0 0	1 0 0	5	97,500	677,551
Do.	Sons of Gwalia South G.Ms., Ltd.	30,000	60,000	0 10 0	0 10 0	1	3,500	28,000
Do.	Other Companies	...	...	...	...	...	...	328,830
North Coolgardie	Various Companies	...	...	...	...	...	...	440,131
North-East Coolgardie ...	Various Companies	...	...	...	...	...	...	82,971
East Coolgardie	Associated Northern Blocks (W.A.), Ltd.	350,000	350,000	1 0 0	1 0 0	1	17,500	682,500
Do.	Golden Horseshoe Estates Co., Ltd.	1,500,000	300,000	5 0 0	5 0 0	1	75,000	3,075,000
Do.	Golden Ridge G.M. Co., N.L.	50,000	92 705	0 10 0	0 10 0	4	72,812	89,221
Do.	Great Boulder Proprietary G.Ms., Ltd.	175,000	1,750,000	0 2 0	0 2 0	4	262,500	3,431,800
Do.	Hainault G.Ms., Ltd.	150,000	150,000	1 0 0	1 0 0	2	7,500	54,113
Do.	Ivanhoe Gold Corporation, Ltd.	1,000,000	200,000	5 0 0	5 0 0	4	240,000	2,588,750
Do.	Kalgurli G.Ms., Ltd.	120,000	120,000	1 0 0	1 0 0	4	150,000	1,057,500
Do.	Lake View Consols, Ltd.	350,000	349,587	1 0 0	1 0 0	1	17,500	1,448,750
Do.	New North Boulder G.Ms., Ltd.	7,500	10,500	0 10 0	0 10 0	1	2,362	4,462
Do.	Oroya Links, Ltd.	312,500	1,150,000	0 5 0	0 5 0	1	14,375	14,375
Do.	South Kalgurli G.Ms., Ltd.	200,000	200,000	1 0 0	1 0 0	2	20,000	105.000
Do.	Other Companies	...	...	...	...	...	...	4,413,385
Coolgardie	Various Companies	...	...	...	...	...	...	329,001
Yilgarn	Marvel Loch G.M. Co., N.L.	100,000	99,550	1 0 0	*1 0 0 †0 4 0	1	2,500	2,500
Do.	Other Companies	...	...	...	...	...	...	48,578
Dundas	Mararoa G.M. Co., N.L.	40,000	100,000	0 8 0	0 3 0	4	20,000	40,000
Do.	Other Companies	...	...	...	...	...	...	147,000
	Total Dividends paid during 1910	...	...	...	...	...	£1,028,393	...
	Total Dividends paid to end of 1910	...	...	...	...	...	...	£21,351,403

* On 49,550 shares. † On 50,000 shares.

TABLE 10.

Value of Gold Production and Percentage of Dividends paid.

Year.	Value of Gold Production.	Dividends paid by Gold Mining Companies.	Dividends % of Total Production.	Value of Gold Production by Gold Mining Companies only.	Dividends % upon Production by Gold Mining Companies.
	£	£	%	£	%
Prior to 1902 ...	29,722,650	6,076,857	20·5		
1902	7,947,661	1,424,272	18·0		
1903	8,770,719	2,024,152	23·1		
1904	8,424,226	2,051,797	24·3		
1905	8,305,654	2,167,639	26·1		
1906	7,622,749	1,993,698	26·1		
1907	7,210,749	1,738,163	24·1	5,722,273	30·4
1908	6,999,882	1,487,317	21·2	5,503,784	27·0
1909	6,776,274	1,359,115	23·0	5,398,725	25·2
1910	6,246,848	1,028,393	16·5	4,815,541	21·4
Total ...	98,027,412	21,351,403	21·8	*21,440,323	*26·2

* Four last years only.

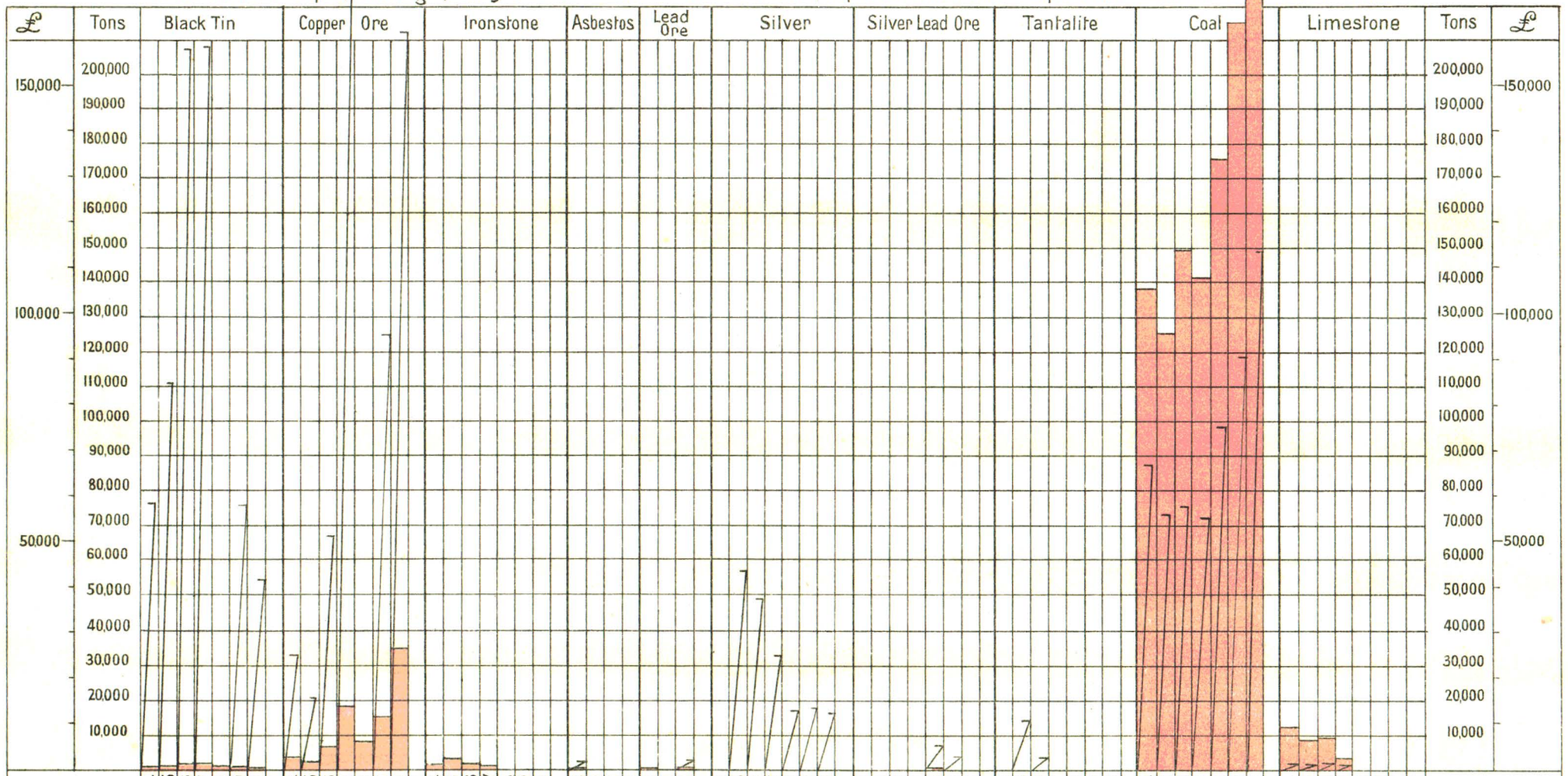
TABLE 11.

Quantity and Value of Minerals, other than Gold and Coal, reported to the Mines Department during 1910.

Goldfield, District, or Mineral Field.	1910.		Increase or Decrease for Year compared with 1909.	
	Quantity.	Value.	Quantity.	Value.
	tons.	£	tons.	£
BLACK TIN.				
Pilbara Goldfield (Marble Bar District) ...	153·50	12,899	− 140·46	− 9,532
Murchison Goldfield (Cue District) ...	...	...	− 1·52	− 118
Greenbushes Mineral Field	317·71	27,974	− 141·04	− 6,812
Total	471·21	40,873	− 283·02	− 16,462
TANTALITE.				
Pilbara Goldfield (Marble Bar District) ...	...	...	− ·45	113
Greenbushes Mineral Field	...	...	− ·85	214
Total	...	...	− 1·30	327
COPPER ORE.				
West Pilbara Goldfield	8,479·80	64,861	+ 1,344·30	+ 2,414
Ashburton Goldfield	...	...	− 10·75	− 259
Murchison Goldfield (Nannine District) ...	...	...	− 608·00	− 2,823
Phillips River Goldfield	25,871·65	96,745	+ 18,540·95	+ 66,930
Total	34,351·45	161,606	+ 19,266·50	+ 66,262
IRONSTONE.				
State generally	10·50	12	+ 10·50	+ 12
LEAD ORE.				
Northampton Mineral Field	185·10	1,777	+ 185·10	+ 1,777
SILVER LEAD ORE.				
Ashburton Goldfield	...	...	− 440·00	− 3,520
WOLFRAM.				
State generally	42·00	115	+ 37·00	+ 25
ASBESTOS.				
Pilbara Goldfield (Marble Bar District) ...	...	...	− 2·83	154

DIAGRAM

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



Year		1904	1905	1906	1907	1908	1909	1910	1911
Black Tin	Value £	58817	86840	157644	158648	71682	57335	40873	
	Quantity Tons	854	1080	1495	1624	979	754	471	
Copper Ore	Value £	25180	16266	50337	180387	51434	95344	161,606	
	Quantity Tons	3969	2389	7430	18978	8294	15085	34,352	
Ironstone	Value £	577	1285	512	438	Nil	Nil	12	
	Quantity Tons	1441	3213	1280	1094	Nil	Nil	11	
Asbestos	Value £					1600	154	Nil	
	Quantity Tons					40	3	Nil	
Lead Ore	Value £	461	Nil	1777					
	Quantity Tons	57	Nil	185					
Silver	Value £	Nil	44278	37612	25382	13058	13220	12449	
	Quantity (O3s.) Tons	Nil	359744	282145	189265	130578	132204	124486	
Silver Lead Ore	Value £	Nil	Nil	Nil	Nil	6914	3520	Nil	
	Quantity Tons	Nil	Nil	Nil	Nil	727	440	Nil	
Tantalite	Value £	Nil	10515	2644	Nil	Nil	327	Nil	
	Quantity Tons	Nil	73	15	Nil	Nil	1	Nil	
Coal	Value £	67174	55312	57998	55158	75694	90365	113,699	
	Quantity Tons	138550	127364	149765	142373	175248	214302	262,166	
Limestone	Value £	1699	1220	1691	1382	Nil	Nil	Nil	
	Quantity Tons	13397	9145	9472	3602	Nil	Nil	Nil	

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

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

1911.

The output of black tin shows a decrease, but copper an increase of 19,266.50 tons valued at £66,262. The production of tin was confined to the Greenbushes and Pilbara fields, and of copper to the West Pilbara and Phillips River fields, the others which contributed during the preceding year not producing any. £1,777 worth of lead ore was raised in the Northampton field, and £115 worth of wolfram shipped at Derby in the West Kimberley Magisterial District.

It will be noted that the figures in this table differ from those in Table 1. The figures above are those reported to the Department, and the table is published as an index to the amount of mining in each field named.

TABLE 12.

Quantity of Coal raised during 1909 and 1910, 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 Men employed above and under Ground.
		tons.	£			tons.	tons.
Collie	1909	214,302	90,965	93	301	609	544
	1910	**262,166**	**113,699**	**124**	**397**	**660**	**503**

The number of men employed at Collieries has increased by 128, and the output by 47,864 tons.

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

TABLE 13.

Total Number and Acreage of Leases held for Mining on 31st December, 1909 and 1910.

Description of Leases.	1909.		1910.	
	No.	Acreage.	No.	Acreage.
Gold mining leases on Crown land	2,105	28,919	**2,317**	**34,538**
„ „ „ private property ...	...	...	**1**	**6**
Mineral leases on Crown land	297	30,256	**259**	**31,517**
„ „ private property	3	70	**2**	**50**
	2,405	59,245	**2,579**	**66,111**

The total number of leases held for mining has increased by 174 as compared with 1909, and the acreage by 6,866 acres. Leases for gold mining have increased in number by 213 and in area by 5,625 acres.

The acreage held under mineral leases has increased by 1,261 acres, notwithstanding that the number of leases has decreased by 38. The number of leases for mining on private property has decreased by 1 and the area by 20 acres.

Table 14.

Number and Acreage of Gold Mining Leases in force each year for the Five Years ending the 31st December, 1910.

Goldfields.		Districts.		1906.		1907.		1908.		1909.		1910.		Percentage of Total Acreage.		Increase or Decrease for 1910 compared with 1909.		Goldfields.
Name.	Proclaimed.	Name.	Proclaimed.	Leases.	Acreage.	Leases.	Acreage.	Leases.	Acreage.	Leases.	Acreage.	Leases.	Acreage.	1909.	1910.	Increase.	Decrease.	
																acres.	acres.	
Kimberley ...	20-5-86	... ...	...	2	13	2	13	2	13	...	...	...	...	...	...	...	...	Kimberley
Yilgarn	1-10-08	... ...	...	64	1,017	60	924	60	1,011	101	1,562	472	9,118	5·40	26·40	7,556	...	Yilgarn
Pilbara	1-10-88	Marble Bar ...	6-11-96	19	204	14	192	14	180	35	426	21	260	2·34	1·16	...	276	Pilbara
		Nullagine ...	6-11-96	29	320	23	257	24	265	22	252	16	142					
Ashburton ...	11-12-90	... ...	...	1	12	...	...	1	6	3	48	3	48	·17	·14	...	...	Ashburton
Murchison ...	24-9-91	Cue	10-1-96	111	1,294	111	1,386	99	1,152	99	1,089	71	756	15·70	13·08	...	22	Murchison
		Nannine ...	7-12-94	131	1,560	125	1,466	126	1,491	177	2,288	205	2,670					
		Day Dawn ...	10-1-96	87	890	84	832	65	639	58	541	49	474					
		Mount Magnet ...	7-12-94	54	443	52	484	47	444	59	622	51	618					
Dundas	31-8-93	... ...	...	59	732	59	740	78	1,038	74	997	71	872	3·45	2·52	...	125	Dundas
Coolgardie ...	6-4-94	Coolgardie ...	1-9-97	148	1,949	134	1,709	136	1,760	115	1,525	100	1,372	6·78	5·38	...	101	Coolgardie
		Kunanalling ...	1-9-97	35	475	38	464	42	521	35	436	37	488					
East Coolgardie ...	21-9-94	East Coolgardie	21-9-94	243	3,570	206	2,967	208	2,994	209	2,948	200	2,868	11·04	8·72	...	180	East Coolgardie
		Bulong	13-11-96	41	518	28	376	23	287	19	245	11	145					
Yalgoo	23-1-95	... ...	...	37	435	32	365	39	467	44	494	38	425	1·71	1·23	...	69	Yalgoo
North Coolgardie	28-6-95	Menzies	20-3-96	108	1,403	86	1,185	79	1,055	78	1,115	76	1,053	12·70	8·75	...	652	North Coolgardie
		Ularring ...	23-9-96	63	824	57	737	58	759	65	815	55	720					
		Yerilla	20-3-96	66	1,135	42	694	62	965	55	784	46	669					
		Niagara	12-3-97	69	875	69	902	55	721	70	960	46	580					
East Murchison ...	28-6-95	Lawlers	1-7-04	111	1,664	136	2,009	137	2,085	183	2,756	86	1,107	17·82	13·23	...	583	East Murchison
		Black Range ...	1-7-04	117	1,581	179	2,564	151	2,152	157	2,397	151	2,282					
		Wiluna	1-3-10	...	...	...	...	...	...	...	...	70	1,181					
North-East Coolgardie	20-3-96	Kanowna ...	13-11-96	97	1,240	88	1,054	77	885	74	908	58	682	3·30	2·03	...	256	N.E. Coolgardie
		Kurnalpi ...	13-11-96	6	66	5	54	6	60	5	48	2	18					
Broad Arrow ...	17-11-96	... ...	...	84	1,039	63	789	57	683	71	939	63	803	3·25	2·32	...	136	Broad Arrow
Peak Hill ...	19-3-97	... ...	...	42	370	40	337	42	352	46	402	52	552	1·39	1·60	150	...	Peak Hill
Mount Margaret...	12-3-97	Mount Margaret	12-3-97	118	1,953	104	1,753	85	1,407	75	1,307	72	1,197	13·59	12·52	396	...	Mount Margaret
		Mount Malcolm	12-3-97	117	2,095	107	2,070	113	2,036	113	2,030	126	2,314					
		Mount Morgans	2-4-02	68	1,015	52	772	49	754	35	593	47	815					
West Pilbara ...	20-9-95	Crown Lands ...	...	7	102	9	132	12	156	10	128	7	72	·44	·21	...	56	West Pilbara
Do.	...	Private Property	...	...	...	...	...	1	24	...	...	1	6	...	·02	6	...	Do.
Phillips River ...	21-9-00	... ...	...	43	480	22	264	24	303	17	240	15	237	·83	·69	...	3	Phillips River
Other Localities ...	...	... ...	...	4	96	4	96	1	24	1	24	...	...	·09	...	...	24	Other Localities
Murray	...	Private Property	...	...	...	...	...	6	118	...	...	...	...	...	...	...	...	
Totals ...	...	... ...	...	2,181	29,370	2,031	27,587	1,979	26,807	2,105	28,919	2,318	34,544	100·00	100·00	8,108	2,483	

213 Leases : 5,625 acres increase for 1910.

Taking all the goldfields, the largest percentage of the area leased for gold mining is in the Yilgarn Goldfield, viz., 26.40, then East Murchison, Murchison, Mount Margaret, North Coolgardie, and East Coolgardie, with percentages of 13.23, 13.08, 12.52, 8.75, and 8.72, respectively.

TABLE 15.

Number and Acreage of Mineral Leases in force 31st December each year, for the Five Years ending 31st December, 1910.

Mining Districts.		Sub-Districts.		1906.		1907.		1908.		1909.		1910.		Increase or Decrease for 1910, compared with 1909.		Districts.
Name.	Proclaimed.	Name.	Proclaimed.	Leases.	Acreage.	Leases.	Acreage.	Leases.	Acreage.	Leases.	Acreage.	Leases.	Acreage.	Increase.	Decrease.	
														acres.	acres.	
Ashburton ...	11-12-90	...	...	4	126	20	567	12	383	5	131	**5**	**131**	...	...	Ashburton
Murchison ...	24-9-91	Cue ...	7-12-94	...	...	2	58	...	...	1	3	...	...	...	3	Cue
		Nannine ...	7-12-94	3	80	7	193	4	126	2	30	**1**	**12**	...	18	Nannine
		Day Dawn ...	10-1-96	1	6	1	6	1	6	1	6	**1**	**6**	...	...	Day Dawn
		Mt. Magnet ...	7-12-94	...	...	...	...	...	...	1	5	...	...	...	5	Mt. Magnet
Greenbushes ...	7-4-92	...	...	62	1,127	100	1,585	60	989	47	727	**49**	**753**	26	...	Greenbushes
Pilbara	16-6-92	Marble Bar ...	16-6-92	32	768	36	763	34	1,114	36	1,142	**16**	**567**	...	575	Marble Bar
		Nullagine ...	6-11-96	...	...	2	72	1	48	1	48	**1**	**48**	...	...	Nullagine
Yalgoo	23-1-95	...	...	1	24	5	168	3	96	2	72	**1**	**48**	...	24	Yalgoo
Yilgarn	22-3-95	...	...	...	...	...	...	...	...	2	96	**2**	**96**	...	...	Yilgarn
Coolgardie ...	22-3-95	Coolgardie ...	22-3-95	3	41	4	61	2	21	2	21	**2**	**21**	...	...	Coolgardie
		Kunanalling ...	1-9-97	...	...	...	...	...	...	...	...	...	...	...	...	Kunanalling
East Coolgardie ...	22-3-95	East Coolgardie	22-3-95	5	20	8	116	7	49	6	50	**7**	**33**	...	17	East Coolgardie
		Bulong ...	15-4-96	...	...	...	...	...	...	...	...	...	...	...	...	Bulong
East Murchison ...	28-6-95	Lawlers ...	1-7-04	...	...	2	42	5	132	10	260	**5**	**104**	...	156	East Murchison
		Black Range ...	1-7-04	...	...	3	7	2	4	2	4	**2**	**6**	2	...	Black Range
		Wiluna ...	1-3-10	...	...	...	...	...	...	...	...	**1**	**10**	10	...	Wiluna
North Coolgardie	16-8-95	Menzies ...	15-4-96	1	48	1	48	1	48	1	48	...	...	...	48	Menzies
		Ularring ...	15-4-96	...	...	1	48	...	...	...	...	...	...	...	...	Ularring
		Yerilla ...	15-4-96	...	...	...	...	...	...	...	...	...	...	...	...	Yerilla
		Niagara ...	1-3-97	...	...	...	...	...	...	...	...	...	...	...	...	Niagara
West Pilbara ...	1-11-95	...	...	15	401	54	1,402	22	683	17	666	**20**	**668**	2	...	West Pilbara
Dundas	27-12-95	...	...	1	6	1	6	1	6	1	6	**1**	**6**	...	...	Dundas
Collie	21-2-96	...	...	74	22,895	80	24,815	80	24,815	79	24,495	**88**	**27,255**	2,760	...	Collie
North-East Coolgardie	15-4-96	Kanowna ...	15-4-96	...	...	...	...	...	...	...	...	...	...	...	...	Kanowna
		Kurnalpi ...	15-4-96	...	...	...	...	...	...	...	...	...	...	...	...	Kurnalpi
Broad Arrow ...	20-11-96	...	...	...	...	1	20	1	20	1	20	**1**	**20**	...	...	Broad Arrow
Northampton ...	1-1-97	Crown Lands...	...	5	124	21	412	11	247	4	60	**1**	**10**	...	50	Northampton
		Private Property	...	...	...	1	20	1	20	1	20	...	...	...	20	
Peak Hill ...	1-4-97	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Peak Hill
Mt. Margaret ...	1-4-97	Mt. Margaret...	1-4-97	1	3	1	3	1	48	1	48	...	...	...	48	Mt. Margaret
		Mt. Malcolm ...	1-4-97	5	32	3	12	3	12	1	6	...	...	...	6	Mt. Malcolm
		Mt. Morgans ...	2-4-02	4	65	13	330	6	139	5	129	**5**	**129**	...	..	Mt. Morgans
Gascoyne	15-4-97	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Gascoyne
Yandanooka ...	1-12-97	Crown Lands...	...	1	20	3	60	...	...	2	40	**2**	**40**	...	...	Yandanooka
		Private Property	...	2	50	2	50	2	50	2	50	**2**	**50**	...	...	
Phillips River ...	1-7-99	...	...	49	1,151	57	1,323	42	1,047	46	1,283	**30**	**782**	...	501	Phillips River
Other localities ...	...	Crown Lands ...	...	4	184	45	1,845	27	1,230	21	860	**18**	**772**	...	88	Other Localities
		Private Property	...	...	...	2	69	...	...	...	...	...	...	...	...	
Totals ...	...	...	...	273	27,171	476	34,101	329	31,333	300	30,326	**261**	**31,567**	2,800	1,559	

Decrease for 1910: 39 leases. Increase in area, 1,241 acres.

In the Collie field the largest area is held, viz., 27,255 acres occupied entirely for coal mining, then follow: Pilbara with 1,320 acres, principally for tin and asbestos, then Phillips River 782 acres. Outside localities 772 acres, and West Pilbara 668, worked principally for copper.

TABLE 16.

Number and Acreage of Mineral Leases in force on 31st December, 1910, showing Minerals for which they are worked.

MINERALS.	Murchison.								Pilbara.				Ashburton.		Greenbushes.		Coolgardie.		East Coolgardie.		Broad Arrow.		Dundas.		West Pilbara.		Yalgoo.		Yilgarn.	
	Cue.		Day Dawn.		Nannine.		Mt. Magnet.		Nullagine.		Marble Bar.		Uaroo.				Coolgardie.													
	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.	Leases.	Acres.	Leases.	Acres.
Coal																														
Copper					1	12			1	48	2	96	2	96							1	20			16	557	1	48		
Ironstone																													2	
Limestone																							1	6						
Graphite																														
Tin											7	211			49	753														
Silver and Lead													3	35											1	48				
Copper and Silver																	2	21	5	23										
Clay			1	6															2	10										
Building Stone																														
Lime																														
Copper and Lead																									1	23				
Asbestos											5	240																		
Tantalite											2	20																		
Wolfram																														
Copper and Antimony																									2	40				
Totals			1	6	1	12			1	48	16	567	5	131	49	753	2	21	7	33	1	20	1	6	20	668	1	48	2	96

MINERALS.	East Murchison.						Collie.		Northampton.		Mt. Margaret.						Yandanooka.		Phillips River.		Crown Lands outside proclaimed Mining Districts.		Total Acreage.
	Wiluna.		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.	Leases.	Acres.	
Coal							88	27,255															27,255
Copper					4	96									4	114	4	90	26	707	4	184	2,068
Ironstone																			2	30	10	440	566
Limestone																			1	40			46
Graphite																					3	100	100
Tin																							964
Silver and Lead																							83
Copper and Silver															1	15							15
Clay			2	6															1	5			61
Building Stone																							10
Lime	1	10			1	8																	18
Copper and Lead									1	10													33
Asbestos																							240
Tantalite																							20
Wolfram																					1	48	48
Copper and Antimony																							40
Totals	1	10	2	6	5	104	88	27,255	1	10					5	129	4	90	30	782	18	772	31,567

TABLE 17.

Number and Acreage of Miscellaneous Leases in force 31st December, 1910.

LEASES.	COOLGARDIE.		EAST COOLGARDIE.		EAST MURCHISON.		DAY DAWN.		GREENBUSHES.		KANOWNA.		MT. MORGANS.		NORTH COOLGARDIE.		WEST PILBARA.		PHILLIPS RIVER.		TOTAL.	
	No.	Acreage.	No.	Acreage.	No.	Acreage.	No.	Acreage.	No.	Acreage.	No.	Acreage.	No.	Acreage.	No.	Acreage.	No.	Acreage.	No.	Acreage.	No.	Acreage.
Machinery	...	...	4	43	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	43
Residence ...	...	...	1	2	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	2	3
Tailings ...	...	...	15	316	1	22	...	...	...	...	...	...	...	...	...	...	...	...	...	...	16	338
Tramway ...	...	...	...	...	3	31	...	...	...	...	1	2	...	...	...	...	1	24	3	7	8	64
Water ...	2	83	2	47	...	...	...	...	...	...	...	...	...	...	2	6	...	..	...	...	6	136
	2	83	22	408	4	53	1	1	...	...	1	2	...	...	2	6	1	24	3	7	36	584

TABLE 18.

Claims and Authorised Holdings under "The Mining Act, 1904," and Regulations, existing on 31st December, 1909 and 1910.

Claims, etc.	Yalgoo.		Yilgarn.		Pilbara.				Ashburton.		Murchison.								Dundas.		Coolgardie.				East Coolgardie.				North Coolgardie.								Collie.	
					Marble Bar.		Nullagine.				Cue.		Day Dawn.		Nannine.		Mt. Magnet.				Coolgardie.		Kunanalling		East Coolgardie.		Bulong.		Menzies.		Ularring.		Yerilla.		Niagara.			
	1909.	1910.	1909.	1910.	1909.	1910.	1909.	1910.	1909.	1910.	1909.	1910.	1909.	1910.	1909.	1910.	1909.	1910.	1909.	1910.	1909.	1910.	1909.	1910.	1909.	1910.	1909.	1910.	1909.	1910.	1909.	1910.	1909.	1910.	1909.	1910.	1909.	1910.
Water Rights ...	...	...	2	4	2	2	6	5	...	...	7	4	20	15	3	3	1	2	14	13	8	10	9	9	18	16	1	1	11	12	8	6	5	4	21	19	...	..
Area of Water Rights	...	...	15	21	11	11	10	8	...	...	18	11	30	28	5	5	1	2	133	133	33	43	51	51	73	56	12	12	35	38	23	15	9	6	36	40	...	...
Lode Claims	...	...	1	1	7	2	16	17	...	...	5	5	...	...	1	..	8	8	1	...	10	11	...	...	8	7	1	1	...	1	...	...	4	1	12	1	...	...
Alluvial Claims ...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	2	1	..	...	1	...	...	...	...	1	2	1	...	...	...	...	...	1	2	...	...	...	...	...
Dredging Claims ...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Prospecting Areas ...	16	3	43	38	21	26	5	5	1	...	25	11	9	3	51	45	23	16	33	32	73	60	47	25	38	46	16	7	50	35	21	24	36	26	34	25	2	2
Area of Prospecting Areas	270	54	656	635	330	375	45	67	10	...	377	156	111	38	813	663	327	224	417	415	1,089	895	777	398	613	658	194	96	717	471	257	263	582	411	470	365	5,380	5,380
Residence Areas ...	10	10	1	17	5	..	8	7	...	2	19	20	13	43	51	39	7	7	...	...	3	2	2	2	72	73	22	22	2	2	...	...	3	2	2	2	...	...
Business Areas ...	18	18	18	33	24	25	5	6	...	...	12	9	...	...	22	20	8	8	3	3	5	5	4	4	14	14	4	4	14	15	4	2	28	8	19	4	...	...
Machinery Areas ...	2	2	...	3	1	1	3	3	...	...	2	1	...	...	1	1	1	1	6	4	6	4	4	2	3	4	2	2	1	2	1	...	2	2	3	2	...	...
Tailings Areas ..	2	2	33	2	1	1	2	2	...	...	3	2	1	...	6	6	2	2	1	1	2	1	...	1	8	8	.	.	2	2	...	...	1	7	2	...	...	...
Garden Areas ...	3	3	3	2	12	12	4	4	...	...	2	2	6	6	8	7	9	9	1	2	8	6	...	...	31	30	...	...	7	8	1	1	...	...	13	6	...	...
Washing Areas ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

Claims, etc.	East Murchison.						Pilbara.		North-East Coolgardie.				Broad Arrow.		Peak Hill.		Mount Margaret.						Greenbushes.		Phillips River.		Outside Goldfields.		TOTAL.		Increase or Decrease for 1910 compared with 1909.	
	Wiluna.		Lawlers.		Black Range.				Kanowna.		Kurnalpi.						Mount Margaret.		Mount Malcolm.		Mount Morgans.													
	1909.	1910.	1909.	1910.	1909.	1910.	1909.	1910.	1909.	1910.	1909.	1910.	1909.	1910.	1909.	1910.	1909.	1910.	1909.	1910.	1909.	1910.	1909.	1910.	1909.	1910.	1909.	1910.	1909.		Increase.	Decrease.
Water Rights	...	6	26	21	4	3	2	1	5	7	...	...	11	10	...	12	32	23	58	39	21	22	10	7	3	4	2	1	310	281	...	29
Area of Water Rights ...	...	10	47	33	8	7	10	5	30	34	...	...	33	31	...	125	83	67	252	222	53	88	52	47	7	9	.	...	1,075	1,158	83	...
Lode Claims	...	...	...	...	1	...	...	1	10	8	2	...	5	12	...	...	4	...	4	4	...	...	...	...	1	1	...	...	101	81	...	
Alluvial Claims	...	...	...	...	...	...	...	...	5	11	1	...	...	...	...	...	7	8	...	...	2	...	33	24	...	...	1	1	56	49	...	
Dredging Claims	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	4	4	...
Prospecting Areas	...	12	41	20	41	37	5	6	31	11	2	3	37	40	7	11	31	27	62	52	25	13	...	1	14	19	5	17	* 845	* 698	...	147
Area of Prospecting Areas ...	...	181	628	273	627	541	78	87	359	129	21	44	536	622	120	178	456	366	921	766	403	175	...	48	225	295	8,836	45,048	26,645	60,317	33,672	...
Residence Areas	...	...	14	13	73	203	13	7	6	5	...	...	...	...	1	7	45	8	2	2	6	1	31	32	...	...	...	...	411	528	117	...
Business Areas	...	2	3	2	35	34	6	6	5	4	2	1	9	15	...	...	52	18	12	6	5	3	6	6	1	1	...	...	338	276	...	62
Machinery Areas	...	2	3	2	2	2	...	...	5	6	2	2	5	6	...	1	2	4	3	1	...	...	10	9	...	2	...	...	70	71	1	...
Tailings Areas	...	...	2	2	1	1	...	...	3	3	...	...	1	4	...	...	5	4	5	3	...	...	3	2	3	4	...	...	89	60	...	29
Garden Areas	...	5	14	13	11	14	3	3	3	3	...	...	...	1	...	...	16	10	18	15	3	3	6	8	..	9	...	...	182	182	...	...
Washing Areas	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	2	1	...	...	...	...	2	1	...	1

* 1909 Including 5 for coal, area 14,180 acres.

* 1910 „ 15 „ „ 45,000 „

Last year the number of Prospecting Areas held was 845, the total acreage being 26,645 acres (which included 5 areas of an acreage of 14,180 acres for coal and oil). This year shows a decrease to 698; acreage 60,317 acres, including 15 areas of 45,000 acres for coal and oil.

TABLE 19.—*Miners' Rights issued during 1909 and 1910.*

PLACE OF ISSUE.	Miners' Rights.		Consolidated Miners' Rights.		PLACE OF ISSUE.	Miners' Rights.		Consolidated Miners' Rights.	
	1909.	1910.	1909.	1910.		1909.	1910.	1909.	1910.
Albany	1	2	...	...	Marble Bar	172	190	...	...
Ashburton	36	40	...	...	Meekatharra ...	190	194	...	...
Black Range	439	415	...	...	Menzies	263	197	...	...
Boulder	38	43	...	...	Mount Magnet ...	171	133	...	...
Bridgetown	1	1	...	...	Mount Malcolm ...	..	38	...	...
Broad Arrow	189	225	...	...	Mount Morgans ...	112	71	...	...
Broome	4	9	...	...	Mulline	37	21	...	...
Bulong	52	52	...	...	Nannine	240	238	...	...
Bunbury	2	7	...	...	Narrogin	...	5	...	...
Burtville	5	16	...	...	Newcastle	1	1	...	...
Busselton	1	...	...	...	Norseman	208	209	...	...
Carnarvon	5	20	...	...	Northampton ...	5	4	...	...
Collie	8	11	...	...	Northam	4	9	...	...
Coolgardie	444	433	...	...	Nullagine	105	74	...	...
Cue	362	231	...	...	Peak Hill	72	54	...	...
Davyhurst	96	53	...	...	Perth	92	296	...	1
Derby	29	14	1	1	Phillips River ...	115	193	...	...
Duketon	...	...	...	...	Pinjin	17	18	...	...
Esperance	1	...	...	...	Port Hedland ...	14	6	...	...
Geraldton	...	...	...	...	Roebourne	86	64	...	...
Greenbushes	112	138	...	...	Southern Cross ...	246	929	...	...
Kalgoorlie	703	905	..	...	Wagin	1	1	...	...
Kanowna	171	147	...	...	Waverley	57	38	...	...
Katanning	...	...	...	...	Williams	...	...	...	...
Kimberley	24	46	...	...	Wiluna	82	124	...	...
Kookynie	166	138	...	...	Wyndham	...	2	...	...
Kurnalpi	35	8	...	...	Yalgoo	70	46	...	...
Lake Darlot	26	21	...	...	Yarri	24	44	...	...
Laverton	201	194	...	...	York	2	3	...	...
Lawlers	157	152	...	...	Yundamindera ...	32	15	...	...
Leonora	271	256	...	...					
Linden	35	23	...	...		6,032	6,817	1	2

TABLE 20.

Number and Acreage of Miners' Homestead Leases in force on 31st December, 1909 and 1910.

Goldfield.	District.	1909.		1910.		Increase.		Decrease.	
		Leases.	Acreage.	Leases.	Acreage.	Leases.	Acreage.	Leases.	Acreage.
West Pilbarra ...	... ...	...	...	1	30	1	30	...	...
Greenbushes	... ...	6	611	6	612	...	1	...	...
Pilbara ...	Marble Bar ...	6	173	4	148	...	...	2	25
	Nullagine	1	20	1	20	...	...	...	...
Dundas	... ...	20	762	23	799	3	37	...	...
Broad Arrow	... ...	4	245	5	495	1	250	...	...
Yilgarn	... ...	9	252	14	432	5	180	...	...
Mt. Margaret ...	Mt. Morgans ...	5	180	5	180	...	...	...	...
	Mt. Malcolm ...	11	2,054	10	2,034	..	...	1	20
	Mt. Margaret ...	8	300	12	619	4	319	...	...
Murchison ...	Cue	10	1,329	10	1,332	...	3	...	...
	Day Dawn... ...	14	163	13	159	...	...	1	13
	Nannine	18	2,112	20	2,262	2	150	...	...
	Mt. Magnet ...	2	40	2	40	...	...	...	...
Yalgoo	... ...	1	200	1	200	...	...	...	...
Coolgardie ...	... ...	50	6,193	47	5,666	...	...	3	527
	Kunanalling ...	1	20	1	20	...	...	...	...
East Coolgardie ...	... ...	110	4,661	113	4,235	3	...	...	426
Phillips River ...	... ...	122	11,882	135	13,712	13	1,830	...	...
Peak Hill	... ...	12	1,865	11	1,765	...	...	1	100
North-East Coolgardie	Kanowna	23	915	23	915	...	...	...	...
North Coolgardie	Menzies	10	648	9	248	...	...	1	400
	Yerilla	2	20	2	20	...	...	...	...
	Niagara	7	404	7	404	...	...	...	...
	Ularring	2	25	2	25	...	...	...	...
East Murchison	Lawlers	7	1,119	5	1,110	...	...	2	9
	Black Range ...	16	2,144	19	2,024	3	...	...	120
	Wiluna	...	...	5	89	5	89	...	...
		477	38,337	506	39,586	40	2,889	11	1,640

As compared with the year 1909, there is an increase in the number of leases by 29, and in acreage by 1,249 acres.

Part IV.—MEN EMPLOYED.

Table 21.

Average Number of Men engaged in Mining during 1909 and 1910.

Goldfield.	District.	Reef or Lode.		Alluvial.		Total.	
		1909.	1910.	1909.	1910.	1909.	1910.
1. Kimberley	...	...	9	13	9	13
2. Pilbara	Marble Bar	79	71	89	55	168	126
	Nullagine	79	63	17	10	96	73
3. West Pilbara	...	12	10	41	33	53	43
4. Ashburton	...	...	...	10	19	10	19
5. Gascoyne	...	...	...	...	3	...	3
6. Peak Hill	...	100	75	10	11	110	86
7. East Murchison	Lawlers	1,000	523	28	25	1,028	548
	Wiluna		270		16		286
	Black Range	901	970	67	5	968	975
8. Murchison	Cue	346	244	14	9	360	253
	Nannine	711	1,104	179	160	890	1,264
	Day Dawn	424	442	21	14	445	456
	Mt. Magnet	238	255	2	2	240	257
9. Yalgoo	...	58	58	2	1	60	59
10. Mt. Margaret	Mt. Morgans	361	183	34	59	395	242
	Mt Malcolm	944	890	17	13	961	903
	Mt. Margaret	616	621	34	18	650	639
11. North Coolgardie	Menzies	592	543	10	12	602	555
	Ularring	322	208	32	31	354	239
	Niagara	324	314	24	34	348	348
	Yerilla	375	345	27	35	402	380
12. Broad Arrow	...	279	246	66	60	345	306
13. North-East Coolgardie	Kanowna	426	397	67	42	493	439
	Kurnalpi	25	18	17	13	42	31
14. East Coolgardie	East Coolgardie	5,951	5,608	50	50	6,001	5,658
	Bulong	88	54	25	17	113	71
15. Coolgardie	Coolgardie	626	614	63	22	689	636
	Kunanalling	200	213	55	16	255	229
16. Yilgarn	...	460	637	1	...	461	637
17. Dundas	...	375	389	9	9	384	398
18. Phillips River	...	95	104	...	1	95	105
State generally	...	...	2	...	...	...	2
Total—Gold Mining	...	16,007	15,471	1,020	808	17,027	16,279
MINERALS OTHER THAN GOLD.							
Tin	Greenbushes	...	...	*220	*237	220	237
	Cue	...	...	*6	...	6	...
	Marble Bar	...	...	*180	89	180	89
Tantalite	Greenbushes	1	...	...	...	1	...
	Marble Bar	1	...	...	...	1	...
Copper	West Pilbara	93	133	...	...	93	133
	Ashburton	2	...	...	...	2	...
	Yalgoo	3	1	...	...	3	1
	Nannine	7	...	...	...	7	...
	Broad Arrow	1	...	...	...	1	...
	Phillips River	391	425	...	...	391	425
Lead	Northampton	...	21	...	...	...	21
Silver-Lead	Ashburton G.F.	5	...	...	...	5	...
Coal	Collie River	393	521	...	...	393	521
	State generally	1	...	...	...	1	...
Asbestos	Marble Bar D.	2	...	...	...	2	...
Wolfram	State generally	3	5	...	...	3	5
	Total—Other Minerals	903	1,106	406	326	1,309	1,432
	Grand Total	16,910	16,577	1,426	1,134	18,336	17,711

* Classified elsewhere as employed at mines.

Comparing the years 1909 and 1910, there was a decrease of 625 men engaged in mining. This decrease is mostly attributable to gold mining wherein the number of men engaged is less by 748 than in 1909; the number of men working reefs or lodes decreased by 536, and alluvial by 212. In mining for minerals there was an increase of 123 principally due to copper and coal, the number of men employed being greater by 62 in the former and 127 in the latter. Tin mining shows a decrease of 180, and wolfram and lead increases of 2 and 21 respectively.

TABLE 22.

Average Number of Men employed at Mines during 1910.

Mineral.	Above Ground.	Under Ground.	Total.	Percentage of total men employed.	Increase or decrease compared with 1909.
Asbestos	...	...	...	...	− 2
Coal	124	397	521	3·08	+ 127
Copper	339	220	559	3·31	+ 62
Gold	6,736	8,735	15,471	91·53	− 536
Lead	6	15	21	·12	+ 21
Silver-Lead	...	...	...	...	− 5
Tantalite	...	...	...	...	− 2
Tin	*306	20	326	1·93	− 80
Wolfram	5	...	5	·03	+ 2
Total	7,516	9,387	16,903	100·00	− 413

*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 increases in Coal, Copper, Lead, and Wolfram, but decreases in all others.

TABLE 23.

Average Number of Men employed at Gold Mines during 1910, 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 1909.	Percentage of total men employed.	
					1909.	1910.
1. Kimberley	...	...	...	...	...	...
2. Pilbara	67	67	134	− 24	·99	·87
3. West Pilbara	7	3	10	− 2	·07	·07
4. Ashburton	...	...	...	...	...	...
5. Gascoyne	...	...	...	...	...	...
6. Peak Hill	47	28	75	− 25	·63	·49
7. East Murchison	768	995	1,763	− 138	11·88	11·40
8. Murchison	951	1,094	2,045	+ 326	10·74	13·22
9. Yalgoo	28	30	58	=	·36	·37
10. Mt. Margaret	704	990	1,694	− 227	12·00	10·95
11. North Coolgardie	582	828	1,410	− 203	10·08	9·11
12. Broad Arrow	97	149	246	− 33	1·74	1·59
13. North-East Coolgardie ...	163	252	415	− 36	2·82	2·68
14. East Coolgardie	2,486	3,176	5,662	− 377	37·73	36·60
15. Coolgardie	318	509	827	+ 1	5·16	5·34
16. Yilgarn	302	335	637	+ 177	2·87	4·12
17. Dundas	169	220	389	+ 14	2·34	2·51
18. Phillips River	45	59	104	+ 9	·59	·67
State generally	2	...	2	+ 2	...	·01
Total	6,736	8,735	15,471	− 536	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 536. The largest decreases were in the East Coolgardie, Mount Margaret, North Coolgardie, and East Murchison Goldfields, but in the Murchison and Yilgarn fields there were substantial increases.

TABLE 24.

Alluvial Gold Workers.

Goldfield.	1909.	1910.	Increase or decrease compared with 1909.
1. Kimberley	9	13	+ 4
2. Pilbara	106	65	− 41
3. West Pilbara	41	33	− 8
4. Ashburton	10	19	+ 9
5. Gascoyne	...	3	+ 3
6. Peak Hill	10	11	+ 1
7. East Murchison	95	46	− 49
8. Murchison	216	185	− 31
9. Yalgoo	2	1	− 1
10. Mt. Margaret	85	90	+ 5
11. North Coolgardie	93	112	+ 19
12. Broad Arrow	66	60	− 6
13. North-East Coolgardie	84	55	− 29
14. East Coolgardie	75	67	− 8
15. Coolgardie	118	38	− 80
16. Yilgarn	1	...	− 1
17. Dundas	9	9	=
18. Phillips River	...	1	+ 1
Total	1,020	808	− 212

The number of alluvial gold workers decreased by 212, the largest decreases being in the Coolgardie, East Murchison, Pilbara, and Murchison fields. Murchison with 185, as in the previous year, heads the list, followed by North Coolgardie with 112, East Coolgardie with 67, Pilbara with 65, and Broad Arrow with 60.

Table 25.

Rates of Wages in the Gold Mining Industry.

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

Locality in which Award or Agreement has effect.	Date of Award or Agreement.	Date of Expiration.	Rock-drill men in shafts.	Rock-drill men in rises.	Rock-drill men elsewhere.	Miners (Hand Labour). +	Miners (wet ground extra allowance). Per shift.	Bracemen and Platmen.	Skipmen.	Mullockers and Shovellers.	Truckers—Filling and trucking.	Truckers—From Shoots.	Men working in Cyanide Vats, and Filter-press men.	Timbermen.	Surface Labourers.	Boiler Cleaners.	Horse-drivers (including feeding and grooming).	Drill and Tool Sharpeners.	Mechanics' Labourers.	Oilers and Greasers.	Riggers.	Firemen.	Pipe Fitters (underground).	Pitmen.	Fitters, Turners, and Blacksmiths.	Patternmakers.	Engine-drivers. Surface winding Engines.	Engine-drivers. All other classes of Engines.	¶Overtime. Up to four hours.	¶Overtime. After four hours.	Hours of work per week. Men on Surface.	Hours of work per week. Men underground.
			s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.		
† Abbotts	30th Aug., 1910 ...	30th Aug., 1911	15 0	14 6	13 10	13 0	0 10	12 6	...	11 10	11 10	11 10	12 6	13 10	11 4	13 0	12 4	14 3	12 4	...	...	...	...	...	...	...	...	...	...	...	48	47
			15 4	14 10	14 2	13 4	...	...	..	12 6	12 6	12 6	13 6	15 0	12 6	...	13 6	...	12 6	...	...	...	...	...	...	...	...	...	...	...	...	...
Black Range ...	13th July, 1905 ...	1st Feb., 1907 ...	...	...	...	15 0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13 6	14 6	...	...	...	...	48	...
	17th May, 1907 ...	31st May, 1910 ...	...	...	...	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
	20th May, 1908 ...	31st May, 1910 ...	15 4	14 10	14 2	...	1 3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	47
	14th Aug., 1908 ...	31st May, 1910 ...																														
Broad Arrow, Paddington, & Kanowna	19th Dec., 1904 ...	19th June, 1906 ...	14 4	13 10	13 4	11 8	1 8	11 8	...	10 6	10 6	10 6	11 8	13 4	10 0	11 10	11 0	12 8	...	...	...	...	...	...	...	...	15 8	15 0	1¼	1½	47& 48	...
	13th July, 1905 ...	1st Feb., 1907 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	48	47
Bulong	13th July, 1905 ...	31st Dec., 1905 ...	14 4	13 10	13 4	11 8	...	11 8	...	10 6	10 6	10 6	11 8	13 4	10 0	...	...	...	...	10 6	...	...	...	...	13 0	14 0	...	...	...	...	48	...
	13th July, 1905 ...	1st Feb., 1907 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13 0	14 0	...	...	...	...	48	47
Burtville	*4th Sept., 1909 ...	7th March, 1911...	...	...	...	13 4	1 8	12 4	...	13 4	13 4	13 4	13 4	...	13 4	...	14 4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	47	47
Cue-Nannine ...	*17th Oct., 1904 ...	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
	†18th Dec., 1908...	1st Jan., 1910 ...	..	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	§15 10 and 14 10	14 2	1¼	1½	47& 48	...
Dundas (Norseman)	13th July, 1905 ...	1st Feb., 1907 ...	...	...	...	13 0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13 6	14 6	...	...	...	...	48	...
	16th June, 1910 ...	15th June, 1913 ...	14 8	14 2	13 8	12 6	1 8	12 0	13 8	11 2	11 2	11 2	12 0	13 8	10 8	12 2	11 8	13 0	11 8	...	...	...	...	...	...	...	...	...	...	...	48	47
	16th June, 1910 ...	16th June, 1911 ...	...	...	...	12 0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14 4	13 8	1½	1½	47& 48	...
Gindalbie	10th Nov., 1908 ...	16th Nov., 1911 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14 10	14 2	1¼	1½	47& 48	...
Higginsville	5th Oct., 1906 ...	1st May, 1908 ...	15 0	14 6	14 0	13 4	1 8	12 4	...	11 4	11 4	11 4	12 4	14 0	10 10	12 6	11 10	13 4	11 10	...	...	...	...	...	...	...	...	...	...	...	48	47
						12 10																										
						12 4																										
Kalgoorlie ...	13th July, 1905 ...	1st Feb., 1907 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13 0	14 0	...	...	...	...	48	...
	*10th March, 1910	30th Sept., 1912‖	14 4	13 10	13 4	11 8	...	11 8	...	11 0	11 0	11 0	11 8	13 4	10 0	..	...	...	10 to 15s.	10 6	...	11 8	...	...	...	...	§ 15s. & 14s.	13 4	...	...	47& 48	47
Kanowna (for Miners' rates *see* Broad Arrow, etc.)	10th Nov., 1908 ...	16th Nov., 1911 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14 0	13 4	1¼	1½	47& 48	...
Kunanalling	*21st Feb., 1910 ...	30th Sept., 1912...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14 10	14 2	1¼	1½	47& 48	...
Lawlers and Mt. Sir Samuel	10th July, 1905 ...	1st Feb., 1907 ...	13 4	12 10	12 4	12 8	1 3	12 0	12 0	11 4	11 4	11 4	11 8	13 0	10 10	12 0	11 10	13 4	11 0	11 0	11 8	11 8	11 0	12 6	...	...	...	...	...	...	48	47
						12 4																										
	13th July, 1905 ...	1st Feb., 1907 ...	...	...	...	12 0	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	13 6	14 6	...	...	...	...	48	...
Leonora, Kookynie, Laverton, etc.	13th July, 1905 ...	28th February, 1906	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	11 8	...	...	...	...	...	...	...	...	48	...
	13th July, 1905 ...	1st February, 1907	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13 0	14 0	...	...	...	...	48	...
	†19th Jan , 1909 ...	1st Jan., 1910	a15 0	14 6	14 0	12 4	1 8	12 4	14 0	11 6	11 6	11 6	12 4	14 0	11 0	12 6	12 0	13 4	12 0	...	...	...	...	...	...	...	...	a14 8	14 0	1¼	1½	48	47
			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	...	...	...	...	...	...	...	14 4	13 8	1¼	1½	47	...
	†19th Jan. 909 ...	1st Jan., 1910	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	48 & 47	...
			...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		

Marvel Loch	†27th Jan., 1910 ...	1st Feb., 1911 ...	13 6	13 0	12 6	10 10	1 8	10 10	...	10 10	10 10	10 10	10 10	12 0	10 6	...	11 6	12 6	...	...	...	10 6	...	...	...	...	...	...	...	...	48	47
Meekatharra	30th Aug., 1910 ...	30th Aug., 1911	b15 4	14 10	14 2	13 4	0 10	12 6	...	12 6	12 6	12 6	13 6	15 0	12 6	...	13 6	14 3	12 6	Men on	cracker	12/6. Sol	ution	hands	13/4.	...	...	...	...	...	47 &	47
			15 0	14 6	13 10	13 0	0 10	12 6	...	11 10	11 10	11 10	12 6	13 10	11 4	13 0	12 4	14 3	12 4	...	...	...	...	...	...	...	...	...	...	...	48	47
Menzies ...	16th Dec., 1904 ...	28th Feb., 1906 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15 5	14 0	1¼	1½	47	...
	19th Dec, 1904 ...	28th Feb., 1906 ...	14 9	14 3	13 9	12 0	1 8	12 0	...	11 0	11 0	11 0	12 0	13 9	10 6	12 0	11 6	13 0	11 6	...	...	...	...	...	...	...	...	...	...	...	48	47
	13th July, 1905 ...	28th Feb., 1906 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11 8	...	...	...	...	...	...	...	...	48	...
	13th July, 1905 ...	1st Feb., 1907 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13 0	14 0	...	...	...	...	48	...
Mt. Magnet ...	†18th Dec., 1908 ...	1st Jan., 1910 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14 0	13 4	1¼	1½	47 & 48	...
	†8th Nov., 1909 ...	16th Nov., 1910 ...	14 6	14 0	13 4	12 6	0 10	12 0	...	11 4	11 4	11 4	12 0	...	10 10	12 6	11 10	13 9	...	...	...	...	...	...	...	...	...	...	...	...	48	47
Mt. Morgans ...	13th July, 1905 ...	28th Feb., 1906 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11 8	...	...	...	...	...	...	...	...	48	...
	13th July, 1905 ...	1st Feb., 1907 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13 0	14 0	...	...	...	...	48	...
	†19th Jan., 1909 ...	1st Jan., 1910 ...	14 8	14 2	13 8	12 0	1 8	12 0	13 8	11 2	11 2	11 2	12 0	13 8	10 8	12 2	11 8	13 0	11 8	...	...	...	...	...	...	...	...	...	...	...	48	47
	†19th Jan., 1909 ...	1st Jan., 1910 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14 4	13 8	1¼	1½	47 & 48	...
Nullagine	*16th Jan., 1905 ..	1st Feb., 1907 ...	...	...	...	14 2	1 8	14 2 and 13 4	...	...	13 4	13 4	14 2	16 8	13 4	...	...	16 8	...	...	...	...	...	...	...	...	‡16 8	‡15 0	...	...	44	44
Peak Hill	6th Dec., 1906 ...	1st Oct., 1909 ...	15 0	14 6	13 10	13 0	1 3	12 6	...	11 10	11 10	11 10	12 6	13 10	11 4	13 0	12 4	14 3	...	...	...	...	...	...	...	...	...	...	...	...	48	47
Southern Cross ...	13th July, 1905 ...	1st Feb. 1907 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12 0	13 0	...	...	...	...	48	...
Wiluna	13th July, 1905 ..	1st Feb., 1907 ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13 6	14 6	...	...	...	...	48	...
	6th Dec., 1906 ...	1st Jan., 1910 ...	15 6	15 0	14 4	13 6	1 3	13 0	13 0	12 4	12 4	12 4	13 0	14 4	11 10	13 6	12 10	14 9	...	...	...	...	...	...	...	...	...	...	...	...	48	47

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

Part V.—ACCIDENTS.

Table 26.

Men employed in Mines killed and injured in Mining Accidents during 1909 and 1910.

A.—According to Locality of Accident.

Goldfield.	Killed.		Injured.		Total Killed and Injured.	
	1909.	1910.	1909.	1910.	1909.	1910.
1. Kimberley	...	...	...	...	...	...
2. Pilbara	1	...	2	1	3	1
3. West Pilbara	...	...	2	...	2	...
4. Ashburton	...	...	...	...	...	...
5. Gascoyne	...	...	...	...	...	...
6. Peak Hill	1	...	1	...	2	...
7. East Murchison	3	1	22	18	25	19
8. Murchison	2	4	44	31	46	35
9. Yalgoo	...	...	...	...	...	...
10. Mt. Margaret	4	6	38	57	42	63
11. North Coolgardie	2	2	9	12	11	14
12. North-East Coolgardie ...	3	...	3	11	6	11
13. Broad Arrow	...	...	1	1	1	1
14. East Coolgardie	14	11	283	363	297	374
15. Coolgardie	1	1	1	4	2	5
16. Yilgarn	1	2	1	...	2	2
17. Dundas	1	...	2	5	3	5
18. Phillips River	1	...	2	4	3	4
Mining Districts.						
Northampton	...	...	...	..	...	...
Yandanooka	...	...	...	...	...	...
Greenbushes	...	...	1	2	1	2
Collie	...	2	49	78	49	80
Total	34	29	461	587	495	616

B.—According to Causes of Accident.

	1909.		1910.		Comparison with 1909.	
	Fatal.	Serious.	Fatal.	Serious.	Fatal.	Serious.
1. Explosives	3	19	3	12	...	− 7
2. Falls of Ground...	13	72	10	46	− 3	− 26
3. In Shafts	6	19	6	26	...	+ 7
4. Miscellaneous Underground ...	7	228	4	320	− 3	+ 92
5. Surface	5	123	6	183	+ 1	+ 60
Total	34	461	29	587	− 5	126

During the year 1910 twenty-nine fatal accidents occurred, as against 34 in 1909. The number of injured shows an increase of 126 over the preceding year. Full details of these accidents will be found in the report of the State Mining Engineer, published as Division II. to this report.

Table 27.

Deaths of Persons employed at Mines from Accidents during 1909 and 1910.

Kind of Mines.	1909.						1910.					
	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	...	...	...	...	...	...	...	2	2	...	5·04	3·84
Men employed ...	...	...	...	(93)	(301)	(394)	(124)	(397	(521)	...	...	...
Gold Mines	4	29	33	·50	3·21	1·94	7	20	27	·93	2·29	1·66
Men employed ...	...	...	...	(7,993)	(9,034)	(17,027)	(7,544)	(8,735)	(16,279)	...	...	...
Other Mines	1	...	1	1·45	...	1·09	...	...	...	...	...	...
Men employed ...	...	...	...	(688)	(227)	(915)	(656)	(255)	(911)	...	...	...
Total for all Mines ...	5	29	34	·57	3·03	1·85	7	22	29	·84	2·34	1·64
Total number of men employed	...	...	...	(8,774)	(9,562)	18,336)	(8,324)	(9,387)	(17,711)			

Of the fatal accidents two occurred in coal mines and the remaining twenty-seven in gold mines. The death rate per 1,000 men employed on gold mines was 1.66 as against 1.94 in 1909.

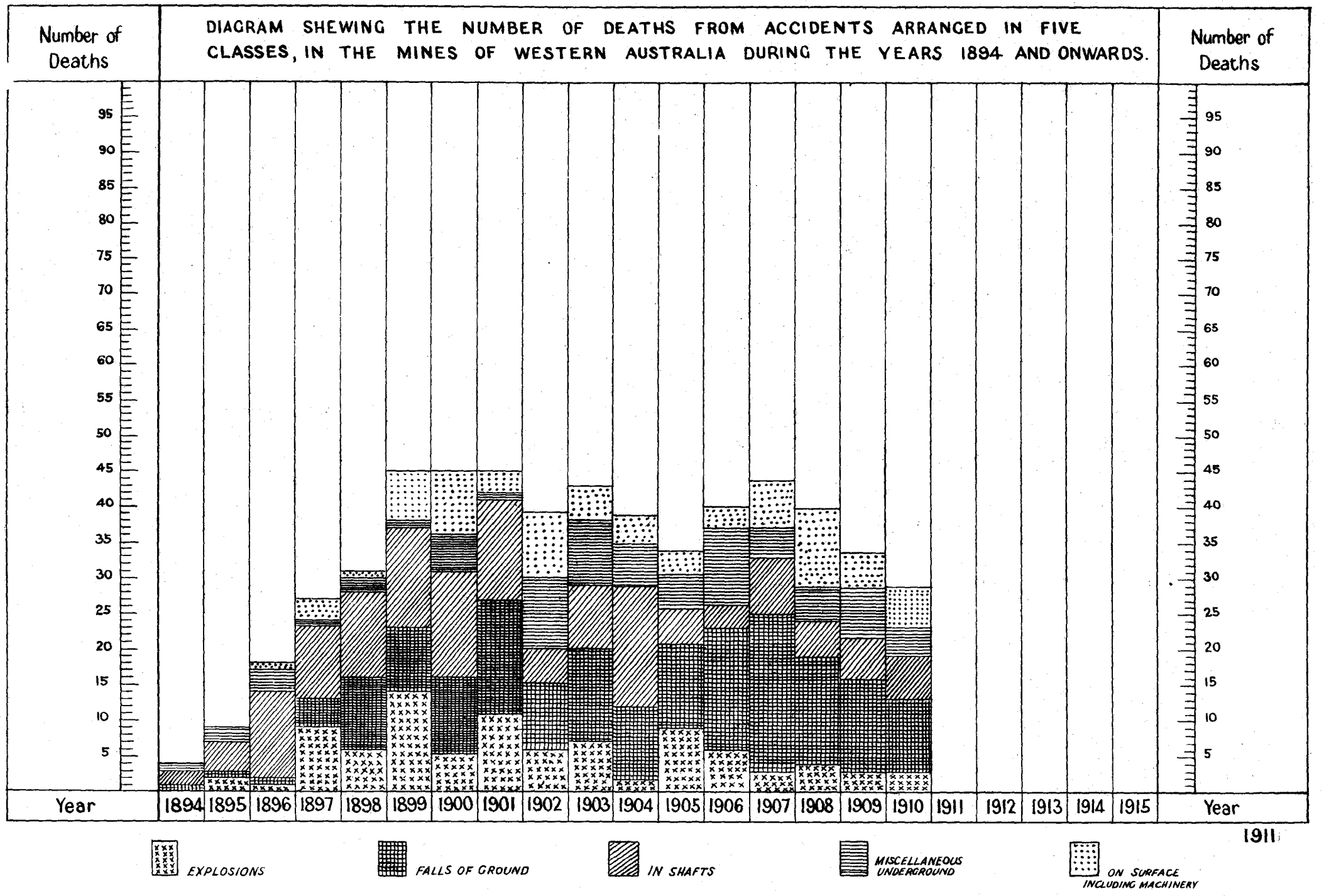

Number of Deaths
DIAGRAM SHEWING THE NUMBER OF DEATHS FROM ACCIDENTS ARRANGED IN FIVE CLASSES, IN THE MINES OF WESTERN AUSTRALIA DURING THE YEARS 1894 AND ONWARDS.
Number of Deaths
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
Year
1894
1895
1896
1897
1898
1899
1900
1901
1902
1903
1904
1905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

TABLE 28.

Deaths of persons employed from Accidents in Gold Mines during 1910, and the Death Rate per 1,000 men employed, and per 1,000 tons of Gold Ore raised during 1909 and 1910 (Number of men taken as in Table 19, not including Alluvial Gold Workers).

GOLDFIELD.	Number of Deaths.			Death rate per 1,000 Men employed.				Number of Deaths per 1,000 tons of Gold Ore raised.	
	1910.			1910.			1909.		
	Above Ground.	Under Ground.	Total.	Above Ground.	Under Ground.	Total.	Total.	1910.	1909.
1. Kimberley	...	...	...	...	...	...	...	...	...
2. Pilbara	...	...	...	...	...	...	6·33	...	·309
3. West Pilbara	...	...	...	...	...	...	...	...	...
4. Ashburton	...	...	...	...	...	...	...	...	...
5. Gascoyne	...	...	...	...	...	...	...	...	...
6. Peak Hill	...	...	...	...	...	...	10·00	...	·015
7. East Murchison	...	1	1	...	1·01	·57	1·58	·003	·009
8. Yalgoo	...	...	...	...	...	...	..	...	...
9. Mt. Margaret	3	3	6	4·26	3·03	3·54	2·08	·018	·012
10. North Coolgardie	...	2	2	...	2·42	1·42	1·24	·019	·019
11. North-East Coolgardie ...	...	...	...	...	...	...	6·65	...	·057
12. Broad Arrow	...	...	...	...	...	...	...	...	...
13. East Coolgardie	1	10	11	·40	3 15	1·94	2·32	·007	·008
14. Coolgardie	1	...	1	3·14	...	1·21	1·21	·012	·016
15. Murchison	2	2	4	2·10	1·83	1·96	1·16	·017	·008
16. Yilgarn	...	2	2	...	5·97	3·14	2·17	·059	·023
17. Dundas	...	...	...	...	...	...	2·67	...	·021
18. Phillips River	...	...	...	...	...	...	...	...	...
Totals and Averages	7	20	27	1·04	2·29	1·10	2·06	·009	·011

The number of deaths per 1,000 men employed shows a substantial decrease from 2.06 in 1909 to 1.10 in 1910, and that per 1,000 tons of gold ore raised shows a slight decrease, being .009 as against .011 for the preceding year.

PART VI.—STATE AID TO MINING.

STATE BATTERIES.

The number of State Batteries existing at the close of the year was 34 as compared with 32 during 1909, the additional crushing plants being Mt. Sir Samuel and Marble Bar, both 5-head mills with producer plants. The number of cyanide plants in operation is 24, as in the previous year. The number of slimes plants also is unchanged, and tin dressing plants are still in operation at Greenbushes North End and Bunbury End.

From the inception of the Battery system to the end of 1910 gold and tin to the value of £3,480,671 have been recovered at the State plants; 784,407 tons of gold ore were treated and produced £2,944,433 worth of gold by amalgamation, £402,676 worth by cyanidation, and £69,674 worth by slimes; and 45,492 tons of tin ore produced tin to the value of £63,887.

During the year the gold ore treated was 89,278 tons for 80,074 fine ozs., and in the preceding year 94,219 tons for 83,127 fine ounces. The scale of charges was not altered during the year.

The working expenditure for all plants for the year totalled £77,458 2s. 7d., and the revenue £75,975 4s. 10d., which, after including £882 11s. 6d. for additions, etc., paid from revenue, shows a loss of £2,365 9s. 3d. on the year's operations.

The capital expenditure on erection of State Batteries from the inception of the scheme to the end of 1910 was £284,300 11s. 3d., £91,981 1s. 8d. being paid from Revenue, and £192,319 9s. 7d. from Loan.

The working expenditure exceeds receipts by £21,379 18s. 8d.

The cost of administration for the year yas £3,891 16s. 8d. against £4,247 11s. 5d. for 1909.

GEOLOGICAL SURVEY.

The work of this branch of the Department has been carried out during the year by 13 officers, whose time has been very fully occupied. The principal reports as a consequence of the year's operations are on—

Results of boring for artesian water on the Eucla plateau;

The geology of the country between Sandstone and Lawlers, East Murchison Goldfield, from the point of view of Railway communication ;

The prospects of obtaining a water supply for Geraldton, either artesian, sub-artesian, wells or catchment areas;

The Mount Egerton Diggings, Peak Hill Goldfield;

Report on the "May Queen" gold mining lease 952, Yilgarn Goldfield, with regard to the loss of the reef due to faulting;

Some notes on the principal Geological Features of the Kalgoorlie Goldfield;

Further notes on the Gingin chalk.

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. For the purpose of making a complete geological examination of the mineral-bearing areas of the State, and also connecting up the various surveys already made, it was decided to augment the present staff by the appointment of two Field Geologists, one Assistant Field Geologist, one Petrologist, and an Assistant Mineralogist. The appointments will be made early in the coming year and the work pushed ahead.

Four Geological Bulletins were published during the year.

ASSISTANCE UNDER THE MINING DEVELOPMENT ACT, 1902.

The following statement shows the sums advanced during the year 1910 under the provisions of the Mining Development Act:—

	£	s.	d.
Advances in aid of mining work and equipment of mines with machinery	4,873	10	11
Advances in aid of boring	275	16	8
Subsidies to provide crushing plants	929	11	2
Providing means of transport ..	202	4	10
	£6,281	3	7

In addition to the above, amounts totalling £1,620 5s. 7d. were expended from the Mining Development Vote on various matters for the assistance of mining, such as water supply, roads, subsidies to assist cartage of ore long distances, and subsidies for development work done below the 100ft. level in small mines. Subsidies to the extent of £1,240 0s. 3d. were paid to private crushing plants, the conditions being that they crush for the public at fixed rates, in most cases a further requirement being imposed as to treating or purchasing tailings. The ore crushed at such plants during the year amounted to 14,202.50 tons.

The receipts under the Mining Development Act, exclusive of interest payments, amounted to £3,201 14s. 1d., made up as follows:—

	£	s.	d.
Refunds of advances ..	2,332	18	8
Sales of plant	140	19	3
Miscellaneous	727	16	2

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.

A short summary is as follows:—

Water Shafts sunk, aggregating 736 feet.
2 Bore Wells, aggregating 173 feet.
166 Hand Bores, aggregating 5,572 feet.

Tanks have been constructed at Chadwin, Koolyanobbing, Tin Hill, Nevoria, Ora Banda, Eucalyptus, Jubilee, Stennet's Rock Agricultural Tank, Ravensthorpe Nos. 1 and 2 Agricultural Tanks, Ravensthorpe No. 3, and others are in progress at Golden Valley, Parker's Range, Salmon Gums (Agricultural Tank), and Grass Patch (Agricultural Tank).

Pumping plants have been installed at Ravensthorpe Nos. 2 and 3 and at Dunn's Swamp. A pipe line was laid from Dunn's Swamp. At Sandstone a shaft was equipped and pumping plant, rising main, and elevated tanks provided for the reticulation of the town. At Norseman, John's Tank was purchased and enlarged, and steam pumping plant at No. 2 Tank replaced by a 25-H.P. oil engine.

The work of providing a water supply on the route to Tanami and the opening up of a Stock Route from Hall's Creek to Wiluna were both completed during the year.

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 248 fine ounces, and for the preceding year 436 fine ounces, a decrease of 188 fine ounces. No other mineral outputs were reported, and mining is practically at a standstill.

BROAD ARROW GOLDFIELD.

The output of gold for the year was 15,482 fine ounces, and for the preceding year 17,122, a decrease of 1,640 fine ounces. This decrease is attributable to the Paddington Consols and the Claremont Gold Mine having practically ceased operations during the latter half of the year.

The Bardoc centre has been very quiet for some time, and the Zoroastrian Mine, which has been working for 10 years, has been closed down and the plant removed. There is now no battery at this centre. However, the developments on G.M. Lease 1423W are most promising, and it is very probable that the owners will shortly be erecting a plant.

Black Flag: This centre has been almost stagnant, until towards the close of the year good values were found in the "Lady Bountiful" mine, which caused a little activity.

At Paddington mining has been very quiet, and nothing has transpired to justify any anticipation of immediate improvement.

All portions of Siberia Centre have been progressing rapidly, in particular at Ora Banda where good developments have caused a considerable number of properties to be taken up.

In the vicinity of Broad Arrow itself developments in the "Panhandle" lease are promising, otherwise matters are quiet. On the whole the outlook gives indication of the coming year being more prosperous than the one under review.

COLLIE COALFIELD.

The output of coal during the year was 262,166 tons, and in the preceding year 214,302 tons, an increase of 47,864 tons, the largest contributor being

the Co-operative Colliery. The coal trade throughout the year was brisk and in excess of any similar period. During the year the Proprietary mine commenced operations in the direction of opening a new Colliery about a mile further east than the present workings.

The number of leases held shows an increase of 9, and the acreage 2,760, and 5,380 acres are held under prospecting areas. The district continues in a flourishing condition, and the outlook for the field is very promising.

COOLGARDIE GOLDFIELD.

The output of gold during the year was 37,911 fine ounces, and for the preceding year 34,135 fine ounces, an increase of 3,776 fine ounces.

In the Bonnievale centre mining continues at a very low ebb, but prospecting is still being carried out.

Burbanks is now the chief producing centre of the field, and the increase in output from the Burbanks Main Lode accounts, in a large measure, for the improved output of the field. Several small shows in the vicinity also produced good gold.

In the Coolgardie Centre nothing of note has transpired, but there has been renewed activity in prospecting, and the State Battery has been kept going practically the whole of the year.

At Eundynie, Gibraltar, Higginsville, Londonderry, Red Hill, and Widgiemooltha the position is practically unaltered.

In the Kunanalling centre nothing of note has occurred. The Carbine mine has been working continuously, and the output, 1,620 fine ounces, was about 1,000 fine ounces better than in the preceding year.

At Chadwin, where a new rush was reported last year, some promising leases are now in existence. At Jourdie Hills steady progress has been made.

During the year a discovery of amblygonite was made at a locality about 14 miles north-west of Coolgardie. In order to encourage the prospectors the Department undertook the transport of a parcel of 4 tons to Europe, and arranged with the Agent General to make full inquiries as to the best market for the mineral and to dispose of the parcel to the best advantage.

The result of these inquiries is that the prospectors have been placed in touch with a reputable firm of Continental buyers, it is hoped, to their mutual advantage.

The outlook for the field is promising.

DUNDAS GOLDFIELD.

The output of gold for the year was 29,627 fine ounces, and for the preceding year 29,549 fine ounces, an increase of 78 fine ounces. No developments of any note have taken place at any of the mines of this field, but the prospects of most are good and the outlook for the field is encouraging.

EAST COOLGARDIE GOLDFIELD.

The output of gold for the year was 778,480 fine ounces, and for the preceding year 899,289 fine ounces, a decrease of 120,809 fine ounces.

This decrease is largely attributable to the reduced outputs from the Golden Horseshoe, Associated, Perseverance, and Oroya Links mines. Developments in some of the mines have not been so satisfactory as was hoped for, but with the enormous amount of development work being carried out an improvement may take place at any time. The Bulong District has been very quiet, and nothing exceptional has transpired. The outlook for the field is good.

EAST MURCHISON GOLDFIELD.

The output of gold for the year was 130,371 fine ounces, and for the preceding year 155,909 fine ounces, a decrease of 25,538 fine ounces. This is partly attributable to the closing down of the Bellevue mine at Mt. Sir Samuel and the Vivien mine at Lawlers, and the reduced outputs of the Oroya Black Range at Sandstone and Gwalia Consolidated at Wiluna. It is not known whether the two former will again start operations on a large scale; at present only a few tributers are employed. The State plant at the first-named place has not been the benefit it was anticipated owing to the reefs in the district not living down and the shows having in consequence been abandoned.

In the Wiluna centre mining is very quiet, the Gwalia Consolidated being at present under exemption pending the installation of a suitable plant for the treatment of the sulphide ore.

The Bulletin mine has erected new plant and done a large amount of work.

In the Sandstone district there has been little change.

During the year the railway from Mt. Magnet was opened, and should prove of considerable benefit to the industry. At Youanmi developments have been very satisfactory, and the district gives much promise of being a prosperous one.

The outlook for the field is, on the whole, good.

GASCOYNE GOLDFIELD.

Mining is still at a standstill in this field, being confined to a few dryblowers at Bangemall. Twenty-six (26) fine ounces of gold were reported.

GREENBUSHES MINERAL FIELD.

The output of Black Tin for the year was 317.71 tons, valued at £27,974, and for the preceding year 458.75 tons valued at £34,786, a decrease of 141.04 tons valued at £6,812. No tantalite was produced. Notwithstanding the decreased output there has been an increase in the number of leases held, an indication that there is still faith in the field. There is also an increase in the number of prospecting areas held. The decrease in output is attributed to the fact that payable dirt is getting deeper and consequently more difficult to get at. Three additional dredging plants were installed, making a total of 12 now in operation. Developments on the Cornwall mine have been satisfactory, five lodes having been discovered which are reported as payable. The price of tin improved considerably during the year, and it is confidently predicted that the coming year for this field will show a great improvement.

KIMBERLEY GOLDFIELD.

The output of gold from this field was 265 fine ounces, and for the preceding year 135 fine ounces, an increase of 130 fine ounces. This is entirely alluvial, and mostly from a fairly rich patch struck early in the year near the old Brockman workings.

Several pieces from 1 up to 14 ozs. were unearthed, but the patch is now worked out. There is nothing to indicate any improvement in the field in the future.

MT. MARGARET GOLDFIELD.

The output of gold for the year was 160,281 fine ounces, and for the preceding year 155,865 fine

ounces, an increase of 4,416 fine ounces. The Mt. Margaret district showed an increased output, due principally to the Lancefield mine at Laverton, the outlying centres showing no progress. The Mount Morgans district shows a considerable decrease, principally owing to the closing down of the Westralia Mt. Morgans mine, in consequence of recent development work not disclosing anything of value. The Mount Malcolm district shows an increased output, and from most of the centres encouraging reports have been received regarding development. The general outlook for this field is good.

MURCHISON GOLDFIELD.

The output of gold for the year was 124,351 fine ounces, and for the preceding year 133,106 fine ounces, a decrease of 8,755 fine ounces.

In the Nannine centre there has been much activity at Meekatharra, and this locality promises to be a large gold producer. At Garden Gully good ore was struck in the "Kyarra" lease, and present indications give promise of the mine opening up well. The find caused the pegging of a large number of leases in the locality. At Quinn's a State battery will be in operation early in the coming year and should be of great assistance to prospectors.

In the Mt. Margaret district the St. George mine has been a steady producer, and it is predicted that development work in the lower levels will materially enhance its value before long.

In the outlying centres vigorous prospecting has been pursued, in many instances with good results.

In the Cue centre mining has been in a very depressed state, and at the various out-centres nothing of any note has transpired. The question of boring in the vicinity of Cue with the hope of striking something good is under consideration, and in all probability the work, with Government assistance, will be be taken in hand during the coming year. In the Day Dawn district vigorous development and prospecting work have been carried out with encouraging results. On the whole the outlook for this field is good.

NORTHAMPTON AND YANDANOOKA MINERAL FIELDS.

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

At Northampton work has been in progress on the Baddera mine, and apart from that a little prospecting. 185½ tons of lead ore, valued at £1,777, were reported.

NORTH COOLGARDIE GOLDFIELD.

The output of gold for the year was 72,748 fine ounces, and for the preceding year 79,399, a decrease of 6,651 fine ounces, almost entirely owing to the falling-off in the output from the Ularring district.

In the Menzies district the various mines, which are practically all locally owned, are opening up satisfactorily. The Maranora mine at Kensington has had a very successful year. At Yunndaga, Comet Vale, and Mt. Ida steady and satisfactory progress has been made. In the Ularring centre matters have been very dull with the single exception of the "Resurgam" mine, from which good crushings have been obtained, and which is now looking very well. At Mulline the "Lady Gladys" mine has been crushing regularly, and vigorous prospecting has been carried out on other properties. At Mulwarrie mining is almost at a standstill. At Davyhurst nothing of note has transpired.

In the Niagara district there is little change, but during the year a good development was reported from the Lubra Queen lease, which promises well. In the Yerilla district good developments have been reported from Linden and Edjudina, but Yarri, Pingin, and Yundamindera are quiet. The outlook for this field is promising.

NORTH-EAST COOLGARDIE GOLDFIELD.

The gold output for the year was 23,027 fine ounces, and for the preceding year 25,462 fine ounces, a decrease of 2,435 fine ounces. The various centres of this field remain much as in the previous year, and nothing has transpired to justify any prediction of an improvement in the near future.

PEAK HILL GOLDFIELD.

The output of gold for the year was 4,327 fine ounces, and for the preceding year 7,919 fine ounces, a decrease of 3,592 fine ounces. This decrease is attributable to the closing down of the Peak Hill Goldfield Ltd. mine about the middle of the year, when exemption from labour covenants was obtained and tributes let over portion of the property. A few men were kept on and employed prospecting the mine. Outside this mine only a few shows are being worked.

During the year a good deal of attention was devoted to a locality near Mount Egerton situated about 90 miles in a north-west direction from Peak Hill. Some gold was reported as having been obtained there, and the erection of a State battery is urged. This is under consideration, and something in that direction will probably be done shortly. The prospects of this field are hopeful.

PHILLIPS RIVER GOLDFIELD.

The output of gold for the year was 8,195 fine ounces, and for the preceding year 6,714 fine ounces, an increase of 1,481 fine ounces. The production of copper was 25,871.65 tons valued at £96,745, and for the preceding year 7,330.75 tons, valued at £29,815, an increase of 18,540.95 tons, valued at £66,930. During the year a public crushing plant, consisting of a 10-head mill, was erected by the Ravensthorpe Battery Company, assisted by the Government. It is hoped and anticipated that this plant will be of considerable assistance to prospectors. A good deal of development work has been done on the various properties throughout the field with encouraging results, but the absence of a decent rainfall has somewhat retarded operations, the year having been a particularly dry one. The outlook for the field is very promising.

PILBARA GOLDFIELD.

The output of gold for the year was 5,370 fine ounces, and for the preceding year 6,764 fine ounces, a decrease of 1,394 fine ounces. Black Tin to the extent of 153.50 tons valued at £12,899 was raised, and in the preceding year 293.96 tons, valued at £22,431, a decrease of 140.46 tons valued at £9,532. The year has been a quiet one for the reason that mining operations on an extensive scale could not be undertaken until the completion of the railway. The State plant at Marble Bar has crushed a large quantity of stone since its erection and promises to be kept fully occupied for some time, thus justifying its establishment.

The copper deposit referred to in last year's report is being opened up, and a parcel of rich ore has been sent away for treatment. It is anticipated that the advent of the railway, which will tend to lessen mining costs, will render the exploitation of the baser metals profitable. In the past only the richest deposits could be worked.

In the Nullagine district mining has been very depressed, principally owing to the great shortage of water, very little rain having fallen in the past two years. As a consequence of this the battery at Eastern Creek has had to be closed down. Good crushings were reported from the "Ard Patrick," which is now down over 300 feet, the "Galtee More," and the "Murdella."

Tin mining has languished during the year, and this is difficult to account for in view of the improvement in the price of the metal. The contributing centres were Moolyella, Cooglegong, and Wodgina.

Asbestos.—None of this mineral was raised during the year, but it is expected that the deposits at Tambourah will be again worked shortly.

Mining for tantalite has also been at a standstill. In the tantalite leases at Wodgina a discovery of uranium oxide was made, but so far only small quantities have been located. The pastoralists in this field have had an exceedingly good year and are very confident of the future. The outlook for the field is hopeful.

WEST PILBARA GOLDFIELD.

The output of gold for the year was 1,484 fine ounces, and for the preceding year 1,540 fine ounces, a decrease of 56 fine ounces.

Copper ore to the extent of 8,479.80 tons valued at £64,861 was raised, and in the preceding year 7,135.50 tons valued at £62,447, an increase of 1,344.30 tons valued at £2,414. Mining in this field gives promise of improvement, and one or two mines in the vicinity of Roebourne are opening up well. The Whim Well copper mine is also a steady producer, and employs a good number of miners. The outlook for the field is good.

WEST KIMBERLEY MAGISTERIAL DISTRICT.

The alluvial find in the vicinity of Obagooma, referred to in the last Annual Report, did not result in anything of a payable nature being discovered. Apart from Reward Lease No. 146H very little work has been done, but on this property excellent tin and wolfram have been raised, but consequent on the meagre facilities for transport and the heavy expense attaching thereto, none was shipped from Derby during the year. The Government is, however, assisting the holder in shipping a trial shipment during the coming year.

On the iron leases at Yampi no work was done, but it is probable that a move in that direction will be made shortly.

YALGOO GOLDFIELD.

The output of gold for the year was 1,333 fine ounces, and for the preceding year 1,805 fine ounces, a decrease of 472 fine ounces. In the immediate vicinity of Yalgoo several shows are being developed with encouraging results, but in most of the outlying centres mining is very dull. Very little attention is paid to this field by prospectors, notwithstanding the fact that it seems to abound in auriferous country.

There is nothing to indicate an improvement in the immediate future.

YILGARN GOLDFIELD.

The gold output for the year was 27,858 fine ounces, and for the preceding year 20,909 fine ounces, an increase of 6,949 fine ounces. The year under review witnessed a remarkable revival of mining on this field, the primary cause being the rich discoveries of gold in the now famous "Bullfinch" mine. An enormous area of ground was pegged and prospecting vigorously pursued with the result that in many centres there have been discoveries which promise to develop into payable prospositions. Many companies with good working capital have secured leases, and it is hoped that their efforts will have some tangible results. It is considered that the future prosperity of this field will largely depend upon the working, on an extensive scale, of the large bodies of low-grade ore which are known to exist. It is a hopeful augury for the mining industry of this State that this field, which has practically been neglected for about 16 years, should have come into such prominence on account of these discoveries. It is a proof of the assertion that most of the goldfields are for the greater part unprospected. The outlook for this field is most promising.

TABLE 29.

Value of Mining Machinery and Number of Stamps and other Mills erected on the 31st December, 1910, compared with the previous Year.

Goldfield.	District.	Value of Mining Machinery.		Batteries. Number of Stamps.		Mills.																			
						1909.										1910.									
		1909.	1910.	1909.	1910.	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		5,000	**5,000**	45	**45**	...	...	...	...	1	...	...	...	...	...	...	...	...	...	**1**	...	...	...	...	...
2. Pilbara	Marble Bar	16,000	**17,227**	65	**70**	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Nullagine	8,009	**7,298**	40	**40**	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3. West Pilbara		2,650	**2,400**	30	**20**	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
4. Ashburton		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5. Gascoyne		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6. Peak Hill		74,050	**73,870**	50	**50**	1	...	...	...	...	...	...	...	2	2	**1**	...	...	...	...	...	...	...	**2**	**2**
7. East Murchison	Lawlers	183,561	**120,423**	228	**153**	1	...	...	...	...	...	...	...	7	1	...	...	...	...	...	...	...	...	**3**	**2**
	Wiluna	*	**84,694**	*	**70**	*	*	*	*	*	*	*	*	*	*	**1**	...	...	...	...	...	...	...	...	...
	Black Range	99,497	**101,198**	115	**125**	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	**2**	...
8. Murchison	Cue	49,131	**41,994**	128	**118**	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Nannine	94,711	**91,528**	189	**250**	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Day Dawn	215,500	**208,585**	60	**65**	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Mt. Magnet	36,963	**35,290**	85	**88**	...	2	...	...	1	...	2	...	...	1	...	2	...	...	1	...	2	...	...	1
9. Yalgoo		25,444	**25,745**	105	**100**	4	...	...	...	...	...	2	...	...	...	4	...	...	...	...	...	2	...	...	...
10. Mt. Margaret	Mt. Morgans	181,850	**191,629**	122	**142**	...	...	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	**4**	...
	Mt. Malcolm	174,538	**164,145**	225	**240**	...	...	...	...	...	...	1	...	8	1	...	...	...	...	...	...	1	...	**3**	...
	Mt. Margaret	145,399	**141,881**	173	**173**	...	5	...	...	...	...	...	...	...	1	5	...	...	...	...	...	...	...	...	1
11. North Coolgardie	Menzies	64,883	**73,538**	151	**145**	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	**4**	...
	Ularring	36,256	**34,722**	85	**85**	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Niagara	76,158	**74,904**	112	**117**	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
	Yerilla	25,558	**24,411**	67	**62**	1	...	...	...	1	...	1	...	...	...	**1**	...	...	...	...	...	...	...	...	...
12. Broad Arrow		36,350	**35,156**	123	**123**	2	...	...	...	1	...	...	...	...	...	**1**	...	...	...	...	...	...	...	**2**	...
13. North-East Coolgardie	Kanowna	49,638	**46,392**	158	**148**	1		...	...	...	...	...	...	1	1	**1**	...	...	...	...	...	...	...	...	**2**
	Kurnalpi	225	**180**	5	**5**	1	...	...	...	...	...	...	...	...	1	**1**	...	...	...	...	...	...	...	...	**1**
14. East Coolgardie	East Coolgardie	1,501,770	**1,576,382**	727	**655**	1	1	40	12	8	...	...	23	13	3	**1**	**10**	**39**	**12**	**8**	...	...	**29**	**23**	**15**
	Bulong	4,850	**2,730**	30	**10**	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15. Coolgardie	Coolgardie	135,862	**112,916**	284	**304**	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	**2**	...
	Kunanalling	15,980	**19,850**	60	**85**	...	...	...	...	...	...	...	...	2	...	...	**2**	...	...	...	...	...	...	**1**	...
16. Yilgarn		55,176	**35,130**	140	**130**	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	**2**	...
17. Dundas		61,725	**73,117**	120	**135**	1	...	...	...	...	1	...	...	...	...	**1**	...	...	...	...	...	...	...	**1**	**2**
18. Phillips River		28,462	**51,555**	30	**46**	2	...	...	...	...	...	...	...	...	...	**1**	...	...	...	...	...	...	...	**1**	**1**
State generally		58,000	**58,000**	...	...	...	...	1	...	...	...	...	...	1	...	...	...	**1**	...	...	...	...	...	**1**	...
Total Gold-extracting Machinery		3,457,196	**3,531,890**	3,752	**3,799**	16	8	41	12	12	1	6	23	40	11	**18**	**14**	**40**	**12**	**10**	...	**5**	**29**	**51**	**27**
Total Machinery, other than Gold-extracting		190,842	**190,175**	15	**10**	...	...	...	...	4	...	...	...	3	4	...	...	...	...	**3**	...	...	...	**8**	**2**
TOTAL MINING MACHINERY		3,648,038	**3,722,065**	3,767	**3,809**	16	8	41	12	16	1	6	23	43	15	**18**	**14**	**40**	**12**	**13**	...	**5**	**29**	**59**	**29**

* Included in Lawlers District.

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 the following amendments to Regulations were gazetted:—

Under the Mining Act, 1904: Regulation No. 12 was repealed and a new one sustituted; No. 29 was added to, and No. 97 amended.

Under the Mines Regulation Act, 1906: Regulation 4 was amended by the addition of General Rules Nos. 8A and 40 and the repeal of Rule 39 and substitution of a new one in its place; the whole of Part 12 of the Regulations was repealed and fresh ones substituted.

PART IX.—INSPECTION OF MACHINERY.

The Chief Inspector of Machinery reports that operations under the Inspection of Machinery Act have been retarded during the past 12 months owing to shortness of staff, which has rendered it impossible to bring the work up to date, and consequently prevented any large increase in revenue.

The number of inspections shows a slight increase over the previous year, but this has only been accomplished by the staff working considerable overtime.

At the end of the year the number of boilers on the registers was 3,478, of which 58 were permanently condemned and 17 converted into tanks, etc., leaving a total of 3,403 as against 3,402 in the preceding year. 1,882 thorough inspections were carried out and 1,757 certificates granted, as compared with 1,869 and 1,781 respectively for 1909. During the year 16 boilers were constructed in the State. The total number of machinery plants is 2,940, of which 1,725 were inspected, and 1,632 certificates issued. In the previous year 1,633 inspections were made and 1,515 certificates issued.

Two hundred and forty-one candidates for Engine-drivers' Certificates were examined, and certificates as shown hereunder were granted:—

1st Competency	17
2nd Competency	38
3rd Competency	46
Loco and Traction Competency ..	13
Traction Competency	1
Marine Competency	8
Interim Certificates	20
Copies of lost and destroyed Certificates	13
Total	156

In carrying out inspection and other work a total distance of 38,709 miles was travelled.

PART X.—SCHOOL OF MINES.

Steady progress has been made at the School during the year, the seventh of its existence.

The attendance at classes has been well maintained, the greatest increase being in the class for engineering subjects. During the year special attention has been devoted to making the Engineering Courses complete. With this object in view a mechanical engineering laboratory has been erected and further equipment obtained. An extension to the workshops has been authorised, and it is expected this will be ready for occupation at the beginning of the 1911 School year. The electrical engineering workshops are now well equipped and afford scope for a thoroughly practical course of instruction. The School was established in the first place to give instruction to those engaged in mining occupations, and its laboratories have been equipped and classes arranged, so as to give a thorough technical and practical training, enabling students to qualify to hold responsible positions connected with the industry; but it now further offers facilities for general education, more particularly in elementary science, which might well be taken advantage of by youths who do not intend to enter upon mining pursuits.

Preparatory classes have recently been established, which are very suitable for boys of fourteen years and upwards, who have just left school, and afford an introduction to Science which will be of great value to them whatever may be their future occupations.

The scheme of Scholarships granted by the Departments has been remodelled so as to make all tenable at the School. These consist of one Junior Scholarship of £40, tenable for one year; one Entrance Scholarship of £60, tenable for three years; and one Senior Scholarship of £75, tenable for two years: all with remission of class fees, to be offered for competition each year. There are in addition six Bursaries of £10 each. The School has been fortunate in securing valuable gifts of prizes and Scholarships from those interested in its work. The Chamber of Mines gives several Scholarships, and Mr. Neil McNeil has donated one, which will probably be available for competition during the coming year. The Editor of the *Australian Mining Standard* grants two prizes each year to the senior scholars, and the Mechanics' Institute gives free membership to three of the senior students. Messrs. Bewick, Moreing & Co. grant the valuable concession of including the School in the list of institutions from which senior scholars will be selected and provided with employment.

The system of free assays for prospectors has been continued and much valuable information has been given them concerning the samples brought in for examination. A total of 407 assays and determinations was made.

CONCLUSION.

In dealing with the operations of the various Subdepartments I have only briefly commented on the principal items. Full and detailed information will be found in the reports of the various officers controlling, published as Divisions 2 to 8 of this Report.

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

H. S. KING,
Under Secretary for Mines.

Department of Mines,
Perth, 31st March, 1911.

DIVISION II.

REPORT OF THE STATE MINING ENGINEER FOR THE YEAR 1910.

The Secretary for Mines, Perth, W.A.

Office of the State Mining Engineer,
Mines Department, Perth, 30th March, 1911.

Sir,

For the Hon. the Minister for Mines' information I have the honour to submit the following report on the work of this office for the year 1910:—

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

During 1910 there have been no changes in the stations or personnel of the Inspectors of Mines.

Inspectors' Reports.—The Inspectors of Mines have sent in their Annual Reports, giving a brief resumé of the work done in their respective districts for the year 1910.

CENTRAL GOLDFIELDS.

The report of the Inspector of Mines, Mr. F. J. Lander, is dated 2nd January, 1911, and says:—

YALOGINDA.

"*Karangahaki.*—The underground workings of this mine have been suspended for some time. As a matter of fact, the mine was practically exhausted until another 100 feet had been sunk. The last 100 feet has just been completed, making the shaft 300 feet deep, and the work of opening out has been in hand a couple of weeks. There is nothing yet to report on the work.

"*Romsey.*—This lease consists of 18 acres and is held by Messrs. O'Brien, Gayher, and McKay. A shaft is sunk vertical for 16 feet, and then goes on the underlay for 70 feet. The formation is over 40 feet wide. It is running north and south and underlying east only a few degrees. The formation is intersected every few yards with quartz leaders running east and west. All the leaders carry good gold. They vary in width from 1 inch to 2 feet. 400 tons have been crushed from this property for 400ozs. of gold. This is the most promising property in the Yaloginda District.

"*Rock Lea.*—This is a 15-acre lease. Since I last visited the mine 50 feet of driving have been done at the 160-feet level. A new shaft, 6 by 3 feet in the clear, has been sunk 160 feet, and been connected with the underground workings. It is close timbered all the way. A ten-head battery has been erected on the mine; the stamps are each 11cwt. The battery is driven by a Crossley gas producer engine of 41 horse-power. The winding is being done by a friction-gear winch, driven by the gas engine. This mine has produced over 500 tons for 500ozs. over the plates. The sands average 5½dwts. to the ton. The reef averages 1 foot in width, and is known as a kidney reef. The trend of the reef is north and south and dipping east at an angle of 25 degrees.

"*The Kelpie.*—The principal shaft on this property is 46 feet in depth. The reef runs north and south, and is dipping west 45 degrees. The shaft is an underlay. A level was driven at 46 feet for 54 feet south and 20 feet north, and was stoped to the surface. The reef is 12 inches wide and has bulked 15dwts. per ton. A new main shaft is started 60 feet south of the underlay shaft. It is down 26 feet.

"*Black Jack.*—Several small shafts have been sunk on this property of 18 acres to try and pick up a continuation of the rich shoot which was found early last year. A new main vertical shaft has been sunk 100 feet deep, and a level driven north and south for 80 feet. This level is connected by a winze with the 50-feet level. A drive was put in at the 50-feet level for 200 feet on a formation 6 feet wide. This formation runs right through the property, but it is not payable. There are three other formations running through this property, which have not been prospected.

"*Black Jack South.*—There are several shafts sunk on this property, and several rich patches of gold have been found, but nothing consistent.

"*Maranui.*—This is an 18-acre lease. There are two shafts sunk to water level on the underlay. A drive north at this level from the No. 1 shaft was put in 48 feet and the same distance to the No. 2 shaft south. A drive from the No. 2 shaft South was put in 62 feet and the reef stoped to the surface. The reef averages 18 inches wide, and is worth 2ozs. 15dwts. per ton. The gold is valued at £4 0s. 10d. per ounce. On the hanging wall is a formation 2 feet wide worth 12dwts. per ton.

"*Yaloginda Consols.*—This is a 24-acre lease, and is held by a Perth company in 40,000 shares. A main shaft, 7 by 3 feet, has been sunk 130 feet and opened out at the 126-feet level, where a cross-cut was put in 37 feet. At 25 feet from the shaft a formation, 18 inches wide, was cut, worth 8dwts. per ton. A drive was put in 40 feet north on this formation and 6 feet south. The drive was too hot to proceed any further. At the time I visited the mine a ventilation shaft was being sunk. It was then about 90 feet deep. At 15 feet from the main shaft the No. 2 reef was cut. It was 8 inches wide, and said to be worth 1oz. per ton. A drive was put in on the reef for 32 feet. After the drive had gone 10 feet the stone cut out. A drive was put in south 15 feet. The stone cut out here also. At this same level a cross-cut was put out east 42 feet and an ironstone lode cut 4½ feet wide. A drive was

put in south 15 feet, and the ore was found to be worth 5dwts. 9grs. per ton.

Nannine.

"The Nannine Mine.—At the present time 12 men are working underground in this mine. They are all working on the Mt. Hall reef. Three men are working in the No. 1 level and nine in the No. 2 level. The reef is maintaining its usual width and values.

"The Klondike.—This lease is held by a local syndicate. It is situated ½-mile north-east of the Nannine townsite. There is no well-defined reef running through this property. It is a net-work of leaders, varying in width from one inch to a foot. Traces of gold only are found in the leaders until they come in contact with the ironstone bars; there the stone is very rich. The great drawback here is the shallow water-level, only 28 feet.

Stake Well.

"Koh-i-nor South.—About 23 men are employed on this lease, opening up the lode known as the "Sand Shaft" lode. Four men are stoping north from the 90-feet level to the surface. The ore body is 48 inches wide. Eight men are sinking and rising to connect with the crosscut, extending from the main shaft 130 feet south of the lode worked by the company. Some development is being done on the lode known as the "Whip Shaft" lode. Tributers have recently acquired the *Koh-i-nor* lease. Four men are employed here developing the lode with good results. Since the Koh-i-nor was taken over 15 feet have been sunk in an old shaft and connected with the 50-feet level. In driving south at this level a new shoot of ore has been struck, averaging from 72 to 96 feet, carrying fair values for the last 10 feet of driving.

Peak Hill.

"The Peak Hill Mine.—Very little work has been done by this company. There are four men employed prospecting for the company, two at the 300-feet level and two at the 40-feet level. There are 16 tributers working in the upper levels of the mine and eight men employed above ground.

The district is very quiet generally.

There are a few men prospecting at Mount Pleasant and a few prospecting at the Horseshoe.

Tuckanarra.

"Nemesis.—The only thing to report in connection with this mine is that the shoot of ore at the bottom of the main shaft has petered out. The No. 2 shoot was also lost for a time, but was picked up further east. Grave doubts, however, exist whether the No. 1 shoot will be picked up again. The new plant is working well.

Quinn's.

"The *Phoenix* and *Phoenix Extended* and the *Commonwealth* are all under a working option to Mr. Sydney Weston, for an English company.

The Island, Lake Austin.

"The Eureka.—This property of 12 acres is held by Messrs. Bartlow and Morris. These are the only men working on the lease. The last crushing of 10 tons was put through at the Lennonville Battery for 71ozs. of gold. 29ozs. were dollied before the crushing was put through. A new shaft is now being sunk north-east of the old main shaft for a good block of stone, which is supposed to exist there.

Moyagee Hill.

"Kuranui.—This is a lease of 38 acres, and is held by Messrs. Davis, Tabsley, and Glenny. When I visited the mine there were two shafts sunk on the same line of lode. One was 45 feet and the other 50 feet deep. The formation is 7 feet wide, and composed of quartz, iron, jasper, and kaolin. There are two distinct lodes running parallel on this property, and gold has been found in both of them for a length of about 38 chains. This is a new discovery of great promise. I saw several samples panned off while I was there, and I should conclude from observation that portions of the lode from where the samples were taken were worth about 10dwts. per ton. This property is situated about one mile south of the old Louise Gold Mine.

Wanderie Country.

"The Comet.—This property of 18 acres is held by Messrs. McLean and Reid. There are four shafts sunk on this lease, two are 79 feet to water level, and one is 35 feet deep and the other is 40 feet deep. About 100 tons of ore have been taken from this lease. The reef is very small, but is worth 3 ozs. per ton. There are 40 tons of stone at grass, to obtain which 400 feet of ground have been stoped.

"The Moonlight.—This is a 12-acre lease held by Miller and Kochler. There are three shafts sunk on the property; one is 103 feet deep; another, 66 feet, is still being sunk, and the other is 60 feet deep. 168 feet of driving have been done in these shafts, and 84¾ tons of stone have been crushed for 490ozs. 11dwts. of gold, valued at £4 0s. 7d. per oz. The value of the gold left in the sands was £2 15s. per ton.

Lennonville.

"Galteemore.—The Galteemore has been worked by tributers for some time past. The best of the ore above water level has been worked out. There is a great formation of low-grade ore here, which should in the future be a great asset to Lennonville.

"The Empress.—This is a lease of six acres, and is held by Messrs. Gross and Atkinson. There is a 5-head battery here, which was running at the time I was at the mine on ore taken from the Galteemore. This battery crushes on an average 22 tons in 24 hours. The last three months the value of the ore put through has averaged 4dwts. per ton, and yet the owners state that it is paying very well. The battery is driven by a Hornsby oil-engine of 12½ horse-power. The cost of driving the battery, pumping with a 6-inch pump from the depth of 180 feet, is 1s. per day per horse-power.

"Wheel of Fortune.—Mr. Males, the owner of this lease, has erected a 3-head battery since my last visit. The battery is worked by a Blackstone 10 horse-power oil-engine. The stone now going through was taken

from the Wheel of Fortune North, and 93 tons gave a return of 37ozs. 6dwts. and 6grs.

MOUNT MAGNET.

"*The St. George.*—Work is being carried on in this mine in the following order:—In the intermediate, off the No. 5 Winze, six men are working in a stope 12 feet wide; in an intermediate, off the No. 9 Winze, six men are working in a stope 14 feet wide; in the No. 6 stope, above the 100-feet level, there are four men working. The stope is 20 feet wide. In the 190-feet level the South drive is being pushed ahead. Three men are working there. In the North stope, above the 190-feet level, six men are working. The stope is working out at 20 feet wide. The main shaft is now being sunk with three shifts of three men each shift. On the north end of the lease an opencut is being worked by four men. From my point of view, the mine is looking better now than it has done for some time.

"*The Alicia* (the old Mayflower).—This is a combination of two leases of 24 acres each. It is held by Messrs. Black and Kingsley. A shaft, 60 feet deep, has been sunk, and about 12 feet of a crosscut driven. The shaft has been sunk in the formation, and the crosscut also, but no wall has been met with. The borings from every hole in the shaft have been tested by wet and dry assay, and the average value up to the present time, is 10dwts. per ton. This is quite a new thing in this district, and the prospects are most hopeful.

"*The Morning Star.*—The 400-feet level in this mine is where the greatest amount of work is being done. A winze is being sunk below this level, and the size of the reef is not known. The values are payable. The mine is looking better now than at my last visit.

BOOGARDIE.

"*Sirdar.*—Work done at the water level on this mine has revealed ore, 5 feet wide, worth 35dwts. per ton. Another 5 feet is valued at 16dwts. per ton. In the north-east shaft, at the 80-feet level, there are 250 tons of low-grade ore broken ready for raising. During the seven months previous to my visit 650 tons of ore were crushed at the State Battery for 6dwts. over the plates and 5dwts. in the sands.

"*The Carbine.*—This lease is held by Mr. John Perriman. It consists of 48 acres. There are seven shafts sunk on this property, the deepest of which is 125 feet. This deep shaft was sunk in a shoot of gold, the length of which was 16 feet, and width 7 feet. The shoot of gold continued to the bottom of the shaft, and is still going down under water. All the ore in this shoot went over 2ozs. over the plates. A lot of good prospecting has been done on this property. Costeans and shallow shafts are all over the lease.

"*The Neptune.*—Only one man is working here, and he is prospecting on the surface.

"*The Coronet.*—This is held by Messrs. Milne and Richards. It is an 18-acre lease, with a main shaft 100 feet deep. 870 tons of ore have been taken from this mine for an average of 14dwts. per ton. The Black Hill Gold Mining Co. have a working option on this property, and are employing four men at the present time.

"*The Havelock.*—At the present time sinking and driving are carried on in the north-eastern portion of the lease. The reef is small, hard, and poor and very discouraging.

"*P.A. No.* 314, *South Britannia.*—This area is held by Messrs. O'Dea, Lowey, and Breech. There are three distinct reefs on this property carrying free gold. A shaft has been sunk on the centre reef to water level, and a crosscut put in 6 feet to cut the reef. The size and value of the reef are not known.

"*The Britannia.*—This mine has just started after being idle for several months.

GULLEWA.

"The *Gullewa* Mine has just started after a very long exemption. The machinery was all being overhauled and a new boiler put in.

YUIN.

"At the *Yuin Reef* Mine four men have just started to work the main shaft after many months of exemption.

CUE.

"*Hidden Treasure.*—This is a property of 12 acres. held by Mr. J. Oates. There are two working shafts. No. 1 main shaft is 260 feet deep, and is 8 feet by 4½ feet in the clear. The No. 2 prospecting shaft is 190 feet deep, but a connection between the two shafts is now completed by means of a winze sunk from the bottom of the 190-feet level, 60 feet east of the prospecting shaft. The average size of the reef is about 4 feet, and the average value of the ore is about £6 per ton. 503 tons of ore have been crushed this year for 771ozs. 9dwts. The gold is valued at £3 16s. per oz. Mr. Oates has taken out 914½ tons for 1,208ozs. 18dwts. during the three years he has worked the mine. At the present time there are 75 tons of 3oz. ore broken ready to be taken to the surface.

"*Duke of York.*—This lease of 24 acres is held by Spencer Brothers and party. Since July of this year the present owners have crushed 139 tons from the mine for 118ozs. 9dwts. They have also sunk a shaft 50 feet and driven on the reef (which is 30 inches wide) for 48 feet. They estimate that, at the present time they have 200 tons of ore in sight, worth about an ounce per ton. This mine needs about £3,000 to be spent on machinery and development work to make it a very valuable property.

"*Lord Nolan.*—Messrs. Chesson and Heydon are the owners of this property. It consists of 36 acres. There are three working shafts on it. No. 1 is 117 feet deep. This shaft is connected with the No. 2 shaft on the north end. The No. 2 shaft is 134 feet deep. It is from this shaft that most of the ore has been drawn since the present owners took it over. The No. 3 shaft is sunk 146 feet to water-level. A crosscut has just been started east, on the top of the water, to cut the reef. From this, the deepest shaft, Messrs. Chesson and Heydon have taken out 534 tons of ore for 467½ozs. over the plates. The reef averages about 2½ feet in width. It is lying very flat. This mine is looking well and is employing 20 men. The people of Cue are watching very anxiously the development of this mine.

"*The Princess Royal.*—This is a lease of 36 acres. The main shaft is 310 feet vertical and 164 feet on the underlay. 1,068 tons of ore have been mined this year for a return of 535ozs. 6dwts. of gold. It is intended to sink the underlay shaft a further distance of 36 feet, and then open out north and

south. The reef is 4 feet wide and underlying west at an angle of 45 degrees. A new winding engine has been installed this year, and a slow speed Chilian mill has been erected, which is capable of treating 40 tons of ore in 24 hours, and it is also said that it can extract 96 per cent. of gold from free milling ore.

"There is nothing further to report on the mines in Cue. Mr. Lloyd's group of mines have been under exemption for some months.

"*The Starlight.*—The following work has been done on this lease during the year under review:—230 feet of sinking, 130 feet of driving, and 60 feet of cross-cutting. 264 tons of ore have been taken from this mine for a return of 153ozs. of gold. The average size of the reef is 12 inches.

INSPECTION OF MINES.

"With one exception, viz., the Ingliston Consols Mine, at Meekatharra, the mines under my supervision, have during the year been worked in accordance with the provisions of the Mines Regulation Act, and only in the exception referred to did I find any contravention of the said provisions.

"At the Ingliston Consols Mine a cage was being removed from the mouth of the shaft in a very careless and unworkmanlike manner when a piece of timber used to support the cage fell down the shaft and struck a miner across the wrist, resulting in his forearm having to be amputated.

"The manager was prosecuted and fined £5 and costs.

"I have to mention that the managers of the various mines in my district have, with their staffs, rendered me all the assistance possible in carrying out my duties."

EAST MURCHISON GOLDFIELD.

The Inspector of Mines, Mr. H. Colbran, reports on 23rd February, 1911:—

"The work for the year consisted of 221 mine inspections, 3,856 miles of travelling, four reports on applications for Government assistance, one mining inquiry, one attendance at inquest, one prosecution for employing men on Sundays contrary to the provisions of 'The Mines Regulation Act of 1906,' one special investigation into the sanitation and ventilation of a mine, entailing tests of temperatures, velocity of air-currents and quantity of CO_2 present, and the ultimate laying out of a system of ventilation throughout the mine, and general office correspondence.

MINING PROGRESS.

LAWLERS.

"Mining at this centre has remained much as during the past few years until last month, when the Vivien mine, having depleted practically all its payable oxidised ore and proved the sulphide zone at a depth of about 350 feet to be unpayable, discontinued operations.

"*The Waroonga G.M.*, which still profitably treats from 6 to 7 thousand tons of from 5 to 5½dwt. ore monthly, is looking very well, and from the bottom level, which is 564 feet vertically below the surface, a winze has been sunk a depth of 107 feet on highly payable ore, thus proving the continuance of values to a vertical depth below the surface of 671 feet. This winze is to be cut to a uniform grade, and then used as an internal shaft, through which, for the time being, all ore broken below the 564-feet level will be hauled. When it is remembered that, in the upper levels, payable ore has been wrought from the Waroonga lode for a length of some 1,500 feet, and for widths varying from 4 to 100 feet, the continuance of values to the depth in this winze is particularly encouraging.

"On the *Vivien Gem* mine, situate about a mile north of the Vivien G.M., a 5-head mill is about to be erected.

"*The Sunrise* has now an inclined shaft down 350 feet on the reef, and from that depth about 100 feet of driving have been done, showing about 8 feet of reef of good value. The test crushing of 160 tons from this mine yielded 114ozs. of gold.

"*The Dobra Scrica* has during the year installed a steam boiler and hauling winch, and systematically turns out parcels of ounce ore.

"*The Golden Swan* (on Cue's Patch) has been prospected during the year to a depth of 50 feet, whence from a small quartz reef, running north and south through kaolin country, several rich crushings have been taken, the last parcel of 61 tons having yielded 205ozs. of gold.

"Several newly found reefs, also, are at present being tried in this district, but to date not enough has been done on them to enable an opinion as to their value being offered.

SANDSTONE AND DISTRICT.

"Mining at this centre continues systematically, the three chief producers having had a fairly continuous run throughout the year.

"*The Oroya Black Range G.M.* has during the year treated 48,073 tons for a return of 25,558ozs. of gold.

"When I was last on the mine an underlay winze had been sunk on the reef for 140 feet below No. 5 level, proving the continuance of the reef to an inclined depth of 856 feet below the surface, at which point the reef was strong.

"*The Black Range Mining Company* were opening up their 8th level, and to the extent to which it was opened up on my last visit it was proving highly payable.

"This mine has during the year treated 29,301 tons of ore for a return of 21,527ozs. of gold.

"Many additions to the plant were being installed at date of my last visit, including grinding pans, by means of which it was anticipated the monthly tonnage would be raised to 3,000, a slimes plant for the economical treatment of accumulated and current slimes, a 20-drill air compressor to supply motive power for underground haulage and rock drill purposes, and producer gas engines for running the mill and treatment plants.

"*The Sandstone Development Company* have during the year treated 11,588 tons of ore for a return of 5,769ozs. of gold.

"On the *Black Range West G.M.* at date of my last visit (16th September, 1910) the shaft had been sunk to a depth of 384 feet, and from it, at a depth of 364 feet, a west crosscut has been put out 50 feet, at which point stringers of mineralised quartz were cut. These, it was thought, were in the ore-channel, which, further north, constitutes the Black Range Mining Company's property, and whose reef the Black Range West sought to work. Since my visit to this mine, I believe a winze has been started off this crosscut to go down on the reef.

"In the *Hancocks District* quite a number of smaller properties continue to be worked profitably.

"*The old Kohinoor* was at date of my last visit being worked by tributers, who were obtaining very gratifying results.

"*The Faughaballah,* which has regularly turned out parcels of highly payable ore, is sinking a winze below the 60-feet level, and contemplates putting down a new 6 x 4 feet shaft to cut the reef at a depth of 130 feet.

"*The Bull Oak,* the owners of which had very bad luck in losing their bottom crosscut to the reef and the bottom lift of their shaft due to running ground, is now, I believe, under option to a company, who will sink a new shaft to prove the size and grade of the reef at depth.

At *Maninga Marley,* on the Havilah mine, a new boiler has been installed, and the new shaft has been put down vertically to a depth of 395 feet, at which depth the reef, looking strong and well, has been intersected by a crosscut.

"This mine has during the year crushed 7,042 tons for a yield of 3,662ozs.

Youanmi.

"The big lode formation, discovered some 3½ years ago at this centre, is being rapidly opened up, and is to date proving highly satisfactory. Some seven or eight claims are being worked on the course of this lode, which runs north and south, and underlays to the west at an angle of depression of about 50 degrees.

On the *United lease* the lode has been opened up to a depth of 125 feet on the underlay, and payable ore has been taken out in places over a width of 30 feet. The last crushing (at date of my last visit) of 630 tons yielded 335ozs. from the plates, and left 9dwts. per ton in the tailings.

"From this claim 1,600 tons of ore have yielded 1,922ozs. of gold by amalgamation.

"South of the *United* and on the same lode Jardine, McCulloch, and party have sunk to a depth of 70ft., and driven about 100 feet on the lode at this depth. In this claim also, the lode is payable in places over a width of 30 feet.

"On the claim originally known as 'Miller's,' now held by Messrs. Bewick, Moreing, & Co., extensive development work is being done. The lode has been sunk upon to a vertical depth of 170 feet, where over 500 feet of driving has been done.

"At date of my last visit on the water level (90 feet inclinedly below surface) about 1,100 feet of driving had been done, in addition to a large amount of cross-cutting, which latter had proved the pay ore channel to vary in width from 2 to 15 feet.

"Water is very heavy (exceeding 150,000 gallons per 24 hours), but fortunately suitable for boiler and drinking purposes.

"On this claim also a vertical shaft is being sunk to prove the lode at about 300 feet in depth, and is to date down nearly that depth.

"Several other parties are also working, some on this same lode and others on apparently parallel lodes of the same nature, course, and underlay.

"At *Curran's Find* one or two very promising claims are still being worked, that being worked by Bellchambers just having crushed 31 tons for 49ozs., and the Red, White, and Blue North having recently cleaned up 12ozs. from a 31 tons parcel.

Birrigrin.

"Very little work is at present being done at this centre. At date of my last visit, the main work being done was on the Iona lease, a claim to the west of the Hawthorn Reward. On this claim a well-defined north and south reef, underlaying west in granite country and averaging about 3 feet in width, was being stoped. It had been opened up for some 200 feet in length, and sunk upon to a depth of about 60 feet, but had so far proved rather low grade.

"At *Montagu,* the Caledonian was being unwatered to the 100 feet level, preparatory to the reef at that depth being driven on.

"The *Montagu Boulder* was being worked down to an inclined depth of 170 feet, and the ten-stamps mill was being run to its full capacity.

Wiluna.

"The former chief producer of this centre, the Gwalia Consolidated Gold Mine, having struck refractory sulphide ore below the 100-feet level, ceased ore treatment about the end of July last.

"Then, for a time, underground work of the nature of sinking winzes into the sulphide zone, and driving in it at the 200-feet level, and putting down boreholes was carried on.

"The sinking of these winzes and driving at No. 2 level proved the continuity of values in depth and length, and boreholes below the No. 2 level proved the lode to a depth of some 560 feet, at which point it was 12 feet wide and worth some 11dwts. per ton. This prospecting work then ceased, since when only experimental work of a metallurgical character has been carried on, with a view to determining the best method of treating the ore from the sulphide zone.

"On the *Bulletin and Indicator* a 40 horse-power Hornsby gas engine has been installed, and runs the 5-head mill and Cornish lift.

"The main shaft is 240 feet deep and the bottom level (175 feet) was, on the occasion of my last inspection, being opened up.

"In this mine also sulphides are met with in places along the bottom level, coming up from below in the form of pinnacles.

"On the *Moonlight* stoping and cross-cutting had proved the lode to be payable over a width of 50 feet in places, and about 500 tons of ore were at grass.

"Some eight or nine other prospecting shows were also being worked when I last visited this centre (18th November, 1910).

Kathleen Valley.

"At this centre parcels of varying grade ore have from time to time been treated from the Yellow Aster mine, but towards the end of the year, the pay ore having become depleted, operations ceased.

Walton's Reward Rush.

"About mid-December rich gold was reported to have been found south of the old Walton's Reward claim, which is some 10 miles due east of Pine Springs. The reef discovered runs north-east and south-west, and to the shallow depth worked at present averages some 3½ feet in width.

"Since this reef was found 12 tons of it have been treated, and yielded 66ozs. 14dwts. of gold.

"Three parties are now working and intend crushing at Kathleen Valley, which they estimate can be reached in 20 miles.

NEW ENGLAND DISTRICT.

"On the Empire G.M. (formerly known as 'The Glen-Innis) a boiler, engine, and 5-head mill have been installed during the year.

"The main shaft was sunk to 100 feet, and a cross-cut put into the reef. About 450 tons of ore were broken, but yielded only about 5dwts. per ton by amalgamation.

"The mine owners are now, however, in receipt of a Government subsidy for public crushing, and the mill is therefore a boon to the prospectors of the district.

"About 11 miles north-west of the Empire a promising-looking reef was discovered by the Cameron Brothers, and was sunk on for about 20 feet. A parcel of 26 tons from this reef yielded 58ozs. of gold over the plates, but the reef was found to split up as sinking progressed, and eventually the claim was abandoned.

"About a mile beyond Cameron's claim, is Harris' Reward, upon which a lot of very good work has been done, but the reef, which is small and lies between very hard country rock, is a little too low-grade for prospectors.

"On *Ives' Reward* claim several reefs can be seen out-cropping in gneiss country, and at date of my last visit (November) on one of these an underlay shaft was down about 40 feet, exposing about eight feet of quartz and schist, said to be worth 18dwts. per ton.

"Several other reefs in this vicinity have been opened up to a lesser extent.

"At *Bronzewing* at date of my last visit (24th November, 1910) the only work being done was on the Malbie claim, where a nice body of quartz was being stoped over the 50-feet level. From this a parcel of 55 tons yielded 23ozs. of gold.

SIR SAMUEL.

"During the year a State mill, run by a suction gas engine, has been erected at this centre, and immediately following upon its inception many old shows recommenced operations. Unfortunately, however, this renewed activity did not last long, as, after a first crushing, several claims were abandoned as unpayable, and in the majority of the remaining claims complex sulphides were met at depths varying from 40 to 50 feet, and thus when the oxidised ore became depleted work ceased.

DARLOT.

"At this centre mining is now very dull. The Zangbar and Monte Christo are under exemption.

"The *Waikato* has been unwatered to the 80-feet level, and a considerable amount of underhand stoping done from that level. The last crushing of 102½ tons from this stoping yielded 64½ozs. of gold.

"From the *British King* 48 tons yielded 21½ozs., and from the *King of the Hills* 72½ tons yielded 33½ozs. of gold.

"The *Ballangarry* has had a good deal of work done on it during the year, but the grade of ore for some time has been very low.

WILSON'S PATCH.

"The *Great Western Mine* at this centre has again re-commenced operations on a small scale, and from it, I believe, payable stone is now being raised.

MT. CLIFFORD.

"Several small prospecting shows are being worked in this locality. The reefs, or rather leaders, are, for the most part, patchy both in size and value.

"The old *Famous* is still being worked, and from it recently at a depth of about 40 feet 5cwt. of ore yielded 540ozs. of gold.

"Similarly the *Victory,* on which 80 feet of driving and 100 feet of sinking have been done on a leader in places only one inch thick, in hard, diorite country, has from 18½ tons yielded 1,856ozs. of gold.

ACCIDENTS.

"During the year there have been reported to me 23 accidents, causing injury to 23 persons.

"Of these accidents one was fatal, 14 serious, and eight minor.

"The fatal accident was particularly regrettable, owing to the fact that the injured man himself in order to send blunt drills straight up a shaft requested his mate to remove part of the penthouse above him. He then sent up the drills in a bucket, and remained standing vertically beneath the opening in the penthouse. Then, by some means not satisfactorily explained, a drill fell down the shaft, and, passing through the opening in the penthouse, hit the man on the head and fractured his skull.

"Of the 14 serious accidents, eight appear to have been purely accidental, five caused by carelessness on the part of the injured man, and one by carelessness on that of the management.

"Of the eight minor accidents, seven appear to have been purely accidental, and one to have been contributed to by the injured man's carelessness.

"Of the total 23 accidents, one was caused by explosives, eight by falls of ground, five occurred in shafts, six were caused miscellaneously underground, and the remaining three on the surface.

GENERAL REMARKS.

"During the year, the provisions of the Mines Regulation Act of 1906 have been well complied with throughout the district, and more system has been established for the regular inspections of working and examinations of ropes and appliances, and the consequent entries in the Record Book than obtained previously."

MT. MARGARET GOLDFIELD.

Mr. S. Cullingworth, Inspector of Mines, reports on 9th February, 1911:—

"The year has not been marked by any notable fresh discoveries or, with a few exceptions, by any remarkable development in the various mining centres on the above field. There appears to be a dearth of prospecting expeditions, those prospectors who are in the district mostly confining their work to taking out what crushings they can from previously abandoned mines.

"There is, I think, a lack of incentive to induce parties of men to go out and spend a large amount of time in prospecting, for unless they are fortunate in striking something remarkably rich their discoveries are not likely to be of much value to them, as prospecting 'shows' of only medium richness and size and problematical value do not at the present time sufficiently interest capitalists to invest in them.

"The prospector himself usually has not sufficient money to develop his property, so that any property discovered has to be sufficiently rich to pay from the start. On the other hand, most of the principal mines have been in active operation throughout the year, have employed their usual number of men, and in some cases the tonnage has been largely increased.

LEONORA.

"*Sons of Gwalia Mine,* at Leonora, continues to be the chief producer in the Mount Margaret district, with a monthly tonnage of 13,000 tons. The main incline shaft is now some 2,400 feet in depth, and the lower levels of the mine have opened up large bodies of, I understand, satisfactory values. A large amount of development work has been undertaken, and has resulted in considerably augmenting the ore reserves. Ore supplies have been drawn from the No. 2 level to bottom workings.

"*Sons of Gwalia South.*—Prospecting by the aid of a diamond drill has been largely undertaken within the last few months, and has resulted in locating fresh ore bodies which remain to be developed.

"The main shaft is now 600ft. in depth (vertically). The tonnage is 2,000 tons monthly.

"At the Gwalia Proprietary, late Tower Hill, a large amount of prospecting work has been done, chiefly at or near the surface, and has revealed several promising lenses of stone, which I understand are to be tested by trial crushings.

"Of the smaller and privately owned mines situated near Leonora, the Trump, the Casino, and the Gold Blocks have been energetically worked with, I believe, satisfactory results to their owners. On the Gold Blocks, from the main incline shaft at a vertical depth of about 200ft., good stone taken from a large and solid-looking ore body was being raised on the occasion of my last visit.

"The country northward of the above mines is quiet, the King of the Hills and other mines in that locality being most spasmodically worked.

"There has been a reported discovery of molybdenite in this locality, but as yet no work has been done to prove its extent. At the North Star, at Malcolm, a large amount of development work has been carried on chiefly from the No. 4 level, and with the object of locating and opening up the payable ore shoot in the level above. This has lately been struck, and is being driven upon with, I believe, very encouraging results so far.

"No. 3 level has been reached at Hills Proprietary, at Murrin, and is now being developed. During the year the 20-head mill has been kept employed, and a slimes plant has been installed and is now running smoothly.

"The W.A. Copper Company has re-opened the Anaconda copper mine, and regular shipments of sulphide ore are dispatched to the head works at Guildford; the monthly output being between 400 to 500 tons.

MOUNT MORGANS.

"*The Westralia Mt. Morgans mine,* after doing a certain amount of prospecting work from the 600-foot level, has now suspended operations.

"*The Transvaal* mine has been idle a great portion of the year, chiefly through litigation. Work has now been re-started, and fresh machinery, including another 10-head mill, with rock breakers and new shaft headgear, has been erected. A main incline shaft is being sunk, and it is expected this mine will be in active operation at an early date.

"Very little progress has been made at *Mt. Margaret,* although there are some ore bodies which should be well worth prospecting; indeed, small parcels of very rich copper and gold ore have been sent away from Mt. Morven.

"At *Laverton* a mine belonging to Messrs. Gardiner and party has been sold, and is, I understand, to be floated. The vein, so far as it has been worked, has been highly profitable to the previous owners, and contained high-grade ore. There is also a large and fairly well defined lode on the property.

"*The Lancefield.*—The main shaft has been deepened to below the No. 6 level, or about 840ft. on the underlay. The No. 6 level has been driven for about 460 feet. The lode maintains its size and, I am informed, carries satisfactory values. The monthly tonnage has been increased to about 9,000 tons. Throughout the mine development work has been pushed ahead during the year.

"*Ida H.*—A very satisfactory development has taken place in this mine. From the 900ft. level to approximately 1,100ft. a winze was sunk, and the latter level has been driven upon for about 120ft. The vein, which was about 18 inches wide at 900 feet, gradually widened out to from 4ft. to 5ft. I am informed the stone so opened up is of good value, indeed, gold can be seen very freely. This development is regarded by the management as being the most important yet seen in the mine. The 10-head mill has been kept continuously running.

"*Craggiemore.*—Development work has been carried on at Nos. 2 and 3 levels, and has resulted in the opening up of fresh stopes of, I am informed, satisfactory grade.

"*At Burtville.*—The owners of the Golden Bell North have sunk their shaft below 200ft and have, I understand, obtained very satisfactory values. They have lately installed a gas producer with engine and winch.

"At the Mikado the main shaft has been deepened to 300ft., and this level was being driven upon at the time of my visit. It is reported the Edith Hope and Sailor Prince mines are shortly to be re-worked, with English capital. It is also understood that the Childe Harold, a mine which has been idle many years, is to be re-opened.

KOOKYNIE.

"*The Champion Mine* is still under option, and the option holders, after considerable difficulty owing to the heavy inflow of water, have reached the No. 4 level, which is now being driven upon. It is as yet too early to state what the future of this mine will be.

"*The Lubra,* a mine near the Niagara Government Battery, has been re-opened during the year. The 70ft. level has been extended about 120ft., and a make of stone of some 7ft. to 10ft. wide, evidently overlooked by the original owners, has been opened up with very profitable results to the present lessees.

"*At the Orion mine* a main underlay shaft has been sunk from the No. 4 level for a depth of about 200ft., and the ore supplies are being obtained from this depth at present. The 10-head mill has been kept in work during the period under review.

"*At Linden* a 10-head mill is to be erected to replace the present 2-stamp mill. Some very good crushings have been obtained from the various leases, notably from the Grand Junction and the Democrat, from the former 12 tons yielded 230.93 fine ounces, and from the latter 32 tons yielded 109.62 fine ounces.

"*The Carbine and the Dreadnought mines* have also had satisfactory crushings. When the new battery is erected there is every probability of the output

from this district being considerably increased, and fresh parties of prospectors will be induced to visit the locality.

"The owners of the Battlesville lease have purchased a 5-head mill, crushing operations are, however, suspended pending the finding of a water supply. Trial shafts near the mine have not been successful, and it is now intended to convey the water from a shaft about one and a-half miles away.

"*The Potosi and Queen May Leases,* at Yundamindera, are being worked by tributers.

ACCIDENTS TO WINDING MACHINERY.

"The following accidents to winding machinery have come under my notice during the year.

"*Golden Bell North G.M., Burtville.*—Fatal accident to one Chas. Fredk. Schroeder through the breakage of a plummer block on a Thomas' friction winch whilst Schroeder was being hauled to the surface. The breaking of the above block allowed the drum axle to shift slightly, and when the winch was stopped to allow the man to get off, and was thrown out of gear, it was found that the brake could not get down on to its seating, and would not grip.

"A similar breakage took place to the friction winch at the V's. United G.M., at Morgans, the plummer block breaking in exactly the same place. This breakage was caused through the pawl being put in whilst the winch was travelling quickly. In this case no one was injured, as no one was travelling on the bucket.

MILES TRAVELLED DURING THE YEAR, 5,475.

ACCIDENTS.

"There were five fatal, 56 serious, and 29 minor accidents during the year.

PROSECUTIONS.

"There were no prosecutions under 'The Mines Regulation Act' during the period under review."

NORTH COOLGARDIE GOLDFIELD, ETC.

Mr. W. F. Greenard, Inspector of Mines, reports on 6th March, 1911:—

"A continuous and systematic inspection of all the mines situated in the above areas has been maintained throughout the year 1910.

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

"The accidents during the year are: one fatal, eleven serious, eight minor.

"Again, unfortunately, I have to record one fatal accident, due to an explosion in the No. 4 level of Menzies Gold Mines (late Lady Shenton). Stephen Ryan, who was blown to pieces, was a capable, careful miner, and after an exhaustive inquiry into every detail, it was not clearly explained how Ryan came by his death. It was surmised that he may have stayed too long spitting the three holes he had to fire.

"Eleven (11) serious accidents have all been carefully inquired into and fully reported on.

"The filling of stopes has been strictly enforced.

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

"The cutting and re-shoeing of ropes every six months is carried out on every mine. The lubricating with hot castor oil and a small quantity of lime mixed gives excellent results.

"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.

"Where water sprays are available I am insisting on sprays for all dry holes so as to allay the dust.

"The startling information gathered by the Royal Commission on Miners' Phthisis brings clearly to view the very great necessity for good ventilation and the clearing of the mines of all dust, at the same time not losing sight of the economic aspect in the increasing productive powers of the miner under healthy conditions.

"I am of opinion that the time has arrived when large mines should be ventilated with a proper shaft and exhaust fans. Natural ventilation has many drawbacks, even when assisted by compressed air.

"Complaints from any source as to the insecurity of the workings of any mine are given immediate attention, and prompt action taken to remedy any defect.

"Proper travelling ladderways have been insisted on in every mine.

"Sunday work has been reduced to a minimum. No man is permitted to work more than 13 shifts out of the 14.

"In conclusion, every effort is made to make the conditions under which the miners are employed as safe and good as they possibly can be.

MINING PROGRESS.

MENZIES.

"*The Menzies Gold Mines* (late Lady Shenton) continue to develop the eastern portion of their ground, and recently there has been a good prospect found at 250ft. The outlook for this property is more promising than it has been for some time.

"*The Florence Mine,* after being worked by the company in the early part of the year, was, after a small exemption from work, taken over by tributors, who crushed about 1,000 tons for a payable return.

"*The Friday Mine.*—After a considerable amount of bailing this mine has been unwatered, and a connection made with the Balkis mine, which has made the working conditions of both mines safer and better, the ventilation being considerably improved. One or two crushings have been mined and high values obtained.

"*The Balkis Mine* has completed the erection of an air compressor plant, 5-head battery, and 30 H.P. gas producer engine. The first partial clean up has taken place; 90 tons returned 157ozs.—over 30 dwts. per ton. The owners estimate they have an additional 200 tons of ore raised of slightly lower values. Development is now going on below the 400ft.; above that level the shoot of values looks well.

"*The Queensland Menzies Mine* has done very little work during the year. This is a remarkable mine, after having paid between £80,000 and £100,000 in dividends that it should be to-day lying almost idle. The shoot of values which paid these large dividends pitched diagonally through the entire lease, and was mined to within 10ft. of the boundary, where displacement occurred, the boundary being so near to the Nada lease, belonging to another company, that they stopped further prospecting for this splendid ore shoot. It is the opinion of several competent miners that this shoot could be again located.

"*The Crusoe Mine* has been worked by Roberts and Truscott, who have also had a few tributers working. Good developing work has been done, and several paying crushings obtained.

"*The Aspasia Mine* has been worked by tributers, who have had several good crushings. This is a sound mining proposition, and should be developed on sound lines. The tributing system spells disaster to most mines in the long run unless a sound developing policy is part of the system.

"*The Surprise Mine,* situated south of the Lady Sherry, and owned by Caudwell and Richards, who discovered during the year some very rich specimen stone. They have sunk on the pitch of the shoot for 150ft., but they now propose to sink a new main vertical shaft to 200ft. There are a number of prospectors working on this line of country with fair prospects.

"*The Flying Fish, the Leonidas, the Aurelia, the Maori Chief,* and several leases in their immediate vicinity, continue to be worked, and from time to time good small crushings are obtained.

"*The Dreadnought G.M. Co.* continues to employ 9 or 10 men developing the shoot of ore values pitching towards the Dreadnought South. This shoot has not opened out as it gave promise to in the earlier stages of development. The country rock is extremely hard, which has pinched the shoot somewhat and made working costs high.

"*The Dreadnought South* is now boring with a diamond drill, a method that may or may not be suitable to the Menzies district. In this case boring is probably warranted, through the limited amount of money available.

"In the Picton district the *Maranoa Mine* is situated, and owned by Herley Bros., and is now equipped with a 10-head battery, two large Cornish boilers, large air compressor and receiver, winding engine, etc. The plant is also equipped with a number of labour-saving devices with a view to the economical treatment of the ore. The mine has opened up remarkably well down to the 200ft. in the Southern drive. At that level the reef is from 6ft. to 8ft. wide, carrying high values.

"*The Lusitania* (late Goodenough) has also been acquired by Messrs. Herley Bros., who are energetically developing the mine.

"*The Alathea Mine* (late Blow Fly) has unfortunately, through financial difficulties, been compelled to close down. The margin of profit in the ore mined called for very great economy; anyhow, the values produced show that the mine warranted a test.

There are a large number of mines in the Picton, Springfield, and Hill View districts. During the year they have not been so productive as formerly, but they contain promising lodes and reefs, and will most undoubtedly be further tested with good results.

"*The Menzies Consolidated Mine,* at Woolgar, has continued to be developed in a systematic manner; the main shaft has been deepened to 1,200ft. This has rendered the ventilation of this mine an easy matter, and it has also added to the economical working of the proposition. This mine treats over 2,000 tons a month, and employs upward of 100 men.

"*The Lady Sherry* has been worked intermittently during the year. This mine has a good 5-head battery and all necessary machinery for its proper working.

Comet Vale.

"*The Gladsome Mine* continues to produce a good tonnage of ore every month. The water supply allows two shifts to be run by the battery per day. This is a promising proposition, and with more energetic development would probably develop into a large mine.

"*The Sand Queen Mine* has been equipped with a 10-head battery, large suction gas producer engine, winding engine, and compressor, etc., and is being opened up at the 200ft. level, where the reef is large and well defined, carrying good values.

"*The Happy Jack Mine* has been equipped with a Huntington mill and suction gas producer engine. This is a highly promising mining proposition, and now the mine has a crushing plant of its own, rapid development of this property is expected.

Goongarrie.

"At Goongarrie mining is almost at a standstill. Still there is a large area of auriferous country well worth the attention of the practical prospector.

Cane Grass.

"*The Baden Powell* and *Howden Mines* are being prospected, and small crushings are obtained from time to time.

"*At Vettersburg* very little work has been done during the year.

"*At Bardoc* a little work has been done, and several good crushings obtained from the old leases. There is a large area of auriferous country which will eventually repay the attention of the prospector.

"*At Broad Arrow and Paddington,* since the closing of the Golden Arrow and Paddington Consols, mining has been very depressed; still the people in both centres are hopeful, and with a large number of prospectors coming and going, any day something of value may be found which would cause a revival. The Duke battery has been completed by Messrs. Hunt and Sons, who have commenced crushing 600 or 700 tons already broken from the Duke mine. The values are low, but with economy the future is hopeful. This battery will also give a number of prospectors a chance to test a large number of abandoned mines that were producers in the past.

"*At Mulgarrie* mining is depressed and at a standstill.

"*At Gordon* the Sirdar mine has done good work, and treats about a thousand tons of ore a month. The combined cost of mining and milling for the year was 9s. 6½d. per ton. Development work is now being pushed ahead, good values having been located going underfoot at the 140ft.

"*At Gindalbie* mining is depressed. The development of the *Melton Mine* has lacked energy through the want of sufficient capital. The mine has been taken over by a previous underground manager who understands the proposition, and with a good party of tributers will endeavour to make the mine pay. The smaller mines at Gindalbie are not developing too satisfactorily.

"*At Kalpini* mining is very depressed.

"*At Jubilee* a little prospecting is being done. At both of these places there is good prospecting country.

"*At Kurnalpi* mining is very dull. The usual number of dry-blowers continue to find employment, and several patches of rich gold have been located in one or two lode formations, but nothing of a permanent nature has been found.

"*At Mulgabbie* mining has not been too prosperous. Clancy and party, owners of the Hope Mine, discovered a small patch of between 100ozs. and 200ozs. at the latter part of the year. The early part of the year the claim was worked with disappointing results. Blake and Party of the Perseverance Mine had a bad

year, and it was nearly Christmas before they struck any gold, when they got between 200 and 300 ounces in a patch below the 140ft. level. There are very few prospectors left in Mulgabbie, and mining is very dull there.

"*Pingin.*—The Anglo Saxon Co. have continued to work their property for satisfactory results. They recently acquired the North block, and propose to follow the shoot of values into it. The outlook for this property is not so promising as formerly. Mining at Pingin is very depressed, and the outlook is far from satisfactory. There are a number prospecting, and with a new find or two, matters would immediately improve.

"*Edjudina.*—During the year the Edjudina Goldfields, Ltd., acquired the Neta and Genevieve leases and formed them into a company. They are energetically developing the property. These mines have been equipped with a 10-head battery, winding engine, and poppet heads.

"*The Senate Mine* during the year has had its machinery re-arranged, and is now equipped with a large suction producer gas engine by which the battery, winding engine, air compressor, and Cornish pump are all driven. This work has delayed the development of the mine. The gas engine is giving good results, and developments are being pushed ahead rapidly.

"*The Gawler Mine* has been energetically worked during the year and, I am informed, has been able to pay the money back to the Mines Department advanced to the syndicate for development purposes. There are a few working along the Edjudina reef line and getting small crushings from time to time.

"At *Yarri* mining is dull and very little development is taking place.

"*Mulline.*—Good prospecting has been done in the district during the year. Mr. Hoyle and party have had some very good crushings from the Young Australia lease—up to 6ozs. and 7ozs. per ton. Mr. Jennings and mate discovered a small rich leader near the western boundary of the Young Australia, one or two crushings having been mined. Mr. Cusick also discovered a new prospect half a mile south of the Young Australia, right on the road to the Gladys Mine. Floaters of quartz had been picked up, carrying gold, for several years in the locality by a number of people, and it was thought by them that it was Gladys stone dropped off the drays on the way to the battery. The reef is about 12 inches wide and carries values up to 3ozs. and 4ozs. per ton. The Cardinal, owned by Bowyer and party, continues to crush rich stone from small parcels.

"*The Gladys Mine* has not done much development during the year and has been worked almost to a standstill. This mine wants development.

"*The Riverina Mine,* owned by Mr. E. J. Evans, has been worked with eight or ten men throughout the year. Mr. Evans proposes to sink a further depth of 100ft. to open ore reserves.

"*The Riverina South,* owned by Hood and party, are also sinking a new main shaft from the surface to a depth of 300ft. or 400ft. at an estimated cost of £2,000.

"*Mulwarrie.*—Mining at Mulwarrie is almost deserted, but still there are one or two parties prospecting with a view of again opening up this once promising locality.

"*Davyhurst.*—Mining at Davyhurst has been very quiet during this year. The Golden Pole, Waihi, and Homeward have all been worked by tributers, and the ore reserves are practically exhausted.

The Ophir and Oasis Leases have been developed slowly during the year and, the manager informs me, with satisfactory results. It is currently reported that a large company has been formed in London to work the Oasis mine.

"*The Light of Israel Mine* is owned by Cassidy and party, who propose to equip it with a reduction plant. This is a promising property, containing a large lode formation.

"*The Resurgam Mine,* owned by Mr. Matchett, has continued to develop very satisfactorily. A new shaft has been sunk, and has struck the shoot carrying values at 200 feet. Several good crushings have been mined from this property, and the values obtained from the various crushings at the Mulwarrie State battery have varied from 3ozs. to 6ozs. This is a most promising little mining proposition.

"*The Commonwealth Mine,* adjoining the Resurgam on the north, has also done good developing work during the year. The shoot carrying values has been followed down to the 200ft., where several good crushings have been mined.

"*Siberia.*—A large number of prospectors have been located during the year at Siberia, and a lot of gold has been won from surface prospects. The Camperdown, Missouri, Golden, and Reward Mines have returned payable crushings during the year. The Siberia Consols, owned by Franco and Adams, has continued to turn out high values. This is a large schist formation, and is being opened up in a satisfactory manner. There are numbers of prospecting ventures in the immediate vicinity of Siberia of a very promising nature.

"*Callion.*—The developments in this district are undoubtedly disappointing. The advance of £1,000 to the Callion Co. by the Mines Department to assist in the erection of a 10-head battery was given for two purposes—to assist the company in its development and to give the prospectors crushing facilities so that they might be able to test the many low-grade quartz reefs in the district. Had the water supply been larger, the results would have been better. The delay in crushing 300 and 400 ton parcels from the various prospecting propositions disheartened the prospectors. There is no denying the low values obtained, but the properties have been proved to carry values, and with closer attention to the values that will pay, which the mines undoubtedly contain, better results will be obtained in the future.

"*Ora Banda.*—During the year Ora Banda has developed in a most satisfactory manner, and the increase in values as the large lode formations have been opened up in depth is a marked feature. The Gimblet Mine is now under option to the Oroya Mine, and several winzes are being sunk in the sulphide zone from the 150ft. level. About 1,000 tons per month have been mined from the oxidised zone during the year. This oxidised zone formation has been a highly treacherous and dangerous ore body to mine. Great credit is due to Mr. Taylor, the underground manager for the safe manner in which the ore has been mined; and the training a number of young miners have received in working this treacherous ore body will undoubtedly stand them in good stead in keeping themselves safe if ever called upon to work a similarly treacherous oxidised formation.

"*The Gimblet and Gimblet South Extended Mine* are now under option to the Associated Northern G.M., Ltd. These mines contain large lode formations, and the increase in values in depth as sunk or driven on has been phenomenal. Both these properties are very promising ventures.

"*The Lady Evelyn*, owned by Mr. Judd, has been equipped with a good 5-head battery and necessary machinery. A lot of gold has been won from the Lady Evelyn. A water shaft has also been opened up, but what the exact supply of water is, has not, so far as I know, been accurately demonstrated. A large fresh-water tank has also been sunk, but the rain to fill it has been disappointing. Mr. Judd has done remarkably good work on this property, and if it would only rain he would be relieved of many troubles. A large number of leases have been pegged on the quartz reefs and on the many large lode formations with which the district abounds. Development work on several leases is being pushed ahead. On the surface values appear low; this is the history of all the lode formations opened up with such satisfactory results. Values increase as depth is attained; therefore, anyone with a low-grade lode should persevere. Cheap crushing, of course, would assist tremendously; what the time crushing did for the development of Meekathara would be repeated twice over in the Ora Banda district, if available in the immediate locality. The cost of carting (13s. per ton) to Siberia is too heavy a handicap on lode formations showing low values.

"*Mt. Ida.*—The development in the various mines at Mt. Ida is not being pushed on with that energy that one would have expected. The Unexpected group, the Meteor, and Copperfield group, and the Forest Belle group of leases are undoubtedly very promising mining propositions; remarkably good crushings have been obtained from the whole of these leases during the year. Mt. Ida has a large area of auriferous country practically unexplored; there are quartz reefs and lode formations containing low values located over a large area. Lode formations carrying low values, with proper and systematic prospecting, might easily develop into high-grade propositions."

EAST COOLGARDIE GOLDFIELD.

Mr. J. O. Hudson, Inspector of Mines, has submitted a report, dated 13th March, 1911, as follows:—

"(1.) The mines here have been regularly inspected, and where defects were noted they have been promptly remedied.

"(2.) *Explosives.*—The explosives used were of good quality, except in one case where defective fuse was found on a mine; fortunately the defect was found before the fuse was placed in use, and it was condemned.

"Mr. Mann, Chief Inspector of Explosives, made very exhaustive tests of explosives under working conditions, and his report should be of great importance in regard to the gases generated, and will no doubt ensure that the explosives supplied will be of good quality and as little injurious to health as it is possible to manufacture them.

"The men using explosives can render great assistance in this direction by obtaining a knowledge of explosives and using them judiciously.

"While assisting Mr. Mann I noted in a large number of cases that explosives were used in such a manner as to create unnecessary fumes, and that men using them were ignorant of the strength of different grades.

"This is a matter of great importance to the men employed, from a health point of view, as the gases pass upwards through the different levels and men are affected generally who are employed throughout the mine.

"*Stoping.*—There has been no alteration in the methods of stoping adopted, and generally the work has been carried out in a satisfactory manner.

"*First Aid.*—This necessary work is still being continued, and it is to be hoped that during the present year all shift-bosses and men having control of work will have received this very necessary knowledge, and that casualty wards will be installed on all large mines.

"It is pleasing to note the keen interest that the Chamber of Mines is taking in the matter.

"I understand that it is their intention to give a valuable trophy for competition between corps formed on different mines; this will no doubt be the means of creating interest and demonstrating the advantages of obtaining a knowledge of the subject.

"*Accidents.*—The list of accidents already forwarded does not include machinery accidents, they being dealt with by Inspectors of Machinery. There is a reduction of fatal accidents compared with 1909, the figures being 12 for 1909 and 9 for 1910.

"*Ventilation.*—The system of connecting the mines at regular intervals still continues, with good results, and the ventilation of the mines generally is satisfactory.

"The Kalgurli Gold Mine is cross-cutting to connect with the South Kalgurli Gold Mine at 1,800 feet., and this connection will greatly improve the conditions.

"The Golden Horseshoe Gold Mine have connected with the shaft on their Ivanhoe South Extended lease at 2,000 feet.

"The Great Boulder Perseverance Gold Mine have connected with the Lake View Consols at the 1,900ft. level.

"The South Kalgurli have connected with the Associated at the 1,500ft. level, and with the Hainault at the 840ft. level on Morty's lode, and at the 500ft. level on the East lode.

"The Ivanhoe has connected with the Golden Horseshoe Estates at the 1,337ft. level, and with the Great Boulder Proprietary at the 1,650ft. level.

"These connections, beside providing good ventilation, are of great importance in providing means of exit in cases of emergency.

"During the year Dr. Cumpston, as a Royal Commission, made inquiry into the health of the men employed on the mines. The result of his examination shows that a large percentage of the men are affected with fibrosis, and it is necessary that further inquiry should be made to reduce the risk of this disease to a minimum.

"The following are the principal developments during the year:—

"*Lake View and Star Gold Mine.*—During the year the Lake View Consols, Hannans Star, and Boulder Deep Levels amalgamated. The mines have been linked up by a surface tramway and the ore is hauled from the Hannans Star group to the Lake View mill by locomotives. The Boulder Deep Levels main shaft has been equipped with a new winding engine, ore bins, and stone breaker, also with self-dumping skips.

"About half the ore now milled at the Lake View Consols is being supplied from the Hannans Star group.

	Lake View.	Hannans Star.
	Feet.	Feet.
Total depth of Main Shaft ..	1945 ..	1120
Shaft sinking during 1910 ..	19 ..	9
Driving	1403 ..	1649
Crosscutting	203 ..	565
Rising	282 ..	655
Winzing	346 ..	486

"*Great Boulder Perseverance Gold Mine.*—This plant was partially destroyed by fire during 1909. Ball mills were substituted for Griffin mills, and the plant restarted on the 1st of August, 1910.

"Development was carried on during the re-erection of the mill, and a large amount of work carried out. The main shaft was carried down to a depth of 2,190ft.

Total depths of Shafts.

No. 1	90 feet
No. 3 (Main)	2,190 „
No. 4	290 „
No. 6	1,493 „
No. 8	195 „
No. 9	60 „
No. 10	110 „
"Furness"	235 „

"Shaft sinking and development:—

Shaft sinking (main) ..	201ft.
Driving	3,047ft.
Crosscutting	683ft.
Rising and winzing	1,117ft.

"The following plant has been installed:—

Eight No. 8 Krupp Ball mills, each driven separately by a 75 H. P. motor.
Two 30-drill Walker compressor.
Two tube grit mills.

"*The Ivanhoe Gold Corporation.*—The main shaft has reached a depth of 2,430ft.

"The shaft has been provided with an additional winder hauling through a third compartment which has been formed in the ladder compartment.

"The engine is a Fraser & Chalmers 22in. x 48in., drum being 8ft. The shaft is to be equipped with electric return signals. The East lode has been cut in the East crosscut at the 2,270ft. level, the lode being 9ft. in width, and payable values found.

"The following are the principal developments:—

The depth of Shaft	2,430 feet
Shaft sinking during 1910 ..	178 „
Driving	2,816 „
Crosscutting	1,111 „
Rising	302 „
Winzing	1,171 „

"*South Kalgurli Gold Mine.*—During the year a large amount of development has been carried out on the east side of the main shaft; a good length and width of ore located from the 900ft. upwards. The lode is of very promising appearance.

Total depths of Shafts (Main) 1,818 feet; Morty's 991 feet.

Shaft sinking during 1910 ..	284 feet
Driving	2,619 „
Crosscutting	922 „
Rising	87 „
Winzing	770 „

"*Hainault Gold Mine.*—During the year development work on the eastern side of the shaft has been carried out vigorously at 500ft., 650ft., and 750ft. levels, and gives every promise of revealing good supplies of ore.

Total depth of Shaft	1,014 feet
Shaft sinking during 1910 ..	*Nil*
Driving	1,019 „
Crosscutting	1,338 „
Rising	341 „
Winzing	225 „

"*Associated Northern Gold Mine.*—Very little development work has been carried out. The ore shoot is rapidly becoming depleted, and the mill is only partially supplied with ore from the mine. The mill is kept in full work crushing for the public.

"*Golden Ridge Gold Mine.*—This mine continues to yield satisfactorily and pay regular dividends.

"A vacuum slimes plant has been installed.

"The main shaft deepened during the year:—

Driving during 1910	1,599 feet
Crosscutting	835 „
Rising	567 „
Winzing	29 „

"*Kalgurli Gold Mine.*—At the 100ft. level a body of ore was located in the southern portion of the mine. At the 1,550ft. level a body of ore was located, and crosscut disclosed an ore body 58ft. in width carrying rich tellurides.

"Skips are being installed in main shaft.

Depth of Main Shaft	1,900 feet
Shaft sinking during 1910 ..	170 „
Driving	1,911 „
Crosscutting	1,059 „
Winzing	742 „
Rising	972 „
Diamond Drilling	3,712 „

"*Golden Horseshoe Estates.*—During the year the yield from this mine was greatly reduced.

'The main shaft has been carried down to 2,000ft. and connected with the Ivanhoe South Extended shaft at that level.

"Prospecting work has been carried out on the Treasure lease at a depth of 350ft.; two lodes have been located which are reported to carry payable values.

"A 50 K.W. turbo-generator driven by exhaust steam from the mill and air compressor engines has been installed. Skips have been installed in the main shaft.

"The mill has been increased by an additional 20 head of stamps, together with tube mills, concentrating tables, tailings wheel, etc.

"Electric signalling is to be installed in main shaft.

Depth of shafts, Main ..	2,050 feet
„ „ No. 2 ..	1,030 (Ivanhoe S. Extd.)
„ „ No. 3 ..	2,050 feet
„ „ No. 4 ..	372 „
Shaft sinking during 1910 ..	927 „
Driving	4,142 „
Crosscutting	1,670½ „
Rising	63½ „
Winzing	3,251 „

"*Associated Gold Mines.*—This mine has decreased its yield during the year. The plant is being equipped with a steam turbo engine, new rock breaker, and two new roasting furnaces.

"It is intended to instal skips in Judd's shaft.

Depth of shafts: Judd's 2,238ft.; Lilley's	1,423 feet
Shaft sinking during 1910	109 „
Driving	3,235 „
Crosscutting	2,512 „
Rising and Winzing	1,241 „

"Great Boulder Proprietary Gold Mine.—The General Manager has supplied the folowing information:—

Total depths of Shafts:—

Main	2,844ft. 6in.
Edwards	2,842ft.
Hamilton	1,871ft. 6in.
Shaft sinking during 1910 ..	530ft.
Driving	3,298ft. 6in.
Crosscutting during 1910 ..	317ft.
Rising during 1910	311ft.
Winzing during 1910 ..	1,084ft.

"Underground work.—The main shaft, 2,200ft. level: Drive North has been extended 178ft. 6in., the first 141ft. of which has been in ore 5ft. wide, value 8 dwts.; total length of drive, 341ft. 6in.

"The 2,350ft. level Drive North on the West Vein has been driven 206ft. in ore 4ft. 9in. wide; average value 18 dwts. per ton; total length of drive, 244ft.

"Drive North on the West vein at the 2,500ft. level was started and driven 158ft., the first 145ft. of which was in ore 4ft. 9in., average value 10½ dwts. per ton, the balance in mineralised country worth up to 3 dwts. This level was diverted westward and driven 78ft. 6in., and for the first 63ft. the ore was 5ft. wide, value 5½ dwts. The South drive at the same level on the West vein was started and driven 263ft. in ore 5ft. wide, value 6 dwts. per ton; this drive holed to Edwards shaft North drive.

"At the 2,650ft. level the main crosscut West was driven to the West vein, and the drive North driven 299ft. 6in., principally in mineralised country worth 1 dwt. to 5 dwts. From 145ft. 6in. to 212ft. 6in. the ore was 4ft. wide, average value 7 dwts. per ton. The South drive was driven 266ft. in mineralised country worth up to 2 dwts.

"At Edward's shaft, 2,500ft. level, the North drive has been extended 224ft. 6in. in ore 4ft. 9in. wide, average value 8½ dwts.; total length of drive 275ft. 6in. The South drive has been extended 146ft. 6in. in ore 4ft. 9in. wide, value 6½ dwts. per ton; total length of drive 200ft. 6in.

"At Hamilton shaft, 1,100ft. level intermediate, drive North has been driven in ore 5ft. 6in. wide, varying in value from 10dwts. to 20dwts. per ton, for a length of about 130ft.

"At the 1,800ft. level the South drive has been extended 70ft. 6in. in ore 5ft. wide, worth 9½ dwts. per ton; total length of drive 273ft. 6in.

"Surface work.—New condensing plant on the Eastern side of the sulphide mill engine house has been erected, and is working satisfactorily.

"Three new Babcock and Wilcox boilers have been built in, housed, and brought into commission on the East side of the condensing plant. Old economiser has been pulled down from old site and re-erected behind these boilers.

"Excavations were made, foundations built, and new 800-h.p. Belliss-Morcom high speed engine to drive the sulphide mill erected alongside of the Austral Otis driving engine, which will serve as a stand-by only for the future. The new engine is working very well, and the mill house has been extended to cover same.

"Another Edwards duplex roasting furnace and brick flue have been erected, and started at work.

"The thirteenth Griffin mill, made up of spare parts, has been erected, but is not yet at work.

"Complete fire service has been finished, in case of emergency.

"A 10-ton crawl for unloading heavy machinery has been fixed over railway siding.

"Mystery Gold Mine.—This mine is situated on the Northern end of the field. There is an ore body averaging 18ft. in width, which is being stoped over the 150ft. level.

"A new shaft has been started, and will be carried to a depth of 250ft.

'The mine has been equipped with a Huntington mill, three cyanide vats, and gas producer engine.

"Lone Hand Gold Mine.—This lease is South of the Mystery lease. Stoping is being done above the 160ft. level on an ore body about 20ft. in width, and for a length of 260ft.

"About 2,000 loads have been crushed.

"It is the intention of the holders to erect their own crushing plant.

"Hidden Secret Gold Mine.—A large body of ore has been located South of the old workings the values are low, but should, with careful management, prove payable.

"Paringa Gold Mine.—A new ore body has been located East of the new main shaft.

"Golden Dream Gold Mine.—A large body of ore has been discovered which is yielding payable results."

Mr. W. M. Deeble, Inspector of Mines, has forwarded a report, dated 24th February, 1911, as follows:—

"The usual inspections have been made of the various mines, and very little calling for special comment has occurred.

"Ventilation and sanitation in mines have been specially attended to, also the use of explosives underground.

"The signalling systems in the mines are the same as the previous year. The continued use of the electric bells with return signals proves them to be the best system installed in the mines, that is, when they are constructed with suitable cables.

"Mining developments in this field generally have not been all that could be desired during the past year, but the main mines are doing a considerable amount of development work, and while this is being done it is quite possible to make a recovery at any time.

"In sinking shafts the management of the Great Boulder Proprietary Gold Mine are departing from the usual practice in West Australia. The pump end is sunk down about from twenty to twenty-five feet, and from there on the shaft will be carried down the usual size, leaving a solid block of ground over fifteen feet in thickness under the two compartments used for winding. If a cage or skips should fall down the shaft it is impossible for it to affect a penthouse of this description, and the only possible danger, if men were working in the bottom of the shaft, would be by the bursting of the centres.

"Oroya Links Gold Mines.—There is nothing new to report on this mine. The Oroya North block and Oroya South have both been reducing their output, and the main supply of ore is now being broken from the Eclipse lease.

"The North Kalgurli and Paringa Gold Mines have both been worked chiefly by tributers, but nothing was discovered in either mine calling for special comment.

"The same can be said of a large number of small shows in this district.

"A rush occurred at the North end of the Corsair group, about seven miles from Kalgoorlie on the Bulong Road. The ground pegged has not turned out up to expectations. A copper mine in this same district has been taken up again, and will probably be started at an early date.

"Ventilation.—The ventilation of the upper workings of most of the mines was attended to by connecting the workings of different mines and thereby getting a good current of air through each by natural means. This system is still being followed in the lower workings with very good results. In most of the mines it is a rather difficult matter to measure the quantity of air passing through, owing to the splitting of the air currents in a large number of levels and connections between, all of which are irregular in shape.

"In the Golden Horseshoe mine the air can be gauged fairly accurately as the main intake is through a drive. In this mine the main shaft at 2,000ft. depth is connected by a drive 1,300ft. in length to another shaft known as No. 3. The air circulates down No. 3 shaft to the 2,000ft. level, then along the drive, and up the main shaft. The measured volume of air circulating was found to be 22,082ft. per minute, and the average speed to be 526ft. per minute. The speed varied considerably as the area of the drive increased or decreased. When the temperature was 80deg. at surface the 2,000ft. plat, No. 3 shaft, was 68deg., and at 700ft. along drive 74deg.; on plat at 2,000ft. level main shaft the air was 76deg. This air will naturally rise in temperature as it passes through the mine workings. The connecting drive between the two shafts has several turns in it which must have a retarding action on the air. The volume of air going through this drive illustrates the possibilities of natural ventilation with two or more openings to the surface, providing they are of sufficient area. Fortunately, all the large mines have been continuing their shafts downwards, which admits of similar connections at the lowest depths, and such connections in the past have been development work opening up bodies of ore as well as for the purpose of air supply. A disturbing factor in the air supply of most of the mines is that the residues when they are being returned through the sand passes to fill up worked-out ground, falling down the passes act similarly to a steam jet or waterfall, and carry a large volume of air down, which in a number of cases will alter the current.

"Suction Gas Engines.—During the year the suction gas engines have generally been giving satisfaction when used. In last year's report I mentioned that alterations were necessary to meet local conditions. During 1910 three cylinders were cracked through water circulation troubles. I did not learn of either case until some time after, and was therefore unable to see the cylinders. Two were put down to sediment and one to the water being stopped and, when discovered, cold water turned on to the hot cylinder.

"In either case if the cylinders had been fitted with open water jackets they would have been more suitable for where they are used, and probably they would not have been damaged, as a shortage of water would have been discovered at once, and sediment can always be seen and removed before sufficient collects to cause overheating. I expect to see a considerable reduction in the cost of power on mines by the use of wood direct instead of converting it into charcoal as is done at present.

"Metallurgical.—It is noticeable that during the year a number of alterations have been made in the treatment plants with a view to getting higher extractions and reduced costs. There is no doubt excellent work is being done on the mines by both the metallurgists and engineers, but when we consider that in the large mines a saving of one penny per ton means a saving of £50 per month and upwards, it shows a special effort is warranted.

NORTH-EAST COOLGARDIE GOLDFIELD.

"Kanowna District.—Mining has been rather quiet throughout this district during the year, and the only mine employing any number of miners on wages is the North White Feather Gold Mine. A large amount of development work has been carried out, and it was expected that higher values would have been obtained. The main shaft is down 994 feet, and the developments are:—

Driving	1,455 feet
Crosscutting	702 „
Rising	849 „

"The White Feather Main Reef Gold Mine is worked by a large number of tributers, working mostly on small leaders.

"The district generally is being worked by miners in their own shows, all of them getting a little.

"There is a good prospect in this district for a company having the necessary capital to open up the deep alluvial at the point just below the junction of the two leads. Bores put down at this place show that the ground is of a running nature, and deep alluvial methods would have to be adopted to make such a venture a success.

"I am pleased to be able to report that there has not been any fatal accident in this district during the year, and only five accidents that have kept the men away from their usual employment over a fortnight. Two of the latter were caused by falls of ground in stopes. In each case the stopes were closely filled. One was caused by a stone flying out of an ore pass and striking a man. One was caused by a man going through old alluvial workings and falling into a hole; and one was caused by a man slipping whilst he was carrying a machine bar, and the bar dropped on his foot.

"Randalls and Bulong.—During the year mining in these districts has been very quiet. At the latter end of the year the Government assisted the owners of the Southern Cross Gold Mine to erect a battery driven by a suction gas engine. The lode in the mine is easily treated and should be dealt with at a very low cost. The owners of the mill will also treat ore for the public, and this has induced a number of miners to take up various shows and raise ore which they consider payable. Crushings from the deep alluvial have returned 6 to 8 dwts. per ton, which was not high

enough to pay when the material had to be carted to Kanowna or Kalgoorlie, but with a battery close at hand it will have a fair trial."

COOLGARDIE, YILGARN, AND DUNDAS GOLDFIELDS.

Mr. J. Crabb, Inspector of Mines, has reported under date 17th March, 1911, as follows:—

COOLGARDIE GOLDFIELD.

"During the year 84,000 tons of ore were treated for a return of 37,867.29 ounces. This amount compared with 1909 shows a slight increase.

Bonnievale.

"Westralia and East Extension Mines, Ltd (144, 1151, 4375, 4376).—The only work of much importance that was done on this property was by parties of tributers, who carried on the most of their operations in the stopes above No. 6 level. Apparently results were not satisfactory as only short periods were worked.

"Vale of Coolgardie G.M. (1552, 3947).—This property was worked by a party of tributers, but from what I can learn results were not profitable.

Bullabulling.

"Very little mining of importance was done in this centre.

"From Mercer's Find a parcel of 3½ tons of amblygonite was sent to Europe for the purpose of ascertaining its value.

"A small vein of lepidolite was also discovered, but owing to prospectors not knowing its value they have decided to wait until information is received regarding the value of amblygonite, before doing any work on it. It is reckoned that the lepidolite contains about 3½ per cent. of lithium.

"At the First Find, Regan and party stoped out a parcel of ore and had it treated, but it did not pay them, consequently the property was abandoned.

Burbanks.

"Mining at Burbanks has been somewhat dull, the only mine producing to a large extent being the Burbanks Main Lode (2985, 2986, 3444). This mine, which is well equipped, made a very good profit on the year's operations. The vein in the bottom level is reported to be looking well, and it is anticipated that there is a good future at a greater depth.

"Burbanks Birthday (134, 135, 136).—All work done on this mine was by tributers, who are reported not to have done very well.

"Glenloth South (4168).—Ore of a highly profitable character has been mined from this property through the year. As the country rock is increasing in hardness at depth, it is the intention of the owners to erect a producer gas plant and install rock-drilling machinery.

"Grosmont (4310).—During the latter part of 1909 a ten-head mill was erected on this property, and a considerable amount of development done at different points of the mine. But after a few months run it was found that sufficient gold could not be recovered by amalgamation to pay working expenses, and in consequence of this the mine was shut down. It was thought by owners if they were in a position to erect a slimes plant they would have shown a profit, as it was reckoned the slimes contained more gold than was recovered over plates. The cost of mining and milling amounted to 6s. per ton.

"Lady Robinson (2160, 3950, 4125).—This property has been worked by tributers, who mined most of their ore from near the surface.

"Lord Bobs G.M. Syndicate (4241).—The main vein on this property appears to have pinched somewhat along the bottom level. Recently the owners have been doing a deal of prospecting work in the main ore channel, but so far nothing of much value has been discovered. There appears, however, to be every prospect of profitable ore being struck at any time.

Coolgardie.

"New Bayleys G.M. Ltd. (4067, 4122, 4372).—A fair amount of prospecting has been done on this property, but nothing of a profitable character was found. Towards the latter part of the year Price's shaft was unwatered, and winzes were commenced on the vein at the 1,000 feet level. It is intended to sink these winzes to a depth of 100 feet, and then drive along the vein.

"Griffiths G.M. (73, 1902).—Only a small amount of tribute work was done on this property during the year, which proved unprofitable.

"Richmond GM. Syndicate (4295, 4319).—Generally speaking the results obtained from this property were not very satisfactory.

"Tindal's Coolgardie G.M. Co. (33, 3824).—During the year the twenty head of stamps that were erected during the latter part of 1909, were kept almost constantly employed, with the result 21,323 tons were treated for a return of 5,311.25ozs. The property has been well and economically handled, and latterly profitable results have been obtained from what may be termed low-grade ore.

"May Queen.—This property, which is owned by Tierney and party, is situated a few chains east of the Union Jack. During the year an incline was sunk on a small vein to a depth of 80 feet, which proved the vein to carry gold in highly profitable quantities.

Eundynie.

"Hidden Secret North (4251, 4253, 4266).—This is the only mine on which work of any consequence was done at this centre.

"Operations were confined principally to stoping. Toward the latter part of the year the whole of the mine was let on tribute, and a start was made by the tributers to sink the main incline another 100 feet. Since the tributers commenced operations it has been reported that the ore in the incline is carrying gold in highly profitable quantities, and it is anticipated that both the tributers and owners will do well if present values of ore continue.

Higginsville.

"Mining in this centre has been very dull, and the operations at the Fair Play (4382) and the Sons of Erin (4184), which is owned by Mr. Sampey, are reported to have been unprofitable.

Widgemooltha.

"Mining operations have also been very dull at this centre.

"No new discoveries of importance were made, and the gold production was much about the same as won during previous year.

Gibraltar.

"The only work of importance done at this centre was the treatment of some tailings at the De Beers G.M., over which an option has been taken by an Adelaide syndicate.

Gnarlbine.

"During the latter part of the year a ten-head mill was erected on the Gnarlbine G.M., but after milling a few tons of ore, it was found unprofitable, and the mill was closed down.

Londonderry.

"There is nothing of importance to report from this centre.

"The Cheapside still continues to produce profitable ore from the bottom workings.

Kunanalling.

"United Australia (622s).—Very little further development was done on this mine, and operations were confined principally to stoping near the surface.

Carbine.

"Carbine South (7583).—A considerable amount of development work was done on this property, and a ball mill erected near the main shaft. Water has been laid on from Rowell's Lagoon, and it is expected that a start will be made in the early part of present year to crush. As profitable values have been reported to exist it is anticipated that the mine will be a constant producer.

"Carbine (933s).—A considerable amount of development work has been done on this mine at No. 4 and 5 levels, and a large amount of profitable ore has been blocked. The mine is reported to be looking well, and to have every appearance of living to a great depth.

Jourdie Hills.

"Derry's Own 789s.—At this mine the incline has been sunk 150 feet, and drifts extended N-S on the vein, which ranges from two feet to five feet in width. It is estimated that there are 4,000 tons of ore in sight, worth about 28s. per ton. I have been given to understand that it is the intention of the owners to erect a five-head mill on the mine. At present there is a large Cornish boiler and an air compressor on the mine, and all underground work is done by rock drilling machines.

"Jourdie Enterprise (793s).—Operations on this mine during the latter part of the year have been disappointing. It was confidently expected that the rich shoot of ore that was worked down to No. 2 drift would be again picked up at No. 3, and that the owners who have spent a considerable amount of money in developing the mine would be able to recover sufficient from this shoot to pay off their liabilities and show a good profit. Unfortunately, however, it appears that it did not continue much below the No. 2, and the ore apart from the shoot does not appear to be rich enough to be profitably handled.

"Pride of Jourdie North (5143s).—During the year operations were confined to stopes above 140ft. drift. The vein here averages 12 inches in width, and is reckoned to be worth a little over one ounce per ton.

"Jourdie United (369s, 661s).—This mine has been worked by a party of tributers who are reported to have done fairly well. Most of the ore was taken from shallow workings.

Kintore.

"During the latter part of the year W. Woodgate discovered a small rich vein, and sank on it to a depth of 15 feet, and the latest information regarding it is of a very encouraging nature.

"Blue Bell (696s, 727s).—The five-head mill on this property has been kept running almost continuously on public stone.

"Hopeful 783s.—Operations at this mine have not been profitable recently, and the lower workings have been abandoned.

"Shamrock (586s, 602s).—During the year there has been a slight falling off in production; the prospects of the mine, however, are considered promising, and it is highly probable that the vein which in places is small will increase in width deeper.

"Premier (79s).—In the early part of the year a small vein containing highly profitable ore in places was opened up to the hanging wall side of the main lode. It averaged 12 inches in width, but apparently is only a small lense.

DUNDAS GOLDFIELD.

"During the year the total yield from this field amounted to 29,622.34 ounces of gold and 7,362.11 ounces of silver, which is an increase of 73.07 ounces of gold and a decrease of 3,976.65 ounces of silver compared with the previous year.

"The quantity of gold obtained from alluvial amounted to 58.18 ounces, and from dollied specimens 342.5 ounces were recovered, which is an increase of 25.84 ounces of the former, and a decrease of 1,239.81 ounces of the latter compared with the previous year.

"The total production of gold up to the end of the year from all sources amounted to 1,967.82 ounces of alluvial, 6,547.44 ounces of dollied gold, and 489,369.84 ounces from 515,398.2 tons of ore; making a grand total production of 497,885.15 ounces of gold, valued at a little over £2,000,000; the average value of the ore being about £3 16s. per ton.

Buldania.

"On an average not more than three men were engaged in mining at this centre. Only 80 tons of ore were treated from the various prospects, which gave a return of 166.66 ounces.

Dundas.

"In this part of the field mining was dull, and toward the end of the year it was almost deserted. From the various prospects 53 tons of ore were treated for a return of 42.2 ounces.

Norseman.

"Acme North, Mararoa G.M. Co. (1044).—A little development was done on this property at different points, but the ore developed is said to be of rather low grade. During the year 115.5 tons were treated for a return of 24.77 ounces.

"After Years (987).—There was not a great amount of work done on this property, and results were unsatisfactory. From 142 tons 29.95 ounces were obtained.

"Bandit King (1018).—During the year 15.97 ounces were obtained from 37 tons. A small patch of stone was struck, which on being dollied gave a return of 8.86 ounces.

"Better Luck (1121).—This property, which was taken up during the year, gave encouraging results in its initial stages, but eventually was found to be of low grade. From 96.5 tons only 9.89 ounces were recovered.

"Cumberland G.M. (42,43).—Mining operations on this property have been confined to the upper levels, from which 3614 tons were treated for a return of 3,475.94 ounces.

"The total production from this mine amounts to 45,015.15 ounces from 46,082.6 tons.

"Enterprise (1095).—A parcel of 19 tons treated from this property gave a return of 5.53 ounces.

"Esperanza No. 2 (966).—Encouraging results were obtained from this property. From 42.5 tons 107.78 ounces were recovered. Total production amounts to 923.75 ounces from 606 tons.

"Great Empire (1105).This property was opened up during the year, and results have been encouraging. From 110 tons 74.38 ounces were obtained.

"Hampton Plains Estate (1906), Ltd. (938, 945, 988).—The principal work done on this property was the treatment of a large dump of tailings, from which 701.65 ounces were recovered.

"Heather Bell (1112).—Only a small amount of work has been done on this property, but its prospects are considered promising. From 19 tons 12.38 ounces were recovered.

"Hopetoun (1005).—Very little work was done on this property beyond breaking out a little ore from the lower workings. From 25.5 tons 21.81 ounces were recovered.

"Jupiter (1123).—The only gold obtained from this property is reported to have come from specimens which, on being dollied, produced 61.05 ounces.

"Kirkpatrick (956, 1032).—A little development was done in the lower workings of this property, but not much of importance was developed. Only 47.5 tons were treated, which gave a return of 60 ounces. The total production from this mine amounts to 473.73 ounces from 313 tons.

"Lady Gladys Gwendolen (1002).—A fair amount of work has been done on this property, but results have been somewhat disappointing. From 36 tons 4.96 ounces were recovered.

"Mararoa G.M., N.L. (991, 992, 999).—The main incline has been sunk to a depth of 620 feet. The vein at this depth is said to have maintained its size and richness well, and that there are good indications of it continuing to a great depth.

"From 27,985 tons 13, 626.39 ounces were recovered, which is an increase of 876.60 ounces compared with previous year. The total production from this mine amounts to 37,170.35 ounces from 72,143 tons.

"New Moon (964, 1017, 1025).—From stoping and a little development 960 tons were treated for a return of 714.96 ounces. Total production 2,783.56 ounces from 3,236.5 tons.

"North Mararoa G.M.—Only a small amount of work was done on this property during the year. A parcel of 16.5 tons was mined and milled for a return of 3.04 ounces.

"O.K. Extended (995).—This property has had a good record, and it seems not yet to have been given a fair trial to a reasonable depth. From 171 tons 104.12 ounces were recovered. Total production 1,371.36 ounces from 1,275.25 tons.

"O.K. (903).—The vein on this property ranges from a few inches to three feet in width. It has been developed to a depth of 90 feet, and the ore milled has given satisfactory results. During the year 13 tons were treated for a return of 10.11 ounces. Total production amounts to 1,277.35 ounces from 1,117 tons.

"Oversight G.M. (914, 1020, 1037).—Recent operations on this mine have been disappointing. The mine is well equipped, and it was generally expected that it would continue to produce highly profitable ore for a considerable time. There was a big falling off in the grade of ore, and towards the end of the year only a few men were employed. From 1,026 tons mined from the lower workings 373.13 ounces were obtained. Total production 2,569.36 ounces from 2.692 tons.

"Pearl (1094).—Encouraging results were at first obtained from this lease, but recently returns have been somewhat disappointing. From 181.5 tons 35.74 ounces were recovered.

"Pennshaw (1104).—Good results have been obtained from this lease, and the prospects of the mine are said to be promising. During the year 323.5 tons were treated for a return of 164.9 ounces.

"Princess Royal G.M. (106, 187).—A considerable amount of prospecting was done on this mine, but not much of importance was discovered. Operations were confined to the upper levels, from which 5,764 tons were mined and milled for a return of 2,015.13 ounces. The total production of gold from this mine amounts to 140,222 ounces from 165,634.5 tons.

"Princess Royal North G.M. (1021).—A little crosscutting was done at the bottom level for the purpose of prospecting a small vein, but apparently this work did not develop any profitable ore. Only 150 tons of ore were treated, which gave a return of 215 ounces.

"Scandinavian (1086).—Beyond extending the bottom drift a few feet north and making a connection between it and the surface very little was done. From the just mentioned developments, 43 tons were obtained and treated for a return of 7.6 ounces.

"St. Patrick (848).—The rich shoots in this mine have apparently been worked down to country rock that is too hard to permit of their being profitably operated on under existing conditions. During the year 94 tons were treated for a return of 82.51 ounces.

"Son (1092).—During the latter part of the year some very rich ore was discovered in a crosscut that was being put out east at the bottom level, and judging from the prospects and the character of the ore it seems probable that a large amount of profitable material will be obtained. During the year 211 tons were treated for a return of 287.57 ounces.

"Sunrise (1099).—Up to the present not much work has been done on this mine, but so far as proved the vein is rich. From a small quantity of stone 23.73 ounces were dollied, and from 23 tons milled 40.48 ounces were obtained.

"Surprise (1026).—From this property 246 tons of ore were mined, which gave a return of 60.65 ounces.

"Venture (1026).—The Cumberland G.M. Co. took an option over this property during the early part of the year, but owing to the unsatisfactory developments the option was not completed.

"Viking No. 1 (990, 1060, 1016).—A ten-head mill and a 50 B.H.P. producer gas plant have been erected on this mine. A good deal of development has been done in the lower workings, and the vein is said to maintain its size and value well. From 1,140 tons 1,839.3 ounces were obtained. The total production now amounts to 5,699.11 ounces from 1,861 tons.

"Westralia Waihi G.M. (821, 1038).—Owing to the unsatisfactory results it was decided to suspend operations. During the year 10,133 tons of ore were treated for a return of 2,780.54 ounces.

"White Reef (1106).—From this property 137.41 ounces were obtained from 292.5 tons.

YILGARN GOLDFIELD.

"In the early part of the year, C. Jones reported a discovery of rich ore in a lode on the Bullfinch Lease, which is situated about 21 miles north of Southern

Cross. As soon as this discovery was made known through the results obtained from the treatment of a few parcels of ore, a rush set in, and hundreds of prospectors were attracted to the field by the glowing reports that were made of the mine. The country was pegged for miles north and south of the Bullfinch, and lodes that hitherto had received little or no attention from prospectors were carefully prospected, with the result many of them have been found to carry gold.

"The outlook of the field never appeared brighter than at present, and I anticipate that the output of gold will be increased more than fourfold within the next year or so.

"Up to the present only a few of the numerous lodes have been prospected to a reasonable depth, but in almost every case encouraging and fairly satisfactory results have been obtained, and seeing that mining, milling, and cyaniding can be done for a total cost of 9s. 6d. to 12s. 6d. per ton in some cases, it leads me to think that, a field which has produced nearly £2,000,000 worth of gold without exhausting any of its mines must necessarily have an important future. That its future will be infinitely greater than its past will, I think, be made manifest in a few more years, when the properties that have been proved to a reasonable depth to contain many thousands of tons of highly profitable ore, such as the Bullfinch, Corinthian, Corinthian North, Transvaal, Mountain Queen, and the Great Victoria, are equipped with milling plants.

Bullfinch.

"The lode on the Bullfinch lease has been developed to a depth of 100 feet, and has been driven on for a considerable distance.

"It is reported to average 25 feet in width, and to have every appearance of continuing to a great depth. During the year 1,027.52 tons were treated for a return of 10,958.88 fine ounces.

"A considerable amount of work has been done on the leases adjoining the Bullfinch, but I am not aware of profitable ore being found in any of them. There are, however, excellent prospects of the continuation of the Bullfinch lode being found in some of them, and I would not be surprised to learn at any time highly profitable ore had been struck outside and near the Bullfinch boundary.

Golden Valley.

"There was a fair amount of prospecting done about this centre, with the result that some very promising shows have been discovered.

"Pine Hill.—This property, which is situated on the western boundary of the old Kathleen G.M., is reported to be looking well in the bottom of the incline shaft; the lode is said to be over 10 feet in width here.

"Violet (835).—An option was taken over this property a short time ago, and latterly a good deal of development has been done.

"The lode can be seen outcropping throughout the 24 acre lease, and judging from appearance would average at least 10 feet in width.

"The present owners sank an incline to a depth of 80 feet on the lode, and the ore obtained from this development is stated to have ranged from one ounce to three ounces per ton.

"Golden Cross.—The vein on this property is composed almost entirely of quartz, and ranges from two feet to 10 feet in width. It can be traced throughout the 24 acre lease, and in places it has been found to carry excellent prospects, whilst in others the ore is considered highly profitable.

"Golden View.—This property is situated a few miles North of the Violet. There is a vein outcropping through the lease, which is reckoned to average 20 feet in width. A little gold can be found at different points along its outcrop, and during a recent visit a shaft was being put on it for the purpose of testing its value at a depth of about 50 feet.

"Where the prospect shaft was started the ore was reckoned to be worth from 7 to 10 dwts. per ton.

"Rowan's Reward.—There is a large banded ironstone lode trending through this property in a northerly direction. It has a very kindly appearance, and in places good prospects can be obtained. It is now under offer to a company, and a considerable amount of prospecting work is being done.

Greenmount.

"Greenmount G.M. Ltd. (503).—Apparently nearly the whole of the exidised ore has been worked out on this property, and as there is not a suitable plant on the mine to deal with the sulphides, very little work was done during the year.

"Sunbeam (550).—A little development was done on the main vein, but I have been given to understand the value of the ore is very poor where this work was done.

"Transvaal (536).—This property is under offer to a company.

"A fine lode has been developed, which is reported to contain highly profitable ore. The mine is equipped with a 20-head mill and a small roasting plant. Latterly winzes have been sunk from the bottom level for the purpose of further testing its value.

Hopes Hill.

"Hopes Hill (795).—Very little work was done on this property beyond the breaking out of a few tons of ore from the big open cut.

"Corinthian.—This property is now under offer to a company.

"The lode that trends through this property is said to range from 10 to 25 feet in width. It has been developed to a fair extent to a depth of 100 feet, and the ore that has been treated from it has averaged about one ounce per ton.

"Corinthian North.—This property was recently purchased by a company. The lode has been developed to a considerable extent to a depth of 100 feet and in the course of a few months a suitable plant will be erected on the property.

"As the lode is a large one and gives promise of continuing to a great depth, I am of opinion employment will be given to a large number of men for a very long period, and that Corinthian will become a very prosperous centre.

Jacoletti.

"Democrat (884).—Several shafts have been sunk on a small vein of quartz, the deepest being 170 feet. The vein in the bottom workings is maintaining its size and value well, and its prospects are said to be promising.

"Donovan's Find (768).—During the early part of the year operations ceased in this mine for a short time, and water was allowed to rise. The upper workings are now being worked by tributers.

"Exhibition (823).—This property was purchased by a company, and a considerable amount of work is

now being done at different points. It is anticipated that a mill will be erected on the property before long.

"Jacoletti (490, 517).—Very little underground work was done on this mine during the latter part of the year, and operations were confined principally to the treatment of tailings.

"Marvel Loch (714).—A good deal of trouble was experienced in connection with machinery, and the unwatering of the mine, which appears to have retarded progress to a very great extent.

"Mountain Queen (803).—This property has been taken over by a company, and preparations are being made for the erection of a suitable mill. Several thousands of tons of profitable ore have been developed and there seems to be every prospect of this mine becoming a large and consistent producer for many years.

"Queen Mab (803).—Results from this mine have not been of a highly satisfactory nature up to the present; there are many indications, however, that lead one to think that the veins are worthy of being prospected to a reasonable depth.

Parker's Range.

"Spring Hill (724).—Very good progress has been made at this mine, and the value of the ore is said to be improving in the bottom drifts north of the main incline.

"Australia (708).—Results from this mine have not been very encouraging, but I believe it is the intention of the owner to sink the main shaft 100 feet. It is thought that a large amount of profitable ore will be opened up in the next drift.

"Great Victoria (719).—A ten-head mill is being erected on this property, and it is expected to be in operation soon. A fair supply of water was struck in the main vertical shaft, which has been sunk to a depth of about 300 feet. The lode here is 100 feet in width, and is reckoned to average 6 dwts. per ton.

"Never Never (665).—Very little work was done on this property during the year; there are prospects, however, of it being taken over by a syndicate and worked continuously during the present year.

Southern Cross.

"British and Foreign Development Syndicate (13, 29).—This property has been worked principally by tributers, some of the parties having done well. An option was taken over the mine by a company, and a little development work was done in the bottom workings. Apparently results were not satisfactory as option was not completed.

Underground Workings.

"Close attention has been paid to the underground workings.

"Stopes have been kept well filled, and where it was found impracticable to use filling, the ground has been secured by timbering.

Ventilation.

"The ventilation in the mines has been found on each visit of inspection to be good."

COLLIE COALFIELD.

The Annual Report of the Inspector of Mines, Mr. T. D. Briggs, dated 20th February, 1911, says:—

"The coal trade throughout the year has been in excess of that for any similar period, the total output of coal being 261,587 tons, an increase on the previous year of 47,207 tons. Of this total, the Co-operative Colliery contributed the largest quantity, 75,773 tons, the next in order being the Proprietary, 70,680 tons; Scottish, 67,127 tons; Cardiff, 40,122 tons; and the Westralian 7,884 tons.

"Very little development work has been done in the Proprietary, Scottish and Cardiff workings during the year, but the Proprietary commenced operations with the object of opening a new colliery about a mile further east than the present workings. The main tunnel has been driven about 85 yards, but a further distance of 115 yards will need to be driven to strike the seam. The Westralian mine has not improved its position as a coal producer during the year, the principal drawback appears to be the want of the necessary capital.

"On the Premier Company's property a tunnel has been driven on a seven feet seam of coal a distance of about 105 yards, an air shaft has been sunk, and a commencement made with the colliery railway siding, so that the company should be putting coal on the market in a few months.

"The total number of men employed during the year averaged 518, but this number does not include the men employed on prospecting areas, from which no returns were sent in.

"A very unfortunate accident occurred at the Proprietary Colliery during the Christmas holidays, which caused the death of two persons. On December 27th, and while the mine was idle, the manager accompanied by the under-manager, a deputy, and an experienced miner were inspecting some old underground workings with the object of erecting some brick stoppings to seal off a fire that had started spontaneously about four weeks previously. The manager and under-manager were in advance of the other two when they were overcome by poisonous gases from the fire. The deputy, George Hann, went to their assistance, but was overcome, and his brave act cost him his life. The miner, Arthur Saunders, succeeded, at a very great risk to himself, in rescuing the manager from what would have been certain death. He was so overcome by this effort, however, that he could not make any further effort on behalf of the other two men or obtain assistance until it was too late. As these mines are liable to underground fires from spontaneous combustion, three having started in one mine during the last twelve months, it is important that at every mine appliances should be kept and men trained in their use, so that inspections could be made of places containing poisonous gases, or rescue work undertaken in poisonous atmospheres without unnecessary risk. Unless, however, regulations are made making such provision compulsory, I am afraid nothing satisfactory will be done.

"There were three prosecutions under 'The Coal Mines Regulation Act, 1902,' one against a manager for failing to enforce the observance of General Rule 34, which provides for the securing of every working place, and two cases against managers for breach of General Rule 1, which provides for an adequate amount of ventilation at the face of every working place. In each case a conviction was obtained, the Magistrate intimating to one of the offenders that if convicted again for a similar offence the fine would be the maximum of £20.

"Twenty permits were granted under 'The Mines Regulation Act, 1906,' to employ persons on a Sunday, the average number allowed per permit being 6.55."

GREENBUSHES MINERAL FIELD, PHILLIPS RIVER GOLDFIELD, NORTHAMPTON MINERAL FIELD, ETC.

Mr. E. D. Cleland, Inspector of Mines, reports under date 18th February, 1911:—

Inspection of Mines.

"I have the honour to report that during the year 1910 I have been engaged, under your instructions, in relieving Inspectors of Mines in the Murchison, East Murchison, Mt. Margaret, North-East Coolgardie, East Coolgardie, and Yilgarn Goldfields, the Collie Coalfield, and in inspecting my own fields of Phillips River and Greenbushes.

"This work has entailed inspections in thirty separate mining centres, some of which have been visited three or four times during the year.

"The time occupied on the road and in field work amounted to nearly 34 weeks, and the distance travelled aggregated 7,900 miles, nearly. The balance of my time has been taken up with work in the Head Office, Perth.

"I attach hereto reports on the Phillips River, Greenbushes, and Northampton fields."

PHILLIPS RIVER GOLDFIELD.

"The total production of copper and gold from this field during 1910, as reported to the Mines Department, is as follows:—

	Ore treated. Tons.	Metallic Copper. Tons.	Gold. Fine Ozs.
Copper ..	25,871·65	1,685·03	3,864·81
Gold	8,451·67	..	4,444·35
Totals ..	34,323·32	1,685·03	8,309·16

"From copper ore the yield equalled 6.55 per cent. metallic copper per ton. The value of the metal was £96,745. In addition to copper the ore contained by assay 2.84dwts. fine gold per ton.

"From gold ores, treated by milling and cyaniding, the yield averaged 10.51 dwts. fine gold per ton of ore milled.

"The average number of men employed during the year was:—

	On surface.	Underground.	Total.
Copper ..	261	164	425
Gold	45	59	104
Totals ..	306	223	529

"The output for 1910 shows the following increases over that of 1909:—

Copper Ore treated, increase tons	18,540·95
Metallic Copper produced, increase tons ..	1,152·04
Gold contained in Copper, increase ozs. ..	98·25
Gold Ore, milled and cyanided, increase tons	2,030·29
Yield therefrom, fine gold, increase ozs. ..	1,317·39

"In Phillips River Gold & Copper Co.'s mines, the Mt. Cattlin and Elverton, shaft sinking and driving have been pushed ahead vigorously. This work has shown that the lodes maintain their size and value in depth.

"Owing to a scarcity of water during the summer months the company was handicapped to some extent and was put to the expense of getting supplies by rail from sources near Hopetoun.

"A large reservoir has been completed by the Government in the Cordingup Creek, about midway between Ravensthorpe and Elverdton.

"A good deal of renovation work has been expended on the company's concentrating plant and the smelter, and a sintering plant has also commenced work.

"As regards the small privately owned mines, there is little change to record. The best of them have reached a stage at which pumping and hoisting machinery is required, and also means of concentrating the lower grade ores not suitable for cartage to the company's smelter. Capital is urgently needed in these directions, but none is as yet forthcoming. As a consequence there is little development being done, and only the best ore taken from the lodes above water level. Of the total output of copper ore for the year, that produced by the private mines amounted to a little over 1,500 tons.

"*Inspection.*—Owing to pressure of work in other portions of the State I was able to make one visit only to this field during the year. On that occasion the state of the plant at surface and the underground work was generally satisfactory.

"*Accidents.*—Four accidents of a serious nature occurred, two on the surface and two underground. In the former, one man sustained a broken arm through trying to cross over a piece of revolving shafting; the second man fell into an ore bin and broke his arm. In the accidents underground one man injured his knee through slipping off a rope while being hoisted up a shaft, and the second man was injured by a fall of ground in a stope."

GREENBUSHES MINERAL FIELD.

"During the year the output of black tin from this field was:—

Lode	25.06	tons.
Stream ..	292.65	tons.
Total ..	317.71	tons of the value of £27,974.

"The average number of men employed was 237, of whom 11 only were engaged in working underground.

"In comparison with the year 1909 there is a decrease in the output of both lode and stream tin, but an increase of 17 in the number of men employed. This increase may probably be due to work in connection with the construction of dredges in Floyd's Gully, the Excelsior Co. at the Bunbury end, etc., and not to any increase in the number of claims worked, or in the opening of fresh ground. In this last respect there is no change to record.

"A very likely explanation of the falling-off in the output of tin per man is that many of the men find plenty of lucrative employment in sleeper cutting and opossum hunting in the district, and that there has been a strong demand for labour in other directions.

"*Stream Tin.*—The chief producers are the dredge owners, and these in some instances are treating ground which has been mined by hand and the highest grade of ore extracted in past years.

"In the summer months the usual shortage of water curtailed dredging operations, and barges were put out of commission for overhaul and repair. The new plants at Floyd's Gully and the Bunbury end did not get to work till well on in the year, and in both properties there was a good deal of preliminary work to be done before a good working face was established.

"*Lode Mining.*—No advance was made in this branch of the industry during the year, and the tin produced has been at the hands of tributers only, and not of any company possessed of money. As tributers have not the means for installing pumps

and hoisting machinery and treatment plant, and therefore can mine only those shoots of ore that are above water level, the mines are not being systematically developed, and the size and value of the lodes below water level remain unknown.

"*Accidents.*—Four accidents were reported during the year, two of a minor and two of a serious nature. The former comprised injury to a man's hand by a belt fastener, and the second man got strained in lifting a pipe. Of the latter, one man was injured in the eye by the bursting of a water gauge glass, and the other sustained cuts from splinters of rock when blasting.

"*Inspection.*—Two visits of inspection were made during the year, and on those occasions it was found that the requirements of the Mines Regulation Act had generally been well observed."

NORTHAMPTON MINERAL FIELD.

"During 1910 mining on a small scale was resumed on this field, but no opportunity of making an inspection occurred.

"During the last four months of 1910 the ore raised amounted to 185.10 tons, estimated to contain 136.67 tons metallic lead of the value of £1,777."

MINING ACCIDENTS.

"Herewith are submitted tabulated statements of the mining accidents for the year ended 31st December, 1910, for the customary tables Nos. 22, 23, and 24 of your Annual Report, with the totals of the previous year for comparison, and also a diagram of the fatal accidents year by year and their causes. As in last year's report, the accidents tabulated in these returns are now restricted entirely to such as have happened to persons engaged in the occupation of mining, and which have been a result of their occupation.

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

——	1906.	1907.	1908.	1909.	1910.
Total fatal accidents on mines reported	40	46	41	37	34
Less accidents to persons not engaged in mining, deaths in mines due to natural causes, and accidents to persons which were not due to their occupation as miners ..	..	3	1	3	5
Fatal accidents to men engaged in mining	40	43	40	34	29
Total men engaged in mining (average)	19,429	19,113	17,266	18,336	17,711
Accident death rate, per 1,000 men engaged in mining ..	2·06	2·25	2·32	1·85	1·64

"Table 22 shows that 29 persons were killed and 587 seriously injured by mining accidents during 1910, as against 34 killed and 460 injured in 1909. It also shows the distribution of the accidents in the various gold and mineral fields, and the classification of the accidents according to causes. The diagram shows graphically the totals of fatal accidents year by year since 1894, and that since 1899 there has been no great difference in the total mortality from mining accidents, but on the whole some improvement.

"In table 23 the rate of deaths from accidents per 1,000 persons employed in mines is shown for the different sorts of mines, and for surface and underground workings, and the general average rate is seen to be 1.64 for 1910 as against 1.85 for 1909. The rates per 1,000 are based upon the figures in your Table No. 17, which gives a grand total for 1910 of 17,711 men employed at mines, above and underground, inclusive of the alluvial gold workers.

"Table 24 gives a summary for 1910 of the fatal accidents above and below ground in gold mines only, with rates per 1,000 men employed, and per 1,000 tons of ore raised, and with similar figures of 1909 for comparison. The numbers of men on which these rates are based are taken from your Table No. 19, and do not include alluvial workers.

"Hereunder is attached a general table classifying the fatal and serious accidents during 1910 according to the gold or mineral field in which they happened, and also according to causes, the totals from each cause for 1909 being 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	1	6	5	26	2	8	2	212	...	84	1	27	11	363
2. Mt. Margaret	1	1	2	2	1	5	...	24	...	18	2	7	6	57
3. Murchison	...	...	1	3	1	1	...	14	...	10	2	3	4	31
4. East Murchison	...	1	...	3	1	4	...	4	...	2	...	4	1	18
5 Coolgardie	...	...	...	1	...	...	...	2	...	...	1	1	1	4
6 Yilgarn	...	...	1	...	1	...	...	...	...	...	...	...	2	...
7. North Coolgardie	1	2	1	2	...	4	...	1	...	2	...	1	2	12
8. North-East Coolgardie	...	...	...	2	...	...	...	5	...	3	...	1	...	11
9. Broad Arrow	..	1	...	...	...	...	...	...	...	...	...	...	...	1
10. Dundas	...	...	...	...	...	2	...	1	...	1	...	1	...	5
11. Pilbara	...	...	...	...	...	1	...	...	...	...	...	...	...	1
12. Peak Hill	...	...	...	...	...	...	...	...	...	...	...	...	...	...
13. Yalgoo	...	...	...	...	...	...	...	...	...	..	...	...	...	...
14. Phillips River	...	...	...	1	...	1	...	...	...	1	...	1	...	4
15. Collie	...	1	...	6	...	...	2	57	...	13	...	1	2	78
16. Greenbushes	...	...	...	...	...	...	...	...	...	1	...	1	...	2
17. Northampton	...	...	...	...	...	...	...	...	...	...	...	...	...	...
18. West Pilbara	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total for 1910	3	12	10	46	6	26	4	320	...	135	6	48	29	587
Total for 1909	3	19	13	72	6	19	7	228	1	96	4	27	34	461

(The machinery accidents in the above table might properly be included in the "surface" class. They are such as have been caused by machinery in motion and boilers, and which come under "The Inspection of Machinery Act, 1906." They are usually dealt with by the Inspectors of Machinery, but have to be included as mining accidents under the Mines Regulation Act also. Only such are here recorded as "serious" as come within the 14 day rule adopted for mining accidents, 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.")

As a measure of precaution in case they might prove serious, there have also been reported to the Inspectors of Mines a large number of slight accidents, which were found subsequently not to prevent the sufferer from returning to his work within 14 days, and therefore were not tabulated as "serious." Only a proportion of such accidents are reported, there being no obligation upon managers and owners of mines to do so unless the injury is "serious," and no real significance therefore attaches to citation of the figures.

Fatal Accidents.

Brief particulars of each of the fatal accidents reported during 1910 are attached hereunder:—

Explosions.

A premature explosion caused the death of one man at the North Star Gold Mine, Mt. Malcolm. After firing some of a round of holes he returned to fire the remainder, when one of them exploded before he could get away, presumably either from the fuse being faulty or perhaps from a fuse having been cut short by one of the previous shots. Death ensued five days later, due to blood poisoning. (2434/10.)

One man was blown to pieces as a result of an explosion, cause unknown, in the Menzies Gold Mines. He was firing three holes, but no evidence was available afterwards to show how he came to meet with the accident. On examination the ventilation, fuse, dynamite, and general conditions were found to be all that could be desired. The Coroner's jury returned a verdict of accidental death, no blame attachable to anyone. (3261/10.)

Another man met with instantaneous death through an explosion at the Kalgurli G.M. From the evidence of men working near by, it would appear that while deceased was boring a hole an explosion occurred, which blew out all lights, and on obtaining fresh lights they found the man lying on his back, dead. On examination no evidence was found of anything to throw light on the cause of the accident, but the most likely explanation seems to be that the drill struck portion of an old hole in which explosive had remained unfired. The Coroner's jury brought in a verdict of accidental death, with no blame attachable to anyone. (1397/10.)

In Shafts.

A fatal accident happened in the Great Boulder Perseverance Gold Mine, Boulder, to a man who was crushed between the cage and side of shaft. The deceased was one of seven men being hauled to surface in a cage. After passing the No. 5 plat the cage was felt to bump, and on reaching surface it was found that deceased was missing, his body being subsequently found at the No. 4 plat. The indications were that the unfortunate man slipped, or fainted, after passing the No. 5 plat and was dragged up between the cage and the shaft until the next plat was reached, and then thrown clear into it. The Coroner's jury returned a verdict of accidental death, no blame attachable to anyone, and added a rider, that they considered the bar on the cage at present in use was not sufficient protection and that further provision should be made for the safety of human life. (5875/10.)

One of the owners of the Golden Bell North G.M., Burtville, was killed through failure of a winch (a "Thomas" hoist). While he was being drawn to the surface the brakes of the hoist failed to act, causing the bucket to slip and fall down the shaft with the man upon it. The failure of the brake was due to one of the plummer blocks having been broken, allowing the drum to shift so that the brake did not come fairly upon its seat. The hoist should not have been used for raising and lowering men when in this condition. Action was instructed to be taken against the driver of the hoist for having no certificate, but not completed by the end of the year. Owners of these hoists have been notified that men must not be raised by them. (3970/10.)

At the Black Range West Gold Mine, Black Range, some drills were being lowered in a hide bucket down the shaft, when one of them dropped through the bucket down the shaft and struck a man working below, inflicting injuries to his head from which he died four days later. The pent house had been partly opened to facilitate passing the dirt. It is pretty clear that there was much carelessness in this case on someone's part in using an old and broken bucket for such a purpose, but it was impossible to bring home negligence to any particular person. (582/10.)

At the Barrambie Ranges Gold Mine a man, while being raised to surface in a shaft which was hot on account of a steam pump having been used in it, fell out of the bosun's chair, in which he was being lifted, and was killed. He neglected to lash himself to the rope before being raised, although previously warned by the manager not to omit this precaution. At the Coroner's inquest the jury returned a verdict of accidental death, adding that they considered the said shaft too hot to work in. There is no doubt that the exhausting of the steam into the well was a bad arrangement, making the shaft too hot for anyone to attend to the pump with safety, but the manager was trying to remedy this, and had started another shaft for ventilation. (2727/10.)

A timberman was killed at the Golden Horseshoe G.M., Boulder, by being caught between the gig and the wall-plates of the shaft. He and his mate were putting runners in the shaft and had two in the gig, lashed to the chain about 7ft. above the gig, and leaving about 12ft. of the runners above the lashing. Probably the upper ends of the runners fell over and caught under the shaft timbers when the gig was raised, causing deceased to fall and get caught between the gig and the shaft timbers. Death was instantaneous. The Coroner's jury brought in a verdict of accidental death, no blame attachable to anyone, adding a rider—jury are of opinion that persons engaged in this kind of work, to minimise risk, ought to lash runners both at the bottom and near the top. (2481/10.)

One of the owners of a small mine at Southern Cross met with a serious accident on the 2nd July, which terminated fatally on the 12th of the same month. He had suspended a ladder in his shaft by

a light rope, which broke when his weight was put upon it, precipitating him down the shaft. His own want of judgment in using so weak a fastening was alone to blame for the accident. (2477/10.)

Falls of Ground.

A fall of stone at the 600ft. level of the Marvel Loch G.M., Yilgarn Goldfield, caused the death of a man who was employed shovelling ore into a pass. About 1 cwt. of stone fell on him, inflicting fatal injuries. The Coroner's jury returned a verdict of accidental death, but were of opinion that sufficient care was not exercised in sounding the ground that fell. The evidence did not disclose culpable want of care on the part of any particular person. (2413/10.)

One of the owners of the Pioneer G.M., Meekatharra, was killed by a fall of ground while driving through old workings which had been filled with mullock. A badly set stull gave way in the back of the drive and allowed a run of dirt to fall upon him, causing death by asphyxiation. The stull which gave way was put in by himself. (2876/10.)

A heavy fall of ground occurred at the 300ft. level in the Lancefield G.M., Laverton, causing the death of one man. The ground had been sounded just before the accident happened and appeared to be perfectly safe. The Coroner's jury returned a verdict of accidental death. (3141/10.)

Another accident also occurred at the Lancefield G.M., through a fall of ground, by which one man was killed. Deceased and his mate were preparing a foundation for a pump when the fall occurred. As in the previous accident, the ground had been tested prior to the accident and appeared safe. The Coroner's jury returned a verdict of accidental death, no blame being attachable to anyone. (3592/10.)

A man employed in the Champion G.M., Kookynie, while trying to work out a small block of quartz that had been left on the footwall, was crushed to death through a large piece of rock falling on him. The ground is stated to have been apparently quite safe. (985/10.)

Two men were stoping off a shaft about 50ft. from surface at Hannans Consols G.M., Kalgoorlie, when a fall of earth occurred, completely burying them both. One was extricated in a few minutes and found to have received serious injury, but the body of the other was not recovered till three-quarters of an hour later, when life was found to be extinct, his neck being broken. The Inspector of Mines had previously warned the men about the place where the accident happened, and considered that any practical miner should have seen that it was dangerous. The Coroner's jury, however, returned a verdict of accidental death, no blame attachable to anyone. (2228/10.)

At the Golden Horseshoe G.M., Boulder, while firing in a stope, a pass became blocked through a large stone falling over it. On returning the men decided to sand-blast the stone, and so clear the pass, but while doing so a fall of ground occurred, and one man was buried under the dirt and suffocated. The men seem to have taken an undue amount of risk in this case, as they might have seen that the ground was baulked, but probably thought it would hang till they fired the remainder of their shots. The Coroner's jury returned a verdict of accidental death. (279/11.)

A shoveller, while employed at the Golden Horseshoe G.M., Boulder, met his death through a quantity of stone falling from the west wall of the stope. The Coroner's jury returned a verdict of accidental death, adding a rider that more care be exercised in examination of ground after firing. The Inspector of Mines reported that all reasonable care appeared to have been taken, and that no one seemed blamable for the accident. (566/10.)

Two men were killed at the Great Boulder Proprietary G.M., Boulder, while engaged in barring down loose ground. On examination it was found that the fall had occurred through a greasy head which could not be seen before the fall. There seems no reason to blame any person for this unfortunate misadventure, and the Coroner's jury found accordingly. (1651/10.)

Miscellaneous Underground.

A fatal accident at the Great Boulder Proprietary G.M., Boulder, occurred through the deceased falling into an open sand-pass while walking along the 1,400ft. level. He fell 200ft. and succumbed to his injuries two days later. There was no light at the pass at the time of the accident, which was a breach of General Rule 33. The Inspector of Mines had previously given notice that such sand passes must be made so as to have a safe travelling road. The manager of the mine was prosecuted for breach of General Rule 33 of Section 32 of the Mines Regulation Act, 1906, and fined £25 and costs. (3546/10.)

An accident of an uncommon character occurred at the Ivanhoe G.M., Boulder, whereby a man met his death by being smothered through collapse of the top of a cave which had formed in the sand filling below him, causing him to fall and become buried in the sand. The cave was due to some timber breaking away from the lining of the sand pass, and allowing the filling of the stope to run into the pass. As soon as the timber was noticed to have come out, work was stopped and the men were warned not to put any more ore down the pass till it was repaired. The accident was due to the unforeseen circumstance that the cave had formed in the stope below where deceased was working, owing to sand filling running into the broken pass. (330/10.)

Two men lost their lives in the Collie Proprietary Mine, Collie, through entering a level which contained black-damp and poisonous gases from a mine fire. Several other men were overcome by the gases in trying to rescue those first fallen, but were got out in time, and recovered. The two who were first overcome could not be reached for some time, and were dead when at last brought out. The work they were trying to do was of an emergency nature, necessitated by the fire, and risks were knowingly undertaken, apparently in the belief that it would be possible to make a short dash into the bad air and get out again without misadventure. Great bravery and devotion were shown by several of the rescue party in their efforts to bring out the fallen men. The foul air probably contained a good deal of carbon monoxide as well as carbon dioxide, rendering it very poisonous and dangerous. A full inquiry was held by the Warden into this accident, but no one was found to have been to blame. (5959/10.)

On Surface.

At the Great Fingall G.M., Cue, an air receiver exploded owing to having become very thin from internal corrosion, causing the death of one man. This accident emphasised the need for frequent inspection

of air receivers, and a General Rule, No. 8A, has accordingly been added to Regulation 4 under the Mines Regulation Act, 1906, directing examination of air receivers at least once a year. The Coroner's jury found a verdict of accidental death, and recommended that all air receivers be inspected annually by the Inspectors of Machinery. (273/10.)

A shocking accident at the Sons of Gwalia G.M., Leonora, caused the death of a man who was trying to shift a driving belt on to a loose pulley, by using a piece of iron piping as a lever, whilst the machinery was in motion. The piping got caught by the belt and struck the unfortunate man, inflicting terrible abdominal injuries. He succumbed six days later. The belt was provided with striking gear for shifting it, but sometimes was rather hard to shift over, hence the use of the lever. With a little trouble it could have been readily shifted from below with safety. The striking gear has now been ordered to be improved so as to be workable by levers from the platform. (2617/10.)

At Tindall's Battery, Coolgardie, another shocking accident caused the death of a youth 19 years of age. When last seen alive he was attending to the feeder tappet of the challenge ore feeder, and was next seen twisted round the driving shaft, and as no one witnessed the accident it can only be surmised that he went down to put the belt in position on the driving pulley and got caught by it; when released life was found to be extinct. The Coroner's jury found a verdict of accidental death. The machinery was well guarded and in good order, and no accident seemed possible if reasonable care were observed, but there must have been some inattention or incautious action on the part of the deceased which led to the accident. (2637/10.)

A man was killed at the battery of the St. George G.M., Mt. Magnet, while preparing to cut a belt in order to shorten it, for which purpose he ascended the feeder platform with another man to assist him. The latter turned away for a moment to get a lamp from a bench near by, and then heard a crash, and on looking round found deceased jammed under the main driving belt. He expired before he could be extricated. The Coroner's jury returned a verdict of accidental death, no blame being attachable to anyone, and that the machinery was in good order. The Inspector of Machinery formed the opinion that the immediate cause of the accident most probably was that in endeavouring to lay out the belt flat on the platform preparatory to cutting it, deceased must have lifted the lower end of it so that it came into contact with the revolving pulley on the main line shaft and drew him down under the pulley. He recommends that it be made compulsory to stop all shafting which is in direct contact with such belts for the time required for effecting repairs. Deceased's mate, however, does not think he was dragged by the belt, but that he must somehow have slipped and fallen from the platform on to the pulley. (235/10.)

While attending to the rock-breaker at the Great Boulder Perseverance G.M., Boulder, a man by some means fell between the fly-wheel and the body of the machine. He was badly crushed and died a few hours later without having regained consciousness. The Coroner's jury returned a verdict of accidental death, with no blame attachable to anyone. The wheels were well protected by covers, and it is difficult to understand how deceased got to where he was found. He may have slipped head first while bending over to turn the Stauffer lubricators. (5066/10.)

At the Ida H. G.M., Laverton, a man was instructed to get up steam at the well, some distance from the mine, to pump water. The following morning his body was found at the base of the boiler. It can only be surmised that probably deceased, while in the act of replacing the safety valve, lever, and ball, which he had removed, fell from his ladder to the ground, and was killed. A verdict of accidental death was brought in by the Coroner's jury. (150/10.)

Deaths in Mines recorded, but not included in Statistics of Mining Accidents.

During the year several deaths in and about mines have been reported which, on inquiry, proved not to be due to accidents to miners in consequence of the nature of their occupation. Although recorded in the Register of Accidents, these have not been included in the compilation of the statistical tables, it being considered that they could not fairly be regarded as mining accidents. This question was fully discussed in last year's report. The following are brief particulars of the cases:—

At the New North Boulder G.M., Boulder, a child while playing beside an unused shaft fell down it, receiving injuries from which he died the following day. From the evidence given at the inquest it would appear that the shaft had been properly covered up to not more than ten days previously, and that the accident was caused through some person or persons unknown removing the timber covering. There was unfortunately no knowledge of the perpetrator. The Coroner's jury found a verdict of accidental death. (4560/10.)

A man employed at the Golden Pole G.M., Davyhurst, dropped dead while sitting in one of the levels. One of his mates had just previously been pulled up in an unconscious state from a winze in which he had been firing, having been overcome by fumes, but there was no evidence that the deceased had been in the fumes or in any way suffered from them. The doctor's certificate showed that he died from heart disease from purely natural causes. (267/11.)

Another man who had apparently taken some liquor, by some means got through the fence round the open cut on the Eclipse lease of the Oroya-Links G.M., Kalgoorlie, and fell into the mine, a distance of about 120ft. The open cut was properly fenced, and the Coroner's jury brought in a verdict of death by falling into an open cut, no blame attachable to any person. (3280/10.)

A man employed in the sawmill of the Great Boulder Proprietary Mine, Boulder, when last seen alive was putting on his coat ready to go home, and on his mate calling to him to hurry he replied "all right." The next morning his body was found at the place where the coats were hung up. A post mortem examination showed that he died from heart disease. Three days before his death he had complained of feeling unwell after a sudden strain thrown upon him by a mishap while handling a log, but the doctor's evidence does not show that this had any demonstrable connection with the death. (3137/10.)

A miner employed at the Associated G.M., Boulder, slipped and fell against the face, cutting his head slightly. He was unwell, suffering from influenza, and soon afterwards died, the doctor giving the cause of death as erysipelas. The doctor stated that the cut on the head seemed to be quite healthy, and that he did not think it was the cause of death. (1850/10.)

Serious Accidents.

The accidents included under this heading, as has been pointed out frequently in former reports, are not only all such as would ordinarily be regarded as "serious" in common speech, but include also all in which the injuries received are severe enough to keep the injured man from returning to his work within fourteen days. Many of them are comparatively slight in their effects, and cause no lasting disablement. Of 365 accidents in the East Coolgardie field reported as "serious" in 1910, only about 25 were cases of breakage of the larger bones, permanent serious injury to eyes or limbs, or injuries likely to have lasting disabling effects. The others comprise all sorts of bruises, cuts, broken and crushed fingers and toes, scalds, burns, jarred hands, poisoned cuts, shocks to the system, smaller dislocations, strains, and wrenches.

Explosions and Explosives.

Twelve persons received injuries recorded as serious during 1910 from explosions. One man was injured through inadvertently placing a lighted candle against the fuse of an unexploded charge. Two men were hurt by explosions occurring while they were tamping charges. Three men were injured by stones from explosions striking them. One man received serious injury from an explosion occurring while he was cleaning up after firing. Three men were injured by premature explosions and from delaying too long after firing the fuse. One man had his hand blown off through a plug of gelignite which he was holding exploding. One man, while shovelling sand, struck explosive which exploded; this accident was due to carelessness on the part of some person unknown in leaving explosives lying about.

Falls of Ground.

Forty-six men were injured more or less seriously during the year by falls of ground. In 12 instances the men at the time they were hurt were engaged in taking down loose ground, a class of work which is absolutely necessary, but which from its very nature is obviously attended with more than ordinary risk of injury from the falling rock. In three instances the accidents were due to the injured men's own carelessness in working under known bad ground. The Inspectors of Mines have not, however, thought it necessary to institute prosecutions for negligence in any of these cases. The great majority of instances, however, were purely accidental mishaps not preventable by exercise of ordinary skill and care, the accidents being of a class inseparable from the miner's occupation.

In Shafts.

Twenty-six persons received serious injuries in shafts from various mishaps. Six were hurt by falls of material, such as stones and timber, down the shafts, and ten by accidents in connection with the working of cages, buckets, kibbles, and skips. One man was seriously injured by falling off the windlass rope while being raised to surface, and two by the breaking of hauling ropes. One serious accident was caused through the cap of a pump blowing off and jamming the man's hand against some timber. One man was seriously injured through the ladder he was standing on giving way, and two through falling from ladders. There were three accidents in connection with stages erected in shafts, one from a plank of a stage falling and carrying the man with it, one from a stage collapsing, and another from the stage tipping, the men being precipitated to the bottom of the shaft. Many of these accidents were more or less due to want of care on the part of the men concerned, but not of such degree as to amount to culpable negligence.

Miscellaneous Underground.

Three hundred and twenty persons were injured by miscellaneous mishaps underground. In 70 cases the injuries were sustained while handling and loading trucks and skips; through fingers or bodies being jammed against shoots or other trucks; toes and feet run over; bodies struck by upsetting of trucks; men slipping and straining themselves while trucking, or lifting derailed trucks or material into trucks; big stones moving in trucks and injuring hands; and so on, the injuries being mostly wrenches, sprains, bruises, fractures of the fingers, and cuts. In 90 cases the injuries were due to falling and rolling loose rocks and stones, such as runs of ore and mullock while shovelling, or stones running down rills and ore-shoots, and six men received severe cuts while handling sharp stones. Forty-one men were hurt while handling rock-drills and coal-cutting machines, and parts of same, and four by the breaking down of the stages on which machines were erected. Other falls in the workings from stages, ladders, or rills, in passes, and so on, caused injury to 32 men, and 20 were hurt by falling tools and pieces of machinery. Flying splinters of stone and steel injured 20 men, and nine men were hurt while handling timber. The remaining cases were due to various accidental causes, jarring of hands, blows from tools, strains, and so on. Most of them must be regarded as purely accidental mishaps, but there is no doubt that very many of them could have been avoided had a little more care been observed.

Surface Accidents (including Machinery).

In and about the surface works of mines 183 accidents were recorded for 1910, the causes being very various. Six men were scalded by hot water and 10 burnt in various ways. Twenty-nine persons sustained injuries from falls caused by missing their footing, slipping, and overbalancing. Twenty men were hurt by trucks and skips; by being jammed or struck by them; by them capsizing, or by the men sustaining strains while working them. Flying splinters injured six men, and five got their hands jarred. Falls of timber and pieces of machinery while being handled accounted for 24 cases of injury. Thirty-one were caused by machinery in motion, twelve of these being caused by handling belts in motion. Twelve men were hurt while handling timber. Other causes of accidents were strains from lifting heavy weights, small stones rolling from ore heaps at batteries, and so on. Most of them were mishaps of an accidental character, the only way of preventing which is the exercise of greater care and forethought by the workmen themselves, and were not from causes which could be effectively dealt with by restrictive regulations, with perhaps the exception of those due to handling belts in motion.

Winding Machinery Accidents.

Under Regulation 11 of "The Mines Regulation Act, 1906," it is necessary for mine owners to report to the Inspector of Mines all accidents to the winding machinery, whether such accidents have caused

injury to persons or not. Such accidents as were attended with injury to persons have already been mentioned, but there were also 19 accidents unattended with injury to persons reported during 1910, brief particulars of which are given hereunder.

Two accidents occurred at the Oroya Black Range and one at the Black Range G.M., the first through overwinding causing rope to break; the second through the engine-driver neglecting to secure the skip, whereby the handle of starting valve was broken; and the third was caused through the driver losing control of the machinery, thereby breaking the starting lever bracket and spindle of starting valve.

Two accidents of a similar nature occurred at the Great Fingall G.M., whereby the cage was lowered till it struck the bottom of the shaft, no injury, however, resulting. In the first instance the chain driving indicator slipped off without the engine-driver noticing it, and in the second the indicator slipped off the sprocket.

At the Lake View Consols G.M. three accidents occurred, one causing the flange on the drum to spring, another cracking the drum, and the third being due to the king pin breaking behind the nut and allowing the cage to drop; the breakage was due to a sudden snap.

Another accident happened at the New North Boulder. The throttle valve flew open, causing the engine to start, although both brakes were down, and breaking a portion of the footplate.

At the Kalgurli G.M. the right-hand back steam bonnet of winding engine was broken through a piece of waste being left in the oil hole which prevented the oil from doing its work.

Two accidents occurred at the Chaffers G.M.; in one the flange was broken, and in the other the engine-driver overwound the baling tank through neglecting to properly adjust the reversing lever whilst attending to firing; no injury resulting.

At the V's United G.M. an accident was caused through the engine-driver attempting to put pawl in "Thomas" hoist while the winch was travelling quickly, thereby causing the plummer block to break.

The Golden Horseshoe G.M. was responsible for two accidents: the first through the engine-driver taking his attention off the indicator, when the cage was overwound and caught by the safety hook; the second through a truck which had been placed in the cage coming out of the bottom deck, causing the cage to be jammed in the shaft and damaging the guides and timbers of the shaft.

An accident was reported from the South Kalgurli G.M., resulting in the right disc and part of segment of drum being cracked.

At the Great Boulder Perseverance G.M. an accident occurred through overwinding owing to an error of the driver.

Another accident, with little injury resulting, occurred at the Hainault G.M. The steam brake had just been packed and was not in operation through an intermediate valve being left closed; the drum was thrown out of gear, and as it received an impetus from the engine the foot brake was unable to hold it. The skip went to the bottom, carrying rope with it.

A serious accident occurred on the 17th August to the winding engine at the Great Boulder main shaft through one band of the friction clutch breaking, due to an old flaw in the metal from an imperfect weld. The drum started to revolve, allowing a double-decked cage and its load to fall from near the 1,250ft. level on to the pent-house near the bottom of the shaft, followed by the winding rope. The cage was much damaged and the rope spoiled. The pent-house resisted the shock admirably and protected two men who were working below in the shaft. The engine-driver, James McGarry, was knocked down by a block of wood flying from the clutch band, and another flying block forced over the handle of the steam throttle valve and started the engine, but very pluckily he went back and shut off the steam, receiving a scalp wound immediately afterwards from another flying clutch block. The post brakes failed to hold the drum, but in the circumstances they were possibly not very firmly applied. The accident was due to an unseen defect in the metal of the band, and no one was blamable for it.

PROSECUTIONS FOR BREACHES OF THE MINES REGULATION ACTS AND REGULATIONS.

The following are brief particulars of the cases of prosecution during 1910 for offences against the Mines Regulation Acts:—

(1) The manager of a mine was fined £4, with costs £1 6s., for employing men on Sunday to break out ore without obtaining the permission of the Minister or Inspector. (2217/10.)

(2) Two miners were charged with neglecting forthwith to report the position of a number of charged holes which they left unexploded in the bottom of a shaft. They did not go to work again, and made no mention of the charged holes till the third day afterwards, when they told the underground manager. The case was dismissed without costs, but an appeal was made to the Full Court, who found that the Magistrate in deciding that the complaint was bad, did not come to a correct decision in point of law. They declared that the complaint was not bad in law, that the report was not made forthwith within the meaning of the Act; that the appeal be allowed with costs against the respondents, and that the case be remitted to the Resident Magistrate's Court for rehearing. On being again heard, new witnesses were brought forward, mates of the accused, who said the latter had, as a fact, reported to them, and admitted that they were themselves the persons who ought to have been charged. The Magistrate had to find that, as a fact, the existence of the charged holes was reported, and dismissed the case, but without costs. As much publicity had been given to the case, it was not thought necessary to lay a fresh complaint against the two men who had admitted their liability in evidence, and the matter was allowed to drop. (1185/10.)

(3) A manager was fined £25 and costs for neglecting to provide a suitable light protected from draughts of air at the upper entrance to a working sand pass at the 1,400 feet level, in which a fatal accident had occurred. (3546/10.)

(4) A fine of £2 with 15s. 4d. costs was inflicted on the manager of a coal mine for neglecting to enforce the provisions of General Rule 34, which provides for the securing of the roof and sides of every working place. The case arose out of an accident by which a man was injured while filling coal. (1904/10.)

(5) A shift boss was fined £5 and costs £13 11s. 8d. for committing a breach of Section 57 of "The

Mines Regulation Act, 1906." He was removing a cage from the top of a shaft in the bottom of which men were at work, and carelessly used a short piece of firewood across the shaft as a support for the cage. When moving the latter the log fell down the shaft and seriously injured a man at the bottom. (661/10.)

(6) and (7) Two colliery managers were fined (one £5 13s. the other £5 4s.) for neglecting to provide an adequate amount of ventilation at the working places in the mine.—(4561/10.)

(8) A miner was fined £2 and costs £3 4s. 6d. for taking charge of a Holman hoist in contravention to clause (6), Regulation 14 of "The Mines Regulation Act, 1906." A certificated driver was available, and the man fined was not under any instructions to handle the hoist.

(9) For neglecting to supply the Inspector of Mines with a duplicate of a Holman Hoist Certificate of Competency forthwith after issue of same, a mine manager was fined £1 and 2s. costs. This case arose out of an accident whereby a man was injured, and the Inspector of Mines was of opinion that there had been a good deal of negligence, but that it would be difficult to prove anything more than failure to supply the duplicate certificate. It was somewhat doubtful if the man working the hoist had been the possessor of a certificate on the date of the accident, but as he had left the State no action could be taken against him.—(2685/10.)

Exemptions from Section 31 of "The Mines Regulation Act, 1906."

During 1910 22 persons were granted certificates of exemption under Section 31, Subsection (4) of "The Mines Regulation Act, 1906," to enable them to take charge of the machinery on small and out-of-the-way mines, it having first been shown in all cases that it was impracticable to employ a certificated engine-driver, and that the Inspector of Mines had examined the applicant in the use of the machinery in question, and found him fit to take charge of it. These exemptions strictly forbid the raising or lowering of men under any circumstances, and no renewal of the certificate can be obtained unless the applicant makes a *bona fide* attempt to pass the engine-drivers' examination before applying.

New Regulations.

Air Receivers.—A new General Rule, No. 8a, was added to Regulation 4 of "The Mines Regulation Act, 1906," during the year, directing examination of air receivers at least once a year. They are to be opened and thoroughly cleaned out, and inspected externally and internally by a competent person, who shall enter the results of his examination in the Record Book. This Regulation was the outcome of an accident through the bursting of a receiver owing to the shell becoming very thin through corrosion.

Clearing Passes and Shoots.—New General Rules, Nos. 39 and 40 have been made under Regulation 4, with the object of preventing persons from going up into passes in which ore rock or sand is "hung up," and imposing responsibility for the methods adopted in clearing them upon the manager or person for the time being in charge of the underground mining work.

Installation and use of Electricity in Mines.—The new Regulations for metalliferous mines, prepared after much consultation with the users of electricity, were gazetted on 5th December, 1910, to come into force on 1st February, 1911. Similar ones for the collieries were not quite completed at the end of the year.

Sunday Labour.

It has been found necessary during the year to give permission on a good many occasions for the employment of men on Sundays, but the Inspectors of Mines have endeavoured to keep this work down to the minimum entailed by actual necessity. In one case where work had been carried on without permission, the manager of the mine was prosecuted and fined.

Mining Development Act, 1902.

Particulars of the transactions under this Act are fully given in Appendix No. 1 to this report.

Amblygonite.

A few interesting particulars of disposal of a small parcel of this rare mineral, which was sent from Mercer and Monaghan's mine near Coolgardie, are attached in Appendix No. 3 hereto.

Field Work.

During the earlier part of the year visits were made by me to the Kunanalling, Ora Banda, and Chadwin districts; to the Phillips River Gold and Mineral Field, and to the new discoveries at Bullfinch and the Corinthian Leases to the north of Southern Cross. Reports dated 2nd May, 1910, and 28th July, 1910, have been published in *Bulletin* form on the two first named fields, and that on the Bullfinch was given to the daily press at the time, and is now reproduced as Appendix No. 2 hereto.

Leave.

On 22nd August I left for England on long service leave of four and a-half months (inclusive of accumulated annual leave), and returned to my office on 5th January, 1911. While in England, with the concurrence of the Hon. the Premier and the Hon. the Minister for Mines, opportunity was taken to do as much advertising as possible of the State's mineral resources, by interviewing numerous prominent mining investors and firms of mining engineers, and giving public addresses. Two of the latter were given in London, one at the Bank of Adelaide, and the other to the Royal Society of Arts, on the Progress and Prospects of Mining in Western Australia. Addresses were also given under the auspices of the Chambers of Commerce of Carlisle, Glasgow, Edinburgh, Newcastle-upon-Tyne, Manchester, and Birmingham, in each of these great towns, on the general industrial progress of Western Australia, about half the time in each case being devoted to mining. The addresses were very well received by the Public and Press.

I have, etc.,

A. MONTGOMERY, M.A., F.G.S.,
State Mining Engineer.

APPENDIX No. 1.

Loans and Subsidies under "The Mining Development Act, 1902," and the Mining Development Vote: Action during 1910.

(*a.*) *Advances for Pioneer Mining and Prospecting.*

1. *Oversight G.M.L.* 957*Y*, *Bulong* (1909 Report No. 1).—Owing to the syndicate abandoning the venture, the Department foreclosed on their mortgage. The leases were forfeited for non-payment of rent, and tenders were called for the purchase of plant on the mine, but up to the end of the year no offer had been received.—(4598/06.)

2. *Sunbeam G.M.L.* 1121*X*, *Kanowna* (1909 Report No. 2).—The party who took up this mine in 1909 worked with rather poor results for the first six months of 1910, and then had to give up the venture. It therefore became necessary to realise the security, but up to the end of the year nothing had been sold. —(697/09)

3. *Eclipse G.M.L.* 1047*X*, *Gindalbie* (1909 Report No. 3).—Work in this mine has not been successful, and there appear to have been dissensions in the party of owners. As they were unable to make regular payments in reduction of the amount lent to them, they were notified at the beginning of August that thenceforward they would have to pay 15 per cent. of all gold won towards repayment of loan. In October notice was given by one of the owners that they were abandoning the venture, and foreclosure had to be resorted to. Tenders were invited for the mine and plant, but had not closed on December 31st. (4718/07.)

4. *Rollo's Reward G.M. Company G.M.L.* 1214*X*, Kanowna (1909 Report No. 4).—There has been no action in connection with this loan during 1910, although there was one inquiry as to terms of leasing the ground.—(4258/07.)

5. *Mt. Chester M.L.* 250, *Ravensthorpe* (1909 Report No. 5).—Early in the year this lease was forfeited for non-payment of rent, and the principal and interest owing written off as irrecoverable.—(3535/07.)

6. *Westralia Tasmania G.M.L.* 1665*T and Mt. Noungel G.M.L.* 1745*T*, *Erlistoun* (1909 *Report No.* 6).—During the year a good deal of development work has been done, the battery improved, and an ore bin and rock-breaker installed on the mine. Interest has been paid fairly regularly, but no further reduction of the principal has been effected.—(3045/05.)

7. *Carbine South Syndicate Ltd. G.M.L.* 758*S*, *Kunanalling* (1909 Report No. 7).—Interest owing on advance for 1909 and up to 31st June, 1910, has been duly paid, but the mine has not been so successful during the year as to allow of any repayment of the principal.—(2866/07.)

8. *Trenton G.M. Co., No-Liability, G.M.Ls.* 388*D*, 399*D*, 400*D*, *Day Dawn* (1909 Report No. 8).—The unpaid balance of the loan and accrued interest, £621 4s. 6d., has been written off as irrecoverable.—(3415/08.)

9. *Coolgardie Prospecting, Development, and Mining Co., No-Liability, Coolgardie* (1909 Report No. 9).—The company being unable to reconstruct or discharge their debt, the Department foreclosed and called tenders for the lease, plant and machinery thereon, but no reasonable offer being received, the debt was written off as irrecoverable.—(3323/08.)

10. *Emily G.M.L.* 1510, *Day Dawn* (1909 Report No. 10).—There was great delay on the part of the owners of this mine in completing their documents, and soon afterwards two of the partners dropped out of the party. Results not proving satisfactory work in the mine was stopped until the members of the party who retained faith in it should be able to resume operations. At the end of the year matters were still in an unsatisfactory position.—(3166/09.)

11. *Greenbushes Prospecting and Mining Company Limited, Greenbushes, Greenbushes South Cornwall M.L.* 300 (1909 Report No. 11).—Owing to the owners being unable to carry on, the Department foreclosed on its mortgage and called tenders for the purchase of the mine and plant, the only offer being one from Phillips and Party to take the mine on tribute for a term of three years, and rent the machinery at a rental of £1 per week, with the right to purchase the property during the term of tribute, and to sublet any portion during such term. At the end of the year a tribute agreement was being prepared.—(1095/08 and 1932/10.)

12. *North End Mines, Limited, Kalgoorlie* (1909 Report No. 12) (*Devon Consols South Extended*).—This mine has been under exemption during the whole of 1910 to enable the lessee to make arrangements for re-opening the mine.—(3461/08.)

13. *Kingdom Come M.L.* 112, *Northampton* (1909 Report No. 13).—Owing to his inability to equip the mine with the necessary machinery, the owner asked that the mortgage be released and B/S discharged. Tenders were called for the purchase of mine and plant thereon, but none were received. The lease has been gazetted forfeited for non-payment of rent and penalties, and the land temporarily reserved from leasing.—(2825/07.)

14. *Jupiter G.M.L.* 771*M*, *Mt. Magnet* (1909 Report No. 14).—Little was done in the early part of the year pending result of litigation over tailings treated at the Boogardie State Battery. From the moneys held by the Department a sum of £23 12s. 4d. was deducted in reduction of the loan. An American whim was allowed to be sold for £17, also in reduction of the loan.—(2892/08.)

15. *Mindeloo G.M.L.* 1518, *Mindoolah* (1909 Report No. 15).—Early in the year the Department foreclosed, and the mine and chattels were put up to auction, but as there was only one offer of £25 for the lot, the plant was removed to the Mines Water

Supply yard at Day Dawn, and the amount owing written off as irrecoverable. The house on the lease was sold for £10.—(4000/05.)

16. *Coolgardie Redemption G.M. Co., G.M.Ls.* 3918 *and* 4052, *Coolgardie* (1909 Report No. 16).—Early in the year several liens were lodged against the leases for wages owing, amounting to about £230. Owing to the company being unable to devise any satisfactory scheme for carrying on, or to reconstruct, the Department foreclosed on its mortgage, and tenders were called for purchase of the mine and plant, but no tenders were received. At the end of 1910 an offer to take over the mine was under consideration.—(2162/09 and 1986/10.)

17. *Dreadnought South G.M.L.* 5334Z, *Menzies* (1909 Report No. 17).—Interest for 1909 and first six months of 1910 has been paid. In September the owners reported having been unsuccessful in their endeavours to strike the Dreadnought reef, although the Dreadnought South shaft had been sunk 213 feet, and applied for the loan of a diamond drill and a £ for £ subsidy for boring up to £500. The Hon. the Minister approved of a plant being provided to put down several bore holes at bottom of shaft, in order to pick up the reef, on a £ for £ basis. Up to the end of the year the Department had not been able to send the drill owing to its being engaged elsewhere.—(4006/09.)

18. *Wheal May Lead Mine, Northampton* (1909 Report No. 18).—Early in the year the owners advised the Department they were unable to carry on any longer. Tenders were called for the purchase of mine and plant, but up to the end of the year no sale was effected.—(1807/09.)

19. *Jourdie Enterprise G.M. Syndicate G.M.Ls.* 786*S and* 773*S, Jourdie Hills* (1909 Report No. 19).—A fair amount of development work was done on this mine during the year. An air compressor and receiver were installed and two drills put to work. The syndicate had paid interest on its loan, and refunded £500 of the principal sum advanced to them.—(2995/06.)

20. *Kanowna Prospecting Coy., Ltd., Kanowna* (1909 Report No. 20).—Early in the year the syndicate was wound up, the last crushing being very disappointing, viz., 37 tons for about 5 ounces. The plant and lease were advertised for sale, but no offers were received. Two applications for tribute were put in, but eventually fell through. All movable goods and chattels were removed to Department's office at Kanowna for sale as opportunity offers.—(1101/09.)

21. *Chamberlain M.L.* 149, *Wodgina* (1909 Report No. 21).—In September, 1910, the lease was forfeited for non-payment of rent and penalties, and the amount of loan owing, viz., £77 8s. 11d., together with accrued interest, written off as irrecoverable.—(3072/07.)

22. *Lubra G.M.L.* 669G, *Niagara* (1909 Report No. 22).—No success having been achieved in getting any one to take over the plant for the amount of the mortgage upon it, the machinery was sold to Mr. Hartley for £100, and the balance of loan and accrued interest, viz., £64 15s. 10d. written off as a loss.—(4276/06.)

23. *W.E.G. G.M.L.* 505*G, Niagara* (1909 Report No. 25).—In February a party of men took over this mine, and worked it on tribute for a few months. Owing to the tributers ceasing work, the mine was put under exemption on October 25th, and at the end of the year was still under exemption.—(524/05 and 4286/10.)

24. *Alicia G.M.L.* 254*F, Mt. Morgans* (1909 Report No. 27).—This mine has been under exemption during the whole of 1910 owing to the collapse of the main shaft and efforts being made to float a company. At the end of the year the lessee being unsuccessful in his endeavours to float a company, was trying to let the mine to tributers. The battery on the property was crushing stone for the leases around the district.—(4809/07.)

25. *The Lost and Found M.L.* 374, *Greenbushes* (1909 Report No. 28).—After a hard struggle to work this mine the owner was forced to relinquish it for want of capital, and at the end of the year the Department foreclosed.—(2663/05.)

26. *Lady Florence G.M.L.* 1265, *Cue* (1909 Report No. 29).—A statement made to the Warden gives the amount of work done in this mine up to June, 1910, as follows, viz., a main shaft 10 feet by 4 feet has been sunk to a depth of 549 feet, divided into three compartments, and close timbered throughout; 700 feet of driving, and 125 feet of rising have been done; and a winze has been sunk 125 feet, making a total footage of 1,499 feet, at a total cost of about £14,000. Up to the end of the year no interest had been paid on this loan.—(363/06.)

27. *Green and Wheatley, Sinking for Deep Lead* at Bulong (1909 Report No. 30).—During the year a good deal of driving and crosscutting has been done on the mine, and the subsidy increased by £50, to be expended on work approved by the Inspector of Mines. Some payable gold was located in August, a trial crushing of 18 tons in October giving a return of 6 ounces 18 dwts., and one of 7 tons in November, 2 ounces 6 dwts. Work was still in progress at the end of the year.—(2390/00.)

28. *Gawler G.M. Coy., Ltd., G.M.L.* 418*R, Edjudina* (1909 Report No. 31).—The company has paid interest with fair regularity, and has reduced the principal by £644 6s. 8d.—(4599/08.)

29. *McLellan and Smyth, P.A.* 221*W, Sinking for Deep Lead at Waverley* (1909 Report No. 32).—The lessees of this mine being unsuccessful in their efforts to strike payable gold were not pressed for payment of interest on loan. No interest has been paid, and no reduction of the loan made.—(4457/08.)

30. *Baird and Party, Prospecting for Deep Alluvial Lead, Bulong* (1909 Report No. 33).—Nothing further has been done in regard to this work during 1910.—(608/09.)

31. *Kalgoorlie North End Development Company, No-Liability, G.M.L.* 3880*E, Devon Consols, Kalgoorlie* (1909 Report No. 34).—During the earlier part of the year the only work on the lease was done by tributers outside the main workings. In August sinking was resumed, and by the end of the year the total work done by the company with aid of the loan amounted to 199 feet of shaft sinking, 391 feet of driving, and 191 feet of crosscutting at the 350 feet level, and 34 feet of driving north at the 450 feet level, and the balance of the loan of £1,500 granted to the company was expended.—(3790/10.)

32. *Klondyke Boulder G.M.L.* 604, *Warrawoona* (1909 Report No. 35).—The work of sinking the new main shaft was carried to a depth of 128 feet, when a leader coming into the shaft brought in a good deal of water, and the ground became soft and difficult. The shaft was sunk to 138 feet, and 90 feet of driving were done at the 105 feet level. The syndicate be-

came short of funds, and most of the year was spent in trying to get more capital, and to work the upper parts of the mine on tribute. Towards the end of the year exemption for six months was allowed to enable the syndicate to recuperate.—(4434/09.)

33. *Brittania G.M.L.* 953*M*, *Mt. Magnet* (1909 Report No. 36).—During the year the progress made on this mine has been very unsatisfactory, little work being done, and the owners being apparently unable to agree among themselves. In July it became necessary to give notice that work on the lease must be resumed or the loan would be called in, but though a little more work was then done, it was again abandoned before long. Further payments on account of the loan were made during the year which brought the total advanced, with interest, to £117 17s. 7d. at end of 1910.—(4434/08.)

34. *Transvaal G.M.L.* 536, *Southern Cross* (1909 Report No. 37).—Towards the end of the year the owners of this lease gave an option of purchase over it, one of the terms of purchase being that all creditors be paid in full by the purchasers, before distribution of the balance owing to the sellers, but up to 31st December no reduction of the principal or interest had been effected, the term of the option not having expired.—(1722/09.)

35. *The Harbour Lights G.M.L.* 1056*C*, *Leonora* (1909 Report No. 38).—No further transactions have been recorded in this matter during 1910, but the money advanced is being recovered by treatment of the slimes accumulated at the Leonora State Battery. —(1806/04.)

36. *Water Supply to Hannan's Reward Tributers, Kalgoorlie* (1909 Report No. 39).—This matter remained in abeyance during the whole of 1910.—(1637/09.)

37. *Water Supply to Tributers of Griffiths G.M., Coolgardie* (1909 Report No. 40).—Up to the end of February, 1910, the amount of loan and accrued interest was £156 14s. 4d., and in March this sum was repaid, closing the transaction.—(1637/09.)

38. *V's United G.M.L. No.* 271*F*.—In consequence of the results obtained by the bores put down by the Mt. Morgans Diamond Drilling and Exploration Syndicate at Mt. Morgans (1909 Report No. 64), a lease was applied for, and the syndicate formed into the above no-liability company. After sinking a shaft 54 feet, they applied for Government assistance, and the Hon. the Minister approved of advances up to £500 on a £ for £ basis to sink and timber the shaft 200 feet, but not to exceed £2 10s. per foot, any balance to be expended in crosscutting or driving. In March the company applied for further assistance to purchase a winding plant as they were unable to cope with the water, and the Minister approved of a plant being supplied on a hire purchase agreement at a cost of £172 2s. The plant was satisfactorily erected in July, and sinking went on to 146 feet deep, when the water became too much for the appliances. In October the Hon. the Minister approved of crosscutting being allowed to start at 141 feet instead of 200 feet. Work was stopped owing to the company's finances being exhausted, but in order to enable the crosscut to be made, the Hon. the Minister on 16th December authorised payment of the then unexpended balance of £121 5s. 4d. of the loan at the rate of £1 for £1 of the cost instead of at a limited rate per foot. Work was in progress at the end of the year.—(4649/10.)

39. *Balkis G.M.L.* 5354*Z*, *Menzies*.—In April, 1910, Dimmick and Party applied for Government assistance to the extent of £150 for the purpose of erecting a compressor, stating that they had machinery on the mine valued at £300. The loan was authorised and documents prepared, but the party withdrew their application. In October they renewed it, and matters were allowed to proceed on the previously arranged terms. By the end of December, a 5-head battery and gas-producer 35 H.P. engine were erected on the mine, and one instalment of £105 5s. 9d. had been advanced. —(1029/10.)

(*b*.) *Assistance in Erecting Batteries and Treatment Plants to be used for Crushing for the Public.*

40. *Spring Hill G.M.L.* 721, *Parker's Range* (1909 Report No. 42).—Up to the end of the year the loan was reduced by £30 16s. 10d. The borrower had great difficulties during the year owing to the dryness of the season and scarcity of water.—(3304/08.)

41. *Never Never G.M.L.* 665, *Yilgarn* (1909 Report No. 44).—In the early part of the year there were many complaints from prospectors as to their not being able to get their ore crushed at the battery, and notice was given to the mortgagor requiring fulfilment of his public crushing obligations to avoid foreclosure of the mortgage or change of management of the mill.

In order to obtain better water supply the Hon. the Minister after much discussion agreed to advance a further sum of £300, to be expended at the rate of £1 for £1 in sinking the main shaft of the mine and crosscutting therefrom, but nothing was done owing to the sudden death of the mortgagor, Mr. D. Hatt, on 12th April. A caretaker was placed in charge of the plant, and the rest of the year was spent in trying to arrange for sale of the property. Several tenders and offers of one sort and another were considered, and ultimately Mr. S. B. Tatham's, of £4,750, on terms, was accepted, subject to the existing public crushing obligations being respected so long as any part of the debt to the Government remained unpaid. —(3276/10.)

42. *Hidden Secret North G.M.L.* 4253, *Eundynie* (1909 Report No. 45).—During the year a cyanide plant was erected, stated to cost £250, interest paid to 30th June, 1910, and the loan reduced by £150. Towards the end of the year the syndicate finding they were unable to carry on, paid off all hands, and applied for permission to let the mine on tribute, having received an offer from a strong party to take a 12 months' tribute, and sink the main shaft 100 feet deeper to the 300 feet level. The Hon. the Minister approved of the proposal, half the royalty being payable to the Department and half to the syndicate to be used in paying off outstanding debts, and the tributers carrying out the syndicate's obligations to crush for the public.—(851/09.)

43. *Roebourne Copper and Gold Mines, W.A., Ltd., G.M.L.* 135, *Roebourne* (1909 Report No. 47).—The party purchasing the battery have paid off a sum of £480 to the end of 1910, and have been making their monthly payments with commendable regularity.—(1799/09.)

44. *Lady Pratt G.M.L.* 1228*X*, *Mulgarrie* (1909 Report No. 48).—During 1910, 156.00 tons of ore were treated from this mine for 49.12 ounces of fine gold, value £209. Since starting crushing in end of 1909, the battery has crushed 427 tons of ore for the public to end of 1910, for which the owners receive a subsidy of 1s. per ton. A total amount of £56 11s. 11d. has been paid in reduction of the loan.—(2289/08.)

45. *Royal Mint G.M.L.* 549, *Yalgoo* (1909 Report No. 49 "Mystery").—In the beginning of the year the holder of the plant received assistance to the value of £16 2s. 6d. in obtaining repairs to it, but shortly afterwards he left the district and could not be traced. The agreement with him was therefore terminated, and the plant put up for sale by tender. The offer of Mr. A. R. Harold of £345, payable at the rate of £13 a month was accepted. In November, a promising find of good ore was reported from the lease, and an option of purchase was given to a Melbourne syndicate on condition of their paying £100 in reduction of Mr. Harold's debt to the Department. This sum was duly paid, and a company has been formed to work the mine.—(3683/09.)

46. *Mulga Queen G.M.L.* 1517*T*, *Duketon* (1909 Report No. 50).—Several crushings have been put through this battery during the year on which royalty has been paid, but results have not been good, and the party has had a hard struggle to carry on at all.—(2344/08.)

47. *Malcolm Prospecting Company, No-Liability, Mt. Malcolm* (1909 Report No. 52).—A considerable amount of development work was done by the company during the year, and there were several fairly good crushings, but up to the end of December no interest had been paid or any reduction of the loan effected. The mine equipment has been much improved, and appears to be good security for the entire loan.—(4567/07.)

48. *Randwick G.M.L.* 978C, *Mt. Malcolm* (1909 Report No. 53).—Several crushings were put through the battery, and the mill has been a help to several prospectors in the vicinity by enabling them to get trial crushings made, but the lessee has had a hard struggle to keep going. Towards the end of the year it became apparent that he would have to abandon the venture.—(3551/10.)

49. *Crown G.M.L.* 1398*W*, *Black Flag* (formerly the *Last Chance*) (1909 Report No. 54).—The working of this mine during the year did not meet with success, and in November the Mining Registrar reported that no work had been done on the lease for two months, and it was practically abandoned. At the end of 1910, the owners were trying to sell the property.—(3325/09.)

50. *Gibraltar G.M.L.* 708*N*, *Yaloginda* (1909 Report No. 55).—Early in the year the party were granted a further loan of £150 for the purpose of sinking the main shaft deeper, and crosscutting at the 200 feet level, at the rate of 30s. per foot. The shaft was sunk 192 feet and some crosscutting done, but the supply of water proved inadequate for the mill. The crushings also gave poor returns. In August the party applied for permission to remove the battery about three miles south on to the North Pole G.M., No. 937N, as the water supply had failed. Tenders were called for the purchase of the plant, and that of the owners of the North Pole Lease was accepted, viz., to take over, dismantle, cart, and erect the whole plant on the North Pole at a cost of £250, to take over the debt owing (£750) on the "Gibraltar," giving as security a mortgage over the "North Pole" G.M. and all plant thereon, and to crush for the public at Government rates. Documents were in course of preparation at the end of the year.—(5228/06.)

51. *Callion G.M. Co., W.A., No-Liability, Callion* (1909 Report No. 56).—No work has been done on this mine, which has been under exemption practically the whole of the year owing to want of water and to efforts being made to introduce more capital into the company. Interest to 31st December, 1909, was duly paid, but no interest for 1910 has been met. The loan was reduced by £9 2s. 2d. Two parties of prospectors who had stone to crush were allowed the use of the battery to do so.—(5884/10.)

52. *Red Hill Westralia G.M. Co., Ltd., Sons of Erin Battery, Higginsville* (1909 Report No. 57).—In the earlier part of the year no agreement could be effected as to the leasing of the well to Mr. Sampey, as he had been unable to locate payable ore in sufficient quantity to require the water constantly, though the plant was used by him on several occasions for trial crushings of low grade ore at a rental of 15s. per day. In August it was decided to remove the plant, but representations by Mr. Sampey of improved prospects led to its being allowed to remain until the end of the year, when if not taken on lease it would be removed.—(1866/07.)

53. *Water Supply to Public Crushing Plant, Ballagundi* (1909 Report No. 58).—As there did not seem to be any immediate likelihood of the water being required at the end of 1910, arrangements were being made by the Goldfields Water Supply to lift the pipes, unless the owners of the battery should make satisfactory arrangements for their retention.—(3921/97.)

54. *Phoenix G.M.L.* 622*N*, *Quinns.*—Early in the year a loan was authorised of £200 to the owners of this lease to assist them in purchase of a boiler and cyanide plant, in return for which they would crush for the public for ten days in each month at State battery rates. The plant required was estimated to cost £360. In May, the Hon. the Minister authorised a further sum of £50 to be lent to assist the party in procuring and erecting a windmill and getting a water supply. Much difficulty was experienced during the year on account of scarcity of water, and nothing was paid in reduction of the loan during 1910.—(3911/10.)

55. *Alathea G.M.L.* 5364Z, *Menzies.*—The owners of this mine, at Springfield, about six miles from Menzies, were granted a loan of £250 to assist them in erecting a 5-head battery, estimated to cost £519, and which would be available for public crushing. The plant was duly erected, and crushed 815 tons of ore, of which 460 tons underwent cyanide treatment, for a return of £890 8s. 11d. This did not pay wages, but the owners managed to continue to work till the end of the year. At that time there was some hope of the mine being taken over by another syndicate.—(2385/10.)

56. *Lane Mill Syndicate*: *Princess Royal Mine, G.M.Ls., Nos.* 222, 653, 1016, 1048, *and* 1114, *Cue.*—Application having been made in August for assistance to the extent of £1,000 in the erection of a producer gas plant, engine, and 10 feet Lane Mill complete, with necessary buildings, etc., estimated to cost £2,300, on the Princess Royal mine, a loan was authorised of £650, under Part IV. of the Mining Development Act. At the end of the year the machinery was mostly erected. It was agreed to be available for public crushing. The Lane Slow Speed Chilian Mill is a new type in this State.—(2923/10.)

57. *Southern Cross G.M.Ls., Nos.* 1076 *and* 1067*Y*.—In June, Messrs. J. Brown and Party applied for a loan of £1,000 for the purpose of establishing on the Southern Cross G.M. a crushing plant, which they proposed to bring from the old Golden Ridge mine at Boorara. The Inspector of Mines reported that the

battery, with the exception of shoes, dies, and liners, was in good order, and stated that the applicants' proposition was to remove the battery, purchase a gas producer plant, and lay a pipe line to the Queen Margaret main shaft for a water supply, and to purchase a boiler for pumping. In July, the Hon. the Minister approved of an advance on a £ for £ basis of £1,000 on the following terms:—(*a*) Under Part II. of "The Mining Development Act, 1902," £1 for £1 up to £500 by way of recoup to company of expenditure on purchase, transport, and erection of an approved suction gas plant to cost approximately £500, boiler about £100, and winch, ropes, tanks, and pipes to cost approximately £180; (*b*) Under Part IV. of "The Mining Development Act, 1902," £500 towards approved costs of transport and erection of a 10-head battery complete, and any balance over to be available towards purchase and erection of machinery in (*a*) without requirement of equal expenditure of £ for £. All plant to be approved by the Inspector of Mines. The battery was duly erected, and the loan paid over by November. The machinery began running in December.—(436/09.)

58. *Ravensthorpe Battery Company.*—In July, 1910, a company was floated called the Ravensthorpe Battery Company, for the purpose of erecting a stamp mill complete, the site chosen being W.R. No. 1, on which is a good dam and water shaft. They applied for Government assistance, and were granted £1,000 at the rate of £2 for every £1 expended by the company. Battery to crush for the public on the same terms and conditions as State batteries, except that while the company has no cyanide plant it will not be compelled to purchase tailings. To crush for the public when required until the whole of advance and interest is repaid, and not less than two years from first instalment of advance. A first mortgage and B/S to be given over the whole property in addition to plant supplied on hire purchase system. The whole of the plant was purchased, and in course of erection at the end of the year, £478 12s. 3d. having been then advanced.

(*c.*) *Miscellaneous Advances.*

59. *Collie Coal Briquettes, Jas. H. Shekleton's Experiments* (1909 Report No. 59).—No further experiments were made by Mr. Shekleton during 1910, and the amount incurred in the manufacture of the briquettes, viz., £105 9s. 4d. was written off as a bad debt. —(1453/08.)

60. *Mt. Magnet Municipal Council—Water Supply* (1909 Report No. 60).—During 1910 the loan was reduced by payments amounting to £24 8s.—(63/05.)

(*d.*) *Boring.*

61. *Purchase of carbons, repairs to drills, etc.*—Particulars of expenditure on these heads are given in the tables attached.

62. *Mt. Morgans Diamond Drilling and Exploration Syndicate, Ltd., Mount Morgans* (1909 Report No. 64).—Up to the end of 1910 no repayment of the amount expended on boring was made. The total cost of the drilling, 8 holes, was £2,305 16s. 5d., of which £1,605 19s. 8d. were paid by the Government, and £699 16s. 9d. by the syndicate. The expenditure by the Government has been allocated as £162 6s. 6d. to the 2 V's ground, and the balance, £1,443 13s. 2d., to the Lady Lawley Lease G.M.L. 282F.—(1697/09.)

63. *Mt. Cassiterite M.L.* 84, *Wodgina* (1909 Report No. 65). Operations on this mine were very seriously impeded during the first half of the year by delay in obtaining a new crank shaft for the Diesel oil engine. Work was resumed in May, and negotiations were entered into to obtain water supply for five years for the town of Wodgina from the well in return for remission of the debt of £75, but a hitch occurred which caused the matter to be still unsettled at the end of the year, and no reduction of the debt was made.—(6701/03.)

64. *Leonora Diamond Drilling and Prospecting Company, Leonora* (1909 Report No. 66).—There is nothing further to report *re* this company.—(2425/08.)

65. *Premier Coal Company, Collie* (1909 Report No. 62).—Early in 1910 the reserve was thrown open, and the company applied for coal mining leases, and began mining work.—(3650/07.)

66. *J. Rollo, North Lead, Kanowna.*—In June, 1910, Mr. J. Rollo signified his intention of further testing the deep ground at the north end of the Kanowna lead by boring, and applied for assistance in doing so, which was granted at a rate not to exceed 4s. a foot up to a total of £100. At the end of the year work was still in progress, several bores having been put down without proving any payable ground. —(4397/05.)

67. *South Blackwood Prospecting Syndicate, South Blackwood.*—In April, 1909, application was made for assistance in prospecting south of the Blackwood River, and a loan of £100 was approved. Owing to wet weather nothing more was done till near the end of the year, when a boring plant was supplied. A good deal of prospecting was done in the beginning of 1910, but no payable ore was found, and operations were abandoned in April. Very little boring was done, most of the ground proving more suitable for prospecting by sinking shallow shafts.—(1533/09.)

SUMMARY OF EXPENDITURE ON MINING DEVELOPMENT UNDER THE MINING DEVELOPMENT ACT, 1902, AND FROM THE MINING DEVELOPMENT VOTE FROM 1ST JANUARY TO 31ST DECEMBER, 1910.

Mine or Owner.	Mining Centre.	Amount.	Total.
		£ s. d.	£ s. d.
ADVANCES IN AID OF MINING WORK AND EQUIPMENT.			
Balkis	Menzies	105 5 9	
Brittania	Mt. Magnet	28 11 10	
Coolgardie Prospecting and Development Co.	Coolgardie	3 15 0	
Coolgardie Redemption Co.	Do.	17 13 3	
Dreadnought	Menzies	53 0 2	
Eclipse	Gindalbie	2 16 0	
Greenbushes Prospecting Co.	Greenbushes	4 2 9	
Green & Wheatley, Messrs.	Bulong	99 3 0	
Kalgoorlie North End Development Co.	Kalgoorlie	706 13 6	
Kanowna Prospecting Co.	Kanowna	14 10 0	
Kingdom Come	Northampton	4 14 0	
Klondyke Boulder	Pilbara	115 0 0	
Lady Agnes	Bulong	1 11 9	
Mindeloo	Mindoolah	29 17 0	
McLellan & Smyth, Messrs.	Waverley	23 7 6	
North Pole	Nannine	708 15 0	
Princess Royal	Cue	489 9 5	
Sunbeam	Kanowna	7 0 0	
V's United	Morgans	537 2 0	
Wheal May	Northampton	2 4 6	
W.E.G.	Niagara	0 17 0	
			2,955 9 5
ADVANCES IN AID OF ERECTION AND EQUIPMENT OF BATTERIES FOR PUBLIC CRUSHING.			
Alathea	Menzies	246 11 6	
Ballagundi Water Supply	Ballagundi	20 0 0	
Crown	Black Flag	150 0 0	
Lady Pratt	Mulgarrie	11 11 11	
Lane Mill Syndicate	Cue	550 0 0	
Never Never	Yilgarn	73 15 9	
Ora Banda Water Supply	Waverley	73 5 9	
Phœnix	Quinn's	200 0 0	
Randwick	Malcolm	22 2 0	
Ravensthorpe Battery Co.	Ravensthorpe	478 10 3	
Roebourne Copper Mines	Roebourne	2 4 9	
Royal Mint	Yalgoo	18 10 9	
Southern Cross	Bulong	1,000 0 0	
Spring Hill	Yilgarn	1 0 0	
			2,847 12 8
BORING ADVANCES.			
Coal Boring	Collie	65 2 2	
Great Fingall G.M. Co.	Day Dawn	63 10 0	
North Lead Kanowna	Kanowna	54 15 8	
South Blackwood Prospecting Syndicate	Blackwood	92 8 10	
			275 16 8
MISCELLANEOUS EXPENDITURE.			
North Lead Pumping Plant	Kanowna	3 19 2	
Bonus on Lead Ores exported	Onslow	117 5 7	
Inspection of Properties	Various	2 9 0	
Preliminary Investigations	Do.	43 10 6	
S. C. Lang: Railage on Machinery	Golden Valley	119 5 2	
			286 9 5
SUBSIDIES ON CARTAGE LONG DISTANCES TO BATTERIES.			
Cogdell, A.	Hope's Hill	2 8 0	
Flemming, A.	Nannine	14 12 6	
Gawler G.M. Co.	Edjudina	24 14 0	
Do.	Do.	25 3 0	
Happy Jack G.M. Co.	Comet Vale	10 16 0	
Do.	Do.	5 8 0	
Do.	Do.	9 18 0	
Holmes & Party	Do.	2 4 0	
Do.	Do.	2 12 0	
Do.	Do.	1 6 0	
Kuhlmann, L. C.	Hope's Hill	4 10 0	
Lawrence, J.	Pig Well	2 9 6	
Lansell, J.	Nannine	7 5 6	
Millionaire G.M. Co.	Quinn's	10 2 6	
Pellew, W.	Southern Cross	1 16 0	
Pike, A. E.	Norseman	5 10 0	
Rodda, J.	Southern Cross	6 9 0	
Rowe, T.	Hope's Hill	3 0 0	
Short, W.	Quinn's	15 0 0	
Thornton, A.	Nannine	3 18 0	
Tregurtha, E. P.	Leonora	14 11 0	
Walter & Drew	Goongarrie	1 14 0	
Wood, P. R.	Kalgoorlie	3 10 8	
Carried forward		178 17 8	6,365 8 2

SUMMARY OF EXPENDITURE ON MINING DEVELOPMENT, ETC.—*continued.*

Mine or Owner.	Mining Centre.	Amount.	Total.
		£ s. d.	£ s. d.
Brought forward	..	178 17 8	6,365 8 2
STATE BATTERIES:			
Recoups of Crushing Charges deducted in lieu of cartage subsidies (12 items)	Various	8 18 0	
		5 8 0	
		4 4 0	
		2 5 0	
		2 4 0	
		19 6 0	
		14 2 0	
		2 17 0	
		6 0 0	
		3 14 0	
		5 11 0	
		10 16 0	
		264 2 8	
Plus amount charged to Subsidies to Batteries in 1909, transferred to Cartage Subsidy in 1910:—			
Rowan, H.	Hope's Hill	1 10 0	
			265 12 8

SUBSIDIES TO BATTERIES CRUSHING FOR THE PUBLIC.

	Tons.	Rate per ton. s. d.		
Atkins, F.	130½	5 0	Warrawoona	32 11 3
Callion G.M. Co.	982½	1 0	Callion	49 2 6
Dallison Bros.	480½	2 0	Kundip	48 1 0
DeBernales, C.	75	2 0	Yundamindera ..	7 10 0
Eastlake, F.	219	2 0	Birrigrin	21 18 0
Elliott, C. G.	32	2 6	Gindalbie	4 0 0
Friedman & Johnson	313	1 0	Ora Banda	15 13 0
Henwood, S. C.	212½	1 6	Bulong	15 18 9
Henderson, J. C.	555	1 0	Do.	27 15 0
Jacoletti, G.M. Co.	3,586	1 6	Jacoletti	268 19 0
Paton & White	204	1 0	Randalls	10 4 0
Poole, H.	1,291	2 0	Lawlers	129 2 0
Princess Dagmar	1,136½	2 6	Quinn's	142 1 3
Patterson, W. A.	229½	1 0	Parker's Range ..	11 9 6
Spencer, A. A.	174½	2 0	Mindoolah	17 9 0
Spicer, J.	509	1 6	Tampa	38 3 6
Smith & Langford	671½	2 0	Lawlers	67 3 0
Spencer & Thompson	1,714½	2 0	Birrigrin	171 8 6
Taylor Bros.	13	1 6	Jaurdie Hills ..	0 19 6
Two Boys' Battery	1,243	2 0	Kundip	124 6 0
Walsh, P. J. (rebate)	96	2 0	Comet Vale	9 12 0
Williams, J. M. D.	211	1 6	Diorite King	15 16 6
S. State Batteries	123½	2 0	Menzies	12 7 0
(Recoup of Crushing Charges)				
			1,241 10 3	
Less Account H. Rowan, charged to above in 1909, transferred to Cartage Subsidy in 1910		.. ..	1 10 0	
				1,240 0 3

SUBSIDIES ON DEVELOPMENT WORK.

Alford, W. B.	Menzies	5 7 1	
Alexander, G.	Mt. Ida	3 18 0	
Burgess, H. F.	Menzies	23 16 1	
Bull Oak G.M. Co.	Black Range ..	73 19 9	
Dawkins & Nelson	Do.	20 15 7	
Fort, G.	Menzies	2 12 0	
Graham & Marquand	Norseman	6 15 0	
Heron, G.	Wiluna	22 13 8	
Klentz, O. E.	Black Range ..	14 5 0	
McIntyre, A.	Menzies	6 7 6	
Parker, A. E.	Niagara	2 0 0	
Pentland & Party	Nannine	5 13 3	
Pickering, J.	Coolgardie	2 12 6	
Rufin, P.	Linden	3 9 0	
Roberts, W. J.	Pinjin	24 5 4	
Stoltze, L.	Niagara	18 15 0	
			237 4 9
Carried forward	..	..	8,108 5 10

SUMMARY OF EXPENDITURE ON MINING DEVELOPMENT, ETC.— *continued.*

Mine or Owner.	Mining Centre.	Amount.	Total.
		£ s. d.	£ s. d
Brought forward			8,108 5 10
PROVIDING TRANSPORT FOR PROSPECTORS.			
Purchase of Horses, Camels, etc.			202 4 10
			8,310 10 8
Less amounts charged during 1909, and transferred by order of Auditor General, during 1910:—			
Ora Banda Water Supply		244 10 1	
Driving in Callion Well		0 10 10	
Amounts repaid in 1910, and charged during 1909—			
Griffiths, G.M.		156 14 4	
Crown G.M.		7 6 3	
			409 1 6
Expenditure as per Treasury			£7,901 9 2

Mine or Owner.	Mining Centre.	Amount.	Total.
ADVANCES REFUNDED.			
Callion G.M. Co.	Callion	9 2 2	
Carbine South G.M. Co.	Kunanalling	1 0 0	
Crown G.M.	Black Flag	7 6 3	
Gawler G.M. Co.	Edjudina	632 14 2	
Griffiths G.M.	Coolgardie	156 14 4	
Jourdie Enterprise G.M. Syndicate	Jourdie Hills	500 0 0	
Jupiter G.M.	Mt. Magnet	23 12 4	
Lady Pratt G.M.	Kanowna	26 12 7	
Malcolm Prospecting Co.	Malcolm	1 0 0	
Mulga Queen G.M.	Laverton	38 10 9	
Never Never G.M.	Yilgarn	34 19 6	
Randwick G.M.	Malcolm	25 0 0	
Roebourne Gold and Copper Mine	Roebourne	341 6 9	
Royal Mint G.M.	Yalgoo	127 0 0	
Spring Hill G.M.	Yilgarn	127 9 10	
Sunbeam G.M.	Kanowna	29 10 0	
The Hidden Secret G.M.	Eundynie	150 0 0	
V's United G.M. (engine and winch)	Morgans	50 0 0	
Westralia Tasmania G.M.	Erlistoun	51 0 0	
			2,332 18 8
RECOVERED FROM SALE OF SECURITIES.			
Jupiter Lease (Whim)		17 0 0	
Lady Agnes G.M.		12 12 3	
Mindeloo (cottage sale)		10 0 0	
P.A., 245 G. (J. Walker)		100 0 0	
Randwick		1 7 0	
			140 19 3
MISCELLANEOUS REFUNDS.			
Mt. Magnet Water Supply		24 8 0	
Cost of Diamonds for Whim Well Copper Co.		176 15 0	
Means of transport for prospectors, etc.		187 2 0	
Cost of Diamonds in drilling		168 15 3	
Premier Coal Co.		170 15 11	
			727 16 2
			£3,201 14 1

ADVANCES WRITTEN OFF, TO 31ST DECEMBER, 1910.

Year Authorised.	Name of Mine or Borrower.	Nature of Work.	Locality.	Amount of Loan and Interest written off.	Date written off.
				£ s. d.	
1902	Manners & Gore	Battery erection	Gabanintha ..	285 0 4	29–5–05
1903	Cheyne, C. C.	Sinking shaft	Yandanooka ..	70 17 0	31–12–04
1903	Foran and party	Opening deep alluvial lead	Kalgoorlie	150 0 0	14–2–06
1903	Hannan's Reward and Mt. Charlotte G.M. Co., Ltd.	Boring for reef	Kalgoorlie	383 11 9	31–12–04
1903	Irwin River Coal and Prospecting Syndicate	Boring for coal	Irwin River ..	925 6 0	23–3–05
1903	Jameson, C. A.	Opening deep alluvial lead	Smithfield	50 0 0	30–6–04
1903	South Fingall G.M. Co., Ltd. ..	Boring	Day Dawn ..	1,030 18 0	18–1–04
1903	Waite and party	Opening deep alluvial lead	Trafalgar	100 0 0	18–4–05
1904	Admiral G.M.L.	Boring for reef	Peak Hill	719 1 1	30–3–06
1904	Blake, McKinnon, & Muir	Working deep lead ..	Kanowna	50 0 0	23–9–04
1904	Bell, Wm.	Battery water supply ..	Mosquito Creek ..	520 12 6	31–12–05
1904	Marshall, Geo.	Erection of puddler ..	Coolgardie	152 17 2	15–2–06
1904	Ninety-eight G.M.L.	Sinking shaft	Bulong	262 2 11	13–3–07
1904	President Loubet	Do.	Callion	255 18 3	12–6–07
1904	Stuart, Rollo, & McIvor	Boring for lead	Kanowna	262 11 6	22–5–07
1904	Tierney and party	Sluicing alluvial	Coolgardie	150 0 0	22–10–04
1904	Westralia Mining and Oil Corpn., Ltd.	Boring for oil	Warren R. ..	618 14 7	20–3–06
1904	White Flag Consols	Sinking shaft	Wilson's Patch ..	48 10 5	3–10–06
1905	Battler's Hope	Do.	Greenbushes ..	118 18 4	6–6–07
1905	Brooklyn G.M.L.	Sinking shaft and purchase of machinery	Lennonville ..	91 1 11	18–6–09
1905	Chadwick's Reward	Sinking shaft	Koolyanobbing ..	110 3 5	30–6–08
1905	Great Northern G.M. Co.	Do.	Kalgoorlie	203 5 0	8–4–08
1905	Iron King G.M.L	Water Supply	Bullabulling ..	25 0 0	29–6–05
1905	Haddon G.M.	Do.	Southern Cross ..	71 8 4	22–11–06
1905	Little Doris G.M.L.	Battery erection	Erlistoun	356 3 0	25–9–08
1905	Monkland G.M.L.	Sinking shaft	Gindalbie	576 7 6	28–4–09
1905	Mt. Ida Battery Lease	Do.	Mt. Ida	313 6 2	29–5–07
1905	Pakeha G.M.L.	Do.	Paddington ..	149 15 5	24–4–08
1905	Rollo's Reward G.M. Co.	Sinking shaft	Kanowna	314 16 3	20–4–10
1905	Trenton G.M. Co., N.L.	Crosscutting Main shaft ..	Day Dawn ..	621 4 6	4–5–10
1906	Coolgardie Opal G.M.L.	Do.	Coolgardie	102 4 6	10–10–07
1906	Hague & Arthur	Battery erection	Menzies	158 19 7	3–9–08
1906	Kalgurlie G.M. Syndicate	Mining Development ..	Paddington ..	239 19 11	23–4–08
1906	Kingsmill, W. J., and party ..	Driving tunnel	Ravensthorpe ..	204 15 8	9–3–10
1906	Lubra G.M.	Purchase of machinery ..	Kookynie	64 15 10	23–3–10
1906	Menzies Prospg. and Development Co.	Sinking shaft	Menzies	594 0 11	3–3–09
1906	Nicholson, Mahoney, & O'Donohue	Battery erection	Gum Creek ..	351 14 2	5–2–08
1906	W.A. Sluicing Syndicate	Water supply	Coolgardie	309 1 3	21–2–07
1907	Coady, J. H.	Making briquettes ..	Collie	82 3 2	29–4–08
1907	Corrin, J.	Sinking shaft	Nullagine	195 3 1	26–8–08
1907	Cross, F.	Do.	Yarri	50 0 0	28–4–07
1907	Dellavedora and party	Do.	Parker's Range ..	106 13 10	27–11–08
1907	Elias, T.	Driving tunnel	Greenbushes ..	245 17 11	24–6–08
1907	Just-in-Time G.M. Co.	Battery erection	Mt. Morgans ..	1,011 19 9	3–12–08
1907	Providence Copper G.M. Co. ..	Sinking	Goongarrie ..	22 5 7	14–5–08
1907	Robinson and party	Battery erection	Mt. Ida	136 14 9	24–6–08
1907	Reid, G.	Sinking	Peak Hill	25 11 3	22–6–08
1907	Tierney, Aldridge, and party ..	Crosscutting	Coolgardie	162 6 3	18–2–09
1907	Whale G.M.	Mining development ..	Niagara	129 18 3	29–12–08
1908	Chamberlain North G.M.	Extending tunnel ..	Wodgina	77 8 11	14–9–10
1908	Kanowna Low Grade	Purchase of machinery ..	Kanowna	93 17 3	16–2–10
1908	Shekleton, J. H.	Making briquettes ..	.. ..	105 9 4	28–6–10
		Total	.. ..	£13,458 13 4	

MINING DEVELOPMENT EXPENDITURE.

Advances outstanding at 31st December, 1910.

No. of File.	Name of Lease, Mine, or Borrower.	No. of Lease.	District.	Amount Authorised.	Principal previous to 1910.	Moneys advanced during 1910.	Principal Moneys.		Interest.		Total Principal and Interest outstanding at 31st Dec., 1910.
							Repaid.	Balance Outstanding.	Paid.	Outstanding.	
	A.—Pioneer Mining and Prospecting.			£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
4809·07	Alicia	254F	Mt. Morgans	245 0 0	195 0 0	..	..	195 0 0	4 2 6	25 15 0	220 15 0
4434·08	Brittannia	953M	Mt. Magnet	150 0 0	85 0 8	28 11 10	..	113 12 6	..	4 5 1	117 17 7
1029·10	Balkis	5354Z	Menzies	150 0 0	..	105 5 9	..	105 5 9	..	0 9 9	105 15 6
2866·07	Carbine South	758S	Kunanalling	500 0 0	401 10 0	1 0 0	1 0 0	401 10 0	57 0 8	10 3 4	411 13 4
3323·08	Coolgardie P.D. and M. Synd.	4093, 4117	Coolgardie	1,500 0 0	900 15 5	3 15 0	..	904 10 5	..	67 16 9	972 7 2
1986·10	Coolgardie Redemption	3918, 4052	Do.	1,000 0 0	1,003 3 6	17 13 3	..	1,020 16 9	..	52 14 10	1,073 11 7
4006·09	Dreadnought South	5334Z	Menzies	300 0 0	246 19 10	53 0 2	..	300 0 0	19 13 4	6 13 6	306 13 6
4718·07	Eclipse	1047X	Gindalbie	450 0 0	450 0 0	2 16 0	..	452 16 0	62 8 11	..	452 16 0
3166·09	Emily	1510	Day Dawn	400 0 0	372 1 9	..	..	372 1 9	..	44 7 10	416 9 7
4599·08	Gawler	418, 419B	Edjudina	750 0 0	750 0 0	..	632 14 2	117 5 10	73 1 8	0 10 7	117 16 5
2995·06	Jourdie Enterprise	786S, 773S	Jourdie Hills	1,000 0 0	1,000 0 0	..	500 0 0	500 0 0	59 17 9	19 1 8	519 1 8
4549·08	Hannan's Reward	160	Kalgoorlie	250 0 0	250 0 0	..	..	250 0 0	..	..	250 0 0
2892·08	Jupiter	771	Magnet	400 0 0	400 0 0	..	40 12 4	359 7 8	5 0 0	22 1 8	381 9 4
1806·04	Harbour Lights	1056C	Leonora	612 1 6	612 1 6	..	..	612 1 6	..	..	612 1 6
3790·10	Kalgoorlie North End Dev. Co.	3880E	Kalgoorlie	1,500 0 0	492 0 0	706 13 6	..	1,198 13 6	20 11 3	18 19 7	1,217 13 1
4434·09	Klondyke Boulder	604	Warrawoona	500 0 0	250 0 0	..	..	250 0 0	7 2 6	6 8 3	256 8 3
363·06	Lady Florence	1265	Cue	1,000 0 0	1,000 0 0	..	..	1,000 0 0	..	259 19 9	1,259 19 9
4000·05	Mindeloo	1518	Mindoolah	300 0 0	169 0 0	29 17 0	10 0 0	188 17 0	..	8 1 1	196 18 1
3461·08	North End Mines	4037	Kalgoorlie	1,000 0 0	436 10 0	..	..	436 10 0	..	..	436 10 0
4598·06	Oversight	957X	Bulong	850 0 0	822 0 0	..	..	822 0 0	91 13 9	63 15 9	885 15 9
598·05	Princess Royal	222, 653, 1016, 1048, 1114	Cue	1,000 0 0	..	489 9 5	..	489 9 5	..	2 18 10	492 8 3
697·09	Sunbeam	1121X	Kanowna	1,000 0 0	1,019 2 6	13 8 7	209 4 0	823 7 1	116 12 6	45 13 9	869 0 10
1722·09	Transvaal	536	Southern Cross	325 0 0	325 0 0	..	..	325 0 0	..	61 9 6	386 9 6
4649·10	V's United	271F	Mt. Morgans	672 2 0	..	537 2 0	50 0 0	487 2 0	1 11 2	10 5 10	497 7 10
524·05	W.E.G.	505G	Niagara	500 0 0	296 16 1	0 17 0	..	297 13 1	..	89 10 4	387 3 5
3045·05	Westralia Tasmania	1665T, 1745T	Erlistoun	300 0 0	299 4 9	1 0 0	51 0 0	249 4 9	45 4 8	6 6 0	255 10 9
608·09	Baird & Others	45W	Bulong	40 0 0	40 0 0	..	..	40 0 0	..	..	40 0 0
2390·00	Green & Wheatley	P.A.	Do.	100 0 0	23 14 0	75 9 0	..	99 3 0	..	..	99 3 0
1101·09	Kanowna Prospecting Co.	323X	Kanowna	750 0 0	651 19 3	14 10 0	..	666 9 3	..	..	666 9 3
4457·08	McLellan & Smyth	221W	Waverley	50 0 0	26 12 6	23 7 6	..	50 0 0	..	..	50 0 0
1932·10	Greenbushes P. & M. Co.	300 M.L.	Greenbushes	1,200 0 0	1,063 8 4	4 2 9	7 0 0	1,060 11 1	..	81 6 8	1,141 17 9
1807·09	Wheal May	Loc. 6	Northampton	300 0 0	300 0 0	2 4 6	5 15 9	296 8 9	..	20 5 5	316 14 2
2825·07	Kingdom Come	112 M.L.	Do.	200 0 0	200 0 0	4 14 0	..	204 14 0	5 8 6	15 11 0	220 5 0
2663·05	Lost and Found	374 M.L.	Greenbushes	150 0 0	64 10 0	..	..	64 10 0	8 9 8	4 14 1	69 4 1

	B.—Assistance in Erecting Batteries and Treatment Plants to be used for Crushing for the Public.									
2385·10	Alathea	5364z ..	Menzies	250 0 0	..	246 11 6	..	246 11 6	..	4 6 5	250 17 11
1706·09	Callion	860u ..	Callion	1,000 0 0	1,000 0 0	..	9 2 2	990 17 10	40 0 4	51 3 4	1,042 1 2
3325·09	Crown	1398w ..	Broad Arrow ..	150 0 0	150 0 0	..	7 6 3	142 13 9	3 18 11	..	142 13 9
5228·06	Gibraltar	708n ..	Nannine	750 0 0	..	708 15 0	..	708 15 0	..	20 1 0	(Loan transferred to Nth. Pole Mine.)
851·09	Hidden Secret North	4253..	Eundynie	1,000 0 0	1,000 0 0	..	150 0 0	850 0 0	101 3 3	22 4 10	872 4 10
598·05	Lane Mill Syndicate	..	Cue	650 0 0	..	550 0 0	..	550 0 0	..	1 16 2	551 16 2
2289·08	Lady Pratt	1228x ..	Mulgarrie	250 0 0	170 4 10	35 0 0	35 4 11	169 19 11	6 6 4	..	169 19 11
3785·08	Lady Agnes	910y ..	Bulong	480 0 0	485 0 6	1 11 9	88 4 9	398 7 6	..	27 7 5	425 14 11
4567·07	Malcolm Prospecting Co.	1175c ..	Malcolm	1,550 0 0	1,550 0 0	1 0 0	1 0 0	1,550 0 0	84 9 9	234 6 4	1,784 8 4
2344·08	Mulga Queen	517t ..	Duketon	550 0 0	491 10 6	..	76 8 9	415 1 9	8 1 3	48 18 6	464 0 3
4337·09	North Pole	937n ..	Nannine	(Loan taken	over from Gib	raltar Mine.)	..	..	..	8 13 9	737 9 9
3276·10	Never Never	665	Yilgarn	1,000 0 0	1,000 0 0	73 15 9	191 16 4	881 19 5	89 6 4	97 2 9	979 2 2
667·10	Ravensthorpe Battery Co.	..	Ravensthorpe ..	1,000 0 0	..	478 10 3	..	478 10 3	..	5 1 1	483 11 4
3551·10	Randwick	978c ..	Malcolm	560 0 0	555 1 5	22 2 0	26 7 0	550 16 5	..	45 3 5	595 19 10
1799·09	Roebourne G. and C. Ms.	135	Roebourne	1,000 0 0	1,027 5 9	3 11 6	461 6 9	569 10 6	..	41 13 6	611 4 0
436·09	Southern Cross and Southern Cross South	1067, 1076, W.R., 27y	Bulong	1,000 0 0	..	1,000 0 0	..	1,000 0 0	..	6 10 5	1,006 10 5
3304·08	Spring Hill	724	Parker's Range ..	855 0 0	854 16 5	1 0 0	215 11 10	640 4 7	137 10 7	16 15 5	657 0 0
5046·10	Mystery	P.A. 157 ..	Yalgoo	350 0 0	347 14 5	19 10 9	216 10 0	150 15 2	..	5 11 0	156 6 2
1343·07	Hodder, E.	M.A. 64 ..	Randalls	253 3 2	253 3 2	..	148 13 0	104 10 2	6 18 4	35 11 3	140 1 5
3911·10	Phœnix	622n ..	Quinn's	250 0 0	..	200 0 0	..	200 0 0	2 6 7	5 1 0	205 1 0
3921·07	Water Supply to Public Crushing Plants	.. ..	Ballagundi	170 0 0	150 0 0	20 0 0	..	170 0 0	..	..	170 0 0
	C.—Miscellaneous Advances.										
63·05	Mt. Magnet Municipal Council Water Supply	..	.. ..	460 17 10	460 17 10	..	139 8 0	321 9 10	..	..	321 9 10
				£32,973 4 6	23,642 4 11	5,476 5 9	3,274 6 0	25,844 4 8	1,058 0 6	1,626 15 5	27,471 0 1
	A.—*Pioneer Mining and Prospecting*	..	.. ..	19,444 3 6	14,146 10 1	2,114 17 3	1,507 6 3	14,754 1 1	577 18 10	949 5 10	15,703 6 11
	B.—*Assistance in erecting, etc.* ..	..	.. ..	13,068 3 2	9,034 17 0	3,361 8 6	1,627 11 9	10,768 13 9	480 1 8	677 9 7	11,446 3 4
	C.—*Miscellaneous*	..	.. ..	460 17 10	460 17 10	..	139 8 0	321 9 10	..	..	321 9 10
				£32,973 4 6	23,642 4 11	5,476 5 9	3,274 6 0	25,844 4 8	1,058 0 6	1,626 15 5	27,471 0 1

APPENDIX No. 2.

Report on the Recent Discoveries at the "Corinthian" and "Bullfinch" Leases, Yilgarn Goldfield.

Office of the State Mining Engineer,
Mines Department,
Perth, 2nd August, 1910.

The Secretary for Mines,

Having had the honour of accompanying His Excellency the Governor and the Hon. the Minister for Mines on 30th and 31st ultimo, to the Corinthian and Bullfinch leases, in the Yilgarn Goldfield, I have now to submit a short report about them.

The Corinthian leases are about 12 miles North-Westerly from Southern Cross, and the Bullfinch leases about another 12 miles further on, the latter leases being about 7 miles from the old first discoveries of gold in the Eastern Goldfields at Golden Valley. The auriferous country appears to be a continuation of the long belt which stretches from south of Parker's Range to Southern Cross and Hope's Hill, and consists of a zone of dioritic greenstone lying between extensive granitic areas. All along the belt the greenstones are frequently strongly sheared by pressure and converted into quartzites, jaspers, and hematites, especially close to the contacts with the granite. This feature has been fully described in my published report on the Yilgarn Goldfield of 14th September, 1908, in which it is shown that these sheared zones have often subsequently been ruptured by earth movements, with formation in them of bodies of auriferous quartz, sometimes conforming with the lamination of the jasper-bars, but often also cutting through these. Not uncommonly the quartzites have been broken and jumbled, and the interstices have been filled with auriferous veins of quartz and oxide of iron, making an auriferous "lode formation." The old Hope's Hill mine which produced 31,671.83 ounces of fine gold from 124,825 tons of ore crushed, was a typical example of the lodes of this zone, and the new discoveries are apparently a recurrence of the same sort of lode further to the north. They appear to be near the eastern contact of the belt of dioritic country with the granite.

The Corinthian and Corinthian North leases have been taken up on a low hill in which the bedrock emerges from beneath the covering of loam which generally obscures it in the neighbouring plains. For some chains in width this hill is seen to be an occurrence of the Hope's Hill type of "lode-formation" on an unusually extensive scale, comprising several parallel lines of quartz reefs carrying gold. How many such reefs exist it is yet impossible to say, but they appear to be somewhat numerous. Between them are seen outcrops of laminated quartzite and sheared greenstone. Not less than four recognisable lines of quartz lode have been tested to some extent by costeaning on the Corinthian, but probably further search will add greatly to the number of veins. They should be regarded as members of a group of veins in a large "formation," however, rather than as separate reefs, and are liable from their nature and origin to join one another and to be somewhat short, bunchy and irregular. In parts there seems much probability that several of them may be worked together by large open cuts.

The main shaft of the Corinthian is down about 90 feet, and at 50 feet a crosscut has passed through a body of quartz said to carry good values for 14 feet wide. The end of the drive, however, is still in quartz, also auriferous, so the valuable ground has not yet been cut through. The lode runs about N.N.W. with slight westerly underlay. In the shaft another parallel reef of quartz has been cut below the 50 feet level, carrying gold, but somewhat poor. The main quartz body shows well-smoothed walls of weathered dioritic schist. There appears to be a very fine large body here of valuable ore.

In the "Corinthian North" lease which is under option to the Oroya Black Range Coy., the reef has been rapidly developed by the efforts of a force of 35 men, and has been proved much more thoroughly in consequence than has been possible in the adjoining lease where there is only the prospecting party. In the north lease the lode has been proved by surface costeans 100 feet apart, and by four or five shafts 30 to 50 feet deep, to average quite 25 feet in width for a length of 850 feet, all of which is stated to be of an average payable grade, though not very rich taken in bulk. In one of the shafts a long crosscut has been made at 30 feet depth across the "formation," there being about 40 feet of quartz east of the shaft, and then a quantity of laminated jasperoid quartzite, while to the west the crosscut passes through shattered and sheared greenstone country. Neither to the east nor the west has the solid country yet been found. According to the values stated to exist, and which appear to be borne out by the frequent appearance of visible gold in the stone, this lode should be a very valuable one, even if the values should not persist in depth. A great deal of it could be worked by open cutting methods at very low cost. There seems every reason to be very hopeful of the future of this discovery.

The Bullfinch group of Leases are situated very similarly to the Corinthian, on a low rise protruding from loam-covered flats of lacustrine origin. To the south-west of the principal workings the hill shows much banded jasperoid rock and quartz, and in parts of the workings themselves occasional traces are met with of similar material, showing the occurrence to be somewhat similar to the Corinthian lode. The Bullfinch lode however seems to show less of the laminated quartzite and more solid quartz than that previously described, and also in parts is very full of brown iron oxide. The lodes where opened seem to run about N. 75° W., in several roughly parallel lines, but both north and south the formation tends to take the usual north-north-westerly trend of the Yilgarn auriferous zone. Probably the nearly east and west strike of the ore bodies is due to a local twisting of

the more ancient sheared zone with consequent formation of vents for thermal activity, resulting in the formation of the ore-bodies. The prospecting operations are scattered over 3 leases of 24 acres each, and they are plainly several separate bodies of auriferous material.

A shaft has been sunk about 30 feet in quartz and brown iron oxide, in which very rich ore has been found, returns of a parcel sent to Kalgoorlie being over £20 per ton in value. This "make" of ore is about 6 to 8 feet wide, but the full width is nowhere seen. The ore-body opened up is clearly only one part of a large "formation." On surface the numerous other ore occurrences that have been trenched upon also show that the zone of auriferous material is a very wide one with numerous lenses, bunches and veins of ore through it rather than one continuous ore-body. Gold is very easily obtainable in a large number of surface trenches, and evidently a good deal of open cut winning could be done. As a "surface show" the prospects are uncommonly good, and there seems every likelihood that an important mine will be developed. In some of the brown iron ore there is a good deal of iron pyrites in small grains, and kernels of undecomposed pyrites have been found in several of the denser lumps. It seems clear that much of the ironstone is the direct result of the oxidation of pyrites and the expectation is that the ore in depth will be highly pyritic. Part of the parcel treated at Kalgoorlie was found to contain so much pyrites as to require roasting before a good extraction of the gold could be got by cyaniding. The gold is firmly set in the solid quartz and dense iron ore, and seems more likely to have been in the original pyritic lode-stuff than deposited by secondary processes during weathering, though it is to be expected that there has been some secondary concentration in the ironstones. To the north of the Bullfinch leases, Mr. Gilbert has opened up the cap of a good-looking quartz body, carrying good gold, which is evidently one of the same group of reefs as in the adjoining Bullfinch ground.

To the south of the Bullfinch workings about a quarter of a mile, Mr. Lenneberg has obtained some excellent quartz "floaters" containing good gold, and by trenching he has cut two parallel reefs about 50 feet apart, which run north-westerly and dip north-east. These have been sunk upon on their underlay for about 30 feet, and some good stone obtained showing gold pretty freely. Much of it is diorite strongly silicified and full of quartz veins. In one of the reefs there is also some fibrous hornblende, said to carry gold. The veins yet cut do not, however, seem to account for the good "floaters," and further search for them is necessary.

The whole belt of country from Hope's Hill to the Bullfinch is well timbered with Morrell and Salmon-gum, which will provide splendid supplies of mining timber and firewood.

These new discoveries are among the most promising "prospects" I have yet seen in the State, and are on such a large scale that they seem exceedingly likely to be of great importance.

I have, etc.,

A. MONTGOMERY, M.A., F.G.S.,
State Mining Engineer.

APPENDIX No. 3.

RESULTS OF SALE OF A PARCEL OF AMBLYGONITE FROM MESSRS. MERCER AND MONAGHAN'S MINE, NEAR COOLGARDIE.

The gross weight of amblygonite shipped here was 3 tons 4cwt. 3qrs.

The net weight sold in Europe, after deduction of bags and losses in transit and sampling, was 3,200 kilos, equal to 3 tons 3cwt.

The price realised was 165 marks per 1,000 kilos, equal to £8 3s. 11d. per ton of 2,240 lbs.

The total price realised was £25 16s. 5d.

The Western Australian charges have been:—

	£ s. d.	£ s. d.
Cartage and forwarding, Coolgardie ..	0 3 6	
Railway freight, Coolgardie to Perth	2 18 3	
Freight per S.S. "Paroo"	5 13 4	
Insurance	0 2 0	
Wharfage	0 14 8	
Railage to "Paroo"	0 7 0	
		9 18 9
London expenses were		6 15 8
Expenses London to German buyer's works		3 16 11
		£20 11 4

The *net return* was therefore £5 5s. 1d., which would not be a payable return so far as this parcel was concerned, as it cost the owners about £21 to break the mineral out and take it to Coolgardie. Several expenses, however, would not recur if the ore were sent direct to the purchaser's works, *e.g.*, transhipping charges, storage, cartage in London, and Johnson's fee for analysis. Nearly £10 would have been saved if the mineral had gone directly from here to its destination, and the return would have been about £15, or say £5 a ton, which ought to be a payable price for the raisers when they can get to work in a regular fashion. The market, however, seems limited to 100 to 200 tons per annum, which would hardly be worth considering unless the mineral could be got as a sort of bye-product when mining for tin ore.

The Agent-General does not seem to have been able to find a buyer who would pay for both the lithia and the phosphoric acid, though the value of the latter in the mineral is quoted at about £2 a ton. There is little doubt that if a trade were established this value also could be secured after a little time, as the works found it worth while to take the trouble to save it.

It is unfortunate that the market is so limited, as it would appear that the demand would barely keep two men on the mine, unless values in tin were also discovered.

Particulars of analysis of the minerals were sent to several European firms dealing in minerals and chemical products. Two valued the phosphoric acid contents at about £2 per ton, but had no use for the lithia. Another valued the ore at £6 to £6 10s. a ton for lithia alone, if the ore contained a minimum of 8 per cent. of Li_2O, and said there was a greatly lessened price as the percentage of lithia fell from 8 per cent. to 7 per cent., while below 7 per cent. the ore would be unsaleable. Messrs. Aron Hirsch & Sohn, of Halberstadt, finally accepted the parcel, but could give nothing for the phosphoric acid, dealing only with the lithia, which they valued as above at 165 marks per 1,000 kilos, equal to £25 16s. 5d. for the 3,200 kilos forwarded. They stated that they believed that there was a present market for some 8 to 10 tons monthly, say 100 tons per annum, at from £8 to £9 per ton if delivered c.i.f. Antwerp, and also it was possible that in a few months after delivery commenced, say from 6 to 8 months, the market might gradually increase, *i.e.*, more could be taken, provided it was done gradually; in that case the market possibly might be worked up to double the amount, say 200 tons per annum, without affecting the price.

The total London charges, £6 15s. 8d., were made up as follows:—

CHARGES IN LONDON.

Dock Charges:—

	£ s. d.
Landing rate at 5s. per ton	0 16 2
Marking Nos. 1/30 on bags	0 1 3
Cutting open 10 bags, sampling in duplicate, sewing up, including bags supplied, and forwarding samples to Cross Street and Victoria Street	0 9 11
Cutting open 10 bags, sampling, sewing up, including bags supplied, and forwarding to 15 Victoria Street	0 6 7
Rent, 8 weeks at 2½d. ton	0 5 5
Marking loose bags	0 0 3
Packing loose into 4 bags, including tiers supplied	0 3 1
Delivery to land conveyance, 2s. 6d. ton ..	0 8 1
Cartage on samples	0 0 6
Fare	0 0 5
	£2 11 8
Cost of analysis by Messrs. Johnson & Sons ..	4 4 0
Total London Charges ..	£6 15 8

Messrs A. Hirsch & Sohn's final account sales for the 34 bags of mineral were:—

		£ s. d.
Net weight = 3,200 kilos = 3 tons 3cwt. 0qrs. 0lbs.		
a M.165 per 1,000 kilos. M. 528·00.		
£8 1s. 4·4d. 2,204·6lbs.		
= £8 3s. 11d. per 2,240lbs.	20·45	25 16 5
Less:—		
	£ s. d.	
Cartage from Docks to Wharf and shipping charges at 9s. per ton	1 9 7	
Freight from London to Works at 12s. per ton	1 19 5	
Bill of Lading, Customs Entry fee	0 5 0	
Insurance: from London to buyer's works. M 3·00 at 20·45	0 2 11	
		3 16 11
		£21 19 6

Later advice from Messrs. Hirsch state that their works would be willing to interest themselves in this material, provided that regular deliveries for an extended period can be relied upon. If this condition would be fulfilled their works would be willing to create a market for the lithium product, and would be willing to take at the first 8 to 10 tons of the material monthly for 12 months, while subsequently the quantity might be gradually increased to 15 to 20 tons per month. Their works would be willing to pay from £8 to £9 per ton for the material c.i.f. Antwerp, and would propose to make payment on the following terms:—

They would pay 55s. per unit per ton of lithium oxide (Li_2O) with a treatment charge of £13 15s. per ton of material; for instance, with 8 per cent. Li_2O this—

Would calculate at the rate of 55s. ..	£22	0	0
Less the treatment charge	13	15	0
	£8	5	0

i.e., £8 5s. per ton of ore delivered c.i.f. Antwerp. The weighing and sampling of the material could take place at Antwerp, assays to be made by both parties and exchanged on a certain day with division of differences, if they do not exceed ¼ per cent. of Li_2O, while in case of greater differences a reference assay to be made by an assayer to be mutually agreed upon.

A still later communication from Messrs. Hirsch set a limit of 5½ per cent. Li_2O as the minimum percentage that could be accepted in saleable amblygonite.

REPORT OF THE BOARD OF EXAMINERS FOR COLLIERY MANAGERS' AND UNDER-MANAGERS' CERTIFICATES UNDER "THE COAL MINES REGULATION ACT, 1902."

The Secretary for Mines, Perth, W.A.

Office of the State Mining Engineer,
Department of Mines,
Perth, 30th March, 1911.

Sir,

We have the honour to forward to you, for the Hon. the Minister for Mines' information, the following report of the above Board for the year 1910.

Three meetings were held during the year, on 28th April, 21st July, and 27th October.

On the 21st July an inquiry under Sec. 26 of the Act was held into the conduct of John McGeachie, as a result of which his certificate was cancelled by the Executive Council on the 7th September, 1910.

An application for a Certificate of Service was received from an applicant on the strength of his being an Inspector of Mines under the Mines Regulation Act, 1906, but was refused as the term "Inspector of Mines" in the Coal Mines Regulation Act, 1902, refers to Inspectors appointed under that Act only.

Another application for a Certificate of Service was received, but as the applicant's term of employment as a manager did not come within the period of five years immediately prior to the commencement of the Act, required by Section 24, he was informed that the Board had no power to grant a certificate.

An application was received from Mr. J. Leitch for a first class Certificate of Competency and notification of his intention to sit for examination. The examination took place in the office of the Inspector of Mines, Collie, on the 7th, 8th, and 9th April, 1910, Mr. Inspector Cleland acting as supervisor. The requisite percentage of marks for a pass not being obtained at the April Examination in the subjects of Geology and Surveying, Mr. Leitch was allowed to sit again for these papers in October, and after further written and oral examination, a First Class Certificate of Competency was granted and duly issued to him.

In December, 1909, William Drysdale applied for a first class Certificate of Competency, his application being accompanied by a similar certificate granted him in England by the Home Office, and after consideration his application was approved by all members of the Board and a certificate issued to him, the action being confirmed at the next meeting of the Board in April.

A copy of the papers set at the Examination held in April, 1910, for first class Certificates of Competency is appended to this report.

The Board desire to draw the attention of the Hon. the Minister to the necessity which, in their opinion, exists for amendment of the provisions relating to the issue of Managers and Under-managers' certificates.

We have, etc.,
A. MONTGOMERY,
State Mining Engineer,
Chairman.
A. GIBB MAITLAND,
Government Geologist.
T. D. BRIGGS,
Inspector of Mines, Collie.
F. A. LANE, Acting Secretary.

The Coal Mines Regulation Act, 1902.

EXAMINATION FOR FIRST CLASS CERTIFICATES OF COMPETENCY.

Subject—*Arithmetic.*

Thursday, 7th April, 1910, 10 a.m. to 11 a.m.

1. How many iron plates 5ft. long by 3ft. wide are required to cover a floor 50ft. long by 27ft. wide, and how much will they cost at 3s. 6d. per cwt., the plates weighing 18lbs. per square foot? (40)

2. Six horses and two ponies eat 8 cwt. of hay and two sacks of corn in eight days when hay is £4 per ton and corn 10s. per sack: what will it cost to keep 10 horses and 5 ponies for six days when hay is £5 per ton and corn 12s. per sack? Three ponies to be reckoned as equivalent to two horses. (40)

3. At a colliery when the output of large coal is 12,227 tons the output of small is 2,245: what is the percentage of small to the total quantity, and proportion of small to large? (30)

4. What is the square root of 915,849 and of 24674.1264? (30)

5. Simplify $\frac{(7\frac{1}{3} \text{ of } 5\frac{1}{2} \times \frac{2}{5}) - (\frac{2}{5} \text{ of } 3\frac{3}{4} \text{ of } 7\frac{1}{3})}{\frac{7}{5} \times 1\frac{3}{8}}$. (30)

6. Divide .7349 by .00694 to 4 places and .3 of 7.469 by 1.7 of 14.5 to 4 places. (30)

The Coal Mines Regulation Act, 1902.

EXAMINATION FOR FIRST CLASS CERTIFICATES OF COMPETENCY.

Subject: *Surveying.*

Thursday, 7th April, 1910, 11 a.m. to 1 p.m .

1. Why are mining plans necessary to a colliery manager, and what is the best method by which they may be permanently preserved? (35)

2. How would you proceed to adjust a theodolite before commencing an underground survey? (40)

3. Describe fully the method to be adopted in ascertaining accurately the average grade of a seam worked in a mine. (30)

4. Discuss the relative merits of the miner's dial and the theodolite in colliery surveying. (30)

5. How much coal will you gain in a 6ft. seam by cutting one yard from every side of 100 pillars, measuring 8 yards by 20 yards? (30)

6. If at a vertical depth of 341 feet a seam of coal is cut, which is known to be dipping at an angle of 22½ degrees west, at what distance and in which direction would you expect to find the outcrop if the surface is level? (35)

The Coal Mines Regulation Act, 1902.

EXAMINATION FOR FIRST CLASS CERTIFICATES OF COMPETENCY.

Subject: *Geology.*

Thursday, 7th April, 1910, 2 p.m. to 4 p.m.

1. Give a concise description of coal, and state to what geological periods the different classes of coal belong. (15)

2. What is a fossil? Give the names of six typical fossils belonging to the Carboniferous period. (15)

3. Describe the mode of occurrence of the following rocks and enumerate the principal minerals of which each is formed:—granite, basalt, sandstone, shale, dolomite, and conglomerate. (17)

4. If in working a coal seam it is found to pass into natural coke, to what cause would you ascribe the change? (13)

5. If the beds in a series of coal measures have a uniform dip in one direction, are 2,000 feet in thickness, and the outcrops of individual coal seams are hidden beneath a superficial deposit, how could the number and quality of the various seams be ascertained with a boring plant having only 200 feet of rods? Illustrate your answer by means of a sketch. (20)

6. A coal seam resting upon a considerable thickness of shale and covered by sandstone is traversed by faults. If faults are met with when working the seam under the following conditions to what class would they belong:—

(a) On working to the rise sandstone is encountered;
(b) working to the dip sandstone is encountered.
(c) working to the rise shale is encountered, and
(d) on working to the dip shale is encountered?

Illustrate your answer by diagrams. (20)

The Coal Mines Regulation Act, 1902.

EXAMINATION FOR FIRST CLASS CERTIFICATES OF COMPETENCY.

Subject: *The Coal Mines Regulation Act*, 1902.

Thursday, 7th April, 1910, 4 p.m. to 5 p.m.

1. What are the provisions of the Act regarding the period of employment of men underground in any colliery? (15)

2. To what classes of mines does the Act apply? (7)

3. What does the Act require with respect to the number, relative position, and equipment of shafts, tunnels or outlets which must be provided in a mine? (15)

4. What is the duty of an owner or manager with regard to keeping plans of the workings of a mine? (15)

5. What are the provisions of the Act as to contributions by owners and workmen to the Accident Relief Fund? (15)

6. When must safety lamps be used? (10)

7. What are the General Rules relating to signalling? (15)

8. What provision is to be made for ambulance requisites in a mine? (8)

The Coal Mines Regulation Act, 1902.

EXAMINATION FOR FIRST CLASS CERTIFICATES OF COMPETENCY.

Subject: *Machinery.*

Friday, 8th April, 1910, 10 a.m. to 1 p.m.

1. A boiler is required to supply steam at 100lbs. pressure to an engine developing 50 B.H.P.: give a sketch with dimensions and a specification of particulars of construction of a suitable Cornish boiler. (50)

2. What are the principal causes of formation of scale in boilers? Describe how "hard" water should be treated to render it fit for use in boilers. (30)

3. Describe a jet condenser for use with steam pumps. What advantages are secured by the use of condensers? (30)

4. Describe a spiral drum for winding from deep shafts. What are the advantages and disadvantages of spiral drums? (30)

5. State your views with regard to winding ropes upon the following points, viz.:—

(a) The ratio that the load should bear to the breaking strain of the rope;
(b) methods of capping and frequency of re-capping;
(c) turning ropes end for end, and
(d) the length of time they may be used. (40)

6. What are the advantages of electrical transmission of power in collieries, and what are the principal drawbacks to its general use? (30)

7. Water has to be pumped from a depth of 100 fathoms at the rate of 180 gallons per minute: what is the horse-power required? (30)

8. Calculate the horse-power of a winding engine to raise 1,000 tons of coal from a depth of 250 fathoms in 9 hours. (30)

9. An incline rising to the shaft at the rate of 4 inches to the yard is 2,000 yards long: the engine is required to haul a set of thirty 15cwt. skips up this incline: what is the strain on the rope? (30)

The Coal Mines Regulation Act, 1902.

EXAMINATION FOR FIRST CLASS CERTIFICATES OF COMPETENCY.

Subject: *Mining of Coal.*

Friday, 8th April, 1910, 2 p.m. to 5 p.m.

1. Give a description of the working of a main and tail-rope haulage system 1,000 yards in length, giving type of engine and length of ropes, and explain the advantages of the system. (40)

2. Describe a "low tension" and a "high tension" system of electrical shot firing, and compare their relative advantages and disadvantages. (30)

3. How would you detect the first symptoms of spontaneous combustion in a coal mine? What is your opinion of the causes of spontaneous combustion, and what means can be taken to prevent it? (30)

4. How would you secure a long wall face where the roof is hard rock, and the floor rather soft? (30)

5. In what circumstances and for what reasons would you adopt the bord and pillar system of working in preference to that of long-wall, and *vice versa?* Discuss the question with special reference to the conditions of the Collie Coalfield. (40)

6. Discuss the relative merits of round and rectangular shafts. How would you keep a shaft circular and plumb while sinking? (30)

7. What are the principal points requiring attention in the selection of material for bratticing, and in the erection of brattices? (30)

8. In what circumstances would you adopt the freezing method of shaft sinking? Describe the main outlines of the method. (35)

9. Describe the construction of an underground dam in a heading, capable of resisting the pressure of a body of water standing to 200 feet higher in old adjoining workings. (35)

The Coal Mines Regulation Act, 1902.

EXAMINATION FOR FIRST CLASS CERTIFICATES OF COMPETENCY.

Subject: *Ventilation and Dangerous Gases.*

Saturday, 9th April, 1910, 10 a.m. to 1 p.m.

1. The height of the water-gauge is .9 inches: if the length of the air-way were doubled and the velocity of the air current increased from 7ft. to 12ft. per second, what would be the water-gauge? (30)

2. The ventilating pressure being equal to 12lbs. per square foot of section, the area of section being equal to 60 square feet, the rubbing surface being equal to 800,000 square feet, and the velocity of the air current in an air-way being equal to 10 feet per second, what would be the co-efficient of friction? (30)

3. The effective horse-power of a fan being 40 H.P. and the water-gauge 3.1 inches, what is the quantity of air circulating per minute? (30)

4. A fan engine whose indicated horse-power is 48 is driving 120,000 cubic feet of air per minute into a mine, with 1½ inches of water-gauge: what is the percentage of useful effect? (30)

5. There are 6,000 cubic feet per minute of air passing in an air-way: how much will the power have to be increased to pass 12,000 cubic feet per minute through the same air-way? Explain the reasons of the disproportionate increase. (30)

6. If you were conducting the exploration of a colliery which had been on fire, of what gases would you be most cautious; where would you expect to meet them, and what means would you adopt to detect them? (40)

7. Explain why dry coal-dust is dangerous in mines. (20)

8. How would you test the air of a mine for its percentage of carbon dioxide? (30)

9. Describe a wet and dry bulb thermometer, and explain its use in connection with mine ventilation. (30)

10. What is an anemometer? Describe how you would test the accuracy of your anemometer, and also the mode of using it in an air-way in a mine. (30)

DIVISION III.

REPORT OF THE SUPERINTENDENT OF STATE BATTERIES FOR THE YEAR 1910.

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 1910, being the thirteenth annual report bearing on the subject.

Since the inception of State Batteries, 784,407 tons of ore have been milled for a yield by amalgamation of 808,955 ounces of gold, valued at £2,944,433 18s. 9d., and sands produced from these crushings have yielded 97,224 ounces of gold, valued at £402,675 17s. 9d.; also, slimes treated to date amount to 72,161 tons for 17,453 ounces, valued at £69,674 10s., making a grand total of £3,416,784 6s. 6d. worth of gold, which has been distributed almost wholly amongst prospectors and others working in the various districts served by our plants.

Although for the year under review the tonnage supplied to the mills has unfortunately been much less than the previous year, and notwithstanding that a greater number of plants have to be maintained, the costs have been kept down to practically the same as the preceding year, and as the revenue has not increased, the financial result has been very similar to the year 1909, as the following comparative synopsis will show:—

Operation.	1910.			1909.		
	Tons.	Expenditure per ton.	Revenue per ton.	Tons.	Expenditure per ton.	Revenue per ton.
		s. d.	s. d.		s. d.	s. d.
Milling	89,278½	11 3·33	9 6·68	94,218	11 1·71	9 6·44
Sand treatment ..	43,391	6 2·99	8 6·11	61,032	6 5·80	8 9·71
Slimes treatment ..	28,599½	8 9·10	9 11·57	16,848	10 0·74	9 6·70
Tin treatment ..	3,769	5 5·56	3 4·13	5,043	4 8·22	3 7·53

The above includes all Head Office expenses, as well as £6,943 9s. 6d. for repairs and renewals.

The revenue and expenditure for the year have been as follows, showing a loss of £1,482 17s. 9d.:—

Operation.	Tonnage.	Revenue.	Expenditure.	Profit.	Loss.
		£ s. d.	£ s. d.	£ s. d.	£ s. d.
Milling..	89,278½	42,635 3 7	50,344 5 3	..	7,709 1 8
Sand treatment	43,391	18,462 6 10	13,558 18 0	4,903 8 10	..
Slimes treatment	28,599½	14,248 16 4	12,525 5 3	1,723 11 1	..
Tin treatment	3,769	628 18 1	1,049 14 1	..	400 16 0
Total	..	75,975 4 10	77,458 2 7	6,626 19 11	8,109 17 8

In several districts, although sufficient ore has not been supplied to keep the plants reasonably employed, they have been kept in good order and the staff employed to crush whatever stone may be available, from time to time, whilst in other districts the supply of stone has been so small that the managers have been dispensed with, and the mills put in charge of the nearest manager of another State Mill, who arranges to visit the district and crush out the supply as required, a caretaker being appointed in the interim.

To carry out this economy it has been found necessary to stipulate that these mills will only be put into operation when at least 500 tons of ore are booked for crushing, but at mills which have a resident manager, prospectors may have smaller quantities crushed by paying the feeders' wages in addition to the schedule rates.

The following list shows the capacity of the plants in the various districts and also the percentage of

their capacity that has been supplied during the past year, which will be seen to be only about one-third, so that the whole of the plants are idle two-thirds of the year.

Battery.	Number of Stamps.	Capacity of Mill in tons.	Tons milled.	Percentage supplied.
Menzies	10	11,000	9,118	82·9
Linden	2	2,500	2,043	81·72
Wiluna	10	8,000	5,623½	70·29
Coolgardie	10	10,000	6,440	64·4
Mount Sir Samuel	5	6,000	3,669	61·15
Meekatharra	10	10,000	6,041	60·41
Youanme	5	8,000	4,589½	57·37
Norseman	10	9,000	4,887	54·3
Niagara	10	9,000	4,776	53·07
Black Range	10	10,000	4,778	47·78
Siberia	5	6,000	2,859½	47·66
Yarri	10	10,000	4,760	47·6
Boogardie	10	9,000	3,939½	43·77
Mount Ida	10	8,000	3,294	41·18
Pinjin	5	5,000	2,055½	41·11
Leonora	10	10,000	3,083	30·83
Pig Well	10	8,000	2,288	28·6
Marble Bar	5	5,000	1,338½	26·77
Yerilla	5	3,500	903	25·8
Darlot	10	9,000	2,004	22·27
Mulwarrie	10	8,000	1,439	17·99
Mulline	20	15,000	2,689½	17·93
Nannine	5	6,000	1,048	17·47
Desdemona	2	2,500	·425	17·
Burtville	10	9,000	1,526	16·95
Sandy Creek	10	8,000	1,134	14·12
Laverton	10	8,000	676	8·45
Tuckanarra	10	8,000	668	8·35
Ravelstone	10	8,000	492½	6·16
Lennonville	10	8,000	400½	5·
Messenger's Patch	5	6,000	187	3·1
Widgiemooltha	10	8,000	61	0·76
Kalpini	10	9,000	40	0·44
Randalls	10	8,000	*Nil*	..
Total	294	268,500	89,278½	33·25

As shown in the above list, Menzies Battery is the only one that has been kept reasonably occupied for the year, and even this mill crushed 1,069 tons less than the previous year, and unless better tonnage is forthcoming it will be necessary to close down several of the plants, whilst others can only be run at stated periods and close down for such time as is necessary to allow an accumulation of sufficient stone in the district to justify the expense of sending a staff to the mill.

Plants.

Generally speaking, our milling plants are in better condition than they have been for some years. During the past twelve months, including the cost on power plants, £6,943 9s. 6d. has been spent on repairs and renewals, equal to 1s. 3.9d. per ton of stone treated. A good deal of this has been spent in improving and overhauling the power plants at the various mills from which we have benefited considerably in a reduction of fuel costs, and at present our engines are in a good state of repair, but many of the boilers are showing signs of wear, and the pressure allowed by the machinery inspectors is being continually reduced, and the time is not far off when many of the steam plants will be discarded and probably gas-producer plants will be installed in their place.

Management.

The management at the mills shows a considerable improvement, and a large measure of credit of keeping costs down, notwithstanding the shortage of ore in many districts, is due to the better standard of managers, and to this we look for still further economies during the next year.

I regret having to record the loss by death of Manager Morris from Pig Well, who was one of the most reliable managers in the service.

New Plants.

During the year a new 5-head mill with gas-producer plant, was erected at Mt. Sir Samuel, and a similar one at Marble Bar, whilst a new cyanide plant has been added to the Wiluna mill, and at Greenbushes the North End plant has been removed to Salt Water Gully.

Parcels Crushed.

The total number of parcels crushed for the year was 1,617, the average assay value being 1oz. 2dwts. 8grs. per ton, or equal to £4 9s. 5d.

The following is a list of the various mills:—

Return showing Number of Parcels treated and Tons crushed at State Batteries during 1910.

Plant.	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	84	4,778	4,517 11 0	934 13 11	5,452 4 11	22 20	4 11 4
Boogardie	59	3,939·50	2,122 15 12	1,019 17 8½	3,142 12 20½	15 22·84	3 3 8
Burtville	44	1,526	2,395 6 0	386 10 9	2,781 16 9	36 11.	7 5 10
Coolgardie	219	6,440·5	4,539 15 18	1,247 6 11¾	5,787 2 5¾	17 23·28	3 11 11
Darlot	27	2,004	1,079 9 0	152 16 8	1,232 5 8	12 7·15	2 9 2
Laverton	13	⅛676	761 5 12	144 19 9½	906 4 21¼	26 19·48	5 7 3
Leonora	49	3,082·75	5,920 15 0	857 6 0	6,778 1 0	43 23·37	8 15 7
Linden	48	2,043	2,119 17 15	904 12 11½	3,024 10 2½	29 14·59	5 18 5
Meekatharra	73	6,041	4,633 6 11	1,697 8 18	6,330 15 5	20 23	4 3 6
Menzies	194	9,118	5,444 2 5	2,413 6 6¾	7,857 8 11¾	17 5·61	3 8 11
Mulline	73	2,689·50	3,048 17 0	606 0 11	3,654 17 11	27 4·41	5 8 9
Mulwarrie	44	1,439	1,987 18 0	466 14 19	2,454 12 19	34 3	6 16 6
Nannine	26	1,048·50	714 16 0	204 9 22	919 5 22	17 12·72	3 10 1
Niagara	97	4,776	3,774 0 20	689 1 19½	4,463 2 15½	18 16·41	3 14 9
Norseman	113	4,887	4,480 0 12	1,317 13 12	5,797 14 0	24 3·26	4 16 6
Pig Well	30	2,288	3,220 8 0	612 4 6½	3,832 12 6½	28 12·86	5 14 1
Pinjin	20	2,055·50	1,280 12 0	347 13 9	1,628 5 9	15 20·35	3 3 4
Sandy Creek	37	1,134	1,819 18 0	319 19 0	2,139 17 0	36 18·41	7 7 1
Siberia	30	2,859·25	3,026 4 17	779 16 19½	3,806 1 12½	36 14·92	7 6 6
Wiluna	45	5,623·50	3,379 7 0	2,416 12 12	5,795 19 12	20 23·66	4 3 11
Yarri	59	4,760	5,130 9 20	1,178 17 7½	6,309 7 3½	26 2·73	5 4 5
Yerilla	8	903	1,283 7 0	167 15 22¼	1,451 2 22¼	33 18·86	6 15 7
Youanme	38	4,589·75	2,349 8 7	1,284 17 7	3,634 5 14	15 20·06	3 3 4
Desdemona	16	425	421 4 8	..	421 4 8	19 20	3 19 4
Lennonville	21	400	292 19 20	..	292 19 20	14 15·55	2 18 7
Marble Bar	33	1,338·50	1,422 16 0	..	1,422 16 0	21 6	4 5 0
Messenger's Patch ..	5	187·25	85 15 0	..	85 15 0	9 3·79	1 16 7
Mount Ida	26	3,294	4,871 14 0	..	4,871 14 0	29 13·87	5 18 3
Mount Sir Samuel ..	48	3,669	2,950 1 0	..	2,950 1 0	16 1·92	3 4 3
Ravelstone	12	492·50	504 11 12	..	504 11 12	20 11·76	4 1 11
Tuckanarra	23	668	385 10 18	..	385 10 18	11 13	2 6 2
Widgiemooltha	3	61·50	36 10 22	..	36 10 22	11 21·21	2 7 6
Kalpini	..	40	74 0 0	..	74 0 0	1 17	7 8 0
Total	1,617	89,278·5	80,074 14 13	20,150 13 21	100,225 8 10	22 8·68	4 9 5
					tns. cwts. qr. lbs.	lbs.	
Greenbushes, B. End ..	98	3,403yds.		..	37 3 2 10	24·47	..
„ N. End ..	7	366		..	6 7 2 0	39	..

The operations at the various mills are commented on in Inspector Howe's report, from which the following remarks are taken:—

Black Range.—Good work has been done at this plant during the year on a greatly decreased tonnage, viz., 41.3 per cent. less than last year, whilst the plant and machinery have been well maintained.

Milling costs, 7s. 7.36d. per ton, were third on the list, whilst the profit under this heading amounted to £472 13s. 3d.

Sand treatment costs, 4s. 7.27d. per ton, were second on the list, showing a profit of £576 12s. 7d.

Slime treatment costs, 7s. 5.73d. per ton, were fourth on the list, the profit being £666 8s. 8d.

The total net profit made at Black Range for the year amounted to £1,715 14s. 6d.

Boogardie.—The tons milled during 1910 showed a falling off of 36 per cent. as compared with 1909, and still the cost was reduced to 9s. 9.98d. per ton, a decrease of 1s. 0.63d. per ton.

Sand treatment costs, 5s. 4.98d., showed the substantial decrease per ton of 1s. 6.95d., on a greatly decreased tonnage, and gave a profit of £485 3s. 4d.

This mill has been well handled during the year, and, should tonnage be forthcoming, will hold its own, under the present management, with any of the plants.

The machinery has been well maintained. Towards the close of the year the old leaching plant was renovated in order to undertake the treatment of slimes.

Burtville.—This battery milled 1,526 tons at a cost of 9s. 10.99d. per ton, showing a profit of £5 17s. 10d. for the year. The decrease in tonnage shows a falling off of 48.7 per cent. as compared with 1909.

Only 892 tons of sand were treated, at a cost of 5s. 6.14d. per ton, showing a profit of £182 1s. 2d.

Coolgardie.—On a slightly increased tonnage, milling costs stand at 8s. 0.69d., a decrease of 1s. 10.72d. per ton. A profit of £8 5s. 9d. was made under this heading during the year.

Sand treatment costs were reduced to 5s. 1.80d. per ton, a profit of £451 18s. 8d. being made.

Good work has been done at this plant.

Darlot.—Two thousand and four tons of ore were milled at a cost of 13s. 2.13d. per ton, showing a loss of £262 9s. 10d. During the year the mill has been thoroughly overhauled, and is now in good working order. The sand plant was closed down in April.

Desdemona.—This two-head mill crushed 425 tons during the year, at a cost of 29s. 8.08d. per ton, resulting in a loss of £360 19s. 3d. There appears to be very little prospect of keeping this plant supplied with ore.

Laverton.—Six hundred and seventy-six tons of ore were milled at a cost of 18s. 3.96d. per ton, resulting in a loss of £257 3s. 8d.

Two hundred and seventy-seven tons of sands were treated for a profit of £33 0s. 5d., the cost being 7s. 6.07d. per ton.

This plant is run in conjunction with Burtville.

Leonora.—At this plant 3,083 tons were milled for an expenditure of 12s. 2.04d. per ton, whilst the revenue was very low, being only 7s. 2d. per ton. A loss of £669 19s. 6d. was incurred during the year, and this loss includes an expenditure of £556 9s. 8d. for renewals and repairs. New battery boxes were installed, a new cam shaft and cams and cam pulley put in, and the mill generally overhauled. The power plant was also overhauled.

One thousand four hundred and fifty-nine tons of sand were treated for 7s. 8.42d. per ton, resulting in a profit of £91 5s.

The slime plant completed the treatment of the accumulated slimes, in all 7,945 tons being handled at a cost of 7s. 8.72d. for a profit of £899 15s. 3d.

The year's operations in all departments at Leonora resulted in a profit of £434 10s. 7d. The plant is now in good working order, and is ready to handle a large tonnage if same should be forthcoming.

Linden.—Two thousand and forty-three tons were handled by the two-head mill at a loss of £1,158 7s. 2d., the cost per ton being 23s. 11.13d.

One thousand seven hundred and fifty-seven tons of sand were treated for 7s. 3.55d. per ton, showing a profit of £155 0s. 10d.

Two hundred and thirty-three tons of slimes were treated by the leaching process for 6s. 11.16d. per ton, giving a profit of £35 14s. 11d.

When the 10-head mill is completed costs will be considerably reduced, and the plant will no doubt pay its way, and should there be a fair tonnage, profits should be made.

Meekatharra.—Six thousand and forty-one tons of ore were milled at a cost of 10s. 4.84d. per ton, recording a loss of £383 6s. 8d. This cost includes £514 0s. 10d. for renewals and repairs, the principal item of which was the overhauling of the power plant.

Three thousand two hundred and seventy tons of sands were treated at a cost of 5s. 0.38d. per ton, showing a profit of £682 8s. 11d.

Eight hundred and fifty-five tons of slime were mixed with residues and leached at a cost of 16s. 2.55d., showing a loss of £264 11s. 5d. This work had to be stopped on account of the handling of the slime becoming too expensive.

The whole of the operations at Meekatharra for the year resulted in a profit of £34 10s. 10d.

Menzies.—Nine thousand one hundred and eighteen tons of ore were crushed at a cost of 7s. 2.85d. per ton, showing a profit of £620 6s. 5d. During the year the power plant and mill were overhauled at a cost of £703 17s. 5d.

The sand plant treated 3,556 tons of sand at a cost of 5s. 3.93d. per ton, and a profit of £656 1s. 11d. was made thereby.

The vacuum slime plant handled 9,256 tons of accumulated slimes at a cost of 7s. 5.73d. per ton, and showed a profit of £771 16s. 4d.

The gross profit for the year's work in all departments amounted to £2,049 4s. 8d., a very creditable performance, more especially in view of over £700 being expended on the work connected with overhauling the plant.

The plant and machinery are in really good order and condition. This plant has now had three years of prosperity, 29,736 tons having been treated by the mill during that period—an average of just under 10,000 tons per annum.

Messenger's Patch.—This mill put through its final crushing of 187 tons. Towards the close of the year it was dismantled and forwarded to Quinns, where it is to be re-erected.

There is no cyanide plant at this centre.

Mt. Ida.—Three thousand two hundred and ninety-four tons were crushed for 11s. 11.08d. per ton, resulting in a loss of £160 10s. 6d. The mill is quite obsolete, the battery boxes are almost worn out, and the boiler in a bad state.

No cyanidation is undertaken at Mt. Ida.

Mt. Sir Samuel.—At this new five-head plant 3,669 tons were milled at a cost of 11s. 10.29d. per ton, whilst the receipts amounted to 10s. per ton. The loss was £340 10s. 5d. The ore crushed has been of a hard nature.

There is no cyanide plant at Mt. Sir Samuel.

Mulline.—The tonnage fell away 33 per cent. at this plant, only 2,689½ tons being crushed at a cost of 14s. 4.89d. This high cost includes very heavy repairs, viz., £449 1s. 11d., which amount was chiefly expended in overhauling the power plant. The loss on milling was £420 13s. 9d.

The sand plant treated 1,415 tons, at a loss of £53 5s. 11d., the cost per ton being 10s. 4.92d.

No slime was handled during the year.

The plant and machinery are now in good order, and there is sufficient slime accumulated to run the slimes plant for two or three months this year.

Mulwarrie.—One thousand four hundred and thirty-nine tons were crushed at a loss of £670 0s. 1d., the cost per ton being 19s. 3.04d.

Seven hundred and nine tons of sand were treated at a cost of 12s. 2.28d., the loss on treatment being £83 8s. 9d. The sand was mostly all refractory.

A good deal of trouble was experienced with the water supply, same causing long delays and consequently expense.

Marble Bar.—The new 5-head mill commenced operations in August, and from then till the close of the year crushed 1,338½ tons, at a cost of 14s. 9.04d. per ton, which resulted in a loss of £193 13s. 5d.

The water supply was very small, and continuous milling could not be maintained, which is the principal cause of the high costs.

Nannine.—Only 1,048 tons were milled for the year, which resulted in a loss of £768 1s. 7d. £341 4s. 6d. of this amount was lost prior to Manager Burnside taking charge at the end of March, and then a good deal of money had to be spent in repairing and overhauling the plant, viz., £242 5s. 9d. This expenditure came at a bad time, there being very little ore offering for treatment. The repair work, however, was imperative, and the mill is now in first-class order.

When the plant at Quinns commences operations, it is proposed to work it under Manager Burnside's control, conjointly with Nannine.

No sand was treated during the year.

Niagara.—The tonnage at this plant was maintained during the year, and the 4,776 tons milled were treated at a cost of 10s. 8.11d. per ton, resulting in the small loss of £36 11s. 3d.

Three thousand seven hundred and seventy-two tons of sand were leached and showed a profit of £738 8s. 10d. The cost per ton, 4s. 6.91d. was the lowest on the list for all plants.

Two thousand three hundred and eighty tons of slimes were treated by the leaching process at a cost of 9s. 5.40d., and resulted in a profit of £51 15s. 4d.

Norseman.—A serious falling off was recorded in the tonnage, and the 4,887 tons milled showed a decrease of 31.8 per cent. as compared with the figures for 1909.

The cost of milling amounted to 11s. 10.46d. per ton, and a loss of £374 9s. 3d. was made.

Renewals and repairs cost £355 19s. 9d., and include a new steel smoke stack, and new bearings and shaft for tailings wheel.

Three thousand two hundred and ninety-nine tons of sand were treated at a cost of 6s. 5.77d., a profit of £370 11s. 6d. being made thereby.

Three hundred and fifty-two tons of slimes were filter-pressed at a cost of 13s. 10.50d., a loss of £68 6s. 9d. being incurred. This tonnage represents the final run of the previous year's treatment, and had to bear the expense of cleaning the plant and machinery preparatory to its term of idleness.

Pigwell.—Two thousand two hundred and eighty-eight tons of ore were milled for a cost of 10s. 6.28d., which operation resulted in a profit of £24 5s. 9d.

The tonnage shows a decrease of over 25 per cent. as compared with 1909.

One thousand three hundred and seventy-six tons of sand were leached at a cost of 8s. 4.03d., the treatment resulting in a profit of £61 2s. 6d.

Three hundred and forty tons of slime were leached at a cost of 15s. 2.20d., the loss being £98 4s. 5d.

Since the beginning of November this plant has been under the Leonora management.

Pinjin.—Two thousand and fifty-five and a-half tons were milled at a cost of 9s. 11.04d. per ton, and although the work resulted in a loss of £120 2s. 1d., the result is good for this isolated 5-head mill.

One thousand four hundred and sixteen tons of sand were treated at a cost of 5s. 4.75d., a profit of £222 0s. 11d. being made in consequence.

Manager Browne was transferred to Marble Bar and Sandy Creek towards the end of the year, and the Pinjin plant will in future be run by the Yarri management.

Sandy Creek.—Only one thousand one hundred and thirty-four tons were milled, the cost being 25s. 8.18d. per ton, and the loss £495 19s. 5d.

Seven hundred and sixty-three tons of sand were treated at a cost of 15s. 7.53d. per ton, the loss being £215 13s. 6d.

Two hundred and thirty-two and a-half tons of slime were leached for 15s. 4.51d. per ton, the loss amounting to £62 10s.

This plant is now being managed by Manager Browne in conjunction with Marble Bar, and should in future show decreased losses.

Siberia.—Two thousand eight hundred and fifty-nine and a-half tons were milled for 10s. 3.19d. per ton, whilst the revenue was only 6s. 6.3d. per ton, and consequently a heavy loss was sustained, viz., £534 9s. 8d. This goes plainly to show that when 6s. 6.3d. per ton is the revenue, the time crushing on these soft ores does not and cannot pay on these small mills.

Nine hundred and forty-nine tons of sand were treated at a cost of 9s. 1.48d. per ton, showing a profit of £10 17s. 6d.

Wiluna.—This mill treated 5,623½ tons, which is nearly double the 1909 tonnage. The cost per ton amounted to 10s. 2.52d., and a profit of £27 5s. 8d. was made.

Three thousand four hundred and fifty-four tons of sand were treated for a profit of £542 1s. 6d., the cost per ton being 6s. 7.48d.

The power plant has come to the end of its tether, and a new 48 B.H.P. gas-producer plant is on order.

To complete the efficiency of the plant new battery boxes are required, and I hope same will be installed at an early date.

Yarri.—Four thousand seven hundred and sixty tons were milled at a cost of 11s. 7.92d. per ton, which

includes heavy repairs and renewals expenditure, viz., £666 4s. 5d. incurred in connection with overhauling the power plant. The loss was £374 14s. 6d.

Three thousand seven hundred and thirty-four tons of sand were treated for a profit of £226 16s. 3d., the cost being 5s. 0.09d. per ton.

During the year the vats, etc., of the cyanide plant were renewed.

This plant is now being managed in conjunction with Pinjin.

Yerilla.—Once again under 1,000 tons of ore were milled for the year's work. The cost of treating the 903 tons crushed amounted to 20s. 7.80d., and the loss was £452 13s. 6d.

Four hundred and forty-two tons of sand were leached at a cost of 8s. 11.66d., a profit of £9 5s. 7d. being recorded.

This plant is a heavy drain on the finances of the Department.

Youanme.—Four thousand five hundred and eighty-nine and three-quarter tons were milled at this 5-head plant during the year, at a cost of 7s. 5.53d. per ton. This cost is the second best on the list. The revenue, however, was only 7s. 0.8d. per ton, and a loss of £90 4s. 1d. was consequently incurred. This is another instance of the time crushing being too low to defray expenses, even in spite of the costs being very low.

One thousand nine hundred and forty tons of sand were leached for 4s. 11.28d. per ton, the third best cost on the list. The profit amounted to £457 15s. 5d.

Results from this mill are good.

Ravelstone.—Four hundred and ninety-two and a-half tons were milled at a cost of 14s. 11.64d. per ton, the loss incurred being £122 11s. 10d., which is a great deal less than usual.

Widgiemooltha.—The cost of keeping a caretaker at the plant and putting through eight tons amounted to £193 7s. 7d.

Kalpini.—Forty tons were crushed in March, and the loss on keeping the mill open was £116 3s. 2d. The plant is being dismantled for re-erection at Linden.

Randalls.—Tons milled, *nil.* Loss, £120 10s. 3d.

Mills Leased.

Lennonville.—Crushed 400½ tons. Profit, £17 18s.

Tuckanarra.—Crushed 668 tons. Profit, £35 19s. 7d.

Tin Plants.

Greenbushes, B.E.—Three thousand four hundred and three tons of tin ore were treated at a cost of 4s. 3.55d. per ton, a loss of £178 10s. 11d. The revenue only amounted to 3s. 2.9d. per ton.

Greenbushes, N.E.—Treated three hundred and sixty-six tons for a loss of £222 5s. 1d.

This plant is now removed to Salt Water Gully, and the charges have been raised somewhat, which should help to minimise losses.

Yearly Output.

As shown in the statement attached the total tons treated for the year 1910 were 89,278 for a yield by amalgamation of 80,074 ounces, valued at £285,467 12s. 2d., in addition to which 50,169 tons of tailings have been purchased for which prospectors have been paid £37,281 in cash, although only 43,915 tons of these have been treated, the balance being accumulated at the various plants.

J. DUNSTAN,
Superintendent State Batteries.

Milling.

	tons	ozs.
Up to 1901 (3 years) ..	68,791	77,533
1902	39,517	57,255
1903	49,233	58,305
1904	71,616	78,309
1905	85,018	92,327
1906	95,831	94,187
1907	95,280	97,962
1908	95,624	89,875
1909	94,218	83,127
1910	89,278	80,074

Cyaniding (Sands).

	tons.
Up to 1902	29,255
1903	32,369
1904	42,559
1905	54,420
1906	60,422
1907	63,778
1908	62,081
1909	61,265
1910	43,915

Slimes Treatment.

	tons.
Up to 1904	691
1905	7,028
1906	4,737
1907	8,220
1908	5,818
1909	16,848
1910	28,819

Expenditure from "Consolidated Revenue Vote" and "Loan Funds" on Erection of State Batteries for Year ending 31st December, 1910, and Totals since Inception.

Batteries.	From Revenue.	From Loan.	Totals.
	£ s. d.	£ s. d.	£ s. d.
Desdemona Battery Water Supply	..	0 6 3	0 6 3
Mount Ida Battery Water Supply	..	76 15 10	76 15 10
Mount Sir Samuel Battery Erection	..	2,715 7 5	2,715 7 5
Marble Bar Battery Erection	..	3,485 12 11	3,485 12 11
Wiluna Cyanide Plant	..	1,137 11 10	1,137 11 10
Youanme Battery Water Supply	..	253 15 4	253 15 4
Quinn's Battery Water Supply Boring	..	258 2 9	258 2 9
Black Range Slimes Plant	..	175 4 2	175 4 2
Boogardie Slimes Plant, Vats, etc.	..	107 6 9	107 6 9
Quinn's Battery, Removal from Messenger's Patch	..	417 15 10	417 15 10
Linden Battery and Removal of Kalpini Ten-head Battery	..	53 18 8	53 18 8
Greenbushes, Salt Water Gully Battery Erection	..	299 0 1	299 0 1
	..	8,980 17 10	8,890 17 10
Erection of State Batteries—			
Expenditure to 31st December, 1907	91,981 1 8	..	..
Loan Expenditure to 31st December, 1909	..	183,338 11 9	275,319 13 5
Grand Totals	91,981 1 8	192,319 9 7	284,300 11 3

Return showing the Number of Tons crushed, Gold Yield, Average Value per Ton, and Total Value for Year ending 31st December, 1910.

Battery.	Tons Crushed.	Gold Yield.	Average per ton in shillings.	Total Value.
		ozs.		£
Black Range	4,778·00	4,517·55	68·00	16,263·18
Boogardie	3,939·50	2,122·76	38·80	7,641·93
Burtville	1,526·00	2,395·30	111·00	8,623·08
Coolgardie	6,440·50	4,539·77	50·60	16,343·06
Darlot	2,004·00	1,079·45	38·60	3,886·02
Desdemona	425·00	421·20	71·20	1,516·32
Laverton	676·00	761·27	81·00	2,740·57
Leonora	3,082·75	5,920·75	138·20	21,314·70
Linden	2,043·00	2,119·88	74·60	7,631·56
Marble Bar	1,338·50	1,422·80	76·20	5,122·08
Meekatharra	6,041·00	4,633·29	55·20	16,679·31
Menzies	9,118·00	5,444·08	42·80	19,598·70
Mt. Ida	3,294·00	4,871·70	106·40	17,538·12
Mt. Sir Samuel	3,669·00	2,950·05	56·20	10,620·18
Mulline	2,689·50	3,048·85	81·60	10,975·86
Mulwarrie	1,439·00	1,987·90	99·40	7,156·44
Nannine	1,048·50	714·79	30·00	2,573·24
Niagara	4,776·50	3,774·03	56·80	13,586·53
Norseman	4,887·00	4,480·02	66·00	16,128·09
Pig Well	2,288·00	3,220·40	101·20	11,593·44
Pinjin	2,055·50	1,280·60	44·80	4,610·16
Siberia	2,859·50	3,026·23	..	10,894·42
20-Mile Sandy	1,134·00	1,819·90	76·20	6,551·64
Wiluna	5,623·50	3,379·35	43·20	12,165·66
Yarri	4,760·00	5,130·49	77·60	18,469·76
Yerilla	903·00	1,283·35	40·20	1,820·05
Youanme	4,589·75	2,349·39	36·80	8,457·80
Kalpini	40·00	74·00	133·20	266·40
Lennonville	400·25	292·98	52·60	1,054·72
Messenger's Patch	187·25	85·75	32·80	308·70
Ravelstone	492·50	504·57	73·60	1,816·45
Tuckanarra	668·00	385·53	41·40	1,387·90
Widgiemooltha	61·50	36·54	42·60	131·54
	89,278·50	80,074·52	63·80	285,467·61

TIN PLANTS.

	Tons.	Yield Tons Black Tin.
Greenbushes, Bunbury End	3,403·00	37·110
Greenbushes, North End	366·00	6·350
	3,769·00	43·460

Return showing Number of Tons of Sands and Slimes treated, Yield therefrom, and Value for Year ending 31st December, 1910.

Plant.	Tons treated.	Yield.	Value.
	SANDS.		
		Fine ozs.	£
Black Range	3,145	622·52	2,644·52
Boogardie	2,180	512·23	2,176·03
Burtville	912	222·08	943·47
Coolgardie	3,359	477·98	2,030·61
Darlot	283	23·99	101·89
Laverton	277	49·45	210·06
Leonora	1,459	675·49	2,869·61
Linden	1,757	474·00	2,013·76
Meekatharra	3,270	877·25	3,726·83
Menzies	3,556	742·88	3,155·85
Mulline	1,505	440·23	1,870·35
Mulwarrie	820	217·64	924·56
Nannine	..	39·47	167·74
Niagara	3,784	492·63	2,092·85
Norseman	3,347	597·35	2,537·76
Pig Well	1,376	237·10	1,007·32
Pinjin	1,804	259·24	1,101·44
20 Mile Sandy	980½	256·40	1,089·47
Siberia	1,007	290·90	1,235·74
Wiluna	2,978	1,097·54	4,662·30
Yarri	3,734	516·88	2,195·72
Yerilla	442	64·15	272·49
Youanme	1,940	886·04	3,763·91
	43,915½	10,073·44	42,794·28

Plant.	Tons treated.	Yield.	Total.
	SLIMES.		
		ozs.	£
Black Range	5,667	1,068·05	4,537·42
Boogardie	81	20·74	88·07
Burtville	958	289·48	1,229·73
Darlot	238	20·55	87·32
Laverton	142	20·17	85·67
Leonora	7,945	1,696·68	7,208·60
Linden	233	39·53	167·93
Menzies	9,256	2,461·57	10,457·14
Meekatharra	855	208·45	885·68
Norseman	352	130·14	553·11
Niagara	2,380	375·77	1,596·29
Pig Well	340	64·65	274·57
Sand Creek	255½	60·77	258·23
Wiluna	..	..	..
Yerilla	117	12·44	52·85
	28,819½	6,468·99	27,482·61

Return showing the Number of Tons crushed, Gold Yield, Average per Ton, and Value since Inception to 31st December, 1910.

Battery.	Tons Crushed.	Gold Yield.	Average Gold per ton.	Value.
		ozs.	ozs.	£
Black Range	44,695·65	48,489·70	1·08	174,758·80
Boogardie	41,706·15	20,601·48	·49	75,559·52
Burtville	24,011·00	54,277·71	2·26	196,705·57
Coolgardie	42,105·50	37,703·25	·89	135,788·90
Darlot	27,946·75	34,191·64	1·22	126,518·69
Desdemona	902·00	642·20	·71	2,311·92
Laverton	10,735·75	10,805·65	1·06	40,072·07
Leonora	41,466·70	38,420·32	·92	141,893·48
Linden	5,326·75	6,302·18	1·18	22,687·84
Marble Bar	1,338·50	1,422·80	1·62	5,122·08
Meekatharra	53,782·50	68,770·22	1·27	250,252·20
Menzies	48,015·00	40,559·13	·84	145,860·27
Mt. Ida	30,076·40	43,246·91	1·43	158,991·07
Mt. Sir Samuel	3,669·00	2,950·05	·80	10,620·18
Mulline	65,325·70	82,316·05	1·26	295,517·92
Mulwarrie	25,175·40	27,932·26	1·10	103,812·83
Nannine	9,124·35	5,270·72	·57	18,974·56
Niagara	49,186·00	42,891·52	·87	156,597·27
Norseman	47,016·20	49,944·57	1·06	182,982·92
Pig Well	16,521·00	16,413·48	·98	59,088·51
Pinjin	13,920·15	11,083·67	·79	39,900·79
Siberia	9,779·00	9,054·66	·92	32,522·14
20 Mile Sandy	7,008·15	13,680·22	1·95	49,348·76
Wiluna	29,251·75	21,450·90	·73	77,368·42
Yarri	30,401·00	20,944·90	·68	75,401·47
Yerilla	7,327·00	6,855·65	·93	21,878·26
Youanme	6,743·50	4,114·39	·61	14,811·81
Kalpini	3,679·50	2,150·35	·58	7,741·27
Lennonville	29,967·39	34,121·69	1·13	127,894·82
Randall's	4,333·45	1,617·96	·37	5,798·20
Ravelstone	10,425·05	9,545·27	·91	35,534·21
Tuckanarra	15,155·85	20,531·81	1·35	75,538·23
Widgiemooltha	5,711·00	2,413·43	·42	8,949·40
Batteries closed	22,578·35	18,238·52	·80	67,629·56
	784,407·44	808,955·29	1·03	2,944,433·94

TIN PLANTS.

	Tons.	Yield, Tons Black Tin.
Greenbushes, Bunbury End	30,466·50	508,653·16
Greenbushes, North End	15,026·00	163,827·10

Return showing the Number of Tons of Sands and Slimes treated, Yield and Value since Inception to 31st December, 1910.

Plant.	Tons treated.	Yield.	Value.
	SANDS.		
		ozs.	£
Black Range	25,763	7,299·87	30,722·31
Boogardie	29,032	7,530·32	31,455·99
Burtville	13,749¾	4,767·12	19,832·70
Coolgardie	21,756	3,821·97	15,948·83
Darlot	23,654	2,699·17	11,042·16
Laverton	8,911	991·70	4,016·83
Lennonville	24,309	6,592·43	26,653·23
Leonora	25,676	6,115·88	25,207·62
Linden	3,903	1,209·13	5,136·75
Meekatharra	32,265	6,703·36	27,856·15
Menzies	27,517½	7,062·34	29,554·22
Mt. Ida	3,570	357·97	1,423·64
Mulline	37,817	10,674·90	43,124·23
Mulwarrie	20,560	3,837·78	15,662·21
Nannine	3,650	410·12	1,742·50
Niagara	29,932	4,919·85	20,319·06
Norseman	34,674½	7,119·46	29,484·35
Pig Well	11,307	2,358·29	9,898·95
Pinjin	10,198	1,173·66	4,961·10
Sandy Creek	6,013	2,106·89	8,816·82
Siberia	4,126½	882·21	3,748·63
Wiluna	6,506	2,658·24	11,292·33
Yarri	25,576	2,213·93	9,140·92
Yerilla	4,960	575·59	2,444·95
Youanme	3,055	1,342·53	5,702·77
Plants closed	11,584	1,800·08	7,486·64
	450,065½	97,224·79	402,675·89

Plant.	Tons treated.	Yield.	Total.
	SLIMES.		
		ozs.	£
Black Range	5,667	1,068·05	4,537·42
Boogardie	81	20·74	88·07
Burtville	1,100	343·77	1,460·40
Darlot	570	52·61	223·55
Laverton	142	20·17	85·67
Leonora	12,440	2,198·09	9,338·73
Linden	233	39·53	167·93
Menzies	13,428½	3,375·45	14,339·43
Meekatharra	1,980	462·78	1,966·03
Mulline	16,019¾	5,454·63	18,701·48
Norseman	7,479	1,254·16	5,328·19
Niagara	11,671	2,843·10	12,076·78
Pig Well	340	64·65	274·57
Sandy Creek	255½	60·77	258·23
Wiluna	484	170·20	723·06
Yerilla	271	24·69	104·91
	72,161¾	17,453·39	69,674·50

State Batteries, Tin, Cyanide, and Slimes Plants. Costs per ton for Year ending 31st December, 1910.

Plant.	MILLING AND TIN.						Plant.	CYANIDING AND SLIMES.					
	Tonnage.	Wages.		Repairs and Maintenance.		Total.		Tonnage.	Wages.		Repairs and Maintenance.		Total.
		s.	d.	s.	d.	s. d.			s.	d.	s.	d.	s. d.
Black Range ...	4,778·00	4	2·06	3	5·33	7 7·39	Black Range ...	3,089	2	1·59	2	5·69	4 7·28
Boogardie	3,939·50	5	3·73	4	6·27	9 10·00	Boogardie ...	2,180	2	10·43	2	6·56	5 4·99
Burtville	1,526·00	5	7·78	4	3·33	9 11·11	Burtville ...	892	2	9·37	2	9·62	5 6·99
Coolgardie	6,440·50	3	8·00	4	4·70	8 0·70	Coolgardie ...	3,359	2	5·17	2	8·63	5 1·80
Darlot	2,004·00	7	1·11	6	1·03	13 2·14	Darlot	283	4	4·41	5	9·72	10 2 13
Desdemona	425·00	19	10·98	9	7·88	29 6·86	Laverton ...	277	4	3·43	3	2 64	7 6·08
Laverton	676·00	12	9·29	5	6·68	18 3·97	Leonora	1,459	4	3·82	3	4·60	7 8·42
Leonora	3,082·75	6	3·99	5	10·07	12 2·06	Linden	1,757	3	7·99	3	7·75	7 3·74
Linden	2,043·00	14	4·12	9	7·02	23 11·14	Meekatharra ...	3,270	2	4·30	2	8·08	5 0·38
Marble Bar	1,338·50	10	0·01	4	10·12	14 10·13	Menzies	3,556	2	3·02	3	0·91	5 3·93
Meekatharra ...	6,041·00	4	11·88	5	4·97	10 4·85	Mulline	1,415	4	7·95	5	8·97	10 4·92
Menzies	9,118·00	3	8·23	3	6·63	7 2·86	Mulwarrie ...	709	4	8·12	7	6·16	12 2·28
Mount Ida	3,294·00	7	9·22	4	1·87	11 11·09	Niagara	3,772	2	4·61	2	2·30	4 6·91
Mount Sir Samuel...	3,669·00	8	1·10	3	9·19	11 10·29	Norseman ...	3,299	3	0·38	3	5·38	6 5·76
Mulline	2,689·50	8	0·44	6	4·45	14 4·89	Pig Well ...	1,376	4	6·66	3	9·37	8 4·03
Mulwarrie	1,439·00	11	0·61	8	2·44	19 3·05	Pinjin	1,416	3	1·04	2	4·19	5 5·23
Nannine	1,048·50	15	2·80	10	0·94	25 3·74	Sandy Creek ...	763	10	1·46	5	6·10	15 7·56
Niagara	4,776·50	5	6·46	5	1·65	10 8·11	Siberia	949	4	2·69	5	3·55	9 6·24
Norseman	4,887·00	5	9·43	6	1·04	11 10·47	Wiluna	3,454	3	0·52	3	6·96	6 7·48
Pig Well	2,288·00	6	8·11	3	10·19	10 6·30	Yarri	3,734	2	10·85	2	1·24	5 0·09
Pinjin	2,055·50	6	0·90	3	9·81	9 10·71	Yerilla	442	5	9·79	3	1·87	8 11·66
20-Mile Sandy ...	1,134·00	13	3·76	12	4·42	25 8·18	Youanme ...	1,940	2	6·05	2	5·20	4 11·25
Siberia	2,859·50	6	2·82	4	0·37	10 3·19							
Wiluna	5,623·50	5	8·05	4	6·47	10 2·52	*Slimes Plants.*						
Yarri	4,760·00	6	3·54	5	4·38	11 7·92	Black Range ...	5,587	4	10·40	2	7·34	7 5·74
Yerilla	903·00	14	5·64	6	2·18	20 7·82	Boogardie ...	81	7	5·57	13	4·27	20 9·84
Youanme	4,589·75	4	8·71	2	8·81	7 5·52	Burtville ...	958	8	7·75	3	10·53	12 6·28
							Darlot	238	6	7·13	2	7·70	9 2·83
							Laverton ...	142	2	9·28	2	2 57	4 11·85
							Leonora	7,945	3	8·45	4	0·37	7 8·82
							Linden	233	3	6·16	3	5·00	6 11·16
							Meekatharra ...	855	10	3·32	5	10·93	16 2·25
Tin Plants.							Menzies	9,256	3	11·56	4	4·42	8 3·98
Greenbushes (Bunbury end)	3,403·00	2	4·82	1	10·74	4 3·56	Niagara	2,380	6	7·45	2	9·95	9 5·40
							Norseman ...	352	5	8·04	8	2·55	13 10·59
Greenbushes (North end)	366·00	11	5·88	4	9·86	16 3·74	Pig Well ...	340	9	10·44	5	3·76	15 2·20
							Sandy Creek ...	232·5	11	10·46	3	8·09	15 6·55

State Batteries—Working Account for Year ending 31st December, 1910 (excluding Additions and Equipment).

Goldfield.	Milling and Tin.						Cyaniding and Slimes.					
	Plant.	Tonnage.	Expenditure.	Receipts.	Profit.	Loss.	Plant.	Tonnage.	Expenditure.	Receipts.	Profit.	Loss.
			£ s. d.	£ s. d.	£ s. d.	£ s. d.			£ s. d.	£ s. d.	£ s. d.	£ s. d.
East Murchison	Black Range	4,778·00	1,819 7 11	2,268 16 2	449 8 3	...	Black Range ...	3,089·0	711 13 0	1,305 11 7	593 18 7	
Murchison ...	Boogardie	3,939·50	1,936 19 7	1,773 7 6	...	163 12 1	Boogardie	2,180·0	590 6 4	1,075 9 8	485 3 4	
Mt. Margaret ...	Burtville	1,526·00	757 7 1	779 15 9	22 8 8	...	Burtville	892·0	249 0 4	413 11 5	164 11 1	
Coolgardie ...	Coolgardie	6,440·50	2,595 3 8	2,600 0 5	4 16 9	...	Coolgardie	3,359·0	865 1 3	1,176 12 2	311 10 11	
East Murchison	Darlot	2,004·00	1,320 9 6	1,072 0 0	...	248 9 6	Darlot	283·0	144 0 7	110 18 6	...	33 2 1
N. Coolgardie ...	Desdemona	425·00	628 8 0	263 12 0	...	364 16 0	Laverton	277·0	103 19 5	136 19 10	33 0 5	
Mt. Margaret ...	Laverton	676·00	619 11 7	362 7 11	...	257 3 8	Leonora	1,459·0	561 18 9	575 13 6	13 14 9	
Do. ...	Leonora	3,082·75	1,876 3 3	1,107 16 8	...	768 6 7	Linden	1,757·0	642 10 6	786 4 10	143 14 4	
N. Coolgardie ...	Linden	2,043·00	2,444 7 3	1,286 0 1	...	1,158 7 2	Meekatharra ...	3,270·0	822 16 2	1,506 5 7	683 9 5	
Pilbara ...	Marble Bar	1,338·50	993 9 0	793 16 5	...	199 12 7	Menzies	3,556·0	947 7 4	1,630 6 5	682 19 1	
Murchison ...	Meekatharra	6,041·00	3,142 14 4	2,749 5 8	...	393 8 8	Mulline	1,415·0	736 12 7	613 5 4	...	123 7 3
N. Coolgardie ...	Menzies	9,118·00	3,300 5 6	3,909 16 7	609 11 1	...	Mulwarrie	709·0	432 3 4	388 14 7	...	93 8 9
Yalgoo ...	Messenger's Patch ...	187·25	326 16 4	118 13 2	...	208 3 2	Nannine	...	55 17 8	...	...	55 17 8
N. Coolgardie ...	Mount Ida	3,294·00	1,963 19 8	1,803 19 7	..	160 0 1	Niagara	3,772·0	863 3 0	1,574 17 7	711 14 7	
E. Murchison ...	Mt. Sir Samuel	3,669·00	2,175 12 3	1,835 1 10	...	340 10 5	Norseman	3,299·0	1,069 1 8	1,439 13 2	370 11 6	
N. Coolgardie ...	Mulline	2,689·50	1,937 10 2	1,516 16 1	...	420 14 1	Pig Well	1,376·0	573 11 11	634 14 5	61 2 6	
Do. ...	Mulwarrie	1,439·00	1,385 8 3	768 8 2	...	617 0 1	Pinjin	1,416·0	384 18 3	389 17 3	4 19 0	
Murchison ...	Nannine	1,048·50	1,326 19 8	558 18 1	...	768 1 7	20-Mile Sandy ...	763·0	596 5 4	336 15 5	...	259 9 11
N. Coolgardie ...	Niagara	4,776·50	2,549 15 9	2,513 5 5	...	36 10 4	Siberia	949·0	451 17 4	474 13 1	22 15 9	
Dundas ...	Norseman	4,887·00	2,901 2 0	2,526 12 9	...	374 9 3	Wiluna	3,454·0	1,144 3 2	1,671 4 8	527 1 6	
Mt. Margaret ...	Pig Well	2,288·00	1,204 1 2	1,226 14 5	22 13 3	...	Yarri	3,734·0	935 2 10	1,161 19 1	226 16 3	
N. Coolgardie ...	Pinjin	2,055·50	1,016 15 8	880 1 6	...	136 14 2	Yerilla	442·0	198 6 2	207 11 9	9 5 7	
Pilbara ...	20-Mile Sandy	1,134·00	1,456 3 9	965 5 7	...	490 18 2	Youanme	1,940·0	479 1 1	901 7 0	422 5 11	
Coolgardie ...	Siberia	2,859·50	1,467 17 6	877 5 3	...	590 12 3						
East Murchison	Wiluna	5,623·50	2,871 0 4	2,901 0 4	30 0 0	...						
N. Coolgardie ...	Yarri	4,760·00	2,775 3 4	2,706 12 7	...	68 10 9	*Slimes Plants.*					
Do. ...	Yerilla	903·00	932 8 7	479 15 1	...	452 13 6						
E. Murchison ...	Youanme	4,589·75	1,712 3 2	1,622 3 7	...	89 19 7	Black Range ...	5,587·0	2,089 5 1	2,803 13 8	714 8 7	
N.E. Coolgardie	Kalpini	40·00	161 15 11	23 18 7	...	137 17 4	Boogardie	81·0	84 6 8	40 10 0	...	43 16 8
Murchison ...	Lennonville	400·25	0 9 6	18 8 6	17 19 0	...	Burtville	958·0	599 18 10	479 0 0	...	120 18 10
Coolgardie ...	Randall's	...	156 19 1	36 8 10	...	120 10 3	Darlot	238·0	109 18 3	57 14 6	...	52 3 9
Peak Hill ...	Ravelstone	492·50	375 17 5	246 1 1	...	129 16 4	Laverton	142·0	35 8 4	71 0 0	35 11 8	
Murchison ...	Tuckanarra	668·00	...	35 19 7	35 19 7	...	Leonora	7,945·0	3,072 14 9	3,972 10 0	899 15 3	
Coolgardie ...	Widgiemooltha	61·50	211 19 1	31 18 5	...	180 0 8	Linden	233·0	80 15 1	95 9 9	14 14 8	
							Meekatharra ...	855·0	692 1 5	427 10 0	...	264 11 5
	Tin Fields.						Menzies	9,256·0	3,856 3 8	4,628 0 0	771 16 4	
	Greenbushes, Bunbury End	3,403·00	731 2 9	552 11 10	...	178 10 11	Niagara	2,380·0	1,124 12 3	1,170 1 10	45 9 7	
	Greenbushes, North End	366·00	298 11 4	76 6 3	...	222 5 1	Norseman	352·0	244 6 9	176 0 0	...	68 6 9
	Totals	93,047·50	51,373 19 4	43,289 1 8	1,192 16 7	9,277 14 3	Pig Well	340·0	258 2 11	159 18 6	...	98 4 5
	Southern Cross (less transfer to Government Propt. Sales)	...	...	25 0 0	...	25 0 0	20-Mile Sandy ...	232·5	180 14 7	116 5 0	...	64 9 7
							Wiluna	...	62 11 8	...	...	62 11 8
				43,264 1 8		9,302 14 3	Yerilla	117·0	34 5 0	51 3 1	16 18 1	
							Totals ...	72,107·5	26,084 3 3	32,711 3 2	7,967 8 8	1,340 8 9

Statement of Expenditure and Receipts for year ending 31st December, 1910.

Plant.	No of Stamps.	Tonnage.	MILLING AND TIN.											
			Management.	Wages.	Supplies.	Total Working Expenditure.	Per Ton.	Repairs and Renewals.	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.	
Black Range	10	4,778·00	119 6 8	779 18 7	595 16 8	1,495 1 11	6 3·10	194 2 0	130 4 0	1,819 7 11	7 7·39	2,268 16 2	9 5·96	
Boogardie	10	3,939·50	211 7 7	807 14 0	745 17 1	1,764 18 8	8 11·52	64 15 1	107 5 10	1,936 19 7	9 10·00	1,773 7 6	9 0·36	
Burtville	10	1,526·00	72 0 0	306 2 7	221 16 9	599 19 4	7 10·34	69 13 11	87 13 10	757 7 1	9 11·11	779 15 9	10 2·64	
Coolgardie	10	6,440·50	296 19 1	767 15 0	1,037 8 6	2,102 2 7	6 6·33	323 10 9	169 10 4	2,595 3 8	8 0·70	2,600 0 5	8 0·88	
Darlot	10	2,004·00	285 16 8	384 1 3	474 5 2	1,144 3 1	11 5·02	89 17 10	86 8 7	1,320 9 6	13 2·14	1,072 0 0	10 8·38	
Desdemona	2	425·00	296 6 8	122 10 9	155 10 11	574 8 4	27 0·37	18 19 9	34 19 11	628 8 0	29 6·86	263 12 0	12 4·85	
Laverton	10	676·00	93 8 0	307 15 2	125 12 5	526 15 7	15 7·02	33 5 1	59 10 11	619 11 7	18 3·97	362 7 11	10 8·66	
Leonora	10	3,082·75	135 0 0	604 17 1	461 17 4	1,201 14 5	7 9·55	556 9 8	117 19 2	1,876 3 3	12 2·06	1,107 16 8	7 2·24	
Linden	2	2,043·00	180 19 7	1,237 0 5	864 7 10	2,282 7 10	22 4·12	75 18 7	86 0 10	2,444 7 3	23 11·14	1,286 0 1	12 7·07	
Marble Bar	5	1,338·50	194 13 4	463 6 6	261 12 1	919 11 11	13 8·88	19 8 6	54 8 7	993 9 0	14 10·13	793 16 5	11 10·33	
Meekatharra	10	6,041·00	201 16 8	994 17 9	1,224 9 9	2,421 4 2	8 0·17	514 0 10	207 9 4	3,142 14 4	10 4·85	2,749 5 8	9 1·22	
Menzies	10	9,118·00	182 9 4	1,223 1 2	932 6 7	2,337 17 1	5 1·53	703 17 5	258 11 0	3,300 5 6	7 2·86	3,909 16 7	8 6·91	
Messenger's Patch ..	5	187·25	30 0 0	182 1 11	87 0 1	299 2 0	..	6 0 0	21 14 4	326 16 4	..	118 13 2	..	
Mount Ida	10	3,294·00	312 0 0	913 10 8	520 3 7	1,745 14 3	10 7·19	111 0 11	107 4 6	1,963 19 8	11 11·09	1,803 19 7	10 11·43	
Mount Sir Samuel ..	5	3,669·00	295 12 2	1,133 6 7	463 16 4	1,892 15 1	10 3·81	84 14 5	198 2 9	2,175 12 3	11 10·29	1,835 1 10	10 0·03	
Mulline	20	2,689·50	163 13 4	578 7 1	630 12 7	1,372 13 0	10 2·49	449 1 11	115 15 3	1,937 10 2	14 4·89	1,516 16 1	11 3·35	
Mulwarrie	10	1,439·00	93 10 0	632 15 5	324 12 6	1,050 17 11	14 7·26	188 5 6	146 4 10	1,385 8 3	19 3·05	768 8 2	10 8·16	
Nannine	5	1,048·50	225 12 6	389 15 8	391 6 1	1,006 14 3	19 2·43	242 5 9	77 19 8	1,326 19 8	25 3·74	558 18 1	10 8·04	
Niagara	10	4,776·50	174 8 2	1,012 19 2	912 2 0	2,099 9 4	8 9·49	284 8 11	165 17 6	2,549 15 9	10 8·11	2,513 5 5	10 6·26	
Norseman	10	4,887·00	245 2 6	1,080 1 7	1,052 11 4	2,377 15 5	9 8·77	355 19 9	167 6 10	2,901 2 0	11 10·47	2,520 12 9	10 4·08	
Pig Well	10	2,288·00	158 4 0	459 9 11	274 8 7	892 2 6	7 9·58	217 7 7	94 11 1	1,204 1 2	10 6·30	1,226 14 5	10 8·67	
Pinjin	5	2,055·50	150 9 0	458 0 6	312 19 4	921 8 10	8 11·58	28 5 6	67 1 4	1,016 15 8	9 10·71	880 1 6	8 6·75	
20-Mile Sandy, N.W. ..	10	1,134·00	200 0 0	470 14 6	637 0 3	1,307 14 9	23 0·76	104 10 0	43 19 0	1,456 3 9	25 8·18	965 5 7	17 0·29	
Siberia	5	2,859·50	181 17 3	671 14 6	423 8 6	1,277 0 3	8 11·18	104 12 7	86 4 8	1,467 17 6	10 3·19	877 5 3	6 1·62	
Wiluna	10	5,623·50	189 14 6	1,318 9 1	1,051 2 0	2,559 5 7	9 1·22	161 9 6	150 5 3	2,871 0 4	10 2·52	2,901 0 4	10 3·80	
Yarri	10	4,760·00	254 3 2	898 8 7	790 6 7	1,942 18 4	8 1·96	666 4 5	166 0 7	2,775 3 4	11 7·92	2,706 12 7	11 4·46	
Yerilla	5	903·00	237 7 0	396 12 5	213 17 6	847 16 11	18 9·34	56 18 2	27 13 6	932 8 7	20 7·82	479 15 1	10 7·51	
Youanme	5	4,589·75	245 5 0	784 8 5	401 8 3	1,431 1 8	6 2·83	141 3 11	139 17 7	1,712 3 2	7 5·52	1,622 3 7	7 0·82	
Kalpini	10	40·00	..	146 4 3	11 12 2	157 16 5	..	..	3 19 6	161 15 11	..	23 18 7	..	
Lennonville	10	400·25	..	..	..	..	..	..	0 9 6	0 9 6	..	18 8 6	..	
Randalls	10	..	..	156 1 7	..	156 1 7	..	..	0 17 6	156 19 1	..	36 8 10	..	
Ravelstone	10	492·50	48 0 0	100 15 7	150 15 3	299 10 10	..	46 10 0	29 16 7	375 17 5	..	246 1 1	..	
Tuckanarra	10	668·00	..	..	..	..	..	..	..	..	..	35 19 7	..	
Widgiemooltha	10	61·50	..	106 7 8	..	106 7 8	..	1 10 8	104 0 9	211 19 1	..	31 18 5	..	
Totals	..	89,278·50	5,475 2 2	19,889 5 4	15,750 4 0	41,114 11 6	9 2·52	5,914 8 11	3,315 4 10	50,344 5 3	11 3·33	42,660 3 7	9 6·68	
TIN PLANTS.														
Greenbushes, Bunbury End	..	3,403·00	180 0 0	180 12 0	199 4 1	559 16 1	3 3·48	96 11 2	74 15 6	731 2 9	4 3·56	552 11 10	3 2·97	
„ North End	..	366·00	120 0 0	29 18 3	34 13 2	184 11 5	10 1·03	95 16 7	18 3 4	298 11 4	16 3·74	76 6 3	4 2·05	
Totals	..	93,047·50	5,775 2 2	20,099 15 7	15,984 1 3	41,858 19 0	8 11·96	6,106 16 8	3,408 3 8	51,373 19 4	11 0·50	43,289 1 8	..	
Less transfer of Receipts to Government Property Sales Fund (Southern Cross Battery) ..	..	..	..	..	..	..	..	..	..	..	..	25 0 0	..	
												£43,264 1 8	9 3·33	

Statement of Expenditure and Receipts for Year ending 31st December, 1910.

Plant.	Tonnage.	CYANIDING AND SLIMES.																					
		Management.		Wages.		Assays.		Supplies.		Total Working Expenditure.		Per ton.		Renewals.		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	3,089·	99	6 8	213	6 2	54	8 4	202	7 5	569	8 7	2	8·24	16	16 8	125	7 9	711	13 0	4	7·28	1,305	11 7	8	5·43
Boogardie	2,180·	75	12 8	189	0 0	88	15 2	147	9 5	500	17 3	4	7·14	15	5 11	74	3 2	590	6 4	5	4·99	1,075	9 8	9	10·40
Burtville	892·	33	10 0	84	13 4	22	6 6	50	6 6	190	16 4	4	3·34	4	12 0	53	12 0	249	0 4	5	6·99	413	11 5	9	3·27
Coolgardie	3,359·	123	14 3	201	3 4	132	0 10	272	16 3	729	14 8	4	4·13	16	8 7	118	18 0	865	1 3	5	1·80	1,176	12 2	7	0·02
Darlot	283·	39	15 0	38	6 8	19	2 2	25	11 4	122	15 2	8	8·08	1	19 2	19	6 3	144	0 7	10	2·13	110	18 6	7	10·06
Laverton	277·	18	13 4	40	14 0	5	8 6	16	17 8	81	13 6	5	10·76	..		22	5 11	103	19 5	7	6·08	136	19 10	9	10·70
Leonora	1,459·	75	0 0	202	3 6	61	6 5	137	2 11	475	12 10	6	6·24	6	10 1	79	15 10	561	18 9	7	8·42	575	13 6	7	10·69
Linden	1,757·	131	5 3	190	7 0	33	15 3	197	4 8	552	12 2	6	3·48	2	4 3	87	14 1	642	10 6	7	3·74	786	4 10	8	11·39
Meekatharra	3,270·	100	17 2	284	15 10	39	7 8	248	14 9	673	15 5	4	1·45	0	12 5	148	8 4	822	16 2	5	0·38	1,506	5 7	9	2·55
Menzies	3,556·	64	16 10	258	12 1	111	19 9	349	11 10	785	0 6	4	4·98	16	14 8	145	12 2	947	7 4	5	3·93	1,630	6 5	9	2·03
Mulline	1,415·	61	10 0	242	2 0	104	13 4	213	5 0	621	10 4	8	9·41	0	18 9	114	3 6	736	12 7	10	4·92	613	5 4	8	8·01
Mulwarrie	709·	18	0 0	117	5 0	66	8 4	173	3 1	374	16 5	10	6·87	2	13 4	54	13 7	432	3 4	12	2·28	338	14 7	9	6·66
Nannine	..	29	13 4	..		..		4	8 7	34	1 11	..		..		21	15 9	55	17 8	..		..		..	
Niagara	3,772·	139	15 7	282	13 2	43	16 9	254	14 7	721	0 1	3	9·87	9	11 0	132	11 11	863	3 0	4	6·91	1,574	17 7	8	4·20
Norseman	3,299·	108	13 4	294	12 8	185	12 6	327	4 3	916	2 9	5	6·64	12	13 3	140	5 8	1,069	1 8	6	5·76	1,439	13 2	8	8·73
Pig Well	1,376·	86	10 0	167	11 5	23	0 4	105	0 11	382	2 8	5	6·65	130	10 9	60	18 6	573	11 11	8	4·03	634	14 5	9	2·70
Pinjin	1,416·	56	9 3	145	18 2	29	2 3	94	6 8	325	16 4	4	7·23	9	6 4	49	15 7	384	18 3	5	5·23	389	17 3	5	6·07
20-Mile Sandy	763·	153	13 0	170	19 7	45	17 10	48	14 2	419	4 7	10	11·86	84	9 1	92	11 8	596	5 4	15	7·56	336	15 5	8	9·93
Siberia	949·	82	2 2	114	7 5	38	17 11	176	5 0	411	12 6	8	8·09	..		40	4 10	451	17 4	9	6·24	474	13 1	10	0·03
Wiluna	3,454·	100	5 6	407	14 3	83	6 4	338	13 0	929	19 1	5	4·61	63	4 3	150	19 10	1,144	3 2	6	7·48	1,671	4 8	9	8·11
Yarri	3,734·	115	10 0	386	19 10	56	17 1	190	13 6	750	0 5	4	0·20	69	4 5	115	18 0	935	2 10	5	0·09	1,161	19 1	6	2·68
Yerilla	442·	58	3 0	51	12 9	17	1 7	53	2 10	180	0 2	8	1·74	4	10 4	13	15 8	198	6 2	8	11·66	207	11 9	9	4·71
Youanme	1,940·	69	15 0	164	9 2	15	18 6	118	3 9	368	6 5	3	9·56	9	1 10	101	12 10	479	1 1	4	11·25	901	7 0	9	3·50
Totals	43,391·	1,842	11 4	4,249	7 4	1,279	3 4	3,745	18 1	11,117	0 1	5	1·50	477	7 1	1,964	10 10	13,558	18 0	6	2·99	18,462	6 10	8	6·11
SLIMES PLANTS.																									
Black Range	5,587·	145	6 8	1,205	11 0	54	12 10	476	10 1	1,882	0 7	6	8·84	20	2 1	187	2 5	2,089	5 1	7	5·74	2,803	13 8	10	0·43
Boogardie	81·	1	19 9	75	1 5	..		4	6 9	81	7 11	20	1·16	..		2	18 9	84	6 8	20	9·84	40	10 0	10	0·00
Burtville	958·	106	10 0	304	18 4	25	13 4	118	17 11	555	19 7	11	7·28	7	9 10	36	9 5	599	18 10	12	6·28	479	0 0	10	0·00
Darlot	238·	17	5 0	59	3 4	..		22	17 4	99	5 8	8	4·11	2	1 3	8	11 4	109	18 3	9	2·83	57	14 6	4	10·20
Laverton	142·	8	13 4	11	0 6	..		11	11 0	31	4 10	4	4·80	..		4	3 6	35	8 4	4	11·85	71	0 0	10	0·00
Leonora	7,945·	105	0 0	1,287	2 1	98	0 3	1,217	7 4	2,707	9 8	6	9·78	91	7 7	273	17 6	3,072	14 9	7	8·82	3,972	10 0	10	0·00
Linden	233·	23	12 6	17	6 4	5	13 0	28	5 9	74	17 7	6	5·04	..		5	17 6	80	15 1	6	11·16	95	9 9	8	2·35
Meekatharra	855·	57	6 2	380	14 10	2	12 3	212	5 9	652	19 0	15	3·28	..		39	2 5	692	1 5	16	2·25	427	10 0	10	0·00
Menzies	9,256·	179	3 10	1,359	10 6	268	11 0	1,524	0 4	3,331	5 8	7	2·38	196	11 9	328	6 3	3,856	3 8	8	3·98	4,628	0 0	10	0·00
Niagara	2,380·	205	9 8	544	2 0	43	12 6	244	7 10	1,037	12 0	8	8·63	14	17 3	72	3 0	1,124	12 3	9	5·40	1,170	1 10	9	9·99
Norseman	352·	23	5 0	67	12 6	8	18 4	106	0 1	205	15 11	11	8·30	..		38	10 10	244	6 9	13	10·59	176	0 0	10	0·00
Pig Well	340·	46	0 0	112	9 5	6	8 4	62	12 8	227	10 5	13	4·60	19	10 2	11	2 4	258	2 11	15	2·20	159	18 6	9	4·88
20-Mile Sandy	2,325·	42	7 0	87	1 5	13	10 11	16	8 6	159	7 10	13	8·53	7	5 10	14	0 11	180	14 7	15	6·55	116	5 0	10	0·00
Wiluna	..	..		62	11 8	..		..		62	11 8	..		..		..		62	11 8	..		..		..	
Yerilla	117·	..		21	8 1	0	7 9	7	9 8	29	5 6	..		..		4	19 6	34	5 0	..		51	3 1	..	
Totals	72,107·5	2,804	10 3	9,845	0 9	1,807	3 10	7,798	19 1	22,255	13 11	6	2·19	836	12 10	2,991	16 6	26,084	3 3	7	2·95	32,711	3 2	9	1·05

State Batteries.

Balance-sheet from Inception of Scheme to 31st December, 1910.

	£ s. d.	£ s. d.		£ s. d.	£ s. d.
To Capital Expenditure—			By Batteries, Cyanide Plants, etc., as per Approximate Valuation, 31st December, 1910		118,733 0 0
From General Loan Fund	192,319 9 7		„ Gross Loss (including Depreciation)		287,897 8 11
From Consolidated Revenue	91,981 1 8				
		284,300 11 3			
„ Net Loss (excluding Depreciation)		122,329 17 8			
		406,630 8 11			406,630 8 11

Profit and Loss Account.

	£ s. d.	£ s. d.		£ s. d.	£ s. d.
To Working Expenditure—			By Stock on hand		7,395 1 10
Head Office and all Batteries as per Treasury ..	763,514 5 3		„ Revenue received ..	729,527 2 4	
„ Sundry Creditors	4,152 12 7		„ Sundry Debtors	7,603 19 3	
		767,666 17 10			737,131 1 7
„ Interest at 3½ per cent. and Sinking Fund at 1 per cent. on Capital Expenditure		99,189 3 3	„ Gross Loss (including Depreciation)		287,897 8 11
„ Depreciation as per Balance Sheet		165,567 11 3			
		£1,032,423 12 4			£1,032,423 12 4

WESTERN AUSTRALIA.

State Batteries, Cyanide Slimes, and Tin Plants.

Profit and Loss Account for Twelve Months ending 31st December, 1910.

	£ s. d.	£ s. d.		£ s. d.	£ s. d.
To Expenditure as per attached Statement—			By Revenue, as per attached Statement—		
„ Batteries and Tin Plants ..	51,373 19 4		Batteries and Tin Plants— Crushing Charges ..	43,264 1 8	
„ Cyanide and Slimes Plants ..	26,084 3 3		Cyanide and Slimes Plants— Treatment Charges ..	32,711 3 2	
		77,458 2 7			75,975 4 10
		£77,458 2 7	„ Loss on Working carried down		1,482 17 9
					£77,458 2 7
„ Loss on Working brought down	1,482 17 9				
„ Additions and Equipment (paid from Revenue) ..	882 11 6				
		2,365 9 3	„ Net Loss on Year's Operations		2,365 9 3
		£2,365 9 3			£2,365 9 3

DIVISION IV.

REPORT OF THE ENGINEER FOR MINES WATER SUPPLY

The Secretary for Mines.

ANNUAL REPORT, 1910.

Mines Department, Water Supply Branch,
12th June, 1911.

I have the honour to submit, for the information of the Hon. the Minister, my report for 1910:—

The work of the Mines Water Supply includes surveys for, and construction of, reservoirs; conservation of water generally; boring for water and minerals; sinking wells for towns, roads, and mining camps; construction of stock routes; clearing tracks and roads; collection of revenues from water sales; investigations and reports on requests relating to water supply on or about the mineral belts of W.A.

The attached tabulated statements show the principal works done.

Hand-boring Plants.—The summary shows 166 bores, 5,572 feet. This does not include boring done on the Wiluna-East Kimberley Stock Route. To locate sites for the 48 wells on that route about 10,000 feet of boring was necessary.

New Wells constructed as follows:—

For Roads and Stock Routes	55
For Towns and Mining Camps	4
For Batteries	2
Total	61 = 2,513ft.

Average, 5 x 3 in clear.

New Tanks constructed and in progress numbered 14. The capacities range from 50,000 to 25 million gallons. Of these tanks, five are in agricultural areas, and the balance are on Mineral Belts.

Maintenance of Works was attended to so far as money would allow. For years past funds for upkeep have been cut too low. The result will be that many accumulated repairs will have to be done in one year.

Loan of Boring Plants:—

Hand-boring plants	6
Water Stations leased	61
Caretakers employed	8
Pumpers employed	11
Number of Watering Stations on our lists	1,308
Average number of men employed	150

P. V. O'BRIEN,
Engineer for Mines Water Supply.

WATER SUPPLY BRANCH.

ANNUAL REPORT, 1910.

WORKS COMPLETED, UNDERTAKEN, AND INITIATED.

Boring.

Item.	Boring for Water.	Locality.	General Description.	Remarks.
		Eastern Goldfields.		
1	Mines Supply ..	Corinthian Leases near Southern Cross	14 Bores, totalling 1,037ft.	Salt water struck in Bores 10, 12, and 13.
2	For Prospectors..	Tin Hill near Koolyanobbing	10 ,, ,, 38ft.	No. water.
3	Do. ..	Condenser Rocks, Koolyanobbing	26 ,, ,, 73ft.	do.
4	Do. ..	Flat Rocks, Koolyanobbing ..	9 ,, ,, 45ft.	do.
5	Do. ..	2 miles W. of Glen Rhyan Rocks	10 ,, ,, 34ft.	do.
6	Do. ..	Glen Rhyan Rocks	31 ,, ,, 280ft.	do.
7	Do. ..	North of Mt. Jackson	4 ,, ,, 193ft.	Bores Nos. 1 and 4 stock water. Bore No. 3 salt water.
8	Battery water ..	Golden Valley (Knutsford) ..	4 ,, ,, 327ft.	Salt water struck in all bores. 300 gallons per hour in No. 4; well sunk on this bore.
9	Leaseholders' Supply	Mt. Clifford	3 ,, ,, 216ft.	Salt water in No. 2 Bore.
10	Domestic Supply	Ida H., near Laverton ..	7 ,, ,, 351ft.	Good supply fresh water in Bore No. 5.
11	Government Hospital Supply	Laverton	2 ,, ,, 140ft.	Fresh water soakage only in No. 1.
12	Supply for Railway Department	Murrin Murrin	4 ,, ,, 185ft.	Boring carried out for Railway Department.
		Total ..	124 Bores = 2,919ft.	
		Murchison District.		
13	Domestic Supply	Youanme	1 bore, totalling 136ft.	Well sunk on this bore, good supply fresh water.
14	Leaseholders ..	Globe Leases, Meekatharra ..	3 ,, ,, 286ft.	No. 3 Bore equipped as a Bore Well.
15	Stock Route ..	No. 6 Well, Cue-Fortescue Stock Route	1 ,, ,, 67ft.	Well sunk on this bore; good supply fresh water.
16	Road Supply ..	Gabanintha-Meekatharra Road	3 ,, ,, 153ft.	Good supply fresh water in No. 3 Bore; equipped as Bore Well.
17	Do.	Montagu-Wiluna Road ..	16 ,, ,, 827ft.	Wells sunk on Bores Nos. 1 and 5.
18	Do.	Bellchambers-Youanme Road ..	1 ,, ,, 101ft.	Well sunk; good supply fresh water.
19	Battery Supply ..	Quinn's	7 ,, ,, 530ft.	Salt water in No. 4, fresh water in No. 6.
		Total ..	32 Bores = 2,100ft.	
		Miscellaneous Boring.		
20	Road Supply ..	Hall's Creek-Tanami Road ..	6 bores, totalling 238ft.	Wells sunk on Bores 3, 4, and 5.
21	Prospectors, etc.	Mt. Egerton	1 ,, ,, 96ft.	Good supply fresh water. Well sunk on Bore.
22	Do.	Dead Finish	3 ,, ,, 219ft.	Unable to find water.
		Total ..	10 Bores = 553ft.	
		Summary.		
	Hand Boring Plants	Eastern Goldfields	124 bores, totalling 2,919ft.	Average cost per foot about 6s. 6d.
	Do.	Murchison District	37 ,, ,, 2,100ft.	Average cost per foot about 9s. 9d.
	Do.	Miscellaneous	10 ,, ,, 553ft.	
		Total ..	166 Bores = 5,572ft.	

WORKS COMPLETED—*continued.*

. . . . . .

WELL SINKING.

Item.	Wells.	Locality.	General Description.	Remarks.
		Eastern Goldfields.		
23	Domestic Water Supply	Copperfield, Mt. Ida	5ft. x 3ft. x 90ft.	Supply 225 gallons per hour, fresh water.
24	Battery Supply ..	Golden Valley (Knutsford) ..	5ft. x 3ft. x 55ft. ..	600 gallons per hour salt water.
		Murchison District.		
25	Road Supply ..	30½ Mile, Montagu-Wiluna Road	5ft. x 3ft. x 49ft., with drive 5ft. x 3ft. x 16ft.	Fresh water supply.
26	Do.	16 Mile, Montagu-Wiluna Road	5ft. x 3ft. x 86ft. 6in., with drive 5ft. x 3ft. x 10ft.	Do.
27	Do.	28½ Mile, Bellchambers-Youanme Road	5ft. x 3ft. x 93ft. 6in. deep	60 gallons per hour fresh water.
28	Battery Supply..	Quinn's	5ft. x 3ft. x 68ft. 6in. with drive 5ft. x 3ft. x 22ft.	800 gallons per hour salt water.
29	Domestic Supply	Youanme	5ft. x 3ft. x 107ft. with drives 6ft. x 3ft. x 17ft.	200 gallons per hour fresh water.
		Miscellaneous.		
30	Road Supply ..	Hall's Creek-Tanami Road ..	No. 1 Well, 5ft. x 3ft. x 39ft. 6in.	30 gallons per hour fresh water.
31	Do.	do. do. ..	No. 2 Well, 5ft. x 3ft. x 37ft.	115 gallons per hour fresh water.
32	Do.	do. do. ..	No. 3 Well, 5ft. x 3ft. x 23ft.	150 gallons per hour fresh water.
33	Prospectors, etc.	Mt. Egerton	5ft. x 3ft. x 87ft. deep ...	88 gallons per hour fresh water.

Summary.

For Roads and Stock Routes	55	
For Prospectors	4	
For Batteries	2	
	61	= 2,513 feet

WELLS—GENERAL MAINTENANCE.

This covers repairs and additions, such as cleaning out, putting in new ropes and buckets, etc. The following wells have received attention:—

34. *On the Eastern Goldfields*:—47-Mile, No. 1 and No. 3 on Edjudina Road, Eucalyptus, Yundamindera, Wanaway, Burra Rocks, Crawford's Soak, Reidy's Tank, Red Flag, Murrin Murrin, Burtville, Golden Ring, Mulga Queen.

35. *In the Murchison District*:—Day Dawn to Nannine Road, Nannine-Sandstone, Day Dawn and Magnet to Sandstone, Sandstone-Lawlers, Nannine-Abbotts, Bellchambers-Youanme, Nannine-Lake Way, Sandstone District, Maninga Marley, Red Well, 50-Mile, Wallaby Knob, Dingo 10-Mile Bore Well, Montagu, Chesterfield, Jillawarra, 6-Mile, Curran's Find Bore Well, Gap Well, Gabanintha Tank.

36. *In the Pilbara District*:—3-Mile Well, 12-Mile (Trig. Hill), Robinson's 5-Mile, Pindan, Wyman's, Warrawoona, Sandy Creek, Carbana, Robinson's 10-Mile, No. 2 Town Well, Marble Bar, Duffer Creek, Stock Paddock, Burne's Flat, Murphey's Gap, Old Wodgina, Dead Bullock, Shaw Patch, Smith's 2-Mile, Black Range, Shark's, Lalla Rookh, Green's, Pinnacles, Black Gin, Kangaroo Flat, Pilbara, Top Camp, Hong Kong, Station Peak, Egina, Millindinnia, Mallina, Whim Creek, Balla Balla, Eastern Harding, Croydon Well, Croydon Top Camp, Towerana, Caporn's, Friendly Creek, Cajeput Springs.

STOCK ROUTES.

37. *Peak Hill-Leonora Stock Route*:—This Stock Route improved as far as No. 17 Well, near Wiluna. Work temporarily suspended; a start to be made early in the year to complete this work.

38. *Cue-Fortescue Stock Route*:—A party at present carrying out improvements to this Route. A new well has been sunk to replace No. 6 Well, the latter having become useless owing to a number of sheep having fallen in and died, rendering the water unfit for use. Further well sinking in progress.

39. *Peak Hill-Nullagine*:—A party carrying out light repairs on this Route. Work in progress.

40. *Wiluna-Kimberley Stock Route*:—Work on this Stock Route completed. 54 Watering Stations constructed. 48 Wells were sunk to a total depth of 1,604 feet; also about 100 feet of drives put in. Watering Stations were fully equipped with Windlass, Whip, Troughing, Buckets, etc.

WORKS COMPLETED, ETC.—*continued.*

MISCELLANEOUS WORKS.

Item.	Class of Work.	Locality.	General Description.	Remarks.
		Eastern Goldfields.		
41	Surveys, etc. ..	Ora Banda	Pipe Line surveyed from the Flat Rocks Well to the Ora Banda Battery and Slippery Gimblet Gold Mine. Survey, etc., for Tank Catchment	
42	Surveys and Boring	Bullfinch and Corinthian Districts	Surveys for Tanks at 16-Mile and Bullfinch; boring for water in the vicinity of the Corinthian Leases	This work discontinued as the Goldfields Water Supply Administration have laid pipe line as far as Bullfinch.
43	Road Clearing ..	Gindalbie-Binty Binty Road ..	A road cleared and grubbed 16ft. wide from Gindalbie to 7½ miles, thence 10ft. wide to Binty Binty, a total distance of about 17 miles	
44	Do. ..	Chadwin-Waverley Road ..	A road 15ft. wide, cleared and grubbed from Chadwin to the North Pole Gold Mine, a distance of 7 miles 10 chains	
45	Domestic Water Supply	Gwalia Bach	Windmill, Tanks, and Tank-stand removed from No. 1 Well and re-erected on No. 2 Well, equipped with Windlass, Bucket, Trough, Standpipe, etc.	
46	Do. ..	Yarri	Windmill erected, also a 3,000 gallon Tank and Stand	
47	Water Supply for Prospectors, Leaseholders, etc.	Yilgarn Goldfield	Watering Stations put in order on Wangine-Southern Cross Track	
			Track between Koolyanobbing and Maningu	In progress.
			Rough track and Water Stations between Glass's Well and Dooling	In progress.
			Track and Water Stations constructed Mulline to Deimel's and Youanme and the Rabbit Proof Fence (about 300 miles with 36 Watering Stations). Old Watering Stations between Southern Cross and Ravensthorpe being improved and new ones being constructed where necessary.	
			Watering Stations between Golden Valley and Mt. Jackson, and 12 East and West being improved. New ones being put in where necessary	
48	Battery Supply..	Golden Valley	4,026ft. of 3in. Mannesmann Pipe sent to Golden Valley for pipe line from Government Well to Lang's Battery	Not yet laid.
		Murchison District.		
49	Water Supply ..	Meekatharra	Rising main scraped and cleaned out. New pump rods fixed in No. 3 shaft. Engine and pump thoroughly overhauled, also engine and pump at No. 2 shaft	
50	Do. ..	Nannine	New rods and repairs to windmill	
51	Do. ..	Youanme	Well sunk, 12ft. Samson Windmill erected, also 3,000 gallon Tank on Timber Stand	

WORKS COMPLETED, ETC.—*continued.*

MISCELLANEOUS WORKS—*continued.*

Item.	Class of Work.	Locality.	General Description.	Remarks.
		Murchison District—continued.		
52	Water Supply ...	Sandstone	The Wanderie Shaft and Equipment purchased. Shaft 200ft. deep x 7ft. x 4ft. with 120ft. of crosscut and drives. Poppet and Double Winding Winch, 8in. x 12in. x 36in. diameter drums. Cornish Boiler, 19ft. 9in. x 5ft. 6in. Knowle's Double Acting Sinking Pump, 10in. x 5in. x 3in. Storage provided in the Town, consisting of four 10,000 gallon Tanks on 30ft. Timber Stand. 93 chains of 3in. Mannesmann Rising Main from Wanderie Shaft to Elevated Tanks; also about two miles of 4in. 3in.. and 2in. Reticulation Pipes laid, Meters, etc., fixed	Work completed and handed over to a Water Board.
53	Stock Paddock ..	Day Dawn	Surveys made and about six miles of sheep-proof fencing erected	This is an enlargement of existing Stock Paddock.
		East Kimberley District.		
54	Road Water Supply	Hall's Creek to Tanami ..	Boring, well sinking, and opening up a track from Hall's Creek to Tanami	Work completed and party returned to the Eastern Fields *via* the Wiluna-Kimberley Stock Route.

WORKS FOR CONSERVATION OF WATER.

Item.	Tank Construction.	Locality.	General Description.	Remarks.
55	Chadwin Tank ..	About 13 miles S.W. of Waverley	50,000 gallon excavated Tank, lined with reinforced concrete and roofed. Drains constructed; catchment burnt off; and one mile of fencing erected	
56	Koolyanobbing Tank	About 35 miles N.E. of Southern Cross	50,000 gallon excavated Tank. Concrete lined and roofed. Drains constructed; 1½ miles of fencing erected; equipped with 5in. x 5in. "Century" force pump	
57	Tin Hill Tank ..	On Southern Cross-Kool-yan obbing Track	5,000 gallon Galvanised Iron Tank, concreted into Gnamma Hole and roofed	
58	Nevoria Tank ..	One and a-half miles from Nevoria and about three and a-half miles from Marvel Loch	2,000,000 gallon excavated Tank, bottom and sides puddled to 9ft. 6in., and the whole lined with metal. Inlet and Bywash in concrete. Catchment protected by six miles of fencing and special drains made to take off dirty water from roads. Monitor Pump fixed. Watercourse opened up and catchment improved generally	

WORKS COMPLETED, ETC.—*continued.*

WORKS FOR CONSERVATION OF WATER—*continued.*

Item.	Tank Construction.	Locality.	General Description.	Remarks.
59	Ora Banda Tank	Ora Banda	500,000 gallon excavated Tank, lined with asphalt and roofed. 6½ miles of fencing erected. 5in. x 5in. "Century" Force Pump	
60	Eucalyptus Tank	About 17 miles N.W. of Linden	50,000 gallon excavated Tank, lined with reinforced concrete; Tank roofed; two miles of fencing erected; equipped with pump, troughing, etc.	
61	Golden Valley Tank	At Golden Valley	Excavated Tank 40,000 gallons, lined with reinforced concrete	In progress.
62	Jubilee Tank ..	On the Kanowna-Gindalbie Road	50,000 gallon excavated Tank, lined with reinforced concrete. Drains constructed; one mile of fencing erected; equipped with force pump, troughing, etc.	
63	Parker's Range Tank	About 1½ miles West of Townsite	40,000 gallon excavated Tank, concrete lined and roofed	In progress.
64	Water Supply ..	No. 2 Tank, Norseman ..	Mildura and Austin Streets Drains completed, with masonry drops, and street crossing Ramsay Street Drain finished. Racecourse drains and three branches complete with drops to the Railway Reserve. No. 3 Drain cleared. Steam pumping plant replaced by a 25 H.P. Tangye Oil Engine	
65	Do. ..	Johns' Tank, Norseman ..	Johns' Tank purchased and enlarged; catchment improved	About 16,000 c. yds. of excavation taken out of Johns' Tank.
66	Do. ..	No. 1 Tank, Norseman ..	Drains cleaned out and repaired	
67	Tank for Agricultural Water Supply	Stennet's Rock, about 93 miles on Norseman-Esperance Road	230,000 gallon Tank excavated, puddled, and metalled; about three miles of drains and half-a-mile of rabbit-proof fencing. Force Pump, etc.	
68	Do. do.	Salmon Gums, about 64 miles on Norseman-Esperance Road	263,000 gallon excavated Tank	In progress.
69	Do. do.	Grass Patch, about 45 miles on Norseman-Esperance Road	263,000 gallon excavated Tank	In progress.
70	Do. do.	Ravensthorpe No. 1 Tank, about five miles S.W. of Ravensthorpe	1,250,000 gallon excavated Tank with Contour Drains; half-mile of fencing; equipped with force pump, troughing, etc.	
71	Do. do.	No. 2 Tank about 3½ miles N.W. of Ravensthorpe	900,000 gallon excavated Tank; half-mile of fencing; equipped with force pump, troughing, etc.	
72	Ravensthorpe Water Supply	No. 1 Tank	Improvements carried out to this Tank increasing its capacity from 7 to 11 million gallons	
			3½ H.P. Oil Engine and 2in. Centrifugal Pump installed, but afterwards removed to No. 3 Tank, and replaced by a larger plant.	Engine and Pump put in to pump water from No. 1 Tank to No. 2 Tank.
			New Tangye 5 H.P. Oil Engine and Centrifugal Pump being fixed.	To replace Engine and Pump removed to No. 3 Tank.
73	Do. do.	No. 2 Tank	Drains improved; new Drops constructed	

WORKS COMPLETED, ETC.—*continued.*

WORKS FOR CONSERVATION OF WATER—*continued.*

Item.	Tank Construction.	Locality.	General Description.	Remarks.
74	Ravensthorpe Water Supply	No. 3 Reservoir	A reservoir about 25,000,000 gallons capacity constructed. 174 chains of fencing erected. A 22 H.P. Crossley Gas Engine with a No. 2 Crossley Gas Producer Plant to drive a "Weise & Monski" 8-stage High Lift Centrifugal Pump, capacity 4,000 gallons per hour against a head of 400ft. Engine House erected. 94 chains 3in. Mannesmann main from Tank to Smelters	
			Oil Engine and 2in. Centrifugal Pump	Brought from No. 2 Tank and erected near Intake for purpose of emptying Salt Water Pit.
75	Do. do.	Dunn's Swamp near Hopetoun	Temporary pipe line, elevated Tanks and Pumping Plant	Temporary arrangement to enable water to be trucked to Ravensthorpe for Smelters and Mines whilst Reservoirs are empty.

WORK DONE FOR ARCHITECTURAL DIVISION, PUBLIC WORKS DEPARTMENT.

76. Additions and repairs to Marble Bar Police Quarters.
77. Fixing grille over yard at Lockup, Marble Bar.
78. Repairs to Court House and Residency fences.
79. Repairs to Police Station fence.
80. Marble Bar Hospital—erecting Morgue, also temporary Kitchen.
81. Re-erecting Warden's Stables, Buggy Shed, and Chaff House blown down in cyclone.
82. District Medical Officer's Quarters, Marble Bar—erecting new Kitchen, repairs, relining, and painting Quarters.
83. Marble Bar Hospital—Additions Contract.

MINES WATER SUPPLY.

RETURN OF REVENUE AND EXPENDITURE FOR THE 12 MONTHS, JANUARY TO DECEMBER, 1910.

Name of Watering Station.	Capital Cost.	Revenue.	Working Expenses + 8 % Interest and Sinking Fund.
	£	£ s. d.	£ s. d.
Davyhurst Water Supply	18,085	445 12 5	1,772 12 6
Menzies Water Supply	33,137	3,732 18 11	3,647 18 0
Norseman Water Supply	33,117	3,135 17 1	4,187 12 11
Jaurdie Hills Water Supply	6,193	411 3 5	817 10 8
Meekatharra Water Supply	14,307	1,838 10 1	2,309 17 9
Ravensthorpe Water Supply	7,626	1,584 15 7	1,376 18 11
		11,148 17 6	14,112 10 9
Minor Water Stations numbering 1,302 on which 8 % Interest and Sinking Fund are not added ..	..	2,619 14 9	7,328 2 5
		£13,768 12 3	21,440 13 2

DIVISION V.

ANNUAL PROGRESS REPORT

OF THE

GEOLOGICAL SURVEY

For the Year 1910.

WITH TWO MAPS AND TWO FIGURES.

TABLE OF CONTENTS.

LIST OF FIGURES.

LIST OF MAPS.

ANNUAL PROGRESS REPORT OF THE GEOLOGICAL SURVEY FOR THE YEAR 1910.

Geological Survey Office,
Perth, 5th January, 1910.

The Secretary for Mines.

The usual summary report on the various operations of the Geological Survey for the calendar year 1910 is herewith submitted for the information of the Hon. the Minister for Mines.

No departure has been made from the customary arrangement adopted in describing the very varied work carried out by the different members of the staff.

THE STAFF.

The work of the Department has been carried out during the year by 13 officers.

Some changes have taken place in the *personnel* during the year under review.

Mr. Chas. G. Gibson, Assistant Geologist, tendered his resignation to engage in the more lucrative work of the private practice of his profession, whilst Mr. L. Glauert, temporary Field Geologist, severed his connection with the Department on the 31st of May, to join the staff of the Western Australian Museum. These positions, and that of Assistant Mineralogist and Assayer, vacated by Mr. J. H. Brooking in December, 1909, have not yet been filled, hence the operations of the Department have been necessarily somewhat restricted, though such staff as has been available has been fully occupied in various parts of the State.

On the 23rd of May a deputation from the Chamber of Mines of Western Australia waited on the Minister for Mines and impressed upon the Government the necessity for making considerable additions to the numerical strength of the staff for the purpose of carrying out more vigorous research in the direction of the production of geological maps of known auriferous areas, and the examination of geologically unknown areas, with the view to the discovery of fresh mineral fields. The deputation outlined the necessary additions to the temporary staff required to carry out the work. The services of temporary officers are in my opinion unnecessary for any class of work which should reasonably be expected of the Government: special economic geological work of the nature asked for should at all times be performed by the permanent officers of the Survey, and if the staff is not sufficiently numerous to carry out the duties, it should certainly be increased. Again, work of this kind requires, if it is to be of any real service, to be carried on more or less continuously, and is of such a nature that the highest efficiency can only be attained by a permanent staff. The Government ultimately decided to give practical effect to the request of the Chamber of Mines, in so far as making additions to the permanent staff was concerned. The contemplated additions to the staff will enable a good deal of work to be carried out with greater rapidity than has been possible in the past, with, it is hoped, advantage to the mining industry, the development of the natural resources of State, and the advancement of geological science. The energies of the increased field staff will be chiefly devoted to the mapping of the various auriferous belts of the State, the results of which, when properly presented to the public, should tend to prevent the useless expenditure of both time and money, and in this way assist in directing prospecting and mining operations into legitimate channels.

FIELD WORK.

The field work during 1910 has been carried out in various portions of the State in accordance with the usual policy of the Department.

A. Gibb Maitland.—A very large portion of my own time during the year was of necessity devoted to administrative work in the office. In spite of this, opportunity presented itself of doing a little work in the field at Meekatharra, Kalgoorlie, the Yilgarn Goldfield, and the country between Sandstone and Lawlers. Altogether I was absent from the office on field duty 74 days during the year.

H. P. Woodward.—The month of February found Mr. Woodward in the Geraldton neighbourhood reporting upon the question of its water supply. August was devoted to commencing a general reconnaissance of the Murchison Goldfield, a work which suffered considerable interruption owing to the months of September and October being taken up with an examination of the new finds at Mount Egerton.

The months of November and December were spent in the Yilgarn Goldfield, with the object of linking up geologically the various mining centres. Mr. Woodward spent in all 169 days in the field, the balance being devoted to the writing of reports, preparation of maps, and assisting in the general administration of the office.

Chas. G. Gibson.—This officer's field work during the year was confined to a detailed examination of Kalgoorlie, he having been occupied in all 141 days in the field.

H. W. B. Talbot.—With the exception of a few days spent on the Collie Coalfield in the month of February, the whole time of this officer up to the 12th of April was devoted to the office work incidental to the preparation and completion of his report, and maps of the country between Wiluna, Hall's Creek, and Tanami, which form Bulletin 39.

Between the 12th of April and the 25th of October Mr. Talbot was engaged at Meekatharra in the preparation of a topographical map of the country in the more immediate vicinity of Yaloginda, Meekatharra, and Garden Gully, which work was completed in October.

The 8th of November found Mr. Talbot again in the field assisting me in the field work in the country between Sandstone and Lawlers, a work which was completed on December 13. During the year under

review Mr. Talbot was 218 days in the field, and 14 days absent from duty on recreation leave.

L. GLAUERT.—Between the months of January and May this officer was chiefly engaged upon petrological work, the chief results of which appeared in Bulletin 41. He also examined a number of Kalgoorlie rocks, revised proofs of Palæontological Bulletin No. 36, and prepared a digest for the Agricultural Department of the available information relating to Phosphatic deposits of this State. The 10th of May found this officer at Gingin in connection with the examination of the Mesozoic rocks, in the hope of connecting them with those mapped to the northwards by Mr. Campbell, and described in Bulletin 38.

Owing, however, to Mr. Glauert's sudden resignation at the end of May, important work has had to be temporarily abandoned.

This officer was engaged 20 days in the field up to the date of his resignation.

LABORATORY WORK.

The multifarious work in the Survey Laboratory has been carried out as usual under the direct supervision of Mr. E. S. Simpson.

Reporting on the work of the year this officer writes as follows:—

"During the period under review the staff at my disposal has been smaller than at any time during the past many years, consisting of only one professional officer and a boy, in addition to the officer engaged by the State Batteries Branch to carry out the assays required by it, and conveniently done at minimum expense in this Laboratory. After losing a valuable officer through lack of appreciation of the value of his services, the position of Assistant Mineralogist and Assayer vacated by Mr. J. H. Brooking has at last been reclassified and applications called to fill the vacancy. The staff was barely adequate to carry out the routine work, details of which are given in the accompanying table. When fully manned, this Laboratory could and should carry out many investigations with regard to the mineral resources of the State calculated to stimulate their exploitation and utilisation. There are in the State many minerals which will form ultimately the bases of extensive industries, but which are at present lying idle largely for lack of authoritative information with regard to their chemical and physical properties and extent. Each year demands arise for minerals hitherto neglected, and this Branch should be in a position to supply information immediately that demand arises. In the past year, for example, inquiries were received for the first time for radio-active minerals for the production of radium salts, for vanadium minerals for preparation of vanadium alloys and salts, for gypsum for plaster making, and for pyrites for the manufacture of sulphuric acid and, indirectly, of superphosphate.

"The revival of interest in mining during the last two months of the year was reflected in the great increase in prospecting samples received at the Laboratory. The actual revenue from assay fees has been £86 8s. 6d. This would be much greater if other Government Departments were debited with the cost of the work done for them.

"During this year all my own spare time was devoted to the preparation of a monograph descriptive of the minerals of the Kalgoorlie field. This is now practically ready for the press.

"Several mineral occurrences of scientific and economic interest have been noted:—

"*Pilbarite, Wodgina.*—The discovery of this new radium-bearing mineral was by far the most important result of the year's work. A complete scientific description of it was presented to the Natural History and Science Society on the 16th August, and will appear in the next number of its Journal. The newspaper abstracts were quoted by scientific journals throughout the world, any many applications have been received from abroad for supplies of the mineral. It is a hydrated silicate of lead, uranium, and thorium, carrying 23.8 per cent. of uranic oxide, 31.5 per cent. of thoria, and about 7.5 centigrammes of radium per ton.

"*Amblygonite, Ubini.*—In prospecting for tin this mineral was met with in a pegmatite vein. It is of economic value for the phosphoric oxide (48.01 per cent.), lithia (9.31 per cent.), and fluorine (6.95 per cent.) contained in it. A trial lot has been forwarded to London to test the market.

"*Zircon, Greenbushes.*—A bulk sample of zircon sand was received. This was obtained as a by-product in tin sluicing. The parcel contained 47.63 per cent. of zirconia (ZrO_2), equal to 71 per cent. pure zircon ($ZrSiO_4$) the major portion of the balance being ilmenite and rutile.

"*Rock phosphate, White Island, Kimberley Coast.*—This was found to consist mainly of hydrated aluminium phosphate. It is overlaid by deposits of guano and itself rests upon solid diorite.

"*Melonite, Kalgoorlie.*—This telluride of nickel was for the first time noticed by Mr. J. Allan Thomson in the Hidden Secret Mine.

"*Rickardite (?), Kalgoorlie.*—A telluride of copper has been reported to occur in the Kalgurli Mine.

"*Ottrelite, Kalgoorlie.*—A typical ottrelite schist has been discovered near the Trafalgar (Lake View) suburban area.

Table showing Routine Work of the Geological Survey Laboratory during 1910.

	Public.		Official.		† Unclassified.	Totals.
	Pay.	Free.	*Geological Survey.	Other Departments.		
Samples dealt with	71	362	212	1,057	31	1,733
Assays for—						
Gold ...	59	208	38	1,022	8	1,335
Silver ...	1	67	36	...	2	106
Copper ...	5	46	...	...	1	52
Tin ...	2	17	...	4	10	33
Lead ...	...	8	...	...	1	9
Platinum ...	1	2	4	1	...	8
Other common elements	3	60	10	...	...	73
Various rare metals	...	9	2	...	2	13
Analysis—						
Complete ...	...	...	43	6	...	49
Partial ...	1	...	...	3	...	6
Proximate	3	1	...	...	2	6
Calorific values	3	1	...	...	2	6
Determinations of Rocks and Minerals	1	145	42	8	15	211
Microphotographs	...	...	144	...	...	144
Miscellaneous...	2	13	31	13	1	60
Totals ...	81	579	350	1,057	44	2,111

*The figures under this column only include work capable of tabulation and actually recorded in the Laboratory books.

†Samples received through Head Office without any information as to source.

GEOLOGICAL MUSEUM.

Reference was made in last year's report to the aims and objects of the Survey in respect to its collections, but for reasons beyond the Survey's control no effective work was found possible.

During the period covered by this report, 424 new specimens have been added to our collection, bringing the total number entered in the Survey Register up to 11,336. Of microslides there have been added 387, making the total number now available 1,447; whilst 76 photographs of geological and mining subjects, taken by the staff in the ordinary course of its duties, have been added to the collection.

PUBLICATIONS.

During the year the following official publications have been issued:—

Annual Progress Report for the year 1909.

Bulletin 36: Palæontological Contributions to the Geology of Western Australia, III.

Bulletin 38: The Irwin River Coalfield and the adjacent Districts from Arrino to Northampton.

Bulletin 39: Geological Observations in the Country between Wiluna, Hall's Creek, and Tanami.

Whilst Bulletin 41: The Geology and Ore Deposits of the West Pilbara Goldfield, is in the printer's hands.

GEOLOGICAL LIBRARY.

The Library has been increased during the year by 1,744 donations and 81 purchases. Amongst the donations may be specially mentioned a very valuable series of publications of the Geological Survey of India, and 153 folios of the Geological Atlas of the United States of America, presented by the Director of the Geological Survey.

THE ORIGIN, HISTORY, AND WORK OF THE GEOLOGICAL SURVEY OF WESTERN AUSTRALIA.

On the 11th of June, the members of the Natural History and Science Society of Western Australia by invitation paid an official visit to the offices of the Department. Preparatory thereto I delivered, in the Society's Rooms, on the 10th of May, a lecture on the Origin, History, and Work of the Survey, which is appended:—

"The forthcoming visit of the members of the Natural History and Science Society of Western Australia to the Geological Department affords an opportunity of prefacing it by a brief account of the origin, history, and work of the Geological Survey, which really formed the nucleus around which the present Department of Mines and the Western Australian Museum sprang.

"As is pretty well known to you all, the physical sciences are included under two main heads—Astronomy and Geology. The former includes all those branches of science which deal with the constitution, motions, relative positions, and mutual action of heavenly bodies, whilst the latter confines itself to the study of the one upon which we dwell, or, to put it briefly, Astronomy concerns itself with the whole visible universe, and Geology with the earth as an individual.

"One of the most eminent of living geologists recently said: 'Perhaps the shortest definition that has been made of our science, and one equally acceptable to its students and to those who view it from the outside, is, that Geology is the *science of the structure of the earth*. It is in and around that earth-structure that all geological ideas centre.'

"It has been found necessary, for reasons which will be set forth at length during the course of the lecture, to establish a branch of the public service, which is charged with certain important geological investigations. Nearly every civilised country in the world has established a geological survey in some form or another, and the question is often not unnaturally asked, why does an efficient geological staff now form a necessary part of the machinery of government of all nations?

"The ultimate object of any such survey is undoubtedly to promote the development of the natural resources of the country, and this can only be done by more or less systematic efforts to decipher the geological structure, and correctly interpret its history. In so far as a thorough appreciation of the peculiarities of mineral deposits are concerned, such can only be arrived at after a thorough understanding of their natural history; whilst in the search for new deposits, and in defining the probable downward limits of those already known, geologists have to be guided to a large extent by a knowledge of how particular ore bodies have been formed.

"The fundamental object, therefore, of the geological survey of any country, when viewed from the scientific standpoint, is by a more or less systematic investigation of its structural geology, organic remains, and its mineral resources, to arrive at a true understanding of its geological history.

"These objects are carrried out, in a partially settled country such as our own, by means of:—

(a) reconnaissance surveys of those portions of the State about the structure and resources of which little is known;
(b) detailed geological surveys of mining centres under active development, etc.;
(c) chemical and mineralogical examinations of soils, rocks, minerals, and natural waters collected by the field staff, and under certain specified conditions by prospectors and others;
(d) palæontological investigations;
(e) The maintenance of a Geological Museum, and
(f) the publication of the data amassed.

"*History.*—It may perhaps have been forgotten that the inception of active mining operations in Australia dates from the year 1842, when lead and copper mines were first discovered and worked at Wanerenooka, in the Northampton District of Western Australia; hence it is not surprising that this State was amongst one of the first to employ a geologist as part of its official staff. This position seems to have been first occupied by *Dr. Ferdinand van Sommer.* This gentleman travelled extensively during the years 1847 to 1851 throughout the State. He geologically examined the Victoria, Toodyay, and York districts, and extended his observations to the country lying between the latter and Mount Barren, on the south coast. Neither the maps nor the reports of this observer appear to have ever been published, although three articles from his pen bearing upon the geology of Western Australia have appeared in the current literature during the years 1848 and 1849.

"The original drawings of Dr. van Sommer's maps have now been discovered, and are preserved by the Department along with that historical collection showing the progress of geological mapping in Western Australia, which is now on view in the Geological Gallery of the Museum.

"After an interval of 21 years, during which much excellent geological work was accomplished by the Gregory Brothers, *Mr. H. Y. Lyell Brown* was appointed to the post of Government Geologist. This gentleman, during the years 1870 to 1873, prepared three geological maps and issued 10 reports (now out of print), which referred principally to the Southern and Coastal portions of the State. One important map, 'Showing the progress of the Geological Survey' on a scale of about 18 miles to the inch, indicates with a considerable amount of detail the geology of the coastline from Doubtful Bay to a little north of Geraldton. It is interesting to note that the first supply of artesian water in Western Australia was obtained in a bore near the Canning River, a few miles south-east of Perth, and close to the foot of the Darling Range, put down under the advice of Mr. Brown. His Excellency Governor Weld, in a despatch to the Earl of Carnarvon, dated 30th September, 1874, reported that 'it was with much regret that in 1872, owing to the disinclination evinced in the Legislature in the then straitened circumstances of the Colony to expend money on a scientific department, that I was obliged to forego my desire of making it (a geological department) a permanent part of the establishment.' *

"In the same despatch the Governor, basing his information on the data contained in, and the deductions to be drawn from, Mr. Brown's reports, informed the British Government that 'the mineral riches of this Colony are very great. I have never doubted but that they would ultimately become a main source of its advancement. All different kinds of auriferous quartz known in other colonies are abundantly found in various parts of this. The question of payable gold is, as I have long since reported, simply a question of time. . . The Colony is extraordinarily rich in lead, silver, copper, iron, plumbago, and many other minerals are found in various localities, and indications of coal and petroleum are not wanting—what is wanting is energy and enterprise to develop these riches . . .' †

"In 1882, nine years after Mr. Brown's retirement, *Mr. E. T. Hardman*, of the Geological Survey of Ireland, was appointed to the post of Government Geologist. His labours were chiefly confined to the Kimberley District, upon which he issued two voluminous reports illustrated with a series of geological maps. Mr. Hardman was the pioneer geological observer in the far north of Western Australia, and his field work carried out during the years 1883-4 laid the foundation of our knowledge of

* Explorations in Australia: J. Forrest, London, 1875, p. 336. † Ibid., p. 337.

the geology of the Kimberley district, and played an important part in the opening up of the State's first declared goldfield. His two maps and reports greatly stimulated prospecting, as his predictions as to localities where gold would be found were afterwards justified. Mr. Hardman on returning from the North examined the neighbourhood of Bunbury, Blackwood, etc., which ultimately resulted in the discovery of the Greenbushes Tinfield. Later on he investigated the geology of the metropolitan area with reference to the question of its water supply from underground sources. On the termination of Mr. Hardman's engagement with the Western Australian Government he returned to Ireland and resumed his duties on the Geological Survey in 1885, bearing, I understand, the assurance that he would certainly be appointed if a permanent post of Government Geologist was created.

"Mr. Hardman, to whom Western Australian geologists owe a debt of gratitude which it is difficult to repay, died after a few days' illness brought on by the inclemency of weather and exposure to snow and rain on the 30th of April, 1887. Had he lived, the post of Government Geologist of Western Australia would in all probability have been offered to Mr. Hardman, the financial difficulties in the way of his appointment having been removed just before he died.

"Very shortly after Mr. Hardman's term of service in Western Australia came to an end a motion was brought forward in the Legislative Council in 1885 having for its object * 'the establishment of a permanent geological department for the Colony, the geologist in charge of such department to combine with the duties of his primary office those of public analyst.' The hon. member who moved the resolution stated that in doing so 'he trusted and believed he was moving in a matter that would do much good to the Colony, and he *had confidence it would do no harm!!!*' The same hon. member instanced the fact 'that the other Colonies had found that the value of the practical man alone, without scientific knowledge to guide him, was not so great as the value of the practical man assisted by the man of science, and these Colonies were all forming geological departments the same as he proposed to have established here.'

"The debate which followed the introduction of the motion is of considerable historical interest, as it indicates in a certain measure the status in which scientific men were held in the minds of some of the legislators in the Colony at that time, though I cannot but suspect that it in some measure arose from a misunderstanding of the true functions of scientific research, and that in many cases important practical issues are often concealed when included in what appears to be a purely scientific report.

"One hon. member 'denied that scientific men had contributed in any way to the important mineral discoveries which had made the fortunes of the other colonies,' and further stated, 'give him the practical man any day before all their scientific gentlemen.'

"A third speaker intimated that the State 'had already had some experience of these geological men, and for his own part he had very much faith in what the hon. member for . . . said, that we 'could not point to much good that they had ever done for the Colony,' and 'for his own part he would prefer to see the money spent in introducing practical miners, men with picks and shovels.' This gentleman was followed by another speaker whose view was that 'at present he had no faith in these scientific gentry at all—as a rule they were like the newspapers, very wise after the event.'

"It is satisfactory to know that evolutionary processes have been steadily at work since that time, and that such views regarding the status of scientific research and its votaries no longer obtain save in the minds of those very few who invariably peer on the world through the narrow end of the telescope, and are unable to embrace more than microscopical ideas.

"Ultimately the motion to establish a geological department was defeated by a large majority, but judging from the tenor of the debates I am inclined to think that the question of ways and means weighed very heavily with the hon. members in arriving at that decision.

"The late *Rev. C. G. Nicolay* in may ways contributed largely to our knowledge of the geology of the State, and was in charge of the Geological Museum at Fremantle, founded by Mr. Hardman, which became ultimately merged into the National Museum.

It was not, however, until 1887 that the Government found itself able to provide the necessary funds for the post of Government Geologist. The appointment was conferred upon *Mr. H. P. Woodward*, who had previously served for more than three years under Mr. H. Y. Lyell Brown, as the Assistant Government Geologist of South Australia. Mr. Woodward held the appointment of Government Geologist from 1888 to 1895. During Mr. Woodward's tenure of office he had for his associates Mr. B. H. Woodward, who acted as Curator of the Geological Museum and Assayer to the Department, whilst at a later date, 1894, Mr. S. Goczel was added to the staff as Field Geologist and Mining Engineer; hence it became possible to divide the work and make a beginning on more or less systematic lines. It was during this period that the paramount necessity for 'the publication of reliable geological knowledge relating to the nature and extent of useful mineral deposits supplemented by geological map and plans' and a geological investigation of the important question of the underground water supply of the goldfields was impressed upon the Government by its scientific advisers. The work of the Department during this period extended from Albany to Kimberley, though the issue of geological maps in illustration of the various reports seems to have been confined to the later years of the Survey. They include the Collie and Irwin Coalfields, the Tinfield of Greenbushes, the country between Nannine and Esperance Bay, Goongarrie, Cue, Yalgoo, and the Murchison Goldfields. In 1894 Mr. Woodward issued what is still perhaps the most recent geological map of the State. This was published in London, on the scale of 50 miles to an inch. At the date of its publication this map added very materially to our knowledge of the geology of the State, as far east as the 120th meridian. With such a limited staff, still more limited appropriation, the difficulties presented by the vast area of the State, and the practical absence of railway communication, the Survey under Mr. Woodward was able to issue 21 voluminous reports and six geological maps.

"It will thus have been inferred from the above historical information that for some years before the establishment of the present department its need had been realised by many of the more intelligent people of the State, and that its origin was really inspired by a true appreciation of the value to the nation of its natural resources, upon the judicious exploitation of which the welfare of the community so largely depends.

"*Work.*—The Geological Survey as at present constituted was created in 1896 for the purpose of the investigation of the geological structure, mineral resources, mining industries, and underground water supplies of the State, and to this end it became necessary to prepare geological maps and reports such as might be used by the Government and the public in dealing with all general questions which arise from time to time. In such a country as this, the progress of which depends so much upon its mineral wealth, the Survey has, naturally, endeavoured to devote itself to the investigation of those problems in economic geology which it is essential should be solved, if that be possible, without, however, neglecting purely scientific questions; for, of course, the economic and scientific aspects cannot readily be separated.

"It was pointed out to the Government that if the work of the staff was to be of that service to the country which the public had a right to expect, the officers of the Department should not be sent touring the State on every wild-goose chase suggested, or become parts of a mere prospecting machine, but so far as consistent with the resources available, an attempt should be made to carry out the operations as an organised whole. Should, of course, any important discovery be made, or new interests rise into prominence about which it became necessary for the Government to have some early information, a member of the staff could always be instructed to make a special report thereon.

"It will thus be seen that the Department was not established for the purpose of purely scientific research for its own sake, but with the hope that scientific investigation might be made of some material benefit to the proper utilisation of the State's natural resources.

"In such an enormous country as Western Australia it is obviously impossible to carry on the field work even by making use of the most modern methods in a strictly uniform manner, especially as financial considerations necessitate a staff somewhat limited in numbers.

"In young, partially developed countries such as our own there are two totally distinct classes of geological survey work necessary to meet public requirements. The first is the detailed examination of the more important mining centres, which are under active development, the

* Parl. Debates: Leg. Council, Vol. 10, pp. 135-142. Perth: By Authority, 1886.

accumulation of information relating to the occurrence of the various ore deposits and their mode of formation. The second is the preliminary examination of comparatively unknown tracts of country with the view of ascertaining how far its geological characteristics are likely to affect its economic possibilities.

"Theoretically the latter class of work should, as far as possible, be carried out in advance of the occupation of the country for mining or other purposes, Investigations of this latter nature involve the tracing out of the distribution of the various formations that rise from beneath one another, and occupy the surface of the country; and representing these by means of a carefully designed scheme of colours on a map, on a scale sufficiently large to show all the geological and geographical details necessary. When viewed from the economic standpoint this is neither more nor less than a classification of the surface into parts each of which may have useful minerals or other materials peculiar to itself. While, of course, such may be a true conception of what are theoretically the correct methods to employ, those of use who are charged with administrative duties are perfectly well aware that it is not what ought to be done, but what is possible to do with the resources at command, and the conditions prevailing at the time, that govern the whole situation.

"Whichever class of geological work is carried out it is invariably the case that it is in areas which have not been mapped with any approach to accuracy, and that maps suitable as a basis for geological or mining work are practically non-existent. If, of course, important geological surveys had to await the production of topographical maps I am afraid that much of the work would have to be indefinitely postponed; hence, in recruiting the members of the field staff the officers selected have perforce to be familiar with all the usual operations of the engineer and surveyor. In other words the field staff have to be men capable, if need be, of producing such topographical maps as are required to lay down their geological work, and correcting or adding to the topography of such maps as are available of the district in which they happen to be at work.

"A good deal of the field work is carried out by a modification of the plane-table and stadia methods, which by doing away with the necessity for the actual measurement of linear distances by chaining is sufficiently accurate for geological requirements, and, what is perhaps of greater importance is that it is expeditious.

"A topographical surveyor, Mr. H. W. B. Talbot, has now been included in the staff, and while adding materially to the value of the maps issued by the Survey, effects a considerable saving in the time of the field geologists.

Topographical maps do a great deal to promote an exact knowledge of the country in this way, apart from their other multifarious economic uses; are, when intelligently used, capable of being made of considerable educational value.

The work of the department *in its relation to the mining industry* is of course a complicated and delicate task, affecting as it does such a multitude of financial and practical interests. Legislative provision has been made whereby the members of the field staff have access to mines at all reasonable times.

"Experience in most mining fields of the globe has shown that many mining failures have been due rather to a want of knowledge of structural geology than from any lack of engineering training. Hence there has arisen the necessity for the detailed investigation of mines under active development. To this end geological plans and sections of mines have been from time to time prepared; these supply records of established facts in the disposition and changes in the country rock, the position of the ore bodies, their productiveness under various conditions, and thus afford data otherwise unobtainable by which operations can be directed into the most useful channels.

"Detailed surveys on a large scale of many ore deposits have been made in the hope that they might in some measure furnish a guide as to the general behaviour of the lodes.

country, if it is to be intelligently undertaken, must be

"Prospecting, when it takes the form of the equipment of a party for the investigation of a particular tract of carried out in a rational manner. One of the first requisites for this purpose is a properly executed geological sketch map, which ought, amongst other things, to indicate those areas within which the strata possess economic potentialities. The knowledge thus acquired, when properly presented, tends to prevent the useless expenditure in time and money.

"In the course of its work the Department has by means of reconnaissance surveys prepared several maps of fairly large areas for the purpose of meeting the demand for geological information of outside and lesser known mining districts, and directing prospecting into legitimate channels.

"Surveys of this kind designed to serve a special purpose pretend, of course, to nothing more than broad generalised field work of a nature sufficient to furnish a sketch of the main geological outlines, the details of and scientific problems connected with which having, of course, to be deferred to an often remote future. The demands for such a class of geological investigation have increased somewhat more rapidly than can at present be met.

In relation to the pastoral and agricultural industry, the main importance centres upon the question of subterranean water supply, which is without doubt one of Western Australia's most valuable assets. If, of course, underground water supplies are to be intelligently sought for and utilised, it is quite clear that the first step must be the determination of their extent and character. In addition the question of the permanence of present supplies and the extent to which such may be increased are of course of vital importance to the community.

"*Artesian Water.*—Western Australia possesses a large tract of country in which artesian water has been found; it occurs in the following of those divisions into which the State is divided for administrative purposes, viz.: the Eucla, South-Western, Western, and Kimberley Divisions. The area occupied by the artesian water carrying beds has been defined, with as near an approach to accuracy as the present condition of our knowledge admits, upon geological maps, which have been prepared after a more or less careful investigation of the structural geology of large tracts of country. Boring operations have demonstrated the accuracy of the geological deductions, and land that hitherto could not be made effective use of has been taken up and stocked, thus increasing the wool clip and the stock carrying capacity of Western Australia.

"*Agriculture.*—Up to the present time observations in the *agricultural districts* have been confined to the mapping of the rock formations, which constitute the true subsoil, but as yet no attempt has ever been made to represent in detail the distribution of the superficial deposits upon which it is the function of the agriculturist to operate, and which constitute a great national asset.

"The only fairly detailed geological map of an extensive area included within that portion of the State which embraces a large extent of agricultural country is the one which extends from Northampton to Arrino. This map, which was really prepared for the purpose of assisting in defining the limits of the Irwin River Coal Measures, by means of boring operations, shows *inter alia* the distribution of the various crystalline and superincumbent stratified rocks, as well as the alluvial deposits of the valleys and the blown sands along the coast. The geological map thus becomes of considerable value to those cultivators of the soil who are capable of using and interpreting it with knowledge and with judgment. It, of course, makes no pretensions to defining the actual distribution of the soils, though it does represent what is immediately beneath them. In this way it affords a good basis upon which a map showing the distribution of the various classes of soils occurring in the district may be founded; though of course it is well known that soil maps *alone* give but a very imperfect idea of the capabilities of land.

"Attention has been merely drawn to this particular map because it affords an illustration of a class of work the Department has been carrying out, which, when properly interpreted, may be made of value to the agricultural industry for the aid it affords in the direction of appraising the value of land, even though it was constructed for a totally different purpose.

"*Underground Geology.*—In addition to the investigations carried out in connection with surface geology, the exploration of what may be called the subterranean geology of the State has been, perhaps unconsciously, recognised by the Government as being of scientific and practical importance, as may be seen by the policy adopted in connection with the use of its boring plants.

"There are three distinct objects for which the boring plants have been usefully and actively employed as a direct aid to the development of the State's natural resources.

"(1.) The search for artesian water in pastoral and other districts, and subterranean supplies elsewhere. (2.) Proving the coal and oil-bearing formations; and (3) testing the metalliferous deposits.

"Many investigations are materially assisted by, and are to a large extent dependent upon, the results of such boring as has been carried out, when interpreted in the light of the local geological conditions; hence a good deal of work has been carried out by the Survey in connection therewith.

"In addition to the duty of fixing the sites in which many of the Government or State-aided bores are put down, the geological work in connection with the boring consists in collecting as many records and cores as possible of all the bores put down in the State, and examining such of the cores as are available and interpreting the information they give in such a way as will render them of value to the public, etc., when embodied in the official reports.

"In respect to pretty well all boring done by or with the assistance of the public funds, a fairly complete set of the cores now forms part of the departmental reference collection; whilst in the case of operations carried out at private expense, thanks to the cordial co-operation of many of the boring engineers, and to the ready response to requests for information, fairly complete bore records, which might otherwise have been lost, are filed in the archives of the Department.

"Much, however, yet remains to be done before a really complete set of the journals of private bores has been collected, for there is no legal obligation on the part of the public to lodge such data with the Government, even though the operations may have been carried out on what is really State property. Unless some steps are taken to acquire the information there is a possibility that a vast amount of valuable geological data may be irretrievably lost.

"*Petrology.*—In addition to the field work to which your attention has just been directed, microscopic inquiry now forms an important part of the operations of the Department, for there are very many practical problems requiring special investigation in connection with the rocks of the auriferous formations.

"The microscope has also to be employed in conjunction with the chemical balance, and both brought to bear on rocks the relation of which to other rocks have been carefully investigated in the field. It may, perhaps, be of interest to you to indicate the mode in which the microscope is applied to the examination of minerals and rocks.

"Slices cut by one of the many forms of the lapidary's wheels from the rocks or minerals are ground down smoothly until they are but a small fraction of an inch in thickness; they are then mounted on glass by Canada balsam. The effect is to make the great majority of the ordinary constituents of rocks translucent, if not transparent. They are then examined under a specially constructed microscope fitted with Nicol's prisms and other contrivances for optical tests. These refined optical tests often afford information leading to the discrimination of minerals where chemical analysis would not be available. When all the varieties of minerals occurring in a rock have been identified, one's work has only just begun, for its structure and history have to be investigated.

"The mounted rock slides are properly registered, and kept in a separate cabinet. A large number of slides have now been accumulated, the collection amounting to about 1,400. and are ready for immediate reference at any time. The results of this microscopic work are embodied in the various official reports. Perhaps one of the most important petrological reports is from the pen of Mr. J. A. Thomson. B.A., B.Sc., F.G.S., which will be found in Bulletin No. 33. This gentleman's observations make by far the most noteworthy contribution to the petrology of the fundamental rocks of Western Australia which has yet been issued by the Department, and will doubtless prove of more than mere local significance.

"*Chemistry and Mineralogy.*—A very necessary and important part of the organisation for carrying out the geological work which has been outlined in the Laboratory in which such chemical, mineralogical, and other researches essential for the proper discharge of the duties of the Survey are performed. The laboratory is under the charge of a specially trained officer, Mr. Simpson, associated with a staff of assistants. By means of this laboratory considerable assistance is rendered to, and the time of the field staff greatly economised; for it is upon field work that the time of the staff can always be most profitably employed.

"To carry on the primary functions of the work in the Laboratory certain plant and accommodation are of course essential, and this is of such a nature as may be utilised for making the necessary assays, etc., for the State Batteries that it has been found best in the interests of economy and efficiency to have this work carried out by the Survey.

"Part of the policy of the Government consists in the making of free assays and other determinations in the interests of *bona fide* prospectors, and most of this work is carried out in the Survey Laboratory. This class of work naturally takes up a good deal of time, but by its means much valuable information as to the occurrence and distribution of minerals (which it is the function of the Department to secure) would probably be otherwise unobtainable or, at any rate, take many years to acquire. Since the present Department was instituted there have been 5,816 free assays made, in addition to a number for which payment has been received.

"A good deal of the work of the Laboratory is necessarily of a routine character, and much of it is embodied in the various official bulletins and annual reports. During the progress of this work there have been made 177 complete analyses of rocks, 78 mineral analyses, 97 analyses of minerals and allied waters, 118 analyses of coal, 114 of lode stuff and ore mixtures, and 59 soil extracts. There have also been recorded about 130 minerals new to Western Australia.

"The officers of the Survey Laboratory occasionally make, in the ordinary course of their duties, important researches in connection with substances with which geology is concerned, and some years ago a special bulletin (No. 6), designed to reduce these investigations to a systematic form, was prepared by Mr. Simpson and made available to the public.

"A good deal has also been carried out in what may be called the domain of technology, which in some measure supplements the work of the Survey proper. Amongst this technological work may be mentioned the researches into the causes of the corrosion of the pipes of the Goldfields Water Supply main, which were carried out in 1906; the information obtained as a result of the laboratory investigations of the soils from the pipe track, and their effect upon pipe steel and iron are of considerable interest and perhaps of more than mere local importance. In addition a good deal of work is done in what may be called the domain of metallurgical chemistry, although it ought to be made perfectly clear that the commercial application of technical processes is not a function of the Department.

"*Palaeontology.*—Geology is more or less dependent upon palaeontological research, for without the specific determination of fossils, reports involving a wide range of stratigraphy could not be written, nor geological maps of large areas be properly completed, though of course those acquainted with geological field work, and the running of geological boundary lines are aware that palaeontology only plays an insignificant part in the actual construction of the maps. Palaeontology constitutes the timepiece of geology, serving the same purpose as do watches and clocks for the ordinary engagements of life.

"Many biologists, it may be noted with regret, look somewhat askance at Palaeontology on account perhaps of the absence of the softer portions of fossil organisms. The hard parts of organisms are so intimately related to the soft parts that whatever affects the latter is ultimately expressed in the framework. However this may be, palaeontological researches do give the true key of the order of succession of organisms by actual observation in the field, and not by speculative groping in the study and the laboratory on recent organisms. By its means we learn much of some of the characteristic features of the geological systems, and thus gradually acquire that knowledge of the geographies of past eras which is really geology.

"Fossils being of such importance in determining the relative age, succession, and correlation of strata, that the investigation of the palaeontology of a formation becomes an important factor in the early attempts at the development of the mineral resources of regions in which

the stratigraphy has been but imperfectly worked out.

"A very noteworthy instance of the importance of the study of the fossil fauna occurs in Victoria, where the Ordovician auriferous beds contain graptolites, arranged in zones according to the presence of certain specific forms. They thus afford a means of providing geological bench marks which will materially assist, in the absence of other lithological methods of determining the boundaries of the barren and auriferous belts in the Ordovician beds.

"Most of the fossils in the possession of the Department have been collected by the staff during the progress of the field work. Each fossil received at the office is numbered and registered in such a permanent way that its source and destination can at once be found. All the specimens are forwarded to Mr. R. Etheridge, the highest recognised authority on Australian fossils, who acts gratuitously in the capacity of Palaeontologist to the Survey. This gentleman has enriched geological literature with his reports on the collections which have been sent to him from time to time, and which have appeared in our series of Palaeontological Contributions to the Geology of the State.

"Other contributions are from the pen of Mr. Howchin, of the University of Adelaide, whose detailed descriptions of the Foraminifera of the chalk of Gingin make an important addition to the knowledge of a group of organisms to which but little local attention has as yet been paid. Valuable work has been done by Mr. Chapman of the National Museum, Melbourne; his investigation of the fossils of the Collie River Coal Measures has gone a long way towards solving the vexed question of the Geological age of the series.

"Mr. Newell Arber, the well known Palæobotanist, has described the plant remains from the Jurassic Beds of the Champion Bay district, which has enabled a correlation to be effected with their probable stratigraphical equivalents in Queensland, viz., the plant-bearing beds of Talgai, Darling Downs, and Rosewood, near Rockhampton.

"Dr. Geo. J. Hinde's, F.R.S., researches in connection with the fossil sponge spicules from the so-called Deep Lead at Norseman is perhaps one of the most important of our additions to the Palaeontology of the State, and to which reference will be made later on.

"Finally my colleague, Mr. Glauert, has drawn up a list of Western Australian fossils, stratigraphically and geologically arranged, to facilitate the work of the Survey, but which will meet a much felt want at the hands of all workers in and students of Australian Geology.

"The Geological Survey Collection at present contains 21 type fossils, *i.e.*, the identical individual specimens from which species have been described.

"*Geological Museum.*—One of the most essential instructional portions of the equipment of the Geological Survey is its Museum, in which the various rocks, minerals, and fossils collected by the staff in the ordinary course of its duties, or acquired by purchase, or donation, are exhibited for the convenience of the staff, and for the benefit and instruction of the general public. The Survey Collection at present numbers 10,912 specimens.

"It was after careful consideration decided by the Government that the small National Geological Collection previously in the hands of the Museum Committee, should be taken over and the collection combined with that belonging to the Survey, and the whole placed under the care and control of the Geological Survey, thus introducing a system of administration, which is only a really scientific classification of functions, with the additional merit of having had successful experience elsewhere to guide it.

"The geological collection in the hands of the Museum Committee was really too small and insignificant to permit the possibility, having due regard to the other more pressing scientific interests in that institution, of a specialist being retained for its care. Hence by the amalgamation duplication of scientific effort has been reduced to a minimum.

"In the general scheme which the Department proposes to ultimately adopt in connection with the arrangement of the geological collections, a plan has been decided upon which will, it is hoped, meet the requirements of four totally distinct classes of visitors to the Geological Gallery, viz.: (*a*) the general public; (*b*) the average student; (*c*) the practical man, prospector, engineer, etc., and (*d*) the scientific enquirer. Naturally as befits such an important mining State as Western Australia, which ranks second in the gold-mining countries under the British flag, the pride of place will be given to collections illustrating the geological structure and mineral wealth of the country, in addition to the application of geology to the various industrial pursuits, without of course neglecting the more systematic treatment of the science of geology in general. To this end the mineral rocks and fossils of Western Australia will be properly placed in exhibition, and an endeavour made to display specimens which are especially characteristic of Australasia and elsewhere. The fossils which have been almost entirely collected by the staff and our predecessors in the ordinary course of their duties, from the different formations in the State, will be arranged and displayed primarily in stratigraphical, and secondly in zoological sequence in conjunction with the geological maps of the districts in which they were obtained. The rock specimens also will be systematically arranged so as to illustrate the various geological and mining maps; whilst the extremely valuable collection of minerals and metallic ores will be primarily arranged on a metallic basis, but in such a way as to afford a brief *aperçu* of the nature, type, mode of occurrence, and geographical distribution of the mineral wealth of Western Australia. In the case of the ores and other minerals all the specimens will, as far as possible, be of a uniform size (and arranged with illustrative plans, diagrams, and photographs), such being of greater scientific, commercial, and educational value than large trophies, or bulk samples from individual mines, or districts.

Care is being taken to preserve and exhibit only such specimens as are of permanent and real value, and which have a lesson to teach. Carried out on these lines the Geological Gallery will then be as it ought to be, a collection illustrating in the very widest sense the geological structure, mineral wealth, and past life of Western Australia in its relation to geological science in general.

"*Publications of the Survey.*—The results obtained by the Geological Survey are made available to the general public in a useful, practical, and creditable style in three distinct forms, viz., Annual Reports, Bulletins, and Maps.

"The annual reports which are presented every year to Parliament contain a brief statement of the work of the department for the period by which each is covered, and in addition a good deal of miscellaneous information which it is deemed desirable should be issued in advance of the more detailed reports. Up to the present time 14 annual Parliamentary documents have been presented; these in addition to the usual administrative details will be found to contain 58 reports on auriferous deposits in goldfields, 10 on copper and lead deposits, 7 on the tinfields, 3 on the iron ores of the State, 10 on coal and oil, 3 on phosphates, 12 on other miscellaneous mineral occurrences, 8 reports prepared under the provisions of the Mining Acts, 10 on general geological subjects, 1 on petrography, 1 on palaeontology, 2 on mining technology, and 23 on subterranean water supply.

"It was very soon found that a good deal of the value attaching to special reports upon the economic aspects of geology was discounted by delay in publication, which must necessarily happen when detailed descriptions are included in the Report presented annually to Parliament, and it was ultimately determined in 1899 that when reports and maps upon any special subject or district were prepared, they should be printed in a convenient form, styled Bulletins, and made available for distribution to the public so soon as they could possibly be issued from the Government Printing Office.

These separate reports or bulletins, which number 40, deal with a great variety of subjects, as may be noticed by an inspection of the published catalogue and table of contents. Of the bulletins already published, one is a bibliography of the geology of the State; three contain valuable palaeontological contributions to Western Australian Geology, three deal with Artesian Water Supplies, three on such general questions as the Mineral Wealth of the State, the occurrence and distribution of the Base Metals, Minerals of Economic Value (really a valuable handbook for prospectors and others on Commercial Mineralogy) and a statistical account of the mineral production of the State; two refer solely to General Geology; whilst 28 give more or less detailed accounts of the geological structure, ore occurrences, and future mining prospects of pretty nearly every field in Western Australia.

"Of the Geological, Mining, and Topographical maps, there have been issued up to date geological maps of goldfields, 61; copper and lead mining districts, 10; tinfields, 5; coalfield maps, 5; general geological maps, 28; mining maps and plans, 92; mineral distribution maps, 4; of topographical maps, 4; and horizontal and vertical sections, 10.

"An inspection of the various geological maps shows that the titles attached to each explain the degree of accuracy or precision of the field work, and that the geological groups are shown in colours. The colours used, it may be explained, are not based upon any mere arbitrary scheme. The question of the colouration to be adopted in geological maps is one of which very few geologists have had any wide experience; in the Western Australian maps the colours employed for the expression of the geological formations are as nearly as possible those adopted by the International Geological Congress—which meets every three years. The guiding principle in this scheme is, briefly, that the older the formation the deeper is the tint employed on the map. It will be noticed that the colours on the Survey maps are employed in two distinct ways: 1st, solid, *i.e.*, completely covering the surface and in pale tints, and 2nd in patterns.

"The first use is designed to have a chronological function, whilst the second indicates the several subdivisions, or varieties of rock-masses, etc. To guard against the risk of the so-called 'fast colours' fading, each is also distinguished by a special symbol. This identity of colours and patterns is essential when the maps are to form part of a series, and the various formations are to be compared one with another. It is of course difficult to devise a scheme of colouration that will meet universal requirements. The adjustment of the details of the International scheme of Geological Map Colouration to the requirements of the large scale and detailed maps of mining fields, etc., has proved a well-nigh insurmountable difficulty, though on the whole it is sufficiently close to be intelligible to those familiar with the system in question.

"The writing of reports and the other duties incidental thereto, naturally take time, and few people, unless those who have had to do it, adequately realise the labour involved in the preparation of such if they are to have scientific and official accuracy. Hastily written reports are of little real service, of no permanent value, and in many cases tend to materially defeat their own ends.

"For reasons which can be readily understood, geological inquiry in Western Australia has up to the present consisted chiefly of a series of unconnected observations to the co-ordination of which we must look to the future.

"Little or no progress has as yet been made in the direction of the correlation of the various geological horizons with those of Australasia and other neighbouring countries; though our observations, having been carried out in all portions of the State, do permit of certain broad generalisations. A great deal of the work of the Survey is necessarily scattered through the various bulletins, annual reports, and official documents, hence it has been felt that the time has arrived when an attempt ought to be made to gather, and put into a concise form, a systematic account of the geology and mineral and allied resources of the State, illustrated by a large scale geological map of Western Australia, which shall show the present condition of our knowledge. Many intelligent people who are not geologists desire to know something of the geological structure and geological history of the State, and to them as well as to others, such a work will meet a much felt want.

"The task which this literary work involves is a heavy one, and will naturally take a good deal of time to accomplish, seeing that much office work must be done on the Survey Collection, and much literature, etc., abstracted before all the information at our command regarding the geology and mineral resources of the State can be systematically presented; still it is hoped that the map at any rate will be ready for the lithographer by the close of this year.

Scientific Results.—The work which has already been completed has achieved certain valuable results.

"Whatever new facts may have been contributed to science as a result of the Survey's operations, have been solely arrived at in the prosecution of economic inquiries carried out in what I conceive to be a scientific manner.

"It is of course almost impossible to estimate the indirect usefulness of the work of the Survey, which is to be looked for both in the State and out of it; in Western Australia in the economic development of the resources of the State—out of it in the influence it has on the advancement of Geological Science and the attention it directs to the State's mineral wealth. The effect of its working upon the various industries, and on the wealth and prosperity of Western Australia, is naturally that to which the Government attaches the greater importance.

"Time, however, will hardly admit (though there is the inclination) of any detailed reference being made to many of those practical and theoretical questions arising out of the data which have been amassed by the Survey. Amongst the more important results, however, may be mentioned:—

(*a.*) The subdivision and structural features of the fundamental complex of crystalline schists and other metamorphic rocks, which form the staple formation of our gold and mineral fields, have been more or less tentatively established. These form an important group of rocks, the members of which have certain features in common, occupy definite areas, and various lines of enquiry point to being of considerable geological antiquity, in all probability Pre-Cambrian—they contain probably the materials for about one-half of the geological history of the earth.

(*b.*) The investigations carried out on what may be called the Auriferous Series as developed on most of our goldfields, has shown that an intimate relationship subsists between the intrusive granite masses and the auriferous quartz veins and other allied mineral deposits.

(*c.*) Having due regard to the extent of these old rocks and the fact that Western Australia has been remarkably stable and quiescent since early Palaeozoic times, the State may be said to possess almost limitless mining possibilities.

(*d.*) The stratigraphy of that important formation, the Nullagine Series, has now been clearly defined. This formation consists of a great thickness of quartzites, sandstones, conglomerates, and dolomites, together with a series of lavas, ashes, and agglomerates of as yet unascertained thickness. The dolomitic limestones of the Nullagine Series afford evidence that a large portion of Western Australia north of lat. 26 has been subject to marine conditions and point to a more or less prolonged submergence during a very early period in the earth's history. The Nullagine Series is of some economic importance by reason of the fact that its local members have proved to be auriferous in two localities. In many important respects these gold deposits bear a striking resemblance to those celebrated auriferous conglomerates of the Rand in South Africa, better known perhaps as the Banket Deposits. The series is also of importance owing to the fact that the soil derived from the volcanic beds produces that excellent pastoral country which occurs in the recesses of the Hamersley Range.

(*e.*) The question of the geological age of the Collie River Coal Measures which was formerly more or less obscure has now been very clearly settled by a careful investigation of the organic remains associated with the strata, a result which adds considerably to our knowledge of the important scientific question of the distribution of the Glossopteris Flora.

(*f.*) One of the most important advances in Western Australian geology is the recognition of a glacial conglomerate in the marine Permo-Carboniferous Rocks, near the Tropic of Capricorn. This conglomerate, which forms a very valuable stratigraphical horizon, has been traced across country for nearly 200 miles, and is exposed in the valleys of the Minilya, Lyndon, Lyons, Arthur, Wyndham, Wooramel, and Irwin Rivers. The scientific interest attaching to this deposit lies in the fact that it marks the prevalence of intense cold, and a distinct glacial epoch, which there are sound geological reasons for believing to be contemporaneous with the glaciation that affected India, South Africa, The Argentine, The Falkland Islands, and other portions of Australasia in Permo-Carboniferous times.

"(*g.*) The recent recognition of another Mesozoic horizon, viz., the Cretaceous chalk at Gingin, makes an important advance in our knowledge of the younger geological formations, and it is hoped that steps may shortly be taken to accurately define in the field its relationship to the Jurassic beds to the north, and the Artesian water bearing strata which underlie the Metropolitan areas.

"(*h.*) Perhaps the most important recent additions to our knowledge is the recognition of a deposit made up solely of fossil sponge spicules in the so-called Deep Lead at Princess Royal Township, near Norseman, at an alti-

tude of about 900 feet above sea-level. Dr. G. J. Hinde, F.R.S., into whose hands the Department entrusted this material for examination, reports that the deposit is not merely local, but must have been formed in the open ocean at some distance from the coast-line, and probably at a considerable depth. This discovery is of considerable importance, and will have to be thoroughly examined some day, as it involves a whole series of important conclusions regarding the physiographical changes in the district, which depend upon the geological age of the deposit. The solution of the many economic questions involved in the stratigraphical research which such an investigation entails is of no less importance to the community than the purely scientific results which of necessity follow.

"(*i.*) Important additions have been made to the sum total of our knowledge in regard to the geological conditions obtaining in the various portions of the State in which artesian water occurs.

"My self-imposed task is now ended, and in the fulfilment of the task, I have endeavoured to show concisely how the Department came into being, the purpose for which it exists, how it carries out its work, something of what it has been able to accomplish, and how in the highest sense it has endeavoured to justify the conception that '*Geological Science is not only the interpreter of Nature, but the Servant of Humanity.*'"

PRINCIPAL RESULTS OF THE FIELD OPERATIONS.

The following reports of the different field officers give a brief account of the work each has been carrying out:—

A. GIBB MAITLAND, Government Geologist.

(1.) *Results of Boring for Artesian Water on the Eucla Plateau.*

In 1897* it was pointed out that (a) an enormous plateau of Recent and Tertiary Strata occupied the southern portion of the State, extending from the South Australian border to the neighbourhood of Israelite Bay (b) the strata consisted of porous beds into which the rainfall is rapidly absorbed and discharged seawards in the form of fresh-water springs, and (c) that the area was one in which artesian water occurred.

The subject was revived during 1900† in a special report on the "Extension of Artesian Water-carrying Strata from South Australia" in connection with the Transcontinental Railway line, the necessity for the selection of a well-watered route being of prime importance. It was suggested in that report that, in the event of the State undertaking any experimental boring operations, such should be carried out along a line due north and south, starting from any convenient locality at the head of the Australian Bight.

Operations were eventually commenced by the Government at Madura,‡ and a depth of 2,041ft. attained. The site of the bore lies about 110ft. above sea-level, at the foot of the Hampton Range, distant about 30 chains from the face of the escarpment, which is 350ft. in height. So far as could be judged by the cores submitted to this office for examination it appeared that the bore pierced about 903ft. of limestone, the Eucla Limestone of Eocene age, underlaid by shales, with occasional bands of dolomitic limestone. The bore did not, however, pierce the floor of crystalline rocks upon which these beds rest. In this borehole salt water was met at a depth of 100ft. 3in. A subartesian supply of salt water was struck at 905ft. and yielded a pumping supply of water at the rate of 29,000 gallons in 20 hours.

At 1,979ft. an overflowing supply of water at the rate of 1,000 gallons per diem was encountered, whilst at a depth of 2,041ft. good stock water was met with, which issued from a standpipe two feet above the surface at the rate of 5,700 gallons per diem. The bore, however, did not pierce the whole of the thickness of the water-bearing beds.

A second bore at an altitude of about 300ft. above the level of No. 1 was put down at a spot 30 miles north of Madura, and carried down to a depth of 430ft. in the Eucla limestone. This bore did not penetrate the underlying shales and sandy beds.

The third bore was situated at the 337 miles 61 chains peg on the surveyed route of the Transcontinental Line, at an altitude of 576ft. above sea-level. The borehole was carried down to a depth of 1,372ft., and judging from the record of strata supplied (the cores not yet having come to hand) it appears that the strata pierced consist of—

Eucla Limestone	603ft. thick.
Shales	667 „
Fine and coarse sand with hard bands and granite boulders (sandstone) and conglomerate ..	74 „
Granite	28 „

In this bore subartesian water was met with in the sandy beds at the base of the formation, and rose to a height of 420ft. from the surface.

As would have been expected, the results of this boring indicate that the beds are getting very much thinner as the inner margin of the basin is approached, the Eucla Limestone having dwindled from 903ft. to 603ft., whilst the underlying shales diminished from 1,138ft. to 667ft. The first bore was not carried deep enough to pierce the sandy beds beneath the shales, hence there is no evidence available with regard to their actual thickness in this section.

In the year 1908 one of the Assistant Geologists, Mr. C. G. Gibson, devoted four months to an investigation of the geological features of a portion of the country lying along the route of the proposed Transcontinental Railway, and the traverses this officer made enable the eastern boundary of the basin to be defined with a near approach to accuracy; no attempt, however, was made to map the boundary of the basin to the north of the surveyed line.

So far as Mr. Gibson's observations were carried it does not appear, as the geological structure of the plateau indicates, that the sandy water-bearing beds below the Eucla Limestone outcrop near the margin of the basin, but impinge directly on the older granitic and crystalline rocks, which are concealed from view. The sandy beds receive the larger portion of the water along this junction, which to the north must reach a fairly high average elevation.

The catchment area of the Eucla plateau (Premier Downs) is along the northern and eastern edge of the crystalline rocks; this, which sends all its drainage on to the plateau, conveys the rainfall directly to the porous beds along the outer rim of the area.

There are no rivers on the Plateau, hence all the water which falls thereon, other than that lost by evaporation, is available for absorption by the strata upon which it falls.

No reliable estimates appear yet to have been made which enable the amount of water absorbed by the rocks to be arrived at. That such must be fairly considerable is, I think, evidenced by the fact that the Plateau is not drained by any rivers, which would carry off a certain portion of the rainfall, and that it lies within the 10in. to 15in. rainfall belt.

(*) Annual Progress Report, Geological Survey for 1897, p. 29.
(†) Annual Progress Report, Geological Survey for 1900, pp. 28-31.
(‡) Annual Progress Report, Geological Survey for 1903, pp. 33-34.

The hydrostatic pressure of the body of water in the inland portion of the strata has a tendency to force the water outwards and thus cause a permanent flow seawards. This water flows with a velocity due to the difference of level between the intake and the level of discharge, less the frictional resistance of the rock through which it penetrates, which is such as to make the water rise considerably above sea-level in any borehole which may be put down.

Sufficient data have now been obtained by the two deep bores to enable an approximate estimate to be made of the depth at which the subartesian water will be met with along the surveyed route of the Transcontinental Railway Line.

A very voluminous report upon the Mineral Wealth of the State was prepared for the International Conference on the Conservation of Natural Resources. As this has appeared *in extenso* in the pages of the *Australian Mining and Engineering Review,* Vol. 3, Nos. 25 and 26, it has hardly been deemed necessary to reprint it, more especially as it is about to be issued in a more amplified form in the forthcoming volume on the geological and economic resources of the State, which I have at present in preparation.

(2.) *The Geology of the Country between Sandstone and Lawlers, East Murchison Goldfield, from the point of view of Railway Communication.*

In October, 1909, a deputation from the northern districts, urging the construction of a railway from Sandstone to Lawlers, waited upon the Premier: after some discussion it was intimated that the Government Geologist or the State Mining Engineer would be instructed to make a report upon the country lying between the two localities.

It was not, however, until the 12th of October, 1910, that instructions were issued to me to send an officer over this route: there being no other member of the staff available, I decided under the circumstance to make the inspection in person, in company with Mr. H. W. B. Talbot.

A petition was presented to Parliament in 1909 advocating the construction of a railway from Sandstone to Lawlers in lieu of one from Leonora to Lawlers. One of the statements (4) in the petition was to the effect that "from the point of view of opening up new auriferous country the route via Leonora presents no advantages over the route via Sandstone."

It was therefore to the investigation of the question as to whether there was any auriferous country between the two localities that my attention was solely directed.

On the 12th of December, 1910, I was instructed by telegraph that my report on this work need only be brief and of a preliminary nature.

Leaving Sandstone on the 21st of November, nineteen days were devoted to work in the field, during which period an examination was made of the country within about twenty miles on either side of the road which connects Sandstone with Lawlers.

The results of the field work, coupled with the detailed information contained in the reports of Mr. C. G. Gibson, Assistant Geologist, and Mr. Montgomery, the State Mining Engineer, indicate quite clearly that the geological formation containing auriferous deposits occupies only a restricted area in the tract of country lying between Sandstone and Lawlers. The position of this is more or less accurately delineated upon the geological sketch map with which this report is accompanied.*

The auriferous area in which Sandstone lies has a length of about 25, and a width of about 20 miles. The eastern margin of this area is in the vicinity of the township of Maninga Marley, where active mining operations are at present being carried on. Full descriptions of the various mines will be found given *in extenso* in the latter of the two reports to which reference has just been made, and need not be repeated. The auriferous formation consists of a series of metamorphic sedimentary rocks, associated with vesicular greenstones which doubtless represent ancient lava flows.

The series is intersected by intrusive granite, occasionally in the form of dykes. A little to the north of Maninga Marley is a small though conspicuous ridge showing the intrusive nature of the granite: the strata forming the ridge consist of vertical beds of quartzite, mica schist, intersected along the bedding planes by veins of granite.

A traverse due north of Maninga Marley for about 10 miles showed the country to consist entirely of granite, which evidently occupied an extensive area in this part of the East Murchison Goldfield. To the southward the granite was followed for a distance of 14 or 15 miles down Everett Creek as far as the Lake Country, and from a commanding hill near the edge of the lake it could readily be seen that it extended as far southward as the eye could reach.

A very small patch of metamorphic rocks (quartzite, etc.), which represent a portion caught up by the granite outcrops on the main Lawlers road between Survey Stations J.H.R. 173 and 174: it does not, however, appear to have any great longitudinal extent.

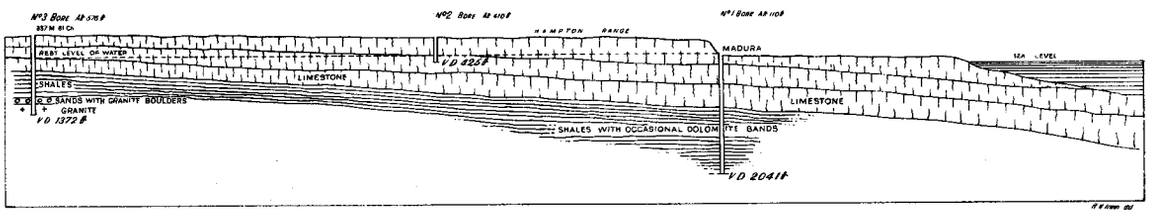
To the west of Hell's Gates, and to the east of No. 5 Well on the reserve at Rocky Creek is a narrow strip of country which might possibly form the matrix of a few small auriferous deposits, containing as it does irregular patches of hornblende schist and massive amphibolite. The belt, however, is not of any great width even at its widest part, the southernmost extremity, where it gradually falls into the Lake, about ten miles due south of No. 6 Well on Reserve 8295, consists of metamorphosed sedimentary rocks (quartzites, etc.).

In the vicinity of Hell's Gates the granite is traversed by several very large and extensive quartz reefs, which may possibly merely represent another phase of the pegmatite intrusions, which are a marked feature in many portions of this district.

Granite occupies the whole of the country between Hell's Gates and Mount Holmes (Wallaby Knob). Mount Holmes is a conspicuous hill which from its isolation forms a well-marked feature in the landscape, and upon it Survey Station J.H.R. 196 has been placed. The normal coarse-grained granite of which it is composed is traversed by a greenstone dyke.

To the north of Mt. Holmes lies what is shown on the maps as the Boolygoo Range, better known locally as the Depôt Hills. Granite occupies the whole of the country until the base of the hills is reached, about 16 miles distant. Where an opportunity of examining these presented itself, they were found to be made up of iron-bearing quartzites, which dip westerly at an angle of 45 degrees. These metamorphic sediments are invaded by intrusive granite: so far as my own personal observations were carried, there were no auriferous deposits to be seen.

* Not reproduced.



GEOLOGICAL SECTION FROM THE SEA COAST TO Nº3 BORE AT 337 M P TRANSCONTINENTAL RAILWAY SURVEY

HORIZONTAL SCALE 10 M TO 1 INCH

VERTICAL SCALE 1000 ft TO 1 INCH

The country between Hell's Gates and Gum Creek Well, Reserve 9591, is all granite of the usual type. The granitic rocks also continue much further eastward, to the vicinity of Lawlers.

I did not, however, deem it necessary to extend my investigations as far as the town of Lawlers itself, that district and its mines having been fully dealt with by Messrs. Gibson and Montgomery, in the reports to which allusion has already been made.

Summarising the results of my investigations, it appears that from its geological constitution it is improbable that the stretch of granite country about 60 miles in width lying between Maninga Marley and Lawlers contains any auriferous or other mineral deposits of such a value as to warrant the construction of a railway for their exploitation.

H. P. WOODWARD, Assistant Government Geologist.

(3.) *The Prospects of obtaining a Water Supply for Geraldton, either Artesian, Sub-artesian, Wells, or Catchment Areas.*

Geraldton (114deg. 32min. E. long. and 28deg. 47min. S. lats.) is situated upon a low sandy promontory terminating in Point Moore, which forms the southern side of Champion Bay, and protects the shipping from all southerly and south-westerly weather.

The town itself has been built upon a long narrow belt of sandy flat or beach only a few feet above high-water mark, bounded by sea upon the north-west and sand dunes upon the south-east, behind which latter a low sandy plain extends to the base of the hills a distance of some six miles.

To the northward and north-eastward the country rises more rapidly towards the Moresby's Flat Topped Ranges, the rocks of which are sandstones and clays, and belong to the Jurassic Series. To the eastward the plain rises more gradually towards the Jurassic capped granite ridges of Newmarracarra, whilst to the southward upon the other hand the country is mostly flat, consisting of coastal and low alluvial plains, the more elevated portions being sandplains.

The area to the northward is drained by the Chapman River, which, although subject to floods in its upper courses rarely discharges any great volume of water into the sea, whilst when pools are met with in its bed the water is usually brackish or salt except immediately after rains.

The country to the south and east is drained by the Greenough River, which takes its rise upon the Murchison Goldfield, and this, like the Chapman, rarely flows except after heavy rains, when large tracts of alluvial plains near the coast called the "Flats" are flooded.

There are four possible supplies, all of which have been considered, viz., 1st from shallow wells within the municipal area, 2nd from artesian bores, 3rd from springs in the hills, and 4th by building dams and conserving water.

This question of a water supply for Geraldton has been under consideration for the last 15 years, during which time the Government has not only expended very considerable sums of money upon it, but have also employed their officers from time to time to report upon the various schemes brought forward.

Recently, however, the condition of things became so bad that the Railway Department installed a condensing plant, from which the locomotives and steamers are supplied.

Shallow wells within the Municipal Area.—The ground upon which the town is built is composed of recent marine and beach deposits piled up by the sea, consisting of sea-weed, shells, and sand, from which the present water supply is obtained at a depth of about eight feet.

The supply is derived directly from the rainfall (18 inches average) impounded by the sand of the dunes, this in its gradual passage towards the sea must pass beneath the town.

It is all very hard but varies very considerably in quality according to the nature of the deposits through which it passes, thus in the beds of decomposed sea-weed it is extremely bad and often salt, in the beds of shell it contains a larger proportion of lime, whilst in the sand it may be very fair quality even close to the edge of the sea.

Although the main supply is derived from the sand hills, this is augmented by the rain which falls upon the town itself, since the surface of the ground is also sand, and there are no impervious beds between it and the water level.

There is no sewerage system in Geraldton with an estimated population of 3,000, therefore, all the waste water after employment for domestic purposes is thrown upon the ground, and has been so disposed of ever since the town was built.

It naturally follows that the rain falling upon this surface becomes contaminated, and that after carrying on this practice for a number of years, that the eight feet of sand filter bed has become impregnated to such an extent that it no longer acts as a purifier, and therefore the usual consequences may be expected at any time attendant upon the consumption of sewerage.

Grimshaw's Valley.—This is situated within the Municipal Area in a depression amongst the sand dunes to the southward of the main portion of the town.

This flat is little over 12 feet above the sea level, whilst the bottom of the pumping trench to be mentioned later on was one foot six inches below it.

The supply here is derived directly from the impounded rain which falls upon the sand dunes, and owing to the fact that these contain large quantities of shell matter as do also the water-bearing beds, it is of a very hard quality.

The Government Analyst reports it to be very pure but extremely hard, this, however, he points out could be reduced to under 10 degrees by treating it by the Archbutt-Deeley process.

The first tests in this locality were made upon a well, which is stated to have yielded from 8,000 to 10,000 gallons per diem; later on, however, the Council, with Government assistance and under the supervision of the Public Works Department carried out the following work.

Extract of report presented to the Municipal Council, dated 15th December, 1907:—"In May last we excavated a trench well 3¾ chains long, by four feet wide, connecting the original Grimshaw's Well with a well where 9 feet 3 inches of water was previously obtained. In order to sink the trench below water level, it was necessary to provide an engine and pump to keep the water bailed out, with the result that about 1,000,000 gallons were pumped out of the trench during sinking operations. A line of pipes 650 feet long was then laid over the rise of the sandhills to the neighbouring valley, and during the first eight days 300,000 gallons were pumped over the sand-

hills, whilst from 1st June to 25th June (including the above quantity) 1,040,000 gallons were pumped away.

"One noticeable feature was that the water was making freely in several places at one end of the trench, and that when the water was reduced to two feet it necessitated the pump pumping from two to three hours to reduce the water, with a capacity of 6,500 gallons per hour. The water makes freely as will be seen from the fact that on the 1st June the water gauge read 5 feet 3¾ inches, and after 16 hours continuous pumping, accounting for 104,000 gallons of water, the water level was reduced at midnight to 1 foot 9 inches, but on the following morning at 10 a.m., it had risen to 4 feet 2 inches, the level each succeeding morning varying from 4 feet 6 inches to 5 feet."

Now it will be noticed, if the above figures are correct, that the average quantity of water pumped in June was 41,600 gallons per diem, and that the average depth of water in the trench after 16 hours pumping was 1 foot 9 inches or about 3 inches above sea level, therefore little more pumping could be carried on with safety.

Next, estimating the population at 3,000, requiring 30 gallons per head each day, their requirements would be 90,000 gallons or over double the supply.

I may next point out that the test was absolutely valueless, since it was carried on in May and June in 1907, during which months 9.81 inches of rain fell, or roughly speaking half the average rainfall of this district, consequently a very considerable portion of this water would be rapidly available.

In the next place, I understand that the volume pumped was estimated upon the capacity of the pump, this is suported by the statement that on 1st June 104,000 gallons were pumped in 16 hours, the capacity of the pump being 6.500 gallons per hour, but since pumps never come anywhere near their nominal capacity in practice, the very outside volume pumped would have been 5,000 gallons.

It is needless for me to go into this matter further. for without this source of supply is tested at the end of the dry season with pumps capable of supplying the requirements of the town and the quantity pumped registered by meter, and pumped to such a distance that there is no fear of a run back, it would be absolutely madness to consider it.

Water supply from wells outside the Municipality.—The general supply of the district is obtained from wells, in which the water level varies from 10 to 100 feet below the surface, the quality and volume are so uncertain that often several had to be sunk before a good potable supply was obtained, whilst there are extensive tracts over which it has proved either impossible to obtain a supply at all, or if obtained it was too salt to use, therefore the consideration of a supply from this source is also out of the question.

Artesian Bores.—The first attempts to obtain a water supply from this source were made in this district at the Racecourse in 1896, when a bore was put down by the Government from the bottom of an 83 feet well to a depth of 1,531 feet, when a supply of salt water was cut which rose to within 45 feet of the surface, and when the volume was gauged at a depth of 73 feet, it proved to be 11,700 gallons per diem.

Since this water upon analysis proved to contain about an equal quantity of salt to sea water it was absolutely useless for supply purposes.

Another bore was put down in the Railway Station Yard at about the same time, but this is reported to have encountered granite at a depth of 420 feet, but no water.

The Racecourse bore proves that the Irwin River artesian basin extends in this direction, whilst the Station Yard bore proves that the underlying granite rises rapidly towards the surface, and although no outcrops are visible in a northerly direction for a distance of nine miles, it would probably be met with at no great depth in the bed of the Chapman River.

In an easterly direction the first outcrop of granite is seen at the northward bend of the Chapman River, six miles distant from Geraldton, therefore conclusively proving that the Racecourse bore was sunk near the northern limits of the artesian basin (see map attached).

In this basin three artesian supplies have been obtained, viz., Yardarino, Dongara, and Geraldton Racecourse, but of these potable water was only obtained in the first mentioned, whilst that from the Dongara bore was even worse than the Racecourse containing about one-fifth more salt to the gallon than sea water.

Upon the evidence thus afforded, further expenditure in the direction of obtaining an artesian supply cannot be recommended.

Natural Springs.—This district generally abounds with springs which, as a rule, break out in water courses upon the hill sides at the junction of the overlaying Jurassic sandstones with the granite, whilst after ringbarking and destroying the timber, water of a saline nature usually oozes out from the sides of the gullies.

Higgety's Springs are situated about 18 miles as the crow flies in a northerly direction from Geraldton; they break out at the northern end or head of a valley at a point where the granite rocks are exposed, over laid by the Jurassic sandstones which cap the higher ground.

Along this point of contact the water oozing out over a considerable area for countless ages has encouraged a dense growth of vegetation, consisting of rushes, bracken, and paperbark, the rotting matter from which in the course of time has formed a deposit of peat covering an area of over 100 acres.

No stream of water flows from this bog, but at one or two points of depression small quantities of water may be observed welling up and trickling along a channel upon the surface for a short distance until it is soaked up again by the peat.

This spring has generally the reputation of being permanent, but Mr. Campbell, late of this Department, states that at the time of his visit in March, 1909, it was quite dry, and this statement I can fully credit, because I noticed unmistakable evidence that considerable areas of the peat itself, which was at the time of my inspection quite boggy, had been burned probably last summer.

There is no indication of this being a deep seated spring, but everything points to the conclusion that it is of shallow surface origin, derived directly from the rainfall upon the elevated sandstone, which drains out in the valleys upon encountering the practically impervious granite.

If this swamp were trenched and drained, there is no doubt but that a considerable quantity of water could be drained off, but this once accomplished there is no evidence to warrant one in assuming that the springs are sufficiently strong to replenish it. In my own opinion a considerable quantity of the water

held in the peat bog is directly impounded from the rain, which the springs are not sufficiently heavy to replenish, thus the peat dries towards the end of the summer, when it is easily ignited and burns out to a considerable depth.

This repeated burning in recent years has considerably diminished the quantity of peat, and therefore a lesser quantity of water can be retained than formerly, the consequence being that whilst in the past a stream was said to flow from it, at the present day there is no indication of such a thing.

I therefore come to the conclusion that there is absolutely no prospect of obtaining a large permanent supply of water at this locality.

19-*Mile Spring, Northern Railway.*—Upon Loc. 613, about two miles south of Newmarracarra and close to the railway line, a series of small springs break out in a gully at the junction of the Jurassic rock with the granite. The uppermost one of them is very good potable water, but following down the creek they get salter and salter until they become quite briny.

There would be insufficient supply from these, but the idea advanced in favour of this locality was that by erecting a dam lower down the creek where there is a good site, that the impounded rain would be augmented by the springs.

This site is absolutely out of the question as the reservoir area is saturated with salt.

Northern Gully springs issue from a railway cutting, and are utilised by the Railway Department for a locomotive supply on account of the pure quality of the water, but the supply is quite inadequate for their own requirements.

In my opinion a supply derived from springs for the town is not worthy of further consideration as I do not consider there is the slightest possibility of obtaining a sufficiently large volume to meet the requirements of Geraldton.

Water Conservation.—Having carefully considered all the sources of water supply which came within the province of a geologist, and arrived at the conclusion that there is no hope of obtaining a sufficient supply of good potable water from any of them, brings us to the consideration of impounding surface water.

Strictly speaking, this is out of my province, as it is purely an engineering question, but still in travelling over the country I have been on the look out for any, to my mind, suitable situation; therefore the following remarks must be taken as suggestions only, whilst any further consideration must be left to the engineers.

The Bullen River crosses the Geraldton-Northampton road at a distance of about 9 miles north of the former town.

It takes its rise some four miles to the northward of this point, flowing down a wide valley, which is followed by the railway line to White Peak Station, when it turns abruptly to the westward, cutting a gorge-like channel through the ironstone and limestone capped granite hill to the sea.

In the upper portion of its course there are no sites suitable for dams, whilst from the tests made by the Resident Engineer, the water is not of a very good quality and of limited quantity, the greatest run off apparently taking place upon the hard ground below the railway line.

There are two good sites for dams here at points where the valley is contracted by granite bars, one being at the road crossing and the other a little lower down at the bottom of the Government Reserve. At either of these a large body of water could be impounded, having a considerable depth at the dam head.

Owing to the fact that there are no indications of salt in the dried up rock pools in the bed, the conclusion arrived at is that the fresh water run off in this lower section far exceeds the saline water from its upper courses.

The only difficulty that I see in the matter is its elevation, which I should estimate roughly, taking White Peak Station as a starting point as the bottom of the lower site, only about 30 feet above Geraldton and the upper about 70 feet.

It would also be impossible to convey the water direct without pumping owing to intervening hills, but the mains might be laid down the valley and so round by the coast.

Before this scheme is seriously considered, it would be necessary to gauge the flow and sample the water, besides ascertaining accurately the levels.

Ego Creek is situated upon the eartern side of the Moresby and Flat Topped Range, about 6 miles from Geraldton. It takes its rise between the ranges and the Brothers, where there is apparently a very fine catchment area, the only question being if there is a suitable site for a dam further down its course, and from what I could see from a distance, I should judge that there would be one near Loc. 1380.

This would be an ideal site if practicable, since there is sufficient elevation to obtain a good head, the distance is short and the catchment area good and clean, therefore there would be every possibility of obtaining a large and good water supply.

There are doubtless many other suitable catchment areas in the Range and the neighbouring hills known to the local residents, which would be worthy of examination by an engineer. Such a piece of work would occupy three months at least, after which the selected and alternative sites would have to be tested.

Conclusion.—Having gone into this matter pretty fully, I think it will be apparent that the only feasible scheme is surface catchment, and if to this can be added natural gravitation it will be a great advantage. Although, perhaps, the initial cost may be greater, it will in the end prove to be more economical, whilst the quality of the water will be far superior if sufficient care is exercised in the selection of a site, and systematic sampling carried on throughout one rainy season before any scheme is adopted.

(4.) *The Mount Egerton Diggings, Peak Hill Goldfield.*

Situation.—These diggings are situated upon the north side of the Gascoyne River from which they are distant about eight miles, and about 10 miles south of Mt. Egerton trig. station.

The nearest postal town is Peak Hill which lies about 80 miles in a direct line to the south-eastward, the road of course being considerably longer and rather heavy for wheel traffic, whilst so soon as the claypans on this route dry up there will be a long stage without water.

Means of communication.—At the present time there are no facilities for communication with Peak Hill where there is a telegraph station and a weekly mail, or with Mt. Clare Station, a distance of 40 miles, which is the terminus of the Gascoyne River mail *via* Carnarvon. This latter is only a bi-monthly service.

Persons desirous of visiting the field must provide their own means of conveyance and stores, but fresh meat can be obtained at a reasonable rate from either

Mt. Clare, 40 miles down the river, or Milgan Station, about the same distance up.

Water Supply.—The Mines Water Supply Department have sunk a well in a central position where there is a large supply of good water at a depth of 79ft. 6in.

Physical Features.—The diggings lie in a basin-like valley surrounded by high rough hills which is traversed by a large creek that takes its rise near Mt. Egerton. This creek enters the valley upon the north side by cutting its way through a quartz conglomerate ridge, whilst it emerges from the south side through a defile in a lofty quartzite range. The surface of this valley is exceedingly rough, for where the sharp edges of the schistose rock do not protrude above the surface the flats are usually strewn with quartz and quartzite fragments.

Geology.—The rocks which comprise the auriferous zone consist of highly cleaved greenstones, quartz schists, and mica slates with occasionally small outcropping masses of a diabasic rock, whilst an intrusive mass of granite is met with at the north-eastern side of the valley.

The origin of these schistose greenstones is uncertain until analysis can be made, but the inference drawn in the field from this mode of occurrence is that they are metamorphosed sediments traversed by basic dykes. These rocks having only as yet been examined macroscopically in the field can only be described as quartz hornblende-mica schists merging upon the one hand into ferruginous quartz schists and upon the other into mica slates.

The granite intrusion which lies in a belt about 25 chains in width consist of ramifications from a magma into the adjacent country or it may be a series of independent dykes, the former being the most probable, but this point cannot be determined owing to the covering of detrital matter. The granite is one of the more basic types and may be classed provisionally as a hornblende granite or grano-diorite, but this point cannot be determined in the field from the weathered specimen obtained.

These schists have an almost universal strike east-north-east with an apparent dip at a high angle to the north (*i.e.*, the cleavage planes), whilst the quartzites, conglomerates and sandstones which form the parallel ranges upon the north and south of this valley strike in the same direction but exhibit a true bedded dip at an angle of about 19 degrees north upon the north side, and in the opposite at about the same grade upon the south, thus demonstrating that the valley is the axis of an anticline. Northward in the direction of Mt. Egerton a series of parallel east and west ranges are crossed composed of sandstones, quartzites and conglomerates, whilst near the base of the Mount itself, which is composed of quartzites, is a ridge of hard crystalline limestones.

Between these hill-ridges schistose rocks outcrop in the creek beds containing quartz veins and ferruginous formation, but these rocks are too highly hydrated to allow of their determination. In these valleys and flats there are low stony ridges formed by diabase outcrops, whilst extensive travertine flats indicate the presence of limestone or calcareous rocks.

The universal dip of about 20 degrees north of the harder belts of rock lead to the inference that a portion of the softer and highly cleaved rocks met with in the valleys belong to the same stratified series and are not wholly intrusive.

Beyond the quartzite range which forms the south side of the main valley are the large alluvial plains of the Gascoyne River south of which rises the remarkable range of hills known as the Saw Backs, which are composed of schistose rocks overlaid with quartzite dipping at a low angle to the northward.

The Auriferous Deposits.—This field is by no means a new discovery since it was worked for alluvial gold as far back as the early nineties, or contemporaneously with the Horseshoe diggings. No record, however, exists as to the quantity of gold obtained from it.

Later on, at some period unknown, a little work was done upon a quartz reef at the western end of the belt; here a shaft was sunk to a depth of some 25ft. and then abandoned. It was again visited last year by a prospector named Carey who pegged out the abandoned shaft, reported the discovery of payable gold and applied for a reward claim which he is still holding. This reported discovery attracted considerable attention, causing a mild rush to take place, but since the majority visited it in the hope of obtaining alluvial gold, they quickly departed, whilst others simply pegged ground and also left, not being finacially strong enough to put in from six to twelve months' work without any return.

The first point that strikes one upon visiting these diggings is the great length of the auriferous belts, *i.e.*, rich prospects can be obtained along one line for a continuous length of two miles. The term "auriferous belt" has been used in counterdistinction to that of reef or lode, which latter have so far not proved to exist in this locality, the gold being contained in independent lenses of stone or formation of as a rule very short longitudinal extent, whilst in following the lens in an easterly direction (or westerly) the next lens of gold-bearing stone is found to be located within another line of the cleavage planes, either north or south, sometimes being divided by as much as 20ft. of clean country.

How these short lenticular bodies will behave in depth it is impossible to say until further development has taken place, but at one or two localities at which a little sinking has been done the results have not been altogether encouraging.

Carey's.—This area is the most eastern upon which gold has so far been discovered: it is situated upon a quartz-strewn hill upon the south side of a quartz and ironstone blow from which a series of barren reefs radiate.

A shaft was sunk upon a rich leader of quartz with a little casing carrying gold to a depth of about 12ft. when it cut out. From this point a crosscut was driven about 10ft. south in which another small vein was cut dipping to the north. The shaft was then sunk for a further depth of 15ft., at which point the small vein encountered in the crosscut was pierced, which, although not so rich as the first one, carried good values.

A little to the eastward of the shaft there is an open-cut in which the outcrop of the first lens is exposed: here it is small but rich enough to dolly. No length of outcrop has been traced, but since no effort has been made in this direction it is impossible to say more than that it indicates a lens of short longitudinal extent followed by others downwards, plunging to the westward and lying either north or south of the one immediately preceding it.

Schuman's Line.—This line has been pegged for a length of 102 chains in continuous leases, not includ-

ing a P.A. at the western end. It is situated upon a low range of schistose hills which lie upon the southern side of the main valley and about one mile west of the last-mentioned.

The Egerton North (*T. Dunn*), 12 *acres.*—Upon this lease there are two small holes: in the first or eastern, which is about 4ft. deep, there is about 3ft. of ferruginous quartz formation, a sample from which taken at the surface for a width of 5ft. is reported to have assayed 72s. About 20ft. north of this there is another small hole, in which a similar formation is met with, which is about 2ft. in width and said to be worth 84s.

Egerton Consols (*E. Schuman*), 12 *acres.*—Near the eastern boundary is a small hole about 12 inches deep, in which is exposed a 4ft. body of quartz formation said to be worth 42s. From this point westward a spur of the range is crossed, the next working being a shaft 36ft. in depth, in which the lode runs north-north-east dip at an angle of 80deg. to the west. It was about 3ft. 6in. at the surface, but dips out at the shaft bottom; the average value at the surface is said to have been about 45s.

A little to the southward there is a small hole in which 2ft. of stone is exposed, said to be worth 14s., whilst to the westward is another hole from which a sample is said to have returned by assay 145s.

Egerton Central (*W. K. Messenger*), 18 *acres.*—In this lease the direction of the veins swings back on to the general course of east-north-east, and in the first hole, in which there is 18 inches of stone, the assay is reported to have given a value of 608s., but in the next, in which the formation is 5½ft. in width, the values drop to 24s., and in the next little hole, where it is small, to 14s.

The next small hole is upon the western side of a ridge spur, from which a 3ft. sample is said to have returned 142s.

Egerton Consols Extended (*E. Schuman*), 12 *acres.*—In the first two small holes, in which the lode was small, the assay values are reported to have been 10s. and 32s., whilst at the next point a 5ft. 6in. body is reported to have yielded 118s.

At this point a shaft has now been sunk to a depth of 20ft., in which the formation rapidly decreases in size, and from samples dollied, also in value. It averages from 2ft. to 4ft. in width and has an underlay of 90 degrees to the north.

This shaft is at the head of the original dry-blowing patch, but so far this is the only gold-bearing vein discovered in this locality, whilst at two trenches sampled upon the east and west side of the patch, the values were only 13s. and 14s.

Mountain View (*Lyons and Eber*), 18 *acres.*—Over a range spur in which there are a considerable number of irregular but large barren quartz outcrops, which present the appearance of altered acidic dykes, there is a small hole from which a sample from a very wide outcrop returned 9s., whilst one further west, where there is only 1ft., is said to be worth 154s., and in the next 4ft. 6in. of stone 93s.

Mountain View South (*Lyons and Eber*), 18 *acres.*—Upon the south side of another range spur an outcrop is said to have prospected 264s., but this upon opening up rapidly decreased. From this point westward the formations follow the base of the range, and at this point a shaft is being sunk upon the underlay of a quartz body that was 5ft. 6in. at the surface, and was valued at 50s. It is down about 8ft., dipping at an angle of 60deg. to the north. The quartz is a good deal crushed and broken, and appears to have fallen over at the outcrop, but there is less formation than in the more eastern portion of the line. A little west of this point there is a small outcrop in which the stone is copper-stained.

Egerton South (*W. R. Messenger*), 18 *acres.*—To the westward of another spur a formation, having a total width of about 20ft., has been scratched, but this is said to only carry a trace, whilst in the four other small holes the formation, although large, was not of high value.

In the foregoing it will be noted that the assay values as given by the owner have been stated because there is no reason to doubt these judging from dollied samples, but since they are only from the outcrop of schistose formation there is every reason to expect that these high values will not maintain downwards.

In traversing this belt I completely failed, with the exception of one or two cases where holes were very close together, to trace any continuity in the bodies prospected; in fact in the majority of cases the lenses were unmistakably separated by continuous and unbroken bars of country. Thus the conclusion arrived at is, that they are a series of lenses perfectly unconnected, following a general direction in a belt of more or less crushed country, this extreme richness being largely due to concentration in the schistose formation.

Lindroo's No. 1.—This line of reef is situated about one mile to the north of the west end of the last mentioned. It outcrops upon a stony rise upon the north side of the creek not far from the southern gorge.

Only a small but pretty rich body of quartz was exposed at the surface, but this, when opened up to a depth of 10ft., increased considerably in size. It is, however, too broken and irregular to form any definite idea as to its exact dimensions. It was driven on in a westerly direction for a distance of 20ft., when another shaft was sunk, cutting it at this point, where it appears to consist of two or three quartz bodies with schistose parting, from one of which some very rich specimens of stone were obtained, whilst the whole of the quartz raised, to judge from prospects, should yield several ounces to the ton.

The cap of this quartz body has been opened for a length of about 30ft., all of which prospects well, but beyond this, although floaters can be found along the line of strike west-south-west for a considerable distance, only very small veins outcrop. These may of course increase in size downwards, but if so the reef will probably be of very variable size. The country here is much more solid, even at this shallow depth, than on Schuman's line, and will probably become pretty solid and hard at 30ft. or 40ft. below the surface. It is the prospectors' intention to sink 50ft. and then crosscut, which should give a fair idea of the character of the lode. There are several other leases pegged on this line, but practically no work has been done.

Lindroo's No. 2 *line.*—This is situated about 30 chains to the north of the last mentioned, where upon the cap on an outcrop of a blue quartz reef a shaft has been sunk to a depth of 20ft. At the bottom of this shaft, however, it becomes small. This reef is only of comparatively low value, but there is a large body of stone, whilst the reef can be traced for some little distance at the surface.

From this point a line of leases has been pegged for a distance of over a mile, but no work has been done upon them further than dollying a little stone.

McLaughlin & Gaffney.—This is situated upon the same belt of country as the last, and upon it the best defined and longest makes of stone as yet opened up at thee diggings are being developed. The central or main line has been traced for a distance of 500ft., yielding good prospects, which are very high in places. At the eastern end the reef cap, which was completely covered by cement, has proved to be about 12ft. in width, but its average value is not yet known, as it has not yet been broken into, but pieces broken here and there gave high results.

A little west of this point a shaft is being sunk, and is now down 15ft., in which the reef averages 2ft. of solid rich stone, but what the average width of the lode will be it is impossible to state until it has been crosscut by trenches. There are also two parallel lines of stone, both of which prospect well, particularly one to the north at a point where it makes to a body about 5ft. in width.

It is of course impossible to state whether this is one continuous line of lode, as sufficient work has not as yet been done, but if it is not, the lenses will follow one another so closely that it will came to practically the same thing. The western end of these quartz veins appear to lose value at a point where a small creek crosses these, upon the other side of which are some blocky diabase outcrops. At the eastern end beyond the trench in which the large body of stone was cut, the superficial deposits increase in thickness, concealing all signs of the reef for chains, whilst at a point a little farther on, where the formations cross the main creek, there is no indication of a reef at all.

Farren and White's.—The next lease in this direction has been applied for by the above prospectors, who have been unable to locate the reef but discovered a formation about 4ft. in width which prospected well. Upon this they sunk a shaft, following it to a depth of 32ft., in which it pinched out at a depth of 10ft., but upon continuing this sinking upon the planes of the country another lens was encountered at a depth of 20ft. which has opened out to a width of 4ft. at the bottom and is estimated to go ½oz. per ton.

These bodies lie upon the cleavage planes of the country at an angle of 70 degrees north and strike east-north-east with a decided pitch to the west, the lower lens outcropping in a hole sunk about 30ft. to the east of the shaft. The country is very schistose and will probably remain 20ft. down to water level, about 30ft.

This belt has been traced for about another 25 chains in an easterly direction until it strikes the granite dykes, but in this distance, although some fine prospects can be obtained, no body of stone or formation has been opened up.

Conclusion.—From a careful examination of these various rich outcrops I have arrived at the following conclusions. A number of rich lenses of quartz upon the northern lines, and formations upon the southern, follow the direction of the cleavage planes of the rock, but do not live in one continuous fissure. These in places undoubtedly so nearly approach one another, that they may be treated as one continuous body, whilst in others they are separated sometimes longitudinally and sometimes laterally by considerable width of barren ground. This lenticular habit will also be found to exist in depth, that is, the outcropping body will cut out, to be followed in a splice-like manner by another similar body.

The great richness of some (particularly in the case of the formations) of these bodies at the surface is undoubtedly due to surface concentration, a portion of the gold being derived from the denuded portions of the same vein; therefore these values will not be maintained in depth, whilst further, the second and third lenses met with in sinking will not be so rich as those outcropping. The present values of these lodes is entirely dependent upon the character of the unaltered country rock below the water level, where, should this prove to be a massive diabase, the values will rapidly drop, whilst, on the other hand, if the schists continue downwards, values will in all probably also do so.

General.—Being the only officer of the Mines Department who has visited this field, I may be excused for diverging slightly from the province of our own department to deal with the general conditions existing here and the prospects of those engaged in the work of opening the field.

To start with: I find that the great difficulty experienced in developing this centre is the want of funds, with a superfluity of which the ordinary prospector is not usually blessed. Many good men have had to take their departure simply for the reason that they were not financially strong enough to wait and develop promising reefs which they had discovered. This, following the statement made above with regard to the values of the stone, may appear strange, but when it is stated that gold is rarely visible in stone even when it may be contained at the rate of 10ozs. to the ton, it will be understood that a living cannot be made by the aid of the dolly-pot.

In consequence of this, only those who had a good banking account or substantial backing have been able to stay, whilst a large number of those are waiting in the hope of effecting a sale. The question of carting stone to Peak Hill is out of the question, for it will take fully 1½oz. stone to pay cartage and crushing charges; therefore only small and very picked parcels could be profitably sent; whilst further, the loss of time in seeing their parcels through the mill would be considerably accompanied by personal expenses. Yet here the difficulty arises in formulating a recommendation, for owing to the small amount of work as yet performed it is quite impossible to form any estimate as to the quality of stone *in situ*. Therefore it would be decidedly premature to recommend the erection of a Government Battery, which is practically the only method by which this field could be opened up. The only two temporary expedients that suggest themselves to my mind that would enable the struggling prospector to develop his show are: first, substantial assistance towards the carriage of trial samples of, say, up to 100 tons, to the nearest State Battery; or, subsidised sinking and driving below a depth of, say, 50ft.

If either of these were offered by the Government, and availed of by the prospectors, in six months' time this locality should be sufficiently developed for an official to report upon the prospects of a State mill finding work to do.

There is no doubt but that there is a considerable quantity of rich stone in sight, and that a battery here would give a considerable impetus, not only to the work upon the present holdings, but to the prospecting of others. Still, as this country is entirely different to any of the other localities in which permanent reefs have been discovered in other portions

of the State, and may closely resemble those in which values were rapidly lost in depth, it would be decidedly premature to recommend the erection of a crushing plant here until at least one of the rich bodies had proved to carry its values down to at least the water level.

(5.) *Report upon the May Queen G.M.L.* 852 (*Yilgarn Goldfield*), *with regard to the loss of the reef due to faulting.*

Acting upon instructions dated November 9th, 1910, I placed myself in communication with Messrs. Liddle and Domley, the owners of the above property, which is situated about 14 miles to the southward of Southern Cross.

After crossing the lake to the southward of the above township the auriferous belt is traversed for a distance of 14 miles, the schistose amphibolites being for the most part covered by a thin deposit of soil, but occasionally patches of mica indicate the presence of granitic dykes, or tracts of dark-red clay with weathered fragments of massive greenstone basic dykes.

At the mine itself the weathered amphibolitic schists are found to extend downwards as far as the bottom workings with so little change that it is probable that at least another 40ft. will have to be sunk before the solid rock will be met with at or near the ground water level.

The reef does not outcrop, but was located by small but rich flat stones after which trenching, and costeen proved a small vein striking nearly north and south to extend for a distance of about 100ft.

To the southward of this it is lost, being apparently displaced by a series of granitic dykes which cross it at an acute angle. This reef, which averages about 6in. in width, may be said to underlie to the westward, but so slight is the dip that it is still in the shaft at a depth of 100ft.

This reef has been driven at the No. 1 or 60ft. level for a distance of 70ft. At the No. 2 or 100ft. level the stone was very rich, and was tracked for about the same distance as in the No. 1 level in a northerly direction. but at the shaft bottom it is sharply cut off by a fault which strikes north-west and south-east and dips to the eastward.

In the northern portion of the bottom level a winze has been sunk to a depth of 30ft. in which the fault was met with at a depth of 15ft., below which the reef was lost; whilst in a crosscut a little north of the winze driven west the fault line was cut at a distance of 20ft., followed a little farther on by a large barren white quartz reef which is exposed upon this side of the auriferous vein at the surface. This would appear to indicate the absence of the small rich vein upon the western side of the fault, but to my mind it is inconclusive in so far that the crosscut was driven at a point some 20ft. above the fault intersection of the vein.

I would therefore advise that a crosscut should be driven at the bottom of the winze in a westerly direction, when if the large barren reef is first cut, it may be safely concluded that the small rich one has died out upon the slide, and further exploiting may be discontinued.

Several crosscuts have been driven in an easterly direction for a considerable distance in barren country, but since this work was executed upon the same side of the fault as the reef already exists, it was not to be expected that it would be cut again.

By crosscutting at the winze bottom the vein, if it exists, should be cut in something less than 20ft. from it, since the main barren reef located in the 100ft. level crosscut was met with at 40ft. from that level upon the western side of the fault, and since it lies about 20ft. to the westward of the outcrop of the small veins. In my opinion there is a very good prospect of the rich vein being cut upon the western side of the fault, which appears to be quite normal, making a clear cut of the reef which is a fissured plane, judging from the walls.

CHAS. G. GIBSON, Assistant Geologist.

(6.) *Some Notes on the Principal Geological Features of the Kalgoorlie Goldfield.**

The importance of Kalgoorlie, which has been responsible for more than one half of the total gold yield of the State, renders some reference to its salient geological features necessary, by way of preface to the series of articles on mining practice, for experience in most mining fields of the globe has shown that many mining failures have been due rather to a want of knowledge, or true appreciation of, structural geology than to any lack of engineering training.

General Topography.—The chief topographical feature of the Kalgoorlie goldfield is a main central ridge of hills trending roughly north-north-west and south-south-east, and reaching its maximum altitude in Mt. Gledden—better known as Maritana Hill—which rises to a height of some one hundred and fifty feet; the ridge has a length of about four miles and dies out in a southerly direction just beyond the south end of what are known as the "Boulder Belt" mines. On each side of this central ridge are wide flats draining southerly and extending laterally on the eastern side for, say, five miles, and on the western for about three. On the east side of the eastern valley is another rather more conspicuous ridge of hills also trending roughly north-west and south-east and having a maximum altitude of possibly a couple of hundred feet; along this ridge of hills are situated the mining centres of Boorara and Waterfall (Golden Ridge). The western flats are also in their turn flanked by a low ridge of hills, less conspicuous at their northern end but well defined at their southern. Both the eastern and western valleys—if they may be termed such—drain, as before stated, southerly into the extensive salt lake or marsh known as Gnumballa or Hannan's Lake, which starts but a short distance south of the Boulder Mines and trends away in a south and south-westerly direction for many miles. On the western side of this salt marsh and some three miles to the south of the Boulder mines is a small conspicuous clump of hills, having their highest point in Mt. Hunt, the most prominent landmark in the district, which rises to a height of possibly some four hundred feet. These hills are more or less connected—by a westerly extension—to the main western ridge.

The town of Kalgoorlie is situated on the western fall of the main central ridge northwards from its middle point, and the mines are along the line of the ridge, the "Golden Mile" being at its southern end, the underlying rocks of the valleys being—as will be explained later—non-auriferous, or practically so.

General Geology.—The original rocks of the Kalgoorlie district were of sedimentary origin, viz., shales, soft sandstones, grits, conglomerates, etc.—with possibly interbedded lava flows—laid down horizontally in probably pre-Cambrian time on a gneissic or granite floor; these were by earth movement afterwards tilted into their present highly inclined posi-

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tions and subsequently intruded by large masses of basic and ultra-basic igneous rocks (amphibolites, quartz diabases, porphyrites, peridotites, etc.), these in turn being intruded by a small series of later acidic rocks (quartz and felspar porphyries). Slight further earth movement has then taken place causing considerable shearing and faulting of the rocks, the former (the shearing) resulting in the formation of the lines along which the auriferous lodes of the field occur.

The accompanying geological map which embraces the main mining portion of the field shows the present relative extent and position of the more important of the various classes of rocks found on the field. These may in a general way be grouped under the following nine heads:—

(1.) The Ancient Sediments (shales, sandstones, grits, conglomerates, etc.).
(2.) The Calc-schists.
(3.) The fine-grained Amphibolites (representing the older "greenstones").
(4.) The Quartz-diabases.
(5.) The Coarse-grained Amphibolites (later or intrusive "greenstones").
(6.) The Peridotites (intrusive ?).
(7.) The Porphyrites.
(8.) The Quartz and Felspar Porphyries (newer intrusives).
(9.) The Recent Deposits (sands, loam, laterite, etc.).

The Ancient Sediments.—These consist of shales, soft sandstones, mica and talc schists, grits, and conglomerates. They are of very considerable extent and are found on both sides of the main complex of igneous rocks, the belt on the western side being of by far the greater development and interest. This belt starts some four miles west of Kalgoorlie and has a width of roughly ten or twelve miles, its general trend being north-north-west and south-south-east; how far northerly it runs is not known, as everything is hidden in this direction by an extensive covering of loose sand and loam; southerly it is known to extend beyond Wollubar—some twenty miles from Kalgoorlie—but appears to be narrowing down in this direction, and probably does not run much farther. The rocks of this series are mostly soft banded sandstones, but they also comprise shales, mica-schists, grits, and conglomerates; they have a prevailing strike of, roughly, 25 degrees west of north, and dip steeply to the west. Good natural sections of these sediments can be seen along the small "breakaways" forming the western edge of the lake country some six miles south-west of Boulder; good examples—more especially of the sandstones—are also seen in some of the old mine workings near Binduli and in one or two old shafts on the eastern foot of the conglomerate ridge two to three miles farther west—or rather south-west. An interesting variation from the soft sandstones is seen about a mile on the western side of this ridge and half a mile south of the Coolgardie road; here there is a considerable development of a hard compact laminated sandstone carrying a large percentage of black mica (biotite) in small flakes, and closely resembling in general appearance a fine-grained biotite gneiss.

The most interesting feature, however, in connection with these sedimentary rocks is the occurrence of a well-defined series of coarse conglomerates interbedded in the sandstones and grits. These have their greatest development at a point some eight and a half miles south-west of Kalgoorlie, where they form a well-marked ridge trending roughly north-north-west and south-south-east and extending for several miles both ways; this ridge is crossed near its north-western end by the main Coolgardie road at a point a little more than seven miles from the Kalgoorlie Post Office. There are at least three main bands of conglomerate in the series, and taken together with the intervening bands of soft sandstone, they have a maximum thickness of well over a thousand feet. They are steeply inclined and dip with the enclosing rocks, *i.e.*, at an angle of seventy-five to eighty degrees to the west. The matrix of the conglomerate beds proper is a fairly soft, slightly micaceous sandstone, practically identical with the surrounding rock, while the pebbles and boulders—rarely more than six inches in diameter—consist of banded and jasperoid quartz, black cherty quartz, hard white quartz, quartzite, quartz and felspar porphyry, felsite, granite, etc. The pebbles, etc, are as a general rule set fairly closely together in the matrix and are well waterworn and rounded; they have, however, since their deposition been—together with the enclosing beds—subjected to considerable pressure and shearing, and usually split fairly readily in one direction; were it not for this defect they would probably prove of considerable value for use as pulverisers in tube mills. (There is, however, one place where pebbles of hard flinty quartz are especially numerous and apparently less ready to split than usual; this spot is in a small ravine on the eastern side of the ridge about a mile and a half south-west of the Coolgardie Road and less than half a mile on the north side of the Boulder-Kurrawang Road; it might be worth investigation by local metallurgists.)

An interesting fact to note here is that in the neighbourhood of Mt. Squires, in the Warburton Range district, Mr. Frank Hann, the well-known bushman and explorer, has reported the occurrence of large bands of vertically-bedded conglomerates running for miles and forming a steep, well-defined ridge of hills. This is the only similar occurrence that the writer has heard of in Western Australia, and from Mr. Hann's description and from seen specimens of the contained boulders, he (the writer) is inclined to the belief that these beds are similar to the Kalgoorlie ("Kurrawang") conglomerates, and, if so, it may be that other rocks in the district are also similar to those at Kalgoorlie, and that if a second "Golden Mile" is to be found this may be the district in which it is to be looked for, more especially as auriferous "greenstone" (amphibolite, etc.) country is known to occur in the Warburton district.

On the eastern side of the main central Kalgoorlie ridge is a second series of sedimentary rocks; these occupy the valley between the Kalgoorlie and Boorara ridges and have a lateral extent of some three to four miles; the general trend of the belt is roughly north-west and south-east, and it runs in these directions for a considerable number of miles, its exact limits not being known. The rocks of this series—in keeping with all the others on the field—strike about thirty degrees west of north and dip steeply to the west: they consist for the most part of shales, soft sandstones, and grits. A good section of what appears to be the western edge of the series can be seen in the old Phœnix brick pits just on the southern side of the Kanowna Road and about two miles from the Kalgoorlie Post Office.

A third series of sedimentary rocks is also found on the eastern side of the Boorara ridge, extending from Kurramia almost to Kanowna, or roughly four miles; this belt also runs approximately north-west

and south-east, and the rocks are very similar to those of the Binduli-Kurrawang—or western—series, viz., soft sandstones, grits, and conglomerates; they strike in the prevailing north-north-west to north-west direction, and as usual dip steeply to the west. The conglomerates of this series differ from those of the western in that they are of much less extent and not so well defined; the beds are also much more weathered. A section showing the conglomerate bed can be seen in a small cutting about a mile and a half along the Kurramia wood line; the band is here about a hundred feet thick and is interbedded with soft sandstones; the pebbles and boulders are mostly of hard blue quartz with quartz and felspar porphyries, the latter being greatly weathered.

All the sedimentary rocks of the district are, for all practical purposes, non-auriferous, and therefore of no great economic importance.

The Calc-schists.—These, as can be seen from the map, form the eastern portion of the main auriferous series and, next to the quartz-diabases, are the most important series on the field. The rocks are essentially fine-grained, but vary somewhat in colour and general appearance; typically they are dark grey on fresh fracture, with a somewhat blotchy appearance, and are characterised by numerous minute veins of calcite running through them in all directions; they break readily in almost any direction and frequently show a slight development of scaly chlorite along the cleavage planes—when these are present. A less typical type is darker, finer grained, more compact, harder, and does not exhibit the same amount of schistosity; it is merely a less sheared and less altered form; this type differs but little in hand specimens from some of the finer grained chloritic diabases.

These rocks were probably originally a basic lava flow, possibly at one time interbedded with the sedimentary series; owing to the extreme alteration that has taken place in them their original structure has been almost completely obliterated, and they now consist essentially of an indefinite mixture of chlorite and carbonates, with only occasionally traces of their original crystalline form left; in addition to the chlorite and carbonates, microscopic investigation shows the following minerals to be present in small quantities:—sericite, albite, zoisite, quartz, ilmenite, rutile, and iron ores.

In their original form the interlacing and interlocking of the original mineral fibres and crystals would give a certain degree of toughness to these rocks, but, owing to the almost total obliteration of this structure by replacement of the original minerals by finely crystalline and non-crystalline carbonates, this toughness has been destroyed and the rocks fracture readily, and this fact, together with their general comparative softness, makes mining operations in them comparatively easy and cheap; moreover, owing to the less frequent occurrence of joint planes and "heads" this class of country after opening up stands much better than much of the quartz-diabase and amphibolite country.

The Fine-grained Amphibolites.—These are found on the western side of the northern portion of the coarse-grained amphibolite, at Somerville, about two miles along the Coolgardie Road, and also on the eastern side of the calc-schist belt. portions of these areas are shown on the accompanying map. In places they very closely resemble the rocks of the calc-schist series, and with them probably belong—in the main—to an older series of "greenstones," being possibly a closely related lava flow or intrusion.

Typically, the rocks of this series are of a dark-green colour, mostly massive, and very fine-grained; they consist apparently almost entirely of light-green hornblende and chlorite with occasionally small crystals of felspar. A microscopic examination of them shows their constituent minerals, in a typical specimen, in addition to the hornblende, chlorite, and felspars, to be calcite, epidote, and various iron ores; in some specimens the hornblende has entirely disappeared and is replaced by greenish chlorite.

As far as known this series is to all intents and purposes non-auriferous, and therefore of no great economic importance.

The Quartz Diabases.—The series of rocks to which the name "quartz-diabase" has been given is by far the most important on the Kalgoorlie goldfield, as it is within them that nearly all the principal ore-bodies at present being worked are found.

The rocks vary greatly in general appearance according to the amount of foliation, shearing and chemical alteration that they have undergone. The type rock is massive and fairly coarse-grained; it has a mottled appearance, being dark-green in general colour with white porphyritic felspars—or what were originally felspars—and occasional fair-sized blebs of colourless quartz, a good deal of this probably being of secondary origin. Under the microscope the rock is seen to consist essentially of plagioclase felspar, quartz and chlorite, the quartz and felspar frequently showing micro-pegmatitic structure, while the chlorite probably represents the remains of original augite; in addition there are present ilmenite (largely altered to leucoxene), calcite, apatite, and saussurite.

Another variety is much finer grained with—in hand specimens—no sign of porphyritic felspars, and with the quartz blebs developed to a much less degree; on microscopic examination, however, this rock proves to be only a modification of the previous one. Both these types are found massive and are also found subjected to all degrees of foliation, schistosity and chemical alteration.

The quartz-diabases are as a series very closely allied to some of the coarse acid amphibolites and in all probability were originally derived from the same magma.

Several interesting forms of extreme alteration are found in the diabases, one of the chief ones being the occurrence of the so-called "graphitic-slate" bands. These are of fairly common occurrence and are sometimes found up to well over a hundred feet in thickness, the more usual width being two to six feet; they are frequently of considerable persistence in strike and have been known to occur down to a vertical depth of well over two thousand feet; they are also known on the other hand to extend only a comparatively few feet both longitudinally and vertically. In places these so-called "slates" exhibit a very marked and regular fissility and in hand specimens exactly resemble true sedimentary slates or shales. The present article is too short to permit of a close investigation in detail of the question, but the writer, after a careful examination of the bands, can allow no other explanation than that they are merely highly-sheared bands of country rock, the graphite being deposited subsequent to the shearing and being probably formed as the result of the decomposition of hydrocarbons derived from deep-

seated sources. The bands are occasionally closely associated with the ore-bodies and in these cases, owing to the graphitic material becoming mechanically mixed with the ore, they cause some annoyance to the metallurgist.

In many instances the bands are non-graphitic, and in these cases they still more closely resemble true slates, especially nearer the surface, where they are slightly weathered; occasionally slight secondary silicification has gone on and the bands then closely resemble fine-grained phyllites.

They likewise occur in the calc-schists, in both the coarse and fine-grained amphibolites, and also to a less extent in the porphyrites.

The second interesting modification occurs as the result of the extreme carbonating of the rocks, whereby they are converted into a mixture of lime, iron and magnesium-carbonates, together with a certain amount of original and some secondary quartz. This form of alteration is extremely common and often occurs over considerable widths—150 feet and more; it is—as is to be expected—most marked where the shearing of the rocks is most pronounced, and in almost all cases is found to occur to a greater or less degree in the immediate proximity of the lodes; frequently it can be noticed taking place on both sides of a main fault-line or cleavage plane, the carbonating being most intense near the fault—or cleavage—and gradually dying out on both sides until the rock reaches its normal state. In its extreme form the carbonated rock is white to pale pink on fresh fracture, but it very rapidly changes on exposure to a dull pink owing to the oxidation of the ferrous carbonate present; in texture it varies from a fine-grained compact variety with very little quartz to a coarse variety with large quartz blebs, this latter variety when seen by candle light underground having at first glance very much the general appearance of a pink granite or syenite. All gradations can of course be obtained from the coarse carbonated type to the typical diabase. A highly schistose variety of the carbonated rock is sometimes found along the lode-channels or where secondary shearing has taken place; this is usually creamy-white in colour and has a somewhat greasy appearance and feel, owing to the large development of sericite along the cleavage-planes; in some of its forms this sericite-carbonate schist is locally known as "fish rock." Splendid examples of this carbonating of the diabase are to be seen in certain of the deeper workings of the Lake View, the Perseverance and the Ivanhoe mines—in fact in almost all the workings within this class of rocks. In the Ivanhoe mine towards the end of the main east crosscut at the 1669-ft. level is to be seen a splendid example of the various changes from the normal green mottled diabase to the coarse white to pink carbonated type.

For exactly the same reasons as with the calc-schists, mining operations in the carbonated diabases are easier and cheaper than in the normal rock; along the same crosscut very often can be seen cuts that have been fired in both classes of rock; in the carbonated variety the cuts will be shot out right to the extreme end of—and even slightly beyond—the holes, while in the tougher normal rock often as much as eight or nine inches of the hole will be left in the face.

In addition to the main fault-lines—which will be referred to later—the diabases are crossed by numerous small secondary faults, fissures and cleavages; these dip at all angles and run in all directions, though the prevailing strike of them is roughly at right angles to the strike of the main faults, and they are probably in most cases induced fissures caused by pressure along these main lines; they are found crossing the lodes as well as the country, but as a rule do no harm beyond the fact that by their intersection with each other or with well-developed shear-lines, they sometimes cause considerable falls of rock to take place in the stopes and—to a less extent—in the drives.

The Coarse-grained Amphibolites.—These are really of two types, (*a*) the basic and (*b*) the felspathic or acid; they are, however, for all practical purposes inseparable, and the latter variety is simply an acid eastern side of the calc-schist belt; portions of these western side of the northern area, the change from one to the other being a gradual one. Typically, the felspathic variety is a coarse-grained green and white mottled rock—coarser grained than the typical quartz-diabase—showing large irregular crystals and blebs of felspar intermixed with dark green crystals of hornblende and chlorite; the two being present in apparently approximately equal proportion; frequently a little clear quartz is also present. In some of its varieties this acid type very closely resembles some of the quartz-diabases, the two, as before stated, being probably originally derived from the same magma.

The basic type—which is found at both the north and south ends of the field—is in hand specimens a dark-green coarse-grained rock consisting apparently almost entirely of green hornblende and chlorite.

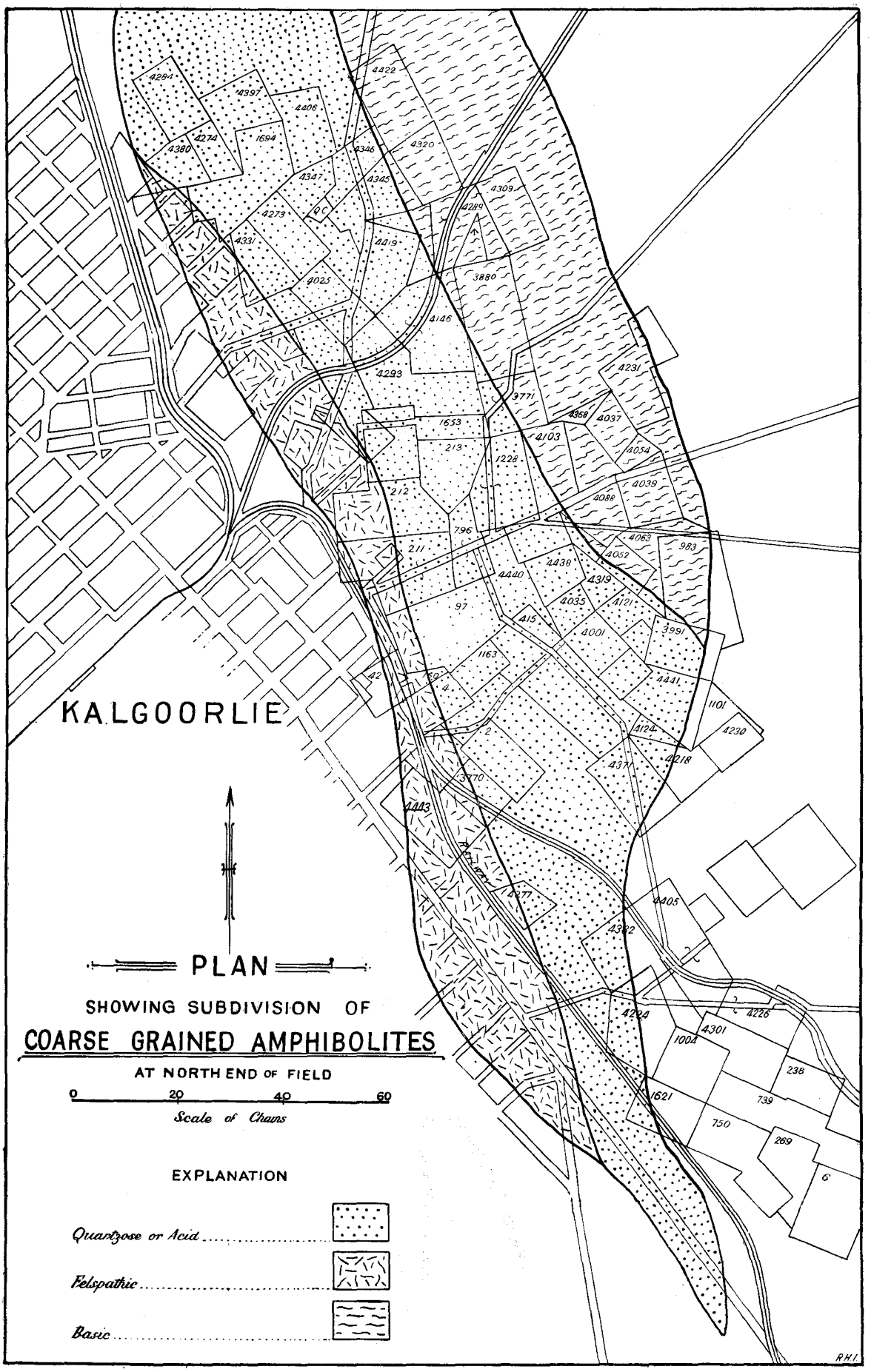
The rocks of both types are generally massive and have not been, on the whole, subjected to the same amount of shearing and alteration as the diabases—though sheared areas do occur, especially to the north-eastern end and in the neighbourhood of Hannan's Hill.

In economic importance certain of the acid amphibolites rank next to the calc-shists, but it is practically only at the north end that they contain any auriferous deposits of commercial value, and even these are of no great importance when compared with those in the diabases. On their western and southern extensions the amphibolites, both basic and felspathic, are practically non-auriferous; the presence of auriferous lodes at the north end may be to a large extent due to the presence of intrusive igneous rocks (peridotites and porphyries) in the neighbourhood.

Coarse-grained amphibolites—principally of the basic variety—occur over a large area to the south of the Boulder Belt in the neighbourhood of Mt. Hunt, and also in the hills forming the ridge further west; these, however, are outside the scope of the present article, sufficient is it to say that they also are for commercial purposes practically non-auriferous.

The Peridotites.—These have their greatest development at the south end of the field along the western edge of Hannan's Lake towards Mt. Hunt, this area being beyond the limits of the map accompanying this article. Several smaller areas of what is in the writer's opinion a carbonated peridotite occur, however, at the north end of the field and the positions of these are shown on the map.

The peridotite at the south end of the field is almost black in colour, is very fine-grained, breaking with a somewhat conchoidal fracture; it has suf-


KALGOORLIE
PLAN
SHOWING SUBDIVISION OF
COARSE GRAINED AMPHIBOLITES
AT NORTH END OF FIELD
0 20 40 60
Scale of Chains
EXPLANATION
Quartzose or Acid
Felspathic
Basic
RHI

fered considerable alteration and in some cases has been altered into a solid serpentine rock. On a small island on the west side of the lake it has, by the action of carbonated waters, been entirely converted into a dark-grey coarsely crystalline rock composed chiefly of carbonates of magnesia, iron and lime.

A little asbestos (var. picrolite) is found here and there in the peridotites, but it is of no great commercial value; scattered over the hills, however, are here and there fair-sized patches of magnesite (carbonate of magnesium) which might possibly be put to some use as furnace linings, etc.

The rock at the north end of the field, which has been mapped as a derivative of the peridotite, is a greyish, fairly coarsely crystalline, carbonated rock, agreeing almost absolutely in analysis with that found at the edge of Hannan's Lake. It is found to be invariably associated with the fuschite- (chrome mica) bearing lodes so conspicuous at the northern end of the field, and it is probably the source from which the fuchsite has been derived, as it is found on analysis to contain a little over one half per cent. of chromic oxide. Especially good examples of these fuchsite lodes can be seen in the Hidden Secret, Fairplay, and Devon Consols leases.

Except for their close relationship to certain gold-bearing lodes at the north end of the field the peridoties themselves can be classed as non-auriferous.

The Porphyrites.—These are of very considerable extent and for the most part are found underlying the recent deposits of the flats on the west side of the Kalgoorlie ridge and to the south and south-west of Boulder. Typically they are massive, and of a brownish-green to dark-brown ground colour with numerous white porphyritic crystals of felspar and occasionally dark porphyritic hornblende crystals; the microscope shows these porphyritic felspars and hornblende to be set in a slightly greenish very finely crystalline felsitic ground mass, the greenish colouration being due to the presence of a little finely-divided chlorite. Numerous variations from the type specimen occur; one of these is a very fine-grained dark-grey compact variety showing in hand specimens no trace of porphyritic structure, while only a few feet away the rock is mottled in appearance and shows innumerable large white porphyritic felspars set in a dark-grey green to brown ground mass; in this latter type are frequently noticed patches up to two inches in diameter of a pale grey felsitic-looking material; these represent merely more acid portions which have segregated out from the original molten mass on cooling. Other variations, which probably represent segregation on a larger scale, approach very closely in general appearance to quartz and felspar-porphyries. Still another variation is seen on G.M.L. 1923, about three miles south of Boulder Block (Fimiston); here can be seen on a dump a very dark almost black rock of fairly fine texture showing a large development of biotite in small flakes and crystals; it is a biotite-porphyrite and, as far as can be seen, merely a local variation from the general type.

The porphyrites occur as large masses—as shown on the map—and also in the form of small dykes; these latter are found traversing the amphibolites in all directions, but are never at any great distance from the main mass, from which they are evidently only off-shoots.

Sheared examples of the porphyrites occur and in this form it very closely resembles, when weathered, some of the soft sandstones of the sedimentary series, so much so in fact that it is practically impossible to distinguish between the two in hand specimens. At Monument Hill, on a western arm of Hannan's Lake and some three-and-a-half miles south-south-west of Boulder Block, is an example of sheared and weathered porphyrite exactly resembling the sediments of the Kurrawang series; several shafts sunk on it have proved its nature beyond dispute. At Walshe's Quarry about a mile along the Coolgardie road are exposed a series of rocks whose origin is more doubtful; as seen in the face of the quarry these rocks appear to consist of sandstones, soft siliceous slates and shales; they *may* be of sedimentary origin, but the writer, after a careful comparison of them with other rocks of the field, is strongly of the opinion that they are merely sheared and weathered porphyrite.

While on the subject of the porphyrites mention must be made of the "building stone" so much used in Kalgoorlie some years ago for building purposes. This is in its typical form a light-coloured fairly compact, rather fine-grained rock, soft enough to be cut with a knife and closely resembling in general appearance a soft sandstone; it frequently exhibits a red-and-white or brown-and-white banded appearance, this being due to original horizontal weathering of the rock. The greater portion of this stone used in the past has been obtained from the White Cliffs—or Button's quarry, some three miles south-west of Boulder Block; in this case it is simply a much-weathered porphyrite. A very similar class of rock results from the weathering of the massive amphibolites, but not much of this has been used for building purposes

The porphyrites are as a whole non-auriferous.

The Quartz and Felspar Porphyries.—These are found for the most part in the form of narrow dykes intruding the older rocks of the field; they are not numerous and are of no great importance; the felspar-porphyries are the more common type; they are as a rule hard and compact, usually of a pinkish colour and have a very fine-grained felsitic ground-mass, in which are embedded fair-sized porphyritic crystals of felspar.

They form dykes of from ten to forty feet in width and often of considerable length, good examples of which can be seen in the workings of the Hainault, South Kalgurli, Perseverance, Lake View and other mines. These dykes have in many cases been subjected to much shearing and have suffered the same faulting, etc., as the main lodes; they appear to have been intruded prior to the formation of the majority of the lodes and, as far as can be judged, do not seem to have had any marked influence on the deposition of the gold.

A large extent of coarse felspar and quartz porphyry is found in the vicinity of Binduli; here there are two well-defined parallel bands up to a maximum of twenty chains in width running for several miles in a north-westerly and south-easterly direction. This occurrence is of interest principally on account of the presence of large crush breccias at both the southern and northern ends of the main band. The finest of these breccias is seen at the south end, some four miles from the Coolgardie road; here it extends over a width of from ten to twelve chains—the full width of the porphyry—having in a general way much the appearance of a compact coarse boulder conglomerate and being in every way similar to the so-called conglomerates of Kanowna, which in the writer's opinion are nothing more or less than similar crush breccias; by following it in a north-westerly direction it can be seen to pass gradually into, first, a slightly sheared, and finally, into the unaltered porphyry. This breccia

has been formed by shearing of the porphyry while it was still probably in a more or less semi-molten condition. The second similar breccia towards the north end of the band cannot be seen on the surface, but it has been exposed in the workings on G.M.L. 3645, a mile and a half to two miles north-west of Binduli.

A similar class of breccia is found within the main porphyrite area, on W.R. 221 about three-quarters of a mile north of Lakeside; here some of the boulders are up to nearly two feet in diameter. No outcrop of this breccia can be seen, but it has been opened up to a considerable extent by mine workings which are now unfortunately inaccessible.

The Recent Deposits.—These consist of loose sand, loam, ironstone-gravel, etc., and are the result of the gradual weathering and breaking down *in situ* of the underlying rocks. They cover by far the greater part of the district, often to a considerable depth, and make accurate geological mapping at times a matter of almost practical impossibility, and what is probably of more commercial importance, they also render surface prospecting extremely difficult.

Included in these "recent deposits" are the laterites, or ironstone-conglomerates, which are such a conspicuous feature of the district. The question of the exact origin of these laterites has at times given rise to considerable argument and even to the present time has not been altogether satisfactorily settled; the belief held by the writer is the fairly commonly accepted one that they have been formed *in situ* by the gradual concentration by atmospheric agencies of ferric oxide derived from the decomposition of the underlying rocks, which in every case have been originally rich in iron compounds.

These recent deposits have not been shown on the accompanying map, which claims only to show the main structural formations.

The Ore Deposits.—The class of deposit worked on the Kalgoorlie field is that to which the term "lode deposit" has been generally applied, for though in a few cases quartz reefs of small size have been opened out, these are always more or less intimately connected with the main class. These lodes have in a general way been well defined as—

"More or less vertical zones of rock usually continuous with the surrounding country and of similar origin, but distinct from it in carrying metallic ores disseminated through them, often in payable quantities, and frequently characterised by strong foliation. They owe their existence to a shearing and faulting action having crushed and foliated portion of the main rock mass in a certain definite direction, producing a more or less well-defined band of rock through which, by virtue of the foliation, mineral bearing solutions can have free circulation. In consequence of this, mineral deposits are formed within the rock, usually, but not necessarily, extending over the whole of the foliated zone and having no definite boundaries horizontally or vertically other than those determined by the decrease of assay values to a point at which they cease to pay working expenses."

For the purposes of detailed description the ore-deposits are best grouped according to the various classes of rock in which they are found, viz.:—

(1) Deposits in the quartz-diabases.
(2) Deposits in the calc-schists.
(3) Deposits in the acid amphibolites.

(1) *The Deposits in the Quartz-diabases.*—These may be subidivided into:—

(*a*) The quartzose ore-bodies.
(*b*) The schistose or carbonated ore-bodies.

There is, however, no hard and fast line between the two classes, both being of the same origin and each in part grading imperceptibly into the other. As a general rule, however, the quartzose bodies are more regular both in values and occurrence than the carbonated. Typical bodies of this class are those worked in the western group of mines, viz., the Great Boulder, Horseshoe and Ivanhoe; most of the other mines are on carbonated or schistose bodies.

The essential difference between the two classes lies in the fact that a greater amount of replacement has taken place in the former and the original lode material has been to a large extent gradually replaced by a dark compact cherty looking quartz, while in the latter the alteration is chiefly to carbonates; these ore-bodies always have a more or less banded appearance and the development of the quartzose material is always greater in the central portion of the lode. Within the limits of the lode channels are frequently found small iregular veins of white glassy quartz, usually running at right angles to the strike of the lodes; these rarely carry any appreciable gold values, but very often contain considerable amounts of tourmaline and tennantite (sulpharsenide of copper) in addition to the usual vein minerals; they are of very limited extent, rarely extending for more than a few feet in any one direction, and are evidently of secondary origin, probably marking shrinkage cracks in the lodes proper.

Very frequently the main lodes show signs of secondary movement and of re-opening, especially along the centre line of fissuring; in these cases the middle portion of the lode is much brecciated, the darker original quartz being broken up and re-cemented by a fine-grained intergrowth of white quartz and calcite. This re-opening is also seen in the case of the carbonated lodes, though the re-cementing of the brecciated material is not so noticeable as in the darker quartzose bodies.

In the case of the carbonated lodes their general apearance varies from a more or less solid mixture of carbonates to a very slightly carbonated sericite or chlorite schist; they are much more irregular both in size and in the distribution of the values than the quartzose lodes.

Almost invariably the main central line of the lodes is marked by a small well-defined seam, usually of quartz with carbonates of iron, etc., and generally not more than a quarter of an inch in width; this represents the central line along which the original shearing has taken place, and it can be followed in many cases for long distances; often the lode, *i.e.*, the crushed and altered rock, will die out and this central seam then exists merely as a narrow cleavage running through the comparatively solid country.

Mineralisation of the lodes has of course taken place to the largest extent where the foliation and crushing have been most intense, while in the more solid rock it has taken place only over a very small area extending outwards from the main fissure. As the shearing of the rocks is irregular in its intensity, so also is the extent of the mineralised lodes irregular, the occurrences being to a certain extent lenticular; in some cases—where the shearing has been fairly general—the mineralisation has extended over a width of well over a hundred feet and the whole of this width has carried payable gold values, while at other times along the same lode-line the shearing—and mineralisation—is confined to a width of a few feet; in short, wherever the country has been highly foliated or sheared, there mineralisation has taken place, but in these mineralised bands, though gold is invariably present up to a certain extent, it is not always there in sufficient quantity to pay for working.

Along the main lode-lines in many cases the values are found to occur in irregular lenticular patches even when there is apparently no change in the lode; in other cases the more highly sheared portions throughout which the ores are deposited are themselves lenticular in habit, and as these lenses are irregular both in size and occurrence they cause some slight trouble both in mining operations and in the satisfactory estimation of ore reserves; for example, a level may be driven for some distance on good values, while one stope taken above the drive may see the end of these values; this has actually happened on more than one ocasion. Again, in prospecting for ore-bodies with the diamond drill, this lenticular habit of the lodes is apt to be very misleading owing to the fact that a bore-hole might cut an apparently fair-sized body of ore which on further development will prove to be only an isolated lens of no great length or depth; at the same time it would be equally likely to miss a lens of ore and cut the lode where it had pinched or carried no values .

The lode-channels themselves are very persistent both in strike and in depth and have been frequently known to continue without a break through several leases; the length and frequency of the ore-lenses along the same lode vary greatly; while one lens may be several hundred feet in length the next one may be only twenty feet; frequently however, the persistence in depth of the short lenses is just as great as with the longer ones, though this is not always the case; all the lenses a a rule show a tendency to pitch to the south. The values never cut out entirely along the main lodes, but in those portions of them connecting two ore-lenses they drop to a point at which they cease to be at present payable.

All these mineralised shear zones, or lodes, have a roughly parallel strike, this being approximately north-north-west, and as they are fairly numerous, extensive diamond-drilling or cross-cutting has to be resorted to in order to prove their existence; frequently a low-grade lode will be intersected in a crosscut and a good deal of development work has often to be carried out along it in the chance of meeting with a lens of payable ore, these being of possible occurrence along any lode channel.

With regard to the mineralisation of the ore bodies the principal lode minerals in addition to gold and tellurides (calaverite, petzite, sylvanite, hessite, coloradoite, altaite) are iron pyrites, marcasite, chalcopyrite, tennantite, asbolite, carbonates (of iron, lime, magnesia, etc.), sulphates (of lime and magnesia), iron ores (hematite, magnetite, ilmenite, etc.), tourmaline, chlorite, albite, rutile, etc. Of these the most important is—next to the gold and tellurides—the iron pyrites; this is usually present in fair quantity, and it is invariably found to be the case that the finer-grained it is the higher are its gold contents; frequently a coarse more or less crystalline pyrites is present, more especially on the walls and in the carbonated lodes, and this almost invariably carries no payable values; it has apparently been deposited at a later date and certainly under different conditions from those of the finer-grained auriferous pyrites.

(2) *The Deposits in the Calc-schists.*—No quartzose ore-bodies occur in this series of rocks, the lodes being similar, and behaving similarly in every way, to the schistose or carbonated ores found in the diabases, and the same general remarks apply almost equally well to both. As a general rule, however, they are more patchy in their contents and on the whole of lower grade than the latter class of deposits.

Special, though brief, mention must, however, be made of one particular ore-body occurring within the calc-schists, and this is the remarkable "Oroya shoot." The ore-body in this case was in the form of a pipe or chimney whose cross-section, though irregular, approximated in a general way to a more or less flattened oval having in places a maximum diameter of roughly a hundred feet. The general pitch of the "pipe" was at a very flat angle to the south, with, at the same time, an underlay to the west. It has been worked from the surface down through the following leases:—Brown Hill, Iron Duke, Oroya and Australia East, or for a total length of over three-quarters of a mile; at the point where it appears to have died out it had reached a vertical depth of about twelve hundred feet. Immediately on the east side of the pipe is a well-defined body of highly sheared rock dipping at an angle of forty-five to fifty degrees to the west; the ore appears to have lain on or close to this shear line, dipping with it and at the same time pitching away, as before stated, very flatly to the south. In several places the hanging and foot walls—if they may be termed such—of the ore body are formed by well marked fault or fissure lines, and these, taken in conjunction with the main underlying shear plane, have probably had a good deal to do with the deposition of the values. Occasional small patches—or "droppers"—of ore run out from the main body; these are of very limited extent and are generally formed on an intersecting cleavage of fissure plane.

(3) *The Deposits in the Acid Amphibolites.*—Lodes similar in origin and general character to those in the diabases and calc-schists also occur in certain of the acid amphibolites, but they have not as a general rule so far proved of any very great importance.

The main point of difference between this class of rocks and the diabases and calc-shists is the occurrence within them of small rich quartz veins and leaders. These have been worked to the greatest extent in Hannan's Reward and on Cassidy Hill; they are never of any great size, rarely exceeding a foot in thickness and more usually ranging from a mere thread up to only two inches; they are confined to certain well-defined belts of sheared rock and are never found beyond the limits of the sheared zone, running at right angles to the general trend of this; although consequently never of any great length, they are fairly persistent in depth. In the big lode on Hannan's Reward, which near the surface exceeds a hundred feet in thickness, these leaders were especially numerous and some of them were phenomenally rich. At first merely the leaders themselves were taken out, but subsequently the whole lode formation—which itself carried a little gold—was worked, the high grade of the quartz veins being sufficient to bring the grade of the whole formation up to payable limits.

It is from these quartz leaders that the bulk of the alluvial gold obtained in the neighbourhood of Hannan's Hill was originally derived.

Another class of deposits found in the amphibolites of the north end are the contact bodies referred to previously as occurring alongside the peridotite dykes. These are merely mineralised zones of sheared and altered rock, and must be classed as "lodes"; they are, however, irregular, following to a considerable extent the boundaries of the peridotite; they are also of comparatively small size and their gold contents are very erratic, although at times extremely high. They are characterised as a rule by their bright-green colour, this being due to the presence of finely divided

fuchsite, whose occurrence has already been referred to. Lodes of this description are typically represented in the Hidden Secret and Fairplay mines.

While on the subject of the lodes generally, brief mention must be made of the large banded and jasperoid quartz reefs occurring in certain portions of the field. These are found principally in the amphibolites, and especially at the south end in the neighbourhood of Mt. Hunt. They are of a dark banded and jasperoid quartz, often carrying a large percentage of hematite and sometimes magnetite, and are the result of extreme alteration and silicification of well defined sheared bands of rock; they are very persistent in strike, sometimes extending for over a mile in length and are of large size occasionally reaching as much as fifty feet in width; near Mt. Hunt they are particularly numerous and can be seen in places rising from the ground to a height of 40 or 50 feet. Although small auriferous quartz leaders are at times associated with them, the jasperoid lodes themselves appear to be practically non-auriferous.

The Faults.—Faulting of the lodes has been fairly common, more especially in the quartz-diabase and calc-schists areas; the main system runs approximately parallel to the general strike of the lodes and the faults dip at an angle of 40 to 45 degrees to the west. The faults of this system are "reversed" faults, and are due to overthrusting of the western portion of the belt; contrary to the usually accepted idea of reverse faults, they do not duplicate the lodes. Occasionally, however, normal or easterly-dipping faults do occur, but they are much less usual than those with a westerly dip. The displacement caused by both classes of faults varies considerably, usually, however, ranging from ten to forty feet. As a general rule the faults of the main system are very persistent not only in strike but also in dip, and can readily be followed down from level to level; they are usually marked by a seam of calcite or gypsum, or a "dig," varying from half an inch up to as much as four inches in width, and in the latter cases almost always act as water channels. Occasionally values are found along the fault-lines between the two portions of the lode, these sometimes extend over a width of as much as two feet; but, as a general rule, values are not found in appreciable quantity along the fault lines.

The numerous small fissures, or "heads" or "floors," which are found crossing the lodes and country in almost every direction, but chiefly at right angles to the main lines, are evidently part of a secondary system induced by these main lines; as a general rule they cause no displacement.

The chief effect of the main faults is, by their presence, to lessen the apparent amount of ore "in sight" between any two levels by causing, as a result of the overthrusting upwards of the upper portion, the formation of a vertical—as well as horizontal—gap between the two portions of the faulted lode.

Another effect of the faulting is represented by the following occurrence which actually took place in the Great Boulder Main Reef G.M. An inclined bore-hole from the No. 14 level cut what appeared to be two separate ore bodies; subsequent development, however, proved the supposed second body to be merely the faulted portion of the original one, the bore-hole thus having passed through the same lode twice; equally well also might it have passed through the gap between the two portions and thus have apparently proved the non-existence of the lode below the level bored from.

CONCLUSION.—With regard to the permanency of the Kalgoorlie and Boulder lodes it may be at once stated that they are undoubtedly deep seated and will in every probability live at least to the depth to which mining operations can at present be carried; whether or no their gold contents will live with them is a matter on which it is impossible to speak with any certainty, and one which can only be proved by actual development; the best arguments in favour of this, however, that the writer knows of, are the following deep-level developments recently reported by two of the leading mines of the field:—

Golden Horse-Shoe.—Cabled report to London, May 19th 1909: "No. 3 shaft, 2,000 feet level—East branch, No. 3 lode, total width 18 feet, assays 1 ounce 2 dwts. per ton; free gold and telluride showing from wall to wall."

Great Boulder Proprietary.—Cabled report to London, August 25th, 1909: "Prospecting with diamond drill, Edwards' shaft, 2,600 feet level, West—At 108 feet from shaft struck ore, for the first three feet schist intermixed with quartz leaders, the ore is very rich in free gold; assays average 11 ounces per ton. The next three feet similar, but there is no visible gold, assays average 5 dwts. per ton. The next 8 feet consists of pyrites and quartz, assay value 5 dwts per ton; there is quartz in the end of the bore-hole."

Cabled report to London, November 12, 1909: "Edwards' shaft, 2,500 feet level—West crosscut has cut the reef 98 feet from the shaft; it is hard quartz; width of ore 14 feet, and assays 10½ dwts. per ton."

Cable, December 11th, 1909: "Edwards shaft, 2,500 feet level—North end of drive, average assays •15 dwts. per ton; south end, 44 dwts. per ton."

These developments are the deepest on the field and speak for themselves as to the permanency of the lodes and their values.

ADDENDA.—Since the preceding article was written the author has had the opportunity of carrying out considerable petrological work in connection with the Kalgoorlie rocks. The result of this has been to confirm his original view that the so-called "newer greenstones" all belong to one main intrusive series, consisting originally of plagioclase-augite and quartz-plagioclase-augite rocks of the gabbro or diabase type.

The two main groupings that have been adopted in the article have been made for *economic* reasons and for simplicity in mapping rather than for strictly *technical* purposes. The distinguishing feature of the groups is the relative amount of mass alteration that has taken place in each, this alteration being represented chiefly by the partial or complete molecular change of the original augite in the rocks to hornblende, uralite, and chlorite.

In the case of the so-called "quartz-diabases" molecular alteration—probably largely assisted by the presence of the intrusive porphyries—has proceeded to a much greater extent than in the "amphibolites," the original augite being wholly and completely altered to chlorite. The term "quartz-diabase" has been given to these chloritic rocks in order to distinguish them from the less-altered and less-auriferous rocks, because this is what they appear to have been originally.

The "coarse-grained amphibolites" comprise all the various modifications of the original newer greenstones, exclusive of the above chloritic (quartz-diabase") type, viz., gabbros, pyroxenites, amphibolites, etc. Typical gabbros are not found within the limits of the map published with Part I. of these notes, but are confined to that area of greenstones referred to in the text as the western ridge, and lying

immediately behind the Kalgoorlie abattoirs. The "felspathic amphibolites," however, which are found at both the north and south ends of the central area, are derived from these gabbros, through the change of the original augite to hornblende and uralite. All gradations between the two classes are obtainable in the field. A more correct subdivision of the amphibolites referred to in the article, viz., (a) the basic, and (b) the felspathic or acid, would be (a) the quartzose or acid (b) the felspathic and (c) the basic. These have their greatest development over the northern area and are undoubtedly merely differentiations from the one intrusive mass; the quartzose or more siliceous type occupies, as would be expected, the central portion of the mass and gradually merges on both sides into the more basic varieties forming the outer margins, the "basic" being on the eastern, and the "felspathic" on the western margin. The "quartzose" type was probably originally a quartz-gabbro, a slightly acid segregation from the normal type; the "basic" was (in part) a pyroxenite, being a basic segregation from the original mass, while the "felspathic" probably represents the nearly normal rock (gabbro or, in part, diabase). In the case of the "felspathic" type the change of the original augite has been to hornblende and uralite; in the "basic" it has been (largely) to hornblende; and in the "quartzose" it has gone further to uralite and chlorite. This latter type approaches very closely to the "quartz-diabase" series, but the change of the augite to chlorite has not been quite as complete as in that series.

The important facts, however, in connection with the various modifications and alterations of these original gabbros, etc., are as follow:—

(1) The rocks in which the conversion to chlorite of the original augite has been complete, viz., the "quartz-diabase" series, are those which contain all the highly-auriferous lodes.

(2) The rocks in which this conversion to chlorite has been partial, viz., the chlorite "quartzose, or acid, amphibolites" of the north end, contain certain less highly auriferous lodes.

(3) The rocks in which there has been practically no conversion to chlorite, viz., the typical amphibolites, gabbros, etc., of the western group, contain no auriferous* lodes.

From these facts it appears not unreasonable to assume that the gold has originally been held in combination by the ferro-magnesian mineral (augite) and the splitting up of this—to chlorite, etc.—has probably assisted in the liberation and solution of the gold subsequently deposited in the lode formations. That this is so, or that the conditions affecting the conversion of the ferro-magnesian minerals had any connection with those affecting the deposition of the gold is, of course, open to argument, but the fact remains that in the wholly chloritic rocks, and in them alone, are the highly-auriferous lodes to be found.

In the original article the writer, when dealing with the felspar-porphyry dykes, stated that " . . . as far as can be judged, they do not seem to have had any marked influence on the deposition of the gold;" this statement was intended to infer more that they had no immediate effect on the local enrichment of the lodes—which they have not—rather than that they had nothing to do with the general process of mineralisation ,etc. As a matter of fact they have probably had a great deal to do with the mineralisation, etc., of the older lodes, in so far that the presence of magmatic water following on their intrusion has been the direct cause of, or, at least, has largely assisted in, such mineralisation.

L. GLAUERT, Field Geologist.

(7.) *Further Notes on the Gingin Chalk.*

According to verbal instructions I proceeded to Gingin on the 11th of May, 1910, with a view of continuing my investigations concerning the development, extension, and relationship of the Gingin Chalk, and of making a general survey of similar or allied beds extending to the northward.

The fact that the vegetation had not yet felt the effects of the winter rains considerably improved the conditions of work and facilitated the examination of the district.

Immediately upon arrival I visited the outcrop on One Tree Hill. Since my last visit a considerable amount of work had been undertaken in order to determine the extent and depth of the chalk. Shafts had been sunk to a depth of 10ft. or 15ft. and borings made by means of long augers with a result that the bed was found to have a depth of at least 25ft. to 30ft.

One of the shafts was sunk outside the "chalk" area on the eastern side of the hill, but the rest were found to be within its borders. In two instances a greenish clay, probably Glauconitic, was entered at a slight distance below the surface and found to continue beyond the limit of the bore. The presence of this clay in the bores was regarded as most discouraging by those undertaking the work, but it is my opinion that fears of the chalk thinning out at the centre of the hill are quite groundless. Measurements made around the two unfavourable sinkings show that the chalk is normally developed on all sides.

An examination of the quarry on the southern edge of the hill shows the presence of numerous joints, two of these, which are somewhat wider than the rest, are seen to be filled with a stiff greenish clay very like that met with in the course of the investigations on the hill-top; it seems therefore that the correct explanation of the occurrence is to be found in the presence of other more or less widened joints containing similar clay. I do not consider that any diminution in thickness of the chalk itself will be found to exist at the centre, the bed will be either of constant thickness or gradually tapering.

The quarry itself has been worked at times during the past twelve months, and from new exposures I was able to procure a good collection of specimens, large Pelecypods (Lamellibranchs) from the north face and Ammonites from the western wall, as well as one or two smaller fossils including corals, Brachiopods, etc.†

The exposure on Mole Cap Hill was unchanged, and needs no remarks, but the outcrops two miles along the Bindoon Road and in the valley of the Moonda Brook now give some good sections of the lower portions of the chalk and the underlying glauconitic clay. Similar clays have also been seen in places along the upper valley of the Gingin Brook, at points where the investigations made last year led me to believe they would in all probability be found.

The outcrops on the eastern, southern, and western sides of Ginginup are much more extensive than was at first supposed, and have been traced along the

*In this context the term "auriferous" is meant to imply a grade of ore that may be profitably mined.—C.G.G.

†These specimens are at present in the hands of Mr. R. Etheridge, the Curator of the Australian Museum, Sydney. His report upon the animal life of the chalk should contain most important results and will, I hope, definitely determine the position of the bed in the Cretaceous Formation.

western escarpment of the Darling Range round the flank of Poison Hill.

The face of the range on the opposite side of the brook was obscured by yellow and white drift sand, and as this, together with ferruginous lateritic sandstone, were all that could be seen for the next four miles the examination of the escarpment was discontinued upon Boonanarring being reached.

The most careful examination of the country between the various outcrops of the chalk did not reveal the presence of any connecting exposure along the Darling Range escarpment, so that the relationship between the chalk and the sandstones of the ranges cannot be determined in the immediate vicinity of Gingin.

It has been suspected that the limestone deposits at Muchea and Bullsbrook might be identical with the chalk on One Tree Hill, and accordingly I proceeded to the first-named locality to examine the limestone *in situ*.

There are numerous outcrops on all sides of the station, but as the material was quarried at a spot a few chains to the south-west of the school-house I visited the quarry in order to examine the section there exposed.

On the surface the stone is seen to be considerably hardened and to resemble a typical limestone or chalk, but at a depth of a few inches the material changes into a pure white horizontally bedded, crumbly limestone, which seems to consist of almost pure calcium carbonate, without any traces of fossil remains and free from coarse grit. The texture is unlike that of any organically formed limestone which I have yet seen, and is remarkably uniform throughout the section. From top to bottom the greatest measurement is about 7ft. without the base of the bed being exposed.

In former years the material was burnt for lime, but at the present time the only use appears to be as a road metal. For this purpose the limestone is not well adapted; the traffic converts it into a greasy mud during the winter and into a fine dust during the dry portions of the year.

The origin of the limestone is rather doubtful. As already stated, it does not appear to be organic, even with the aid of lens no trace of animal remains could be found, but on the other hand, although wherever the limestone is present there is a slight rise of a foot or two above the general level of the plain, there is no indication that the deposit has been formed at the mouth of springs after the manner of calcareous tufa or silicious sinter, because no signs of running water could be seen.

It is possible that the deposit may be due to capillary action, water charged with an abundance of calcium carbonate being drawn to the surface through pores and cracks in the underlying rock and forming a bed on the surface in a manner similar to that which gives rise to laterites and many ironstones.

I believe the formation of such deposits on a large scale is an immense feature, but at the present state of my knowledge of the beds it seems the only solution, thus proving that the Muchea limestones * have no direct connection with the Gingin chalk, and determining the southward extension of the latter bed to be Mole Cap Hill, a little to the south of Gingin Railway Station.

I much regret that circumstances did not permit me to visit the chalk outcrops in the Moora district, which, I am informed, are more numerous and of greater horizontal extent than the Gingin exposures, and therefore likely to yield more satisfactory results concerning their stratigraphical relationship.

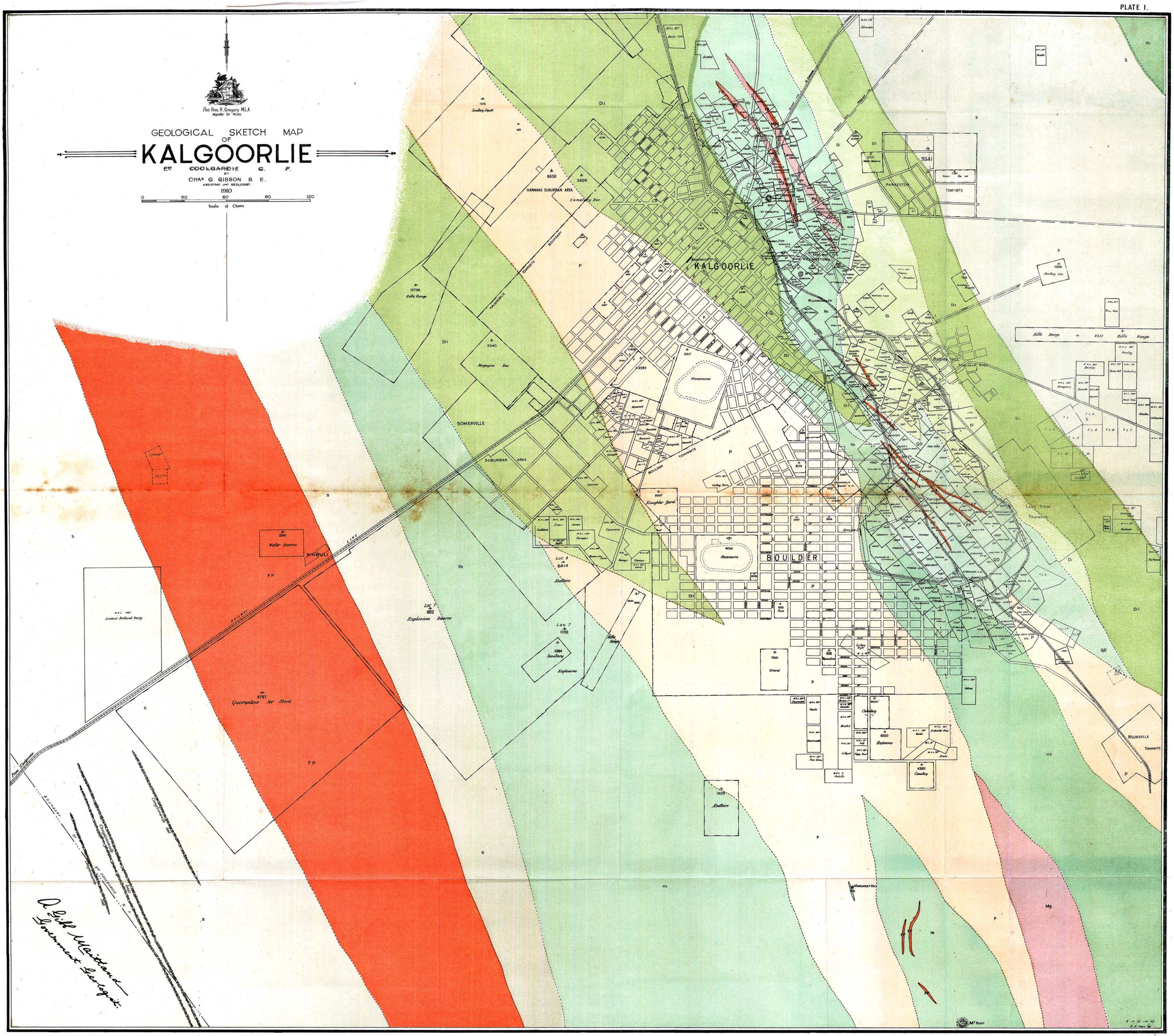
I have, etc.,

A. GIBB MAITLAND,

Government Geologist.

* On the low-lying land between Gingin and the coast there are several exposures of limestone, similar to the Muchea outcrops, and which in my opinion owe their origin to similar causes.

INDEX TO NAMES OF PLACES, MINES, REEFS, Etc.



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

EXPLANATION

ANCIENT SEDIMENTARY ROCKS (*Shales, Sandstones, Grits &c*)	S
CALC SCHISTS (*Older Greenstones*)	Di
FINE GRAINED AMPHIBOLITES (*Older Greenstones*)	Dil
QUARTZ DIABASE (*Later Greenstones, intrusive*) *GOLDEN MILE SERIES*	QD
COARSE GRAINED AMPHIBOLITES (*Later Greenstones, intrusive*) (INCLUDING AMPHIBOLITES, EPIDIORITES & PYROXENITES)	Hb
PORPHYRITE } *Newer Intrusives*	P
QUARTZ & FELSPAR PORPHYRIES } *Newer Intrusives*	FP
PERIDOTITE AND ITS DERIVATIVES (*Intrusive*)	Mg

GOLD MINING LEASE } REGD No. 16E & NAME GREAT BOULDER — MINERS HOMESTEAD LEASE } M.H.L. 70E Dicks — GEOLOGICAL BOUNDARIES — *WATER RIGHT* ..... *W.R.* — *WATER LEASE* ..... *W.L.* — *TAILINGS LEASE* ..... *T.L.*

NOTE. THIS MAP SHOWS STRUCTURAL FEATURES ONLY. RECENT DEPOSITS (*SANDS, LOAMS, LATERITES &c*) OMITTED.

PLATE II

GEOLOGICAL SKETCH MAP OF THE COUNTRY NORTH OF SOUTHERN CROSS

BY

H. P. Woodward
Assistant Government Geologist

1911

SCALE OF MILES 10 0 10 20 30

EXPLANATION

METAMORPHIC ..... D GRANITE ..... Gn

BANDED CHERTS .....

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

N. COOLGARDIE G.F.

COOLGARDIE G.F.

YILGARN G.F.

118° 30′ 119° 119° 30′ 120° 120° 30′

29° 29°30′ 30° 30°30′ 31°

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

DIVISION IV.

SCHOOL OF MINES OF WESTERN AUSTRALIA.

DIRECTOR'S REPORT, 1910.

The Under Secretary for Mines.

Steady progress has been made with the Class work at the School of Mines during the past year. The attendance at classes during the first and second terms has been well maintained, but owing partly to the inability of some of the students to keep pace with the class work, and partly to the fact that a considerable number of those who commence classes leave the district during the year, the third term shows a decrease.

As the School work is arranged in yearly courses, complete in themselves, new students are not encouraged to join classes during the last term, and the losses in enrolments that occur are not made good until the beginning of the following year. It is expected that the inauguration of the Preparatory Classes will bring about a considerable increase in the number of students able to attend classes during all three terms of the year.

The standard of the Examinations has been maintained, and the fact that the results this year show a marked improvement in quantity and quality, indicates that students are earnestly devoting themselves to study, and are deriving considerable benefit from the courses of instruction.

The classes in Engineering Subjects have shown the greatest increase. At the beginning of 1910, Mr. Maurice Copland, B.M.E., who some years ago was Lecturer in these subjects for a few months, was appointed Lecturer in Engineering Subjects, and has been successful in maintaining the interest of the students in their work, and has built up a number of well-attended classes. Further assistance has been given to this department by the appointment of Mr. A. F. Heseltine to give instruction in several of the Mathematical subjects. This will relieve the Lecturer, Mr. Copland, and allow him to devote all his time and energy to the Engineering subjects proper.

During the past year special attention has been devoted to making the Engineering courses of the School complete. In all large mining centres the question of economy in power production, leading to the reduction of working costs, is receiving increased attention, and it is of the highest importance that the Mining Engineer should possess thorough knowledge of all questions bearing upon the economical running of the engines under his charge, and also that he should be able to locate and remedy defective conditions which lead to losses in actual practice. In order to afford students practical instruction in this department of engineering work a mechanical engineering laboratory has been erected, and additional equipment has been obtained. An extension to the workshops has been authorised, and it is expected that this will be ready for occupation early in February.

At the beginning of the year two new lathes were placed in the workshops, and strong classes in Fitting and Turning formed under Mr. J. Murray, a thoroughly experienced mechanic. Recently a small under-fired multi-tubular boiler, an experimental engine, and a surface condenser have been purchased. The engine is fitted with an absorption dynamometer, variable cut-off gear, and carpenter's steam calorimeter. The students will be able to take off indicator diagrams, and carry out actual working tests concerning the determination of steam consumption, mechanical efficiency, and the relative economy of working under various conditions. The experimental plant will make him familiar with the use of the steam indicator, and other testing instruments, and he will gain experience in detecting losses due to defective working conditions. This practical instruction in engine testing, together with periodical visits to the engne rooms of the mines, will give the student a thorough grounding in the fundamental principles of mechanical engineering work.

The electrical engineering workshops are now well equipped, and afford scope for a thoroughly practical course of instruction. In one section of the laboratory a number of vibrationless benches are fitted up for the adjustment and use of delicate instruments for measurements in magnetism, electrostatics, and electro magnetism; while another section contains condensers, motors, transformers, and switch boards. These enable a complete series of tests dealing with the efficiency, regulation, and registration of the machines and instruments used in electrical distribution of power, to be carried out with accuracy. The School possesses all the equipment necessary for the testing of instruments of precision, and for the standardisation and calibration of many commercial instruments in use in the district, and if it should be necessary, the School could undertake this work with advantage.

The School of Mines was established in the first place to give instruction to those engaged in mining occupations, and its laboratories have been equipped, and the classes arranged so as to give a thorough technical and practical training, enabling students to qualify to hold responsible positions connected with the industry, but the School also offers facilities for general education, more particularly in elementary science, which might very well be taken advantage of by youths who do not intend to enter upon mining pursuits. The preparatory classes that have recently

been established are very suitable for boys of fourteen years and upwards, who have just left the State schools, and afford an introduction to science, which will be of great value to these youths, whatever may be their future occupations.

As in previous years, a day class in Physics for some thirty State school scholars has been regularly conducted throughout the year, and by means of the practical demonstrations which have been held, have given students attending the classes an introduction into scientific knowledge, which they could not have obtained elsewhere on the Goldfields.

During the year, also, a Junior Class in Chemistry has been conducted for about twenty scholars of the Christian Brothers College, and here again the School has been able to give the practical demonstrations which are so essential for the proper teaching of the subject, and for which there is no other laboratory in Kalgoorlie.

It is the intention of the Education Department in the near future to erect a science room in connection with one or more of the State schools at Kalgoorlie and Boulder. Preparatory science and other continuation class subjects will be taught, and students between the ages of 14 and 18 will be allowed to attend three of these evening continuation classes free of charge. At the School of Mines preparatory classes in Chemistry, Physics, Mathematics, Geology, and Drawing have been arranged, with the object of training young students up to a standard which will enable them to enter upon a regular course at the School of Mines with advantage, and youths who leave the State school to engage in daily occupation will be able to attend these classes during the evening. Boys who go straight from the State school to the preparatory classes at the School of Mines will be in the best possible position to take full advantage of the regular courses in Mining, Metallurgy, and Engineering provided at the School, and by encouraging full attendance at these preparatory classes, the School of Mines may expect to gain a regular supply of students, well grounded in the fundamental principles necessary for the proper understanding of the more advanced class work. During 1910 the attendance at the preparatory classes has been encouraging, and promises well for the future.

The School has continued the system of free assays for prospectors, to whom much valuable information has been given concerning the samples brought in for examination. During the year free assays and mineral determinations for prospectors reached a total of 407, made up as follows:—

Assays for gold and silver	331
Assays for copper	18
Assays for tin, lead, etc.	2
Determinations of Minerals, rocks, etc.	56
	407

The assays and mineral determinations have all been made by responsible members of the staff, who have spared no pains to ensure accuracy in the results, and to give full information to the prospectors concerning the samples.

The Museum, which contains a large assortment of rocks and minerals, set out in such a way as to be of interest not only to the students, but also to prospectors, has been kept open each afternoon, and besides being of great educational value to the students, has been a source of interest and instruction to a fair number of visitors.

Numerous donations of mineral samples, catalogues and reports, a full list of which is attached, have been made to the School during the year.

The scheme of Scholarships granted by the Department has been remodelled in such a way as to make all the Scholarships tenable at the School of Mines, Kalgoorlie. According to the scheme as it now stands, one Junior Scholarship of £40, tenable for one year; one Entrance Scholarship of £60, tenable for three years; and one Senior Scholarship of £75, tenable for two years, all with the remission of class fees, are to be offered for competition each year. There are in addition six Bursaries of £10 each. It is expected that these scholarships will fully meet the requirements of the local students and will afford to youths outside the Kalgoorlie district facilities of attending the School, and obtaining a training in School of Mines subjects.

The School has been fortunate in securing valuable gifts of prizes and scholarships from those interested in the work of the institution. The Editor of the *Australian Mining Standard* grants two prizes each year to the senior scholars. The Chamber of Mines gives several scholarships. The Mechanics' Institute grants free membership to three of our senior students, and Messrs. Bewick, Moreing, & Company, through their general manager, Mr. J. A. Agnew, grants the valuable concession of including the Western Australian School of Mines in the list of institutions from which senior scholars will be selected and provided with employment.

In addition to these it is anticipated that a scholarship, kindly donated by Mr. Neil McNeil, will be available for competition during the coming year.

A very important innovation, and one which is likely to have a far reaching effect, has been the formation of a Science Society composed of students. Some twelve months ago I discussed with the Committee of the Students' Association the question of forming such a society, and a committee of management having been elected, the society was duly formed. The members have met together during the past year, and have read and discussed papers written by themselves upon matters of scientific interest connected with the School work. Following the establishment of the Science Society has been the production of the School magazine, in each issue of which it is proposed to publish one or more of the papers read at the meetings of the Society. The students are to be complimented on the success which has attended their first publication, and there can be no doubt that from the production of future issues of equally high standard, much good will result to the students generally, and especially to those more intimately connected with the magazine.

It is gratifying to note that students of the Schools continue to secure responsible positions, which in many cases have been obtained directly as a consequence of the technical training received at the School. During the year several students, who have taken the recently established course for Mine Surveyor's Certificates, have obtained positions as assistant surveyors. Several other students have obtained positions in connection with the electric plants, and several have been appointed metallurgists and assayers on the mines. It is distinctly encouraging to the present students, and those who in the future will take up a course of study at the School, that those students

who have been through a set course of study at the local School of Mines are so well able to take their place in outside practice.

Practical classes and examinations:—

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, Metallurgy, and Engineering in the well equipped laboratories. Models for the Mechanics, Engine-driving, and Mining classes, suitable collections of rocks and minerals for the Geology and Mineralogy classes, and instruments for the Surveying class, enable the lecture work to be thoroughly well demonstrated. A special testing room has been set aside for Practical Electricity, while increased accommodation has been provided for the practical classes in Physics. Field practice in surveying is regularly carried on throughout the year, and in Geology the students make periodical excursions into the country and so gain a fuller understanding of the class-work as well as an intimate knowledge of the Geology of the district.

Examinations.—The examinations held annually in connection with the Diplomas and Certificates issued by the Mines Department are conducted by Co-examiners appointed by the Minister for Mines. The appointment of outside examiners for the written papers has tended to maintain a high standard of work at the School. The practical examinations, covering the whole work of the students throughout the year as well as the final test questions, are left in the hands of the Staff.

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.

During the absence of the Registrar on leave, Mr. W. Watson was Acting Registrar for three months up to December 15th, and discharged his duties in a thoroughly satisfactory manner.

The Staff classification, which has now received approval, will be highly appreciated by each of the officers.

Throughout the year I have been ably assisted by the Assistant Director, and by the members of the School staff, to all of whom my thanks are due for their cordial co-operation in the proper conduct of the work of the School.

Annual Demonstration.—The Sixth Annual Demonstration and Distribution of Class Certificates took place in the open space between the main building and the Geology class-room during the last week in February, when the Mayor presided over a gathering of students and visitors interested in the progress of the Institution. The Hon. R. D. McKenzie, M.L.C., gave an address, and on completion of the lecturette by Mr. McDougall, the visitors inspected the equipment of the various class-rooms of the School.

Annual Dinner.—The members of the West Australian School of Mines Students' Association held their seventh annual dinner in Epstein's Café, on Saturday night, 3rd December, 1910. Mr. J. Grigg, the President, occupied the Chair. Those present included the Minister for Mines (Mr. H. Gregory, M.L.A.), the Hon. Minister (Hon. R. D. McKenzie, M.L.C.), the Mayor of Kalgoorlie (Mr. S. E. Hocking), the President of the Chamber of Mines (Mr. R. Hamilton), and several leading mine managers, the Director (Mr. F. B. Allen), the Assistant Director (Mr. T. Butement), and all the members of the staff. Many interesting speeches were delivered. Special features were the menu cards and the topical songs of the students, and altogether the function proved highly successful.

F. B. ALLEN,
Director School of Mines.

DIVISION VII.

ANNUAL REPORT OF THE CHIEF INSPECTOR OF MACHINERY AND CHAIRMAN OF BOARD OF EXAMINERS FOR ENGINE-DRIVERS FOR YEAR ENDING 31ST DECEMBER, 1910, WITH STATISTICS.

The Secretary for Mines, Mines Department, Perth.

Sir,

I have the honour to submit, for the information of the Hon. the Minister for Mines, the following report on the operations of "The Inspection of Machinery Act, 1904," in the districts proclaimed thereunder, together with statistical tables, for the year ending 31st December, 1910.

The duties carried out during the year are similar to those dealt with in previous reports, except that by an Order in Council published in the *Government Gazette* of 14th October last the control of "all floating boilers and machinery" was transferred from this Department to the Harbour and Light Department as from 1st November last.

Following my previous practice, the work is dealt with, for convenience of reference, under the following Divisions:—

1. Inspection of boilers.
2. Inspection of machinery.
3. Survey of machinery of harbour and river boats.
4. Accidents.
5. Engine-drivers' examinations and inquiries.
6. General.

DIVISION I.—INSPECTION OF BOILERS.

At the end of the year there were upon the Registers 3,342 boilers capable of being used as steam generators, as compared with 3,402 at the end of 1909. These figures show a decrease of 60 as against last year's figures. This, however, is hardly fair comment, as there were 68 new boilers registered during the year.

This apparent discrepancy between the above figures and those given for 1909 is easily accounted for. In previous years the total number of boilers in the Registers was shown. This number naturally included many boilers which, although correctly recorded as registered, had been permanently condemned or converted into tanks, condensers, etc. I have decided, in this and future reports, to include only the useful boilers. This will give a more reliable return as to the actual steam power in the State.

Of the total registrations as above, 1,314 were out of use at the end of the year from the usual causes, viz., temporary closing of works, boilers under repair, and further introduction of electric, oil, and gas motors.

The number out of use shows an increase of 26 over last year's figures.

NEW BOILERS REGISTERED.

During the year 68 new boilers were registered. The types represented in the new registrations are as follow:—Water tube, 17; Vertical, 12; Cornish, 10; Lancashire, 3; Return multitubular under-fired, 1; and Lancashire portable under-fired, 1.

Boilers Locally Constructed.—Seventeen (17) of the above boilers were locally constructed as follows:—Loco type, 2; Vertical, 2; Cornish, 10; Lancashire, 2; and Return multitubular under-fired, 1.

The above represent only 25 per cent. of the total number of new boilers. I have again to express my regret that our local manufacturers do not secure a larger percentage of orders for the new boilers required each year. It will be noted, however, that the new boilers not made locally are mainly represented by water tube, and locomotive type boilers. No local makers have yet attempted the manufacture of the former, and very few of them the latter type. Another probable reason for the small proportion of locally made boilers is the scarcity of boilermakers in the labour market.

The following return shows the classification of boilers, exclusive of those permanently condemned or

made into tanks, condensers, etc., on the register at the end of the year:—

RETURN NO. I.—*Return showing Classification of the various Types of Useful Boilers in each District. 31st December*, 1910.

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 (not proclaimed.)	1910.	1909.
Lancashire	25	8	...	46	3	13	10	3	19	...	*127	126
Cornish	104	99	29	164	45	88	92	64	112	...	797	830
Semi-Cornish	30	4	1	5	2	4	...	4	25	...	75	79
Vertical, Stationary	357	71	16	78	30	68	73	36	86	...	815	829
Do. Portable	84	5	...	2	1	2	...	...	...	...	94	96
Do. Multi Stationary	29	3	...	7	1	5	5	6	19	...	75	62
Do. Multi Portable	15	...	...	1	...	...	...	...	...	...	16	18
Do. Patent Tubular	11	...	...	...	...	...	...	...	...	...	11	13
Loco. Type, Rectangular, Firebox, Stationary	65	12	1	23	16	6	9	17	33	...	182	157
Do. do. do. Portable	313	9	7	9	5	5	6	...	...	...	354	388
Do. Circular Firebox, Portable ...	111	1	...	4	...	1	1	...	...	...	118	109
Locomotive	64	10	...	13	3	...	6	...	...	...	96	97
Water Tubes	88	15	2	103	...	3	23	10	...	...	244	230
Return Multitubular, underfired, Stationary	81	16	3	46	8	8	7	...	...	...	169	180
Do. do. do. Portable ...	5	6	..	3	...	1	...	...	...	...	15	16
Do. do. internally fired, Stationary	69	4	..	3	1	...	1	...	...	...	78	81
Do. do. do. Portable	1	...	...	...	...	...	...	...	...	...	1	4
Egg-end and other types not elsewhere specified	17	6	...	1	1	...	2	...	1	25	53	60
Digesters	18	...	...	4	...	...	...	...	...	...	22	...
Totals	1,487	269	59	512	116	204	235	140	295	25	3,342	3,402

* Two (2) of those are underfired Lancashires.

OPERATIONS IN THE VARIOUS DISTRICTS.

From Return No. II. it will be seen that there has been an increase of 19 in the number of thorough inspections made. This result I consider satisfactory in the face of the fact that the Staff of Inspectors was even more inadequate than in 1909. Though 4 Inspectors are shown in the South-Western district, there were virtually only three for most part of the year—Inspector Tickle's connection with the Department ceased on 7th January and his successor, Inspector Butcher, was not appointed until 4th July, six months afterwards, although the appointment, in so far as this Department is concerned, was expedited as far as possible. Inspector Tickle inspected two boilers only during 1910, and Inspector Butcher 35. Of the latter, 13 only have been inspected since this officer has ceased to be under my control. In order to render some assistance to this District I have been compelled to withdraw Inspector Lee from Kalgoorlie for a few weeks to make certain urgent inspections in the South-Western District. Several Inspectors have been absent on sick leave for varying periods; the usual annual recreation leave had also to be provided for. As I have no relieving officer, the matter of arranging leave is always a tax on the resources of the Department, and necessarily results in work not being carried out as it should be.

I must again point out that I consider at least one additional Inspector a necessity. The present staff cannot possibly cope satisfactorily with the work, even if no unusual sick or annual recreation leave is taken into account, to say nothing of inquiries into machinery accidents and other exceptional and unforeseen work.

Thorough inspections were made of 1,873 boilers, and 153 were inspected under steam, making a total of 2,026 inspections, thus showing an increase of 20 inspections as against the previous year. Certificates were granted in the case of 1,790 boilers, showing an increase of 9, and 498 notices for various repairs, additional fittings, etc., were sent out.

The pressure gauge of every boiler inspected was tested, each Inspector being supplied with a Vulcan Gauge Tester for this purpose. Many gauges were found in a very unreliable condition, and were ordered to be renewed or adjusted.

The issue of certificates under Section 30 of the Act was availed of to the extent of 23 certificates, granted for various short periods, in order to tide over boilers falling due at times when it was impossible for an Inspector to attend. The usual precautions were exercised in regard to the issue of these certificates, and in no case has such an issue been found unjustifiable or to have led to any trouble.

In spite of the fact that the number of certificates issued shows an increase, the actual revenue derived from boiler inspections shows a decrease. This appears to be due to the fact that a larger proportion of the larger boilers happened to be out of use during the year.

RETURN No. II.—*Return showing operations in each of the proclaimed districts (boilers only).*

	Districts.											Totals.
	South-Western.	Coolgardie and Yilgarn.	Dundas.	East Coolgardie.	North-East Coolgardie.	Broad Arrow.	North Coolgardie.	Mount Margaret.	East Murchison.	Murchison, Peak Hill, and Yalgoo.	Pilbara and West Pilbara.	1910.
Total number of Boilers registered and capable of being used as steam generators	1,487	269	59	512	75	41	204	235	140	295	25	3,342
New Boilers registered during the year ...	44	2	...	14	...	...	...	4	3	1	...	68
Inspections for the year:												
Thorough	952	137	41	300	23	1	106	148	63	102	...	1,873
Working	96	...	6	...	...	14	16	13	4	4	...	153
Boilers condemned during the year:												
Temporarily	62	5	4	2	...	...	6	9	...	3	...	91
Permanently	19	1	...	1	...	...	...	1	4	2	...	28
Boilers converted into tanks, air receivers, etc., during the year	...	...	...	...	...	...	...	...	3	1	...	4
Number of Notices issued for Repairs during the year	288	32	10	28	2	2	28	52	21	35	...	498
Number of Certificates issued including those issued under Section 30, during the year	859	130	40	293	26	15	106	142	73	106	...	1,790
Total amount of Fees	£ s. d. 1,490 18 0	£ s. d. 292 0 6	£ s. d. 94 0 0	£ s. d. 729 5 0	£ s. d. 64 10 0	£ s. d. 34 0 0	£ s. d. 234 5 4	£ s. d. 329 18 10	£ s. d. 212 10 0	£ s. d. 224 5 0	...	£ s. d. 3,705 12 8
Number of Inspectors	*4			2			1		1		...	8

* Three Inspectors only from 7th January to 4th July.

BOILERS TEMPORARILY AND PERMANENTLY CONDEMNED.

The number of boilers permanently condemned as being unfit for any useful pressure was 28, as against 16 for the preceding year. This considerable increase was to be expected, many boilers having been in the State for periods corresponding to the usual average life of boilers where the conditions are similar to to those prevailing here.

The number temporarily condemned for repairs, sometimes extensive, but in most cases of a trivial nature, was 91. This number also shows a considerable increase over the figures given for 1909. Return No. III. hereunder shows the proportion of condemned boilers to the total number of inspections during the year.

RETURN No. III.—*Showing number of temporarily and permanently condemned boilers per* 100 *inspections made during* 1910.

Year.	Temporarily.	Permanently.
1899	2·64 per cent.	1·42 per cent.
1900	2·21 do.	·498 do.
1901	4·35 do.	·511 do.
1902	5·00 do.	·958 do.
1903	2·43 do.	·697 do.
1904	3·08 do.	·389 do.
1905	2·84 do.	·388 do.
1906	3·98 do.	·960 do.
1907	4·36 do.	·802 do.
1908	3·18 do.	·599 do.
1909	2·89 do.	·797 do.
1910	4·49 do.	·283 do.

MAINTENANCE AND CARE OF BOILERS.

All of the inspectors report that in comparison with the state of things a few years ago, there is a marked improvement in the care devoted to boilers and their equipment, and I am pleased to note there is a growing tendency to value the services rendered by Inspectors. Most owners are beginning to realise that hints given by officers of this Department are generally worth following, and that their opinions as to the condition of boilers must necessarily be valuable, firstly, because they are quite unbiassed, and secondly, because the range of their experience is necessarily great. Owners are also realising that good maintenance must result in increased economy, that bad fittings lead to annoying stoppages, and that small neglected leaks almost inevitably bring in their train most disproportionately large repair bills. The appeal to the pocket is fortunately one that can generally be relied on.

EXPLOSIONS.

It gives me great satisfaction to be again able to say there has been no explosion during the past year. During the last thirteen years 28,339 certificates have been granted, and no single instance of anything that could be dignified by the term boiler explosion has occurred. This result is largely due to the good work done by Inspectors, and the general efficacy of the provisions of the Act. Whilst the total number of boilers in the State is not great, the complete immunity from the appalling effects of a serious boiler explosion compares more than favourably with the rest of the world, especially when account is taken of the destructive character of feed waters which owners in many centres are compelled to use.

During the year a small vertical boiler at West Collie was inspected, and found so badly corroded that its pressure was reduced from 100lbs. to 20lbs. The very rapid nature of the corrosion can be estimated by comparison with the same Inspector's report on inspection made in March, 1909. At this time the only corrosion found was scarcely worth mentioning.

In another case at Collie the district Inspector reports:—

"Up to the present I have always found these boilers remarkably well preserved, the plates being covered with the black, greasy-looking scale commonly found in boilers using feed water containing vegetable matter. On this occasion there was not a particle of scale on the plates about the water level. The plates were found very severely corroded in a belt 6in. or 8in. wide at water level. Towards the back end where circulation is not so great the effect is terrible, especially about the gusset stays."

The cause of the trouble appears to have been as follows:—

The feed water was taken from the Collie River, as previously, but during the summer months the river ceased to flow and was practically a series of water holes. It is the custom at this mine to wash the small coal with water pumped from the mine, which, owing to its acidity, is known to be totally unfit for boiler purposes.

The drainage from the slack heap found its way into the particular pool from which the boiler feed water was taken. This was undoubtedly the whole cause of the rapid deterioration referred to. The damage was practically caused in about two months at the end of the summer. The Inspector, in commenting on this case, remarks:—

"I consider this is one of the most serious cases that has come under my notice. When it is taken into consideration that the plates and rivets can be reduced to such an extent in so short a period, and that responsible mine officials, who are on the spot daily, are content to allow this state of affairs to exist until an Inspector forces their hands, it can be realised what grave responsibilities this Department is incurring, and how easily an accident might happen."

PROSECUTIONS UNDER THE ACT.

During 1910 two prosecutions were initiated. In each case the offence being that of working boilers at a higher pressure than that authorised. A fine of £1 and £2 4s. costs was imposed in each case. I am glad to be able to report that such offences are very rare.

DIVISION II.—INSPECTION OF MACHINERY.

Return No. IV. deals with the registration, classification, and inspection of machinery, subject to the Act.

The number of plants registered at the end of the year was 2,940, as compared with 2,728 at the end of 1909, thus showing an increase of 212.

The number of inspections made was 1,725, for which 1,632 certificates were issued. These figures show increases over the previous year of 111 and 19 respectively. The increase in the number of oil engines and producer gas plants will be seen to have been most marked. The number of electric motors in use is also largely in excess of the previous year's record. The latter are chiefly confined to the Metropolitan area and East Coolgardie, where the necessary supply of current is most easily obtainable. This class of motor is coming into greatly increased favour, and is no doubt ousting a large number of small steam plants. Producer or "Suction" Gas plants have apparently come to stay, and will no doubt be much more largely used when they are better known and understood, especially at outlying centres, where fuel is scarce and the water supply deficient or unsuitable for boiler purposes.

RETURN No. IV.—*Showing classification of Machinery and operations during the year ending 31st December, 1910.*

	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. 1910.	Total, all districts. 1909.
Total registrations	1,508	164	37	467	24	12	131	184	129	284	2,940	2,728
Total inspections made	1,007	79	22	312	9	4	68	107	49	68	1,725	1,614
Certificates issued bearing fees	579	18	2	228	3	1	13	37	9	14	904	912
Certificates (steam) without fees	345	61	20	78	6	3	55	66	40	54	728	701
Notices issued machinery dangerous	39	3	2	24	1	...	4	3	...	...	76	85
Electric Winding Engines	...	...	...	5	...	...	...	...	...	...	5	23
Electric Lighting and Power Plants	18	2	...	3	1	...	3	11	3	5	46	52
Electric Motors all purposes other than lifts	460	21	...	287	...	...	8	47	7	20	850	672
Lifts for passengers (Electric)	41	...	...	...	...	...	...	...	...	...	41	34
Lifts for passengers (Hydraulic)	1	...	...	...	...	...	...	...	...	...	1	...
Lifts for goods (various)	53	...	...	7	...	...	...	...	...	...	60	72
Refrigerating Plants	14	...	...	5	...	...	1	3	...	2	25	28
Oil Engines	325	9	1	4	2	...	18	8	19	34	420	354
Horse-power of Oil Engines	2,205	77	1·6	52	49	...	173	48	82	246	2,933	2,504
Gas Engines	54	...	...	4	...	...	...	...	...	...	58	49
Horse-power of Gas Engines	490	...	...	117	...	...	...	...	...	...	607	492
Air Winches	1	3	...	19	...	...	...	...	...	3	26	24
Gas Producers	6	4	1	4	4	1	3	8	4	9	44	16
Gas Producers, Horse-power	232	250	50	186	167	50	98	372	291	255	1,952	885

DANGEROUS MACHINERY.

In view of the ever increasing speed of machines of all kinds I wish to again impress on owners and importers of machinery the necessity for definitely specifying that all dangerous parts of new machines should be properly guarded. It is much more satisfactory and less costly to have a machine fitted with proper guards by the makers than to fix up "home made" guards. The latter are never so satisfactory, and certainly not so sightly, as guards made and designed as parts of machines.

During the year fencing and guarding of machines have been fairly well carried out, and owners have complied with the directions of Inspectors with, I think, greater willingness than in former years.

There have been instances during the year of operatives removing guards, or neglecting to replace them after cleaning, etc. It is curious, but certainly true, that the persons who have to use machinery are generally the last to see the importance of proper guards. This is especially the case where the user is also the owner, and the argument "No one goes near it except myself" is still very frequently advanced.

During the year 76 notices were issued to owners that machinery was dangerous (see Ret. No. IV.), *i.e.*, guards were necessary, machinery dangerously overcrowded, or out of repair to such an extent as to be a menace to the safety of the operatives using it. The number of notices issued appears to be a greatly decreasing one, and this is as it should be, as it is evidence that the necessity of efficient guards is becoming more recognised.

DIVISION III.—SURVEY OF HARBOUR AND RIVER VESSELS' MACHINERY.

As already mentioned, this Branch of the work was transferred to the Harbour and Lights Department as from 1st November last. Up to that date 31 surveys were made, and certificates duly issued.

Return No. V. gives particulars of machinery, names of vessels, etc. Surveys were conducted in Perth, Fremantle, Bunbury, and Albany.

RETURN No. V.

Return of Surveys of Boilers and Machinery on Steamers and Launches, etc.

Name of Vessel.	Description of Machinery.	Propelled by	Motor Power.	Date last Survey.
Duchess	Compound Surface Condensing Diagonal Engine	Paddle	Steam	24-2-10
Florrie	Single Cylinder H.P. Engine	Screw	do.	22-2-10
Countess	Compound Surface Condensing Diagonal Engine	Paddle	do.	14-2-11
Tanniwha	Compound Non-Condensing Engine	Screw	do.	15-1-10
Kentish Lass	Double Cylinder Non-Condensing Engine	Wheel	do.	19-5-10
Eagle	Compound Surface Condensing Engine	Screw	do.	10-8-10
Reliance	Do. do. do.	do.	do.	25-2-10
Dredge Fremantle	Triple Expansion Surface Condensing Engine	do.	do.	11-7-10
Albatross	Do. do. do.	do.	do.	28-6-10
Lady Forrest	Compound Surface Condensing Engine	do.	do.	23-9-10
Dredge Parmelia	Triple Expansion Surface Condensing Engine	do.	do.	8-1-10
Koori	Compound Surface Condensing Engine	do.	do.	27-7-10
Eclipse	Four Cylinder Tan. Compd. Surface Condensing Engine	do.	do.	13-8-10
Valhalla	Double Cylinder Internal Combustion Engine	do.	Oil	10-3-10
Linnett	Do. do. do.	do.	do.	10-3-10
Ophir I.	Internal Combustion Engine	do.	do.	10-3-10
Ophir II.	Do. do.	do.	do.	10-3-10
Ophir III.	Do. do.	do.	do.	10-3-10
Valkyrie	Do. do.	do.	do.	10-3-10
Valdavia	Double Cylinder Internal Combustion Engine	do.	do.	10-3-10
Valdemar	Do. do. do.	do.	do.	10-3-10
Swan	Internal Combustion Engine	do.	do.	24-3-10
Etta	Do. do.	do.	do.	8-2-10
Eagle	Do. do.	do.	do.	10-2-10
Yorck	Do. do.	do.	do.	„
Brooke	Do. do.	do.	do.	„
Dorothy	Do. do.	do.	do.	18-2-10
Mary	Do. do.	do.	do.	26-4-10
Dorothy (Albany)	Do. do.	do.	do.	„
Fram	Do. do.	do.	do.	„

DIVISION IV.—ACCIDENTS.

In spite of the machinery of the State being very fairly well guarded, I regret to have to report a further increase in the number of accidents.

During the year there were 74 accidents, of which 9 were fatal. Seven (7) accidents were caused by circular saws, resulting in loss of fingers, hands, and an arm. Seven (7) were caused by scalding, the only one of which calling for comment was a case where several boilers were coupled on to the same blow-off pipe. The blow-off cocks were Hopkinson's patent. These cocks have a safety handle so arranged that it can only be taken off when the cock is closed. The cock in question is stated to have been properly closed, and the key was removed to another boiler. The injured man was inside one of the idle boilers cleaning it, when the fireman, being sure the cock on the empty boiler was closed, opened the cock in another boiler and the water forced its way through the supposed closed cock into the boiler which was being cleaned. The cleaner fortunately escaped with severely scalded legs. The cock on examination was found wide open, and I am reluctantly forced to the conclusion that it had been maliciously tampered with. Unfortunately there was no available evidence which might have led to a conviction.

Belting, shafting, and mill gearing, as usual, provided the largest number of accidents, viz., 50, of which 6 were fatal. The 3 remaining fatal accidents were caused by (1) a passenger lift, (1) a friction hoist, and (1) by the bursting of an air receiver.

Return No. VI.

Return showing Number of Accidents in each District during Year ending 31st December, 1910.

Class of Machinery causing Accident.	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.
Circular saws	3	...	...	2	...	...	...	1	...	1	7
Wood-working machines ...	2	...	...	...	...	...	...	...	...	...	2
Passenger lifts	1 (1)	...	...	...	...	...	...	...	...	...	1 (1)
Goods lifts	1	...	...	...	..	...	...	...	...	...	1
Laundry roller	1	...	...	...	...	...	...	...	...	...	1
Biscuit cutter	1	...	...	...	...	...	...	...	...	...	1
Friction hoist	...	...	...	...	...	...	...	1 (1)	...	...	1 (1)
Burst glass water gauge ...	1	...	...	...	...	...	...	...	...	...	1
Scalds from burst steam pipes, hoses, etc. ...	...	...	...	5	...	...	1	...	...	1	7
Electric shocks and burns	...	...	...	1	...	...	...	...	...	...	1
Bursting of air receiver ...	...	...	...	...	..	...	...	...	...	1 (1)	1 (1)
Shafting, belting, couplings, pulleys, and other mill gearing*	5 (2)	2 (1)	1	27 (1)	1	...	...	7 (1)	4	3 (1)	50 (6)
Totals 1910 ...	15 (3)	2 (1)	1	35 (1)	1	...	1	9 (2)	4	6 (2)	74 (9)
Totals 1909 ...	4	1	...	46	...	...	1	6	2	3	63 (5)

*Excluding accidents covered by other headings. Figures in parentheses denote number of fatal accidents.

In almost every instance extreme carelessness on the part of the injured persons was the direct cause of the various accidents. In only one case was any additional guard ordered, and in the vast majority of cases no precautions in the nature of guards, fencing, etc., would have prevented the accidents. As long as men will insist on taking absolutely unnecessary risks accidents will continue. No doubt a spirit of emulation, and the wish to show a disregard for danger accounts for many accidents, and whilst these are valuable qualities, employers as a rule do not encourage either one or the other when they involve personal risk.

FATAL ACCIDENTS.

(1.) On 14th January an engine room assistant at the Great Fingall Gold Mine, Day Dawn, was killed by the explosion of an air receiver. The deceased man noticed a slight leak in the receiver and informed the engine-driver of the fact. The latter examined it and decided it was not serious. Being dark it was difficult to see anything distinctly. The driver returned to the engine room and the deceased man, it is supposed, stayed behind until the explosion occurred. He was thrown back violently against a wall, causing such injuries that he died shortly afterwards.

In my last year's report I referred to this accident. The cause was wasting of the plates, and this could easily have been discovered by competent inspection. I am still of the opinion that these vessels should be brought under control of the Act, and that periodical inspection should be made compulsory, under the Inspection of Machinery Act.

(2.) On January 17th a battery amalgamator at the St. George's Gold Mine, Mt. Magnet, was killed by being crushed under a battery driving pulley. The deceased was about to repair a belt, and no one having actually seen the accident, it remains uncertain whether he missed his footing and fell under the pulley, or whether the belt on which he was going to work caught him and drew him under it. The jury's verdict was that "the evidence does not show how the accident happened, and that all care is taken, and that no blame is attachable to anyone."

(3.) On June 15th an engine-driver at the Greenbushes Timber Corporation Mill, Greenbushes, met with his death through trying to pass under a belt to take a short cut to feed pump. No one saw the accident, but it is supposed that in rising from a stooping position the deceased was struck on the head by a belt fastener. There was no reason to have taken this route to the pump. The legitimate path to it being on the other side of the boiler.

(4.) On 7th July an employee on the Sons of Gwalia, Ltd., was killed whilst endeavouring to shift a belt with a piece of piping. The pipe got caught by the belt and penetrated deceased's abdomen. The belting in question was fitted with "striking gear" which under ordinary circumstances was efficient. The belt, however, had become tighter than usual through getting wet, and the striking gear would not shift it, hence the accident.

(5.) On July 11th a battery hand at Tindals Coolgardie Gold Mine got caught by a belt and was carried round the shafting and killed. There was no witness to the accident and no blame appears to attach to anyone.

(6.) On the early morning of July 12th a visitor at His Majesty's Hotel, Perth, met with his death through a lift accident. Deceased sent his luggage down by the lift in charge of the night watchman, and was in the act of removing the luggage himself, though requested not to do so by the lift boy, when in stooping to pick up a bag he accidentally came into contact with the starting lever and was crushed between the top of lift and the floor.

The starting lever of this lift was a detachable one and orders had been given to always remove it, and to leave door closed if attendant had to leave the lift. The accident occurred between the time of the night watchman leaving the lift and the usual day attendant taking it over. The lever had been left in position by the night watchman, and the lift boy who came on the scene just in time to see deceased entering lift did not know of this; he, however, requested deceased not to touch the luggage and offered to take it out for him. Unfortunately he persisted in doing it for himself. This is the only fatal lift accident which has occurred in the State since the commencement of the operations of the Act.

(7.) A second fatal accident occurred on July 12th at Wellington Mills (Millar's Karri and Jarrah Co., Ltd.) One of the employees met with his death by falling backwards against a belt, the fasteners of which struck him on the head; he was instantly killed. Deceased had entered a sawdust pit beneath the mill floor to attend to another small belt, and when he had finished the work and was getting out of the pit he accidentally slipped in some unaccountable manner and was struck by the belt fastener in question.

(8.) On the 16th October a man was being hauled to the surface at the Golden Bell North Gold Mine, Burtville, by a friction winch driven by a producer gas engine. The bucket in which the man was raised was half way through the doors and brake was applied but did not act; the bucket and man were precipitated to the bottom of the shaft, a distance of 200 feet; the man was instantly killed. It was subsequently found that one of the plummer blocks of the winch drum was broken, which accounted for the brake not acting. The winch, which had only been erected six weeks, was not registered and had not been inspected. It was found to be of very faulty design, and directions were at once given that men were not to be raised or lowered on similar winches nor allowed to work under bucket whilst winch was being used.

(9.) On the 4th November a fatal accident occurred at the Great Boulder Perseverance Gold Mine. The deceased's duties were to attend to a Hadfield crusher, and amongst other things to attend to its lubrication. No one saw the accident happen and the presumption is that in attending to the lubricators on the top of the machine the unfortunate man slipped and fell, head downwards, between the flywheel and the side of the machine. Probably the slip was caused by a sudden attack of dizziness.

The flywheel in question has a wide iron guard right round the top side of the wheel, projecting 12in. beyond the rim on the side next the machine where the deceased fell in. No suggestion was made by the jury that the guard was insufficient.

On July 30th a locomotive belonging to Millar's Karri and Jarrah Co., Ltd., was partially derailed and the guard sustained severe injuries from the effect of which he died on the same evening. This was scarcely a machinery accident and it was therefore not included in the above return.

MISHAPS TO MACHINERY.

In October a winding engine at Collie was incapacitated by the fracture of the drum shaft between the two drums. The engine-driver fortunately noticed that the drums were not running truly, and called the attention of the engineer to the matter. The drums having been removed the shaft was found fractured completely through.

The inspector reports:—"The material appears to be very inferior and much crystallised." He subsequently ascertained that it had formerly been part of the "tail shaft" of a steamer, and the crystallisation referred to probably occurred while in use in the steamer. The accident clearly indicates the folly of using old material for structures in which it is important that everything should be above suspicion.

The plant is only used for the haulage of coal and no damage to person or property (other than the shaft itself) occurred. The engine is a fairly large one, having drums 10 feet diameter. The diameter of the fractured shaft was 8½in., the distance between the bearings being 11ft. 2in. The engine is used for hauling from an underlay shaft. Grade of incline is 1 in 15 to 1 in 10.

The total weight of the load hauled at the time of the accident was 18 tons. The 10 feet drums referred to are now replaced by a pair of smaller drums

In June the drum shaft of the winding engine at the Great Boulder Perseverance Gold Mine was found to be fractured at the edges of the clutch key seats. This was probably due to local crystallisation due to the repeated slight concussions of the feather against sides of key way.

It was decided by the management to replace the shaft by a new one, though personally I did not consider this absolutely necessary. The shaft is 17 feet long, 11½in. diameter; it has two bearings 17¾in. wide and one 14in. wide. The weight of the discs is about 3 tons, weight of drums 6½ tons and shaft itself about 2½ tons. The old shaft was sent to a local foundry for removal of discs, etc., and unfortunately one of the discs got cracked in the process across one of the webs. This necessitated the shrinking on of a steel band. The original mishap, though slight, thus ended in a somewhat costly repair.

In October a mishap occurred to a producer gas engine of 42 h.p. at Merton's Reward Gold Mine. There had been some difficulty in getting the engine to work satisfactorily, but this was eventually overcome. Suddenly the combustion chamber and portion of the cylinder parted from the rest of the engine at the same time bending the gear shaft, and break-

ing both its supporting brackets. The Company has reverted to the use of steam plant.

The District Inspector reports:—

"It will be seen that the strain of the explosion is borne entirely by the outer walls of the water jacket. The total sectional area of this jacket is 67½ square inches. The total safe load would therefore be about 108,000lbs. The explosive force of this particular engine would be about 28,000 to 30,000 lbs; it therefore appears amply strong.

"In the casting in question, however, there was a flaw running for a considerable distance, and the metal generally appears to be crystalline and of poor quality. The flaws would reduce the safe load to about 76,000lbs., which should still have been ample under ordinary circumstances. The actual h.p. required from the engine is, for battery say, 30 h.p., for agitators 8 h.p., and for slimes pump 4 h.p. = 42 h.p. The engine would therefore require to be working at its full rated power with good gas all the time to satisfactorily cope with the load. In my opinion there should have been a margin of at least 25 per cent., and where such a margin is not provided it is almost a certainty that in such a climate as this, pre-ignition will sooner or later take place, and I have very little doubt that this has been the cause of the breakdown."

Fortunately there was no one in the engine room at the time of the accident, or probably there would have been another fatal accident to record.

A peculiar mishap occurred at the Hainault Gold Mine in June. It became necessary to repack a three-way cock on the steam pipe supplying the steam brake cylinders. In order to do this a control valve beyond the cock was closed, but as steam leaked past this valve a second valve on same line of piping was closed. The three-way cock was eventually packed and *one* only of the control valves was opened. The engine-driver was informed that everything was all right. He commenced work by throwing out the clutch, having no suspicion that steam was not available for the brakes. When the drum began to revolve he opened the three-way cock to apply brake and found it inoperative. Not knowing about the second valve, and realising that he could do nothing, he left the engine room. The winding rope was destroyed and the skip somewhat damaged. Fortunately no men were being hauled. The mishap was caused by one of the control valves having been overlooked by the person who closed it. The engine-driver under the circumstances cannot be blamed.

In the above case the brakes were *applied* by steam. I am of opinion that the class of brake which is *released* by steam and applied automatically by a weight is much safer than a brake which is applied by steam.

ENGINE-DRIVERS' EXAMINATIONS.

During the year four examinations were held in Perth, two in Bunbury, Kalgoorlie, Malcolm, and Cue, and one at Albany, Sandstone, and Norseman.

The personnel of the Board of Examiners is the same as it has been for the past three years, viz., Messrs. Gill and Breydon as members, with myself as chairman.

Forty-one meetings were held, at which 260 applications were considered, and the issue of the following certificates approved of:—

RETURN VII.—*Showing total number of Engine-drivers' Certificates (all classes) granted 1910.*

Class of Certificate.	Number granted.	
	1910.	1909.
1st Class Competency (including Certificates under Regulation 9a and Section 63) ...	17	37
2nd do. do. do. do.	39	43
Marine do. do. do. do.	11	8
3rd do. do. do. do.	46	76
Loc. and Traction Competency	13	17
Traction Competency	1	3
Interim	22	23
Copies	13	18
Totals	162	225

INQUIRIES, PROSECUTIONS, ETC.

It gives me great pleasure to be able to report that no official inquiry or prosecution in connection with engine-drivers was necessary during the year. A few cases of overwinds were reported, but in no case was any serious damage done, and in nearly every case the driver was retained in his position and his error condoned.

Considering the enormous tonnage hauled at some of the large mines—anything up to about 25,000 tons of ore per month, the constant strain on drivers and the somewhat severe climatic conditions, it is a matter for congratulation that overwinds and kindred accidents are not more frequent than they are. A few examples of the conditions under which overwinding occurred may be interesting:—

(*a.*) The driver having opened the drain cocks on cylinders, and slightly opened the throttle valve, which is of slide valve pattern operated by a lever working in a sector, proceeded to the top of boilers to open the main stop valve. He had left the North drum out of gear, South drum in gear, and reversing lever in position to wind South drum; both brakes on. When full steam was turned on at boilers the driver heard a noise in the engine-room and ran down to it. He found engine running with throttle valve full open. He at once shut the valve, but could not get near the reversing lever to centre it owing to the end of the rope, which had been detached from the tank, flying round the drum each revolution. He at once ran to the boilers and turned off steam there. The tank was dropped to the bottom of the shaft, and the damage done was fortunately slight. The immediate cause of the accident appears to have been a faulty starting valve. Probably the packing was loose, and when the full boiler pressure was turned on the valve shot over to full open position. Of course both drums should have been out of gear and reversing lever centered. The brakes were both found off, but probably this was accounted for by the

vibration of the end of the rope striking the platform.

(*b.*) A cage with a truck of ore was being hauled to the brace; the driver who had been watching the indicator "in taking his eye from the indicator to the drum somehow missed the mark on the drum." He, however, managed to shut off steam and apply his brake before the hook touched the thimble. The pin was sheared and the cage hung up.

(*c.*) A driver who has had charge of an engine with 20in. cylinders with a 60in. stroke for nine years had an overwind under conditions which should prove a warning to him and to others employed in and about winding engines. He was at the moment hauling blunt drills to the surface and was *talking to the shop foreman* about some intended repairs to the engine. The conversation caused him to be preoccupied, and he momentarily forgot the position of the cage in the shaft, with the result that the cage was overwound. The safety hook acted but the thimble broke, and failed to hold the cage. However, the side grips came into action and prevented further damage.

(*d.*) In February whilst changing to haul from another level a driver failed to secure the North skip, which was empty, by bumper provided for the purpose (the shaft was an underlay). On throwing out the clutch the skip bolted and went down to the pent house. The driver in trying to regain control of the engine broke the handle of the starting valve, and the South skip loaded with quartz then followed the other one. Both skips were found on the penthouse. No damage being done either to penthouse or skip.

(*e.*) In June an accident occurred which might have ended very seriously. Four men were being lowered to the No. 11 level. After the cage had passed No. 10 the chain which drives the indicator slipped off the sprocket. This was not noticed and the driver continued to lower. The cage, which was fortunately not travelling at any very great speed, struck the bottom. Three of the men in cage returned to work and one went home. No one was seriously injured.

(*f.*) Another case of overwind occurred in March. The driver in question was on night shift and had to do his own firing. He left the baling tank in the position where it is emptied, and then went off to attend to his fires. On coming back he turned on steam to lower tank again, forgetting that he had left the reversing lever in position for hauling it up. The tank was carried up to the thimble, a distance of 18 feet.

It is to be noted that in all the *overwinds* above referred to no men were being hauled, and in several cases the driver stated that the overwind would not have happened had they been hauling men. The only conclusion to be drawn is, that the fact of knowing that men are not in cage renders some drivers more or less careless. A driver should not let the fact of there being no men in cage influence him, and just as much care should be exercised when hauling ore, etc., as when men are on; otherwise a habit is formed, and sooner or later he will handle his engine when men *are* on in the same careless way that he has become accustomed to do when he knows he is only handling ore, etc.

OVERWINDING SAFETY APPLIANCES.

Whilst on the subject of overwinds it may be well to call attention to the fact that there are well tested devices on the market which practically render such occurrences impossible.

The Whitmore patent overspeed and overwinding gear combined with the Whitmore brake has been fitted at the following mines in Kalgoorlie:—

Golden Horseshoe, 2 engines, average monthly tonnage 25,000.

Ivanhoe, 2 engines, average monthly tonnage 20,000.

Kalgurli, 1 engine, average monthly tonnage, 10,000.

These engines are all large plants, fitted with Corliss valve gear, steam actuated friction clutches, and steam released brakes. I understand that in every case the gear has given complete satisfaction.

The makers claim for their brake that "any load can be held with the brake, varying according to the amount the foot lever is put down, from zero to maximum load; this maximum load being sufficient to hold the engine against full steam. The wear on the blocks is automatically taken up so that for a given brake load the foot lever is always in the same position."

With regard to the overwinding device the makers explain "the object of their device is to take the control of the engine out of the hands of the driver should he at any time make a slip likely to lead to serious consequences. A driver may at any time start his engine in the wrong direction, and go *up* with his top cage instead of down. This is probably the most frequent of any accidents. The next point is that he may fail to close his throttle valve at the right time and so finish his winding at a speed greater than usual, and cause an overwind. It is therefore essential that any overwinding device should be so designed that it will take the engine out of the driver's control should either of these mistakes occur, and this is the basis upon which our overwinder has been arranged."

At the Edward shaft of the Great Boulder mine the large vertical compound engines by Thompson & Co., Castlemaine, have been fitted with an overwind device designed by Mr. Ridgeway, the mine engineer.

When the cage reaches a predetermined point, the brakes are applied and the engine is firmly held till released. The mechanism, which is purely an overwind gear, is operated by the indicator, and differs from the Whitmore device inasmuch as it only comes into action in case of an actual overwind. I understand that this device has worked well in practice and has been found reliable.

Quite recently another contrivance has been brought forward, which although mainly designed for signalling from a travelling cage may be utilised to prevent overwinding. The patentee claims that from the cage, whether stationary or moving at any reasonable speed, he can signal to the driver or the various plats, shut off steam, and apply the brakes to engine at any prearranged point at top or bottom of the shaft. The device appears ingenious and may have a future before it, but so far as I am aware it has not yet been installed on any of the large mines.

DIVISION VI.—GENERAL.

Inspectorial Staff.—Inspector Tickle ceased duty with this Department on January 7th and subsequently resigned. The vacancy so caused was filled by the appointment of Mr. A. G. Butcher, who commenced work on July 4th, thus involving a loss of six months' work. With the above exceptions the staff remains the same.

Clerical Staff.—There was no change in the *personnel* of the clerical staff with the exception of Cue, where the Clerk to the Inspectors of Machinery and Mines was dismissed from the service, owing to defalcations which were found to exist. During the year it was considered advisable, in the interests of administration, to bring the clerical staff in the offices at Kalgoorlie and Cue under the direction (subject to instructions from the Head Office) of the respective Mining Registrars in those districts.

Revenue.—The total revenue from all sources for the year was £4,358 9s. 5d. My last year's anticipation that the revenue for 1910 would show a marked improvement has therefore not been fulfilled. This has been largely due to an incomplete staff, and to some extent, I regret to say, to the defalcations of the clerk in charge in this office, but I anticipate the estimate will be realised when the financial year closes.

Correspondence.—Inward correspondence totalling 7,065 was received and dealt with, and 5,221 outward letters and telegrams were despatched.

Mileage travelled.—A total of 38,709 miles was travelled by Inspectors, viz., 23,556 by rail, 14,809 by road, and 344 by water.

The total number of inspections (boilers and machinery) was 3,751. Comparing these figures with miles travelled, the average distance travelled per inspection was 10.3 miles.

Coronial Inquiries.—I should like to point out that the present arrangements with regard to inquests in case of fatal boiler and machinery accidents is not satisfactory as far as this Department is concerned. An Inspector of Machinery has at present no legal standing at such inquiries. I maintain that he should have.

The verdict of a jury, the members of which are not by any means necessarily experts, might often be considerably influenced were an Inspector of Machinery present at the inquest, with the right to bring out what evidence he considered necessary from his particular knowledge of the machinery involved.

I trust that, until statutory powers are obtained, it may be possible to make some arrangement by which it shall be rendered obligatory on the part of Coroners to notify Inspectors as to day and place of all such inquiries in future.

In conclusion I desire to place on record my appreciation of the generous support and assistance rendered by the Staff, and to thank officers of other departments, both in the Commonwealth and State Services, who have so ably co-operated with me in connection with engine-drivers' examinations, inquiries, etc., in outlying centres.

C. J. MATHEWS,

Chief Inspector of Machinery and

24th June, 1911. Chairman Board of Examiners.

EXTRACTS FROM DISTRICT INSPECTORS' REPORTS.

Mr. B. Prynn Jones, Inspector of Machinery in charge East Coolgardie, Coolgardie and Yilgarn, Dundas, North-East Coolgardie, and Broad Arrow Districts, remarks:—

"It is extremely difficult to account for the frequency of machinery accidents in any satisfactory manner.

"Firstly comes carelessness born of familiarity, secondly, in my opinion, and closely following comes keen competition for reputation among the youths and men in charge. Employers as a rule do not demand any personal risk on the part of their employees, but they naturally appreciate skill and are not inclined to inquire too closely into methods. Fellow workmen are also prone to differentiate, and so the race for reputation goes on till an accident occurs. Of the two fatal accidents, one occurred in Kalgoorlie and one at Coolgardie. Both were fully reported on and in each case the Coroner's jury brought in a verdict of accidental death without any recommendation as to further fencing or guarding.

"It is satisfactory to note in this connection that the police choose jurymen from those having a knowledge of the work and surroundings of the deceased person.

"*Engine-drivers.*—The year's record shows that while engine-drivers are not immune from occasional lapses of duty, in no case was any accident attended by injury to the person. As regards drivers of winding engines, a few cases of overwinding have occurred, and two in which engines ran out of control. All these have been reported on, and in no case did I deem it necessary to recommend any further inquiry or prosecution. As complete statements are taken from those interested and forwarded to the Board of Examiners it has apparently agreed with my views. In almost every case the employers have condoned the fault of the men.

"It seems a pity that engine-drivers do not take inspectors more into their confidence as to defects in the machinery under their care. It is of course impossible for one to recognise or discover minor defects in the time available for inspection of machinery unless all the parts are separated and cleaned, practically an impossibility. But the man or men working round and about, greasing and cleaning day after day, have often slight defects thrust on their notice which might convey valuable information to an inspector and be the means of preventing serious consequences. As a rule I have found engine-drivers candid and straightforward in the version of accidents and I seem to see a tendency on the part of the employers not to be too exacting.

"Many of the mines and suppliers of electric power have been busy increasing and improving their plants during the year. The Great Boulder have replaced their large mill engine by a triple expansion high speed one of 800 h.p., by Belliss & Morcom, to drive

which required the installation of three large Babcock & Wilcox water-tube boilers. They have further alterations and improvements in view for the coming year. The new exhaust steam Turbo Generator by the A.E.G. Co. on the Golden Horseshoe Mine will start work in the new year, and with the two high pressure ones will run about twenty-five motors, aggregating about 1,200 h.p.

"The Associated are busy with the erection of a British Thompson Houston Co., Ltd., Exhaust Steam Turbo Generator of 750 h.p. and expect to effect great economies. Two additional duplex roasters have been installed.

"The Kalgoorlie Electric Power and Lighting Corporation is increasing its plant by the erection of a large cross compound engine by Carels Freres, of Belgium, to drive a 500 kilowatt three-phase generator by the A.E.G. Co. of Berlin. This will necessitate an increase of steam plant by two 250 h.p. Babcock and Wilcox water-tube boilers.

"The Boulder Council lighting and power plant is being increased and re-arranged. A 140 h.p. producer gas plant of the latest type by Ruston, Proctor & Co. will drive an 80 kilowatt dynamo made by the A.E.G. Co. While the steam plant will be increased by an Allen high speed engine of 240 h.p. combined with 150 kilowatt dynamo, by A.E.G. Co., steam will still be used for the afternoon and early night load, and the gas plant for the remainder of the day. The new Fraser & Chalmers single drum winder on the Ivanhoe mine started work during the year. It is completely up to date and replete with safety devices.

"The drum is fitted with double post brakes applied by weights and released by steam, while the crank discs have brakes under control of the driver's foot. Whitmore's overspeed and overwinding device ensures almost perfect safety in operation.

"To show that the engineers of the Golden Mile know how to handle machinery, it might be interesting to glance at a few details regarding the erection of the new portion of the Perseverance Mine plant. On the first day of the year the site of the new plant was covered with the *débris* of the fire. The new plant consisted in the main of two large 500 h.p. compound air compressors by Walker Bros., eight No. 5 Ball mills, each driven by a 75 h.p. motor and all the supplementary machinery which such a plant involves—condensers, conveyors, fans, etc., each driven by its own motor.

"On January 3rd a start was made to prepare for foundations and by the end of July the whole plant had been given a trial run and was ready for work.

"Each of the compressor foundations consisted of 427 cubic yards of cement concrete and each was laid in 40 hours. The parts of first compressor were commenced to be assembled on May 9th, erection started on the 17th and completed on the 28th.

"Assembling of second compressor began on June 23rd and trial run took place on July 22nd.

"There are over 45 motors on this mine; the only machinery worked by steam being winders and compressors. All electric power is obtained from the Kalgoorlie Power Corporation, Ltd."

———

Mr. G. P. McCulloch, Inspector of Machinery in charge of the North Coolgardie and Mount Margaret Districts, remarks:—

"The condition and upkeep of the boilers and machinery in the districts still show steady improvement in the great majority of cases, but it is of course only to be expected that there will always remain a small proportion of owners too ignorant or careless to realise the importance of looking after machinery properly, if only from the point of view of their own pockets. I have actually known such men to object to the granting of a short certificate (say for six months) on the grounds of the expense they would be put to in *cleaning the boiler* in readiness for inspection, in addition to the inspection fee. In such cases it seemed almost waste of breath to try and point out that the saving in fuel to be effected by cleaning the boiler and flues at proper intervals would compensate for the cost of cleaning and inspection many times over. In this connection a large boiler owner pointed out to me not long ago that he believed it would be a good thing for boiler owners to make the maximum currency of boiler certificates shorter than twelve months, and for the above reasons. Such ignorance as he referred to is, however, happily rare, as pointed out above.

"In my last annual report I touched briefly upon the subject of producer gas engines. The plants of this type installed in the districts are on the whole running well and satisfactorily, although there has been considerable trouble with one or two, from various causes. In one case where the engine practically split into two pieces (fortunately without serious results to any person) the cause was, I am convinced, that the engine was not strong enough for its work, the rated horse-power being the same as that it was actually called upon to do. Therein lays one great point of difference between gas and steam engines. If the work required is equivalent to say 100 h.p., the rated h.p. of a gas engine to do it, in such a climate and under such conditions as obtain here should be about 150 h.p., certainly not less than 130; whereas a steam engine whose rated economical capacity is 100 h.p. would be capable of doing 200 h.p. at a pinch, though certainly with great loss of economy. In such cases reliability must to a certain extent be pitted against economy; the latter may indeed become a misnomer if the former is not assured."

———

Mr. W. Churchill, Inspector of Machinery in charge of the Murchison, Yalgoo, Peak Hill, and East Murchison Districts, remarks:—

"The matter of treatment of boiler feed water in my districts is receiving attention, with very beneficial results, both as regards fuel consumption and boiler cleaning charges. In one case the annual estimated saving is £500 *per boiler*, and this in an installation where there are a number of boilers is a very considerable item. In my opinion other conditions of working have contributed somewhat towards this saving, but even if only 50 per cent. of the above amount be credited to water treatment the necessary small outfit has fully warranted its initial cost and upkeep. The cost of treatment in the above case is about 6d. per 1,000 gallons. The treatment reduces the hardness from about 30 per cent. down to about 1 per cent., which is really lower than is necessary.

"Owing to unforeseen reasons I have only been able to make one trip to the East Murchison District during the year, consequently there were many inspections overdue at the end of the year."

———

Mr. H. L. Gill, Inspector of Machinery in the South-Western District, remarks:—

"During the year 61 new machinery registrations were made of which seven were lifts. There are now 75 lifts in use in Perth, viz., 36 passenger and 39 goods. One passenger lift is still worked hydraulically, the rest are electrically driven. Six goods lifts are operated by hydraulic power, one is driven by a belt from an oil engine and the rest are electrically driven.

"In addition to the ordinary inspection of boilers and machinery where certificates were granted, a good deal of work was done during the year for other departments, *e.g.*, at Fremantle Gaol and Perth Public Hospital, in connection with installation and rearrangement of steam plants, and also in connection with the purchase of traction engines for the Agricultural Department.

"During the year no accidents occurred in connection with boilers inspected by me. Five accidents, due to machinery, were inquired into by me, one of which—a lift accident—was fatal. The circumstances were peculiar, inasmuch as the deceased was not riding in the lift. He had sent his luggage down in it, and afterwards walked down himself. He arrived just as the nightwatchman left the lift, and before the day attendant had entered it. He unfortunately insisted on taking out his luggage himself and in doing so managed to start the lift downwards and was crushed between the top of the cage and the floor.

"I wish to call your attention to the fact that I was not summoned to attend the inquest, nor was the department even informed of the date. I am strongly of the opinion that the inspector of any district in which a fatal accident occurs should have the legal right of being present at inquests. He could often bring out evidence which no one else either would or could.

"I have reason to think there are a good many groups of machinery still unregistered in and about Perth, but as I cannot at present cope with those already registered, I have not been able to make anything like a search for machinery which may not be registered.

"I am pleased to be able to report that there is a growing tendency to fit passenger lifts with more, and better, safety appliances. Most lift owners are beginning to realise that it pays them to have their lifts properly looked after, and this was by no means the case a few years ago.

"Generally, I consider the condition of the boilers and machinery in that part of the South-Western District worked by me is satisfactory."

———

Mr. D. F. Booth, Inspector of Machinery in the South-Western District, remarks:—

"I have made 129 new registrations of machinery during the year, most of which were driven by oil or gasoline engines and used for farm work.

"I am convinced that a large number of accidents occur yearly with chaff cutters, though very few of these are officially reported.

"Most of the reputable makers of chaff cutting machines are now adding safety appliances which make it almost impossible for the operator to get his hands into the knives.

"With regard to maintenance and safeguarding of machinery generally, I can say that in comparison with the state of things, say 20 or even 10 years ago, there has been a wonderful improvement, and in my opinion the liability to accident is now very much less than it was. The improvement in maintenance has also led to an enormous saving of money for the owners of machinery. From this point of view the present condition is satisfactory, but there are still many owners who require a lot more of the education which this department is intended to give them and, some of them, some compulsion before the state of things can be considered as entirely satisfactory from either an engineering or humanitarian point of view."

———

Mr. J. Stone, Inspector of Machinery in the South-Western District, remarks:—

"In the portion of the South-Western District in which I have been engaged during the year ending 30th December, 1910, there are now nearly 400 boilers and 200 groups of machinery, registered under "The Inspection of Machinery Act, 1904." The boilers include all known types, ancient and modern, whilst the machinery section covers a very wide range, from the crude makeshift of the struggling miner and settler to the most modern of labour-saving appliances.

"*Boilers.*—Maintenance has been very fair, although in some cases unsuitable water is still being used for feed purposes, principally in the Collie and Kirupp districts, the destructive nature of the 'Collie water' has previously been dealt with, and there is one well at Kirupp, where the water is equally bad. This was used for locomotive purposes and the life of the boiler proved to be approximately two years, two boilers on this locomotive being ruined in a little more than four years.

"One is often asked, 'How long should a boiler last?' As an example of the uncertainty of this, I would like to refer you to two boilers which were condemned at Kirupp during the year. One of these was built in 1873 and the other in 1907, and yet both were condemned in the same year. This shows how impossible it is to satisfactorily answer questions as to the length of time a boiler should last.

"I am pleased to state that generally boilers are receiving very fair treatment, although in some cases there is still room for improvement, but it is only fair to state that in the majority of these cases, owners fully realise the position, and would gladly remedy defects were it in their power to do so.

"The repair list has again been very heavy; this cannot be attributed to neglect or bad usage, but to the fact that among the boilers in this district we have a large percentage of the oldest boilers in the State; in many cases the makers and material being an unknown quantity, and the design anything but modern.

"In specifying repairs I have continued the policy of making same of a permanent nature, in order to restore boilers to as nearly as possible their original strength; and, with this end in view, have advocated the fitting of new plates in preference to a series of small patches.

"Special attention has been paid to boilers of locomotive type, and every opportunity has been taken for making thorough internal inspections when tubes were drawn. I have also insisted on subjecting boilers to hydraulic test upon completion of repairs; the result has been that boiler jobbers are now practically unknown in these parts, and in almost every case the repairs have been carried out by experienced workmen and completed in a workmanlike manner.

"*New Boilers.*—Several new boilers have been built during the year and have been of modern design, the materials of approved brands, and the workmanship excellent; the finished article, although perhaps lacking that 'nice finish' found in some boilers built by reputable British firms, are for all practical purposes as good as anything built.

"There have been no accidents of a serious nature to boilers. In one case, however, which came under my notice a boiler was wilfully tampered with, and, had it not been discovered, the result may have been serious; unfortunately the culprit could not be found.

"*Old Boilers.*—Several old boilers have been permanently condemned and others reduced in pressure; some of these have been in use for upwards of 25 years; the inspection of the latter is very trying, many of them are not corroded to any extent, but the materials have deteriorated in quality, the only means of determining condition of the plates is to have test pieces cut out. Naturally owners object to this course being adopted; where possible I have continued to make 'bending tests' of old plates.

"*Machinery.*—The inspection of machinery in this district has again been somewhat difficult, owing to a number of plants being of a temporary or portable nature, and being constantly erected or dismantled and removed from place to place. At times it is very difficult to trace them. Several new groups of machinery have been registered, and others are in course of erection and will be attended to in due course.

"*Accidents.*—In connection with the saw-milling industry there have been several accidents of a serious nature, including two fatal accidents. Inquiries were made into the circumstances, and in one case I attended the inquest on deceased. Strange to say that in almost every case I found that the injured person was an experienced workman, who had been engaged in this particular work for years, and had taken more than an ordinary working risk 'once too often.'

"I have frequently seen experienced men, working about a revolving saw, place themselves in unnecessarily dangerous positions where the least slip meant a serious accident, but considering the nature of the work and the number of men employed the percentage of accidents is very low.

"*Engine-drivers.*—During the past year or two the wages and conditions of engine-drivers have improved considerably, and owners are now reaping the benefit by having their plants better cared for.

A new industry is being established, viz., clearing land by traction engines. Four engines are now at work and four others are on order. The traction engine has difficulties peculiar to itself, and in this particular industry is one of the most difficult of engines to manage.

"A driver has to take his engine into the 'virgin bush' away from known water supplies and roads, up hills and down gullies, which appear practically impossible for an engine, and in case of break-down he is required to effect necessary repairs and get along somehow.

"In the past there has been very little traction work done in this State, consequently very few thoroughly experienced traction engine-drivers are available; this is likely to seriously affect the success of this industry, as everything depends on the driver. No doubt they will gain experience in the course of time, but, unfortunately, this experience will have to be paid for by the settler, who is charged a fixed rate for hire of engine, whether work is progressing or not.

"Although I have worked on a considerable number of Sundays and holidays and a vast amount of overtime, I regret to state that I have been unable to keep inspections up to date, or make nearly so many surprise visits and working inspections as I should like to have done. This has been largely due to having to assist in inspection work in other districts.

"The future prospects of this corner of the State are very bright; the flourishing condition of the timber industry, the growing demand and popularity of Collie coal, and the high price of tin and agricultural produce have led to higher wages and better conditions being granted for both skilled and unskilled labour, and have necessitated the duplication and enlargement of existing plants and the erection of many new ones, which means extra duties for the inspector. The vigorous railway and land policies adopted by our Government, while opening up new country, mean considerably more travelling in remote districts for Inspectors of machinery. One could gladly appreciate the development of the wonderful resources of our State and cheerfully meet the demand for extra duties and overtime, were it not for the fact that notwithstanding these additional services, each succeeding year brings its reduction of an already inadequate salary."

DIVISION VIII.

FIFTEENTH ANNUAL REPORT OF THE CHIEF INSPECTOR OF EXPLOSIVES, GOVERNMENT ANALYST, AND AGRICULTURAL CHEMIST, FOR YEAR 1910.

The Government Chemical Laboratory,
Wellington Street, Perth,
1st April, 1911.

The Secretary for Mines, Perth.

Sir,—I have the honour to submit, for the information of the Hon. the Minister for Mines, my fifteenth Annual Report, for the year 1910, concerning the various duties which are entrusted to me.

The year has been rather an eventful one as far as my work is concerned, for it has seen considerable progress made along one or two lines of investigation which have received special attention in this Laboratory for some years past.

GASES IN MINES.

During the greater part of the year the investigation of the nature of the fumes derived from explosives in our mines occupied my principal attention. This enquiry required my absence intermittently from Perth for about eight months of the year, and involved a good deal more labour than I had at first anticipated. It rendered necessary, also, a rapid visit to Broken Hill in the early part of the year in connection with the somewhat similar investigations which were proceeding there. I am glad to say that I was able to carry out almost in its entirety the programme which I had laid down for these investigations, and such parts of the enquiry as I was unable to complete, owing to the lack of the necessary facilities, I am now in a position to carry out, more particularly the series of tests on the velocity of detonation of explosives used in this State, and I hope to have these completed during the present year. The postponement of these tests did not, however, interfere with the preparation of a report on the work carried out at Kalgoorlie, and this was issued on the 5th December, under the title "Report on Investigations into the Composition of Gases caused by blasting in mines." In view of these researches having been embodied in a special report (which has been printed and is available for distribution) it is not necessary for me to deal with them further here, except to say that it is hoped that they may prove of some practical advantage, and that the suggestions put forward as a result of the investigations may assist manufacturers towards such an improvement in the manufacture of explosives as will be of benefit to underground workers.

POTABLE SPIRITS.

I was also able during the year to complete the work referred to in my last Annual Report on the composition and analysis of spirituous liquors, and was able, in July last, to summarise the result in a special report, which had not been published at the close of the year, but which at the present time is being printed and will be available before the lines which are now being written. Therein I have been able to propose a very radical departure from the present method of dealing with spirituous liquors. As far as whisky is concerned I came to the conclusion that it is quite possible, by means of carefully controlled chemical analysis, to so far distinguish between different kinds of spirit as to check the accuracy, within certain limits, of the labels which they might bear. I therefore recommended the introduction of certain legislation which should deal with:—

(1.) Defining certain classes of whisky.
(2.) The mode in which they should be labelled.
(3.) Prescribing chemical standards for the various classes defined.
(4.) Prescribing the chemical methods by which these standards are to be established.

I was only able to obtain the data necessary for dealing with whiskies in this manner, but I see no reason why the same procedure should not be applied to the other common classes of spirits, *e.g.,* brandy and rum, provided that proper steps are taken to provide corresponding data. It might be even possible to extend the same line of investigation to wines, a region as yet unexplored in this direction.

I am very pleased to thus be in a position to make to the Government practical recommendations for the control of the liquor traffic in this State. The whole of the labour on this subject for the last five years has had this practical object in view; but the subject has been so full of difficulties that I have at times almost despaired as to whether any public benefit could be derived in a practical manner from the investigations which I had in hand. Gradually, however, the difficulties and obstructions have been cleared away, and though the suggestions now made for legislative control may not be found entirely without fault, they at least mark a very forward step, and in those directions in which they are themselves lacking it is to be hoped that they will suggest and lead to other measures more effective.

WHEATS AND FLOURS.

A commencement was made during the year with one other matter with which I have for a long time desired to deal. The investigation of the milling properties of wheats must, I have always felt, be conducted not only as a matter of theoretical interest, but must also have some practical outcome in connection with the production and commerce of the State. I therefore conceived the idea of preparing a pamphlet giving a full description and tests of the various classes of wheats which are being grown in Western Australia, for the guidance of farmers in choosing their seed wheat. Such a pamphlet would, amongst other things, contain a description of the habits, seasonal character, appearance, yield and milling qualities of the different varieties, and would be summarised in a recommendation as to the best wheats to be

grown in various districts of the State according to the climate and soil characteristics. This involved a great deal of labour and the milling investigation of a large number of samples.

As I have already said, a commencement was made with this work and it was intended to pursue it closely during 1911, but I regret to say that very soon after the close of 1910 Mr. W. H. J. Clarke, my assistant who was specially engaged upon this work, was seized with typhoid fever and rapidly succumbed. The death of Mr. Clarke will be a severe loss to me, and he had made such a study of the various branches of the subject as rendered his services indispensable in an investigation of this kind. His death was therefore the cause of the indefinite postponement of the pursuit of this work for the present, but I hope to be able to take the matter up again before the conclusion of this year.

GOLDFIELDS WATER SCHEME MAIN.

I am glad to be able to state that the Government after long consideration, finally approved of the trial of my recommendation that the water of the Coolgardie Water Scheme should be treated with lime in order to try to arrest corrosion in the large 30in. main, and that this treatment should be put to a full trial before any steps be taken towards the installation of the d'æration process recommended by the special Board of London experts. The necessary installation for the lime treatment has been made, and I understand from the Resident Engineer of the Scheme that the treatment will soon be in full working. It will be a matter of great interest to watch the result, and I have every reason for confidence that this treatment will, under careful control, be successful.

IMPORTATION OF EXPLOSIVES.

The following tables give all information with regard to the importation of explosives into Western Australia:—

Table I.—Importation for 1910.

	Quantity. lbs.	Value. £
Gelignite	3,657,108	139,280
Dynamite	13,910	591
Blasting Gelatine	296,500	15,790
Gelatine Dynamite	326,900	14,702
Detonators (No.)	4,123,730	5,870
Fuse (Coils)	4,489,324	10,723
Powder, Blasting	318,216	7,026
Powder, Sporting	1,135	142
Explosives N.E.I.	..	13,108
Fireworks	..	413
		£207,645

Table II.—Comparison of Importations for the last five years.

Explosives, etc.	Year. 1906.	1907.	1908.	1909.	1910
Nitro-Glycerine Compounds	157,467	103,062	124,354	121,813	170,363
Blasting Powder	2,317	5,403	2,896	6,163	7,026
Sporting Powder	610	288	133	65	142
Fuse	10,893	8,476	11,265	10,920	10,723
Fireworks	586	362	312	385	413
Cartridges	11,061	..	15,099	9,924	12,908
Detonators	3,322	3,935	3,341	4,804	5,870
N.E.I.	12,725	1,066	6	7	49
Caps	272	..	20	5	151
	£199,253	£122,592	£157,426	£154,086	£207,645

Table III.—Kinds and Quantities of Principal Industrial Explosives imported in 1909 *and* 1910.

	1909. lbs.	1910. lbs.
Gelignite	2,378,100	3,657,108
Blasting Gelatine	370,500	296,500
Gelatine Dynamite	310,250	326,900
Dynamite	7,500	13,910
Blasting Powder	242,217	318,216
Sporting Powder	575	1,135
	3,309,142	4,613,769

Table IV.—Comparison with Other States.

Explosives, Etc.	Western Australia.	New South Wales.	Queensland.	Victoria.	South Australia.	Tasmania.	Proportion of total for Australia imported into Western Australia.
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	%
Nitro-Glycerine Compounds	4,294,418	1,191,205	1,151,022	1,353,650	17,500	401,300	
Blasting Powder	318,216	1,149,325	450,300	257,500	...	118,075	
Sporting Powder	1,135	42,672	30,375	39,130	100	9,400	
	4,613,769	2,383,202	1,661,697	1,650,280	17,600	528,775	42·52
	£	£	£	£	£	£	
Fuse	10,723	2,180	3,630	1,539	100	...	
Detonators	5,870	2,780	3,249	5,538	107	1,155	
Explosives, N.E.I.	13,521	21,950	4,249	60,303	3,865	1,537	
	30,114	26,910	11,128	67,380	4,072	2,692	21.17
Total value of Explosives enumerated above	£207,645	£88,130	£71,334	£135,892	£4,965	£27,397	38·7

It is not clear from the Return whether the Victorian Importations include also those shown for Tasmania; this may probably be so, since the Tasmanian Importations are, I understand, tested in Victoria. This would modify the figures in the last column considerably.

It will be seen that importations have a considerable increase in value over the previous year, namely £53,559. In fact the importation for 1910 constituted a record for this State, exceeding the highest previous figure by over £8,000.

The testing of these large importations of explosives has involved the examination of the following samples:—

Table V.—Tests made on Explosives.

	No. of samples.
Monobel Powder	4
Gelignite	1,409
Fuse	1,737
Gelatine Dynamite	147
Blasting Gelatine	85
Dynamite	6
Miscellaneous	52
Total	3,440

This shows an increase of 1,438 samples over those examined during the previous year. This increase has been very largely due to an enormous increase in the number of fuse samples tested. The difficulty referred to in my last annual report with regard to the compliance with the burning speed regulations was very much accentuated during part of last year with regard to one particular brand of fuse. Very stringent steps had to be taken to enforce compliance with the regulations, and considerable quantities of fuse were condemned and withdrawn from consumption. I am very glad to say that the steps taken have apparently been effective, and that the consignments of this fuse now entering the State are proving equally satisfactory with other brands imported.

The above figures do not include the samples examined in connection with the special investigations at Kalgoorlie already referred to.

Storage.

There has been very little change in the Explosives Magazines during the period under review. There are at present 72 magazines on Explosives Reserves —one less than last year. These include five Government buildings, and the total capacity of all the magazines is 1,208½ tons. Outside the reserves declared by the Government there are 36 magazines with a capacity of 30½ tons.

The above figures do not include detonator magazines which are treated as adjuncts to main magazines.

There are at the present time 44 reserves with a total area of 3,205 acres. The removal of the Kalgoorlie magazine has not been advanced during the past year, the present position being that the whole question must wait the provision of the necessary funds by the Government. As regards the Fremantle Depot and other reserves the year has been quite uneventful, and no changes or special recommendations have to be recorded.

Licensed Premises.

The licenses issued and revoked for the keeping of explosives for sale during the year are as follows:—

Applications received	74
Licenses issued	74
Licenses revoked	55
Licenses remaining in force	212

Inspection Work.

The special work on Gases in Mines at Kalgoorlie in which I required the assistance of Mr. Kirton, Assistant Inspector of Explosives, for the larger part of the year, materially interfered with the conduct of routine inspections, but nevertheless the following places have been visited as opportunity allowed:—Kalgoorlie, Coolgardie, Menzies, Kanowna, Norseman, Kookynie, Malcolm, Morgans, Laverton, Leonora, Lawlers, Sandstone, Magnet, Cue, Day Dawn, Nannine, Meekatharra, Yalgoo, Geraldton, Mingenew, Moora, and Bridgetown.

The following prosecutions were undertaken arising out of the above inspections:—

Date.	Offence.	Penalty.
25/5/10 ..	Storing in excess of license ..	Fined £1 and costs.
25/5/10 ..	Breach of Regulations ..	Fined £1 and costs.
28/5/10 ..	Storing in excess of license ..	Fined £2 and costs.
28/5/10 ..	Breach of Regulations ..	Fined £1 and costs.
16/12/10..	Storing in excess of license ..	Cautioned and ordered to pay costs, £1 2s.

In respect of the exceptionally heavy importation of explosives, the quantity which it has been found necessary to condemn or destroy, on any grounds, has been unprecedently small. So much so as to be insignificant. Only three small parcels of a few pounds each have been discovered at various times during the inspection of stores, etc., which have been in such a condition as rendered their destruction necessary, and none of the shipments arriving in the State had to be detained on the coast on account of chemical or physical deterioration, with the exception of the shipments of fuse which have been already referred to.

THE AMENDMENT OF THE ACT.

It has for some time been evident to me that the working of the Department would be greatly facilitated and simplified by the complete revision of the Explosives Act, 1895, under which we now work.

This Act was drafted upon the model of the English Explosives Act, and had naturally to be very much modified to suit local conditions. The result is that it is somewhat overweighted in certain directions and is not sufficiently clear and unequivocal in others. The general trend of the provisions is quite excellent, as has been proved by its successful operation for a period of fifteen years, during which term it has been found adequate to meet all public requirements, but nevertheless practical experience from time to time has shown the desirability of a simplification of some of its provisions, and a general recasting of the constitution of the Act.

The pressure of other duties has hitherto prevented me from giving this matter the attention desired, but I hope to be able to deal with it during the coming year.

GENERAL ANALYTICAL WORK.

As an indication of the general chemical work carried on in my laboratory I append the following table:—

Table VI.—General Classification of Analysis.

Explosives	3,440
Spirits	375
Waters (general)	96
Soils	79
Fertilisers	195
Rocks and Deposits	28
Essences	22
Oils	350
Foodstuffs and miscellaneous	371
Sewage	229
Wheats and Flours	29
Criminal investigations	70
Lime	23
Fabrics	13
Vinegar	9
Medicinal compounds	71
Milks	12
Kerosene, Benzine, Turpentine, etc.	178
Hydrometers	63
Stomachs	24
Dairy Thermometers	101
Metals	39
Matches	49
Waters (special)	227
Total	6,093

Table VII.—Departments for which work was performed.

Customs	1,260
Agricultural Department	230
Crown Law Department	78
Inspection of Liquors	120
Mines	5
Works and Railways	479
Engineer Goldfields Water Supply	204
Public Health Department	23
Private Analyses	50
Miscellaneous	204
Explosives	3,440
Total	6,093

These figures show an increase over the previous year of 928 samples, but in addition it must be remembered that the above figures do not include any relating to the special investigation of gases conducted at Kalgoorlie.

In connection with this enquiry 266 samples of gases and air were obtained and analysed, and in addition a very large number of special analyses of explosives and of wrappers were carried out, with special tests of one kind and another which need not be enumerated here, but which have been fully set forth in the special report dealing with the composition of gases caused by blasting in mines.

It will thus be seen that as far as actual work is concerned this year has established a record far above that of any preceding year, and it is also probable that it has led to more definite results of a far-reaching character than I have previously been able to record. This has been very largely due to the unflagging loyalty and zeal of the staff under my control, and I cannot too strongly express my appreciation of the spirit which they have manifested in their work.

STAFF.

The staff at the end of 1910 consisted of the following officers:—

Assistant Government Analyst	1
Assistant Inspector of Explosives	1
Analysts	9
Clerks	3
Magazine Keepers	2
Watchmen	2
	18

This represents one more analyst than during the previous year, and it must necessarily be that the staff should show gradual increase from year to year. The increase of the general analytical work shown in the tables of statistics in my Annual Report clearly demonstrates the necessity for this, and renders it necessary, in my opinion, that the composition of the professional staff should be at an early date reconsidered and entirely reclassified.

I beg to acknowledge the continued and ready assistance accorded to me by the Commissioner of Police and his officers, and the Inspectors of Mines under the State Mining Engineer.

I also beg to express my great appreciation of the special assistance that was rendered to me during the investigations at Kalgoorlie by the Director of Technical Education and his staff at the Kalgoorlie School of Mines, who placed their laboratory at my disposal for the chemical work entailed in that investigation, and in many ways rendered me kind and valuable assistance.

I have, etc.,
E. A. MANN.

APPENDIX.

DEPARTMENT OF MINES.

MINING STATISTICS, 1910.

MINING STATISTICS TO 31st DECEMBER, 1910.

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EXPLANATIONS OF SIGNS AND ABBREVIATIONS.

Gf. Goldfield.
Mf. Mineral field.
D. District.
G.M.L. Gold Mining Lease.
M.L. Mineral Lease.
Loc. Location.
L.C. Lode Claim.
Q.C. Quartz Claim.
R.C. Reward Claim.
M.R.C. Mineral Reward Claim
M.A. Machinery Area.
Mach. L. Machinery Lease.
P.A. Prospecting Area.
T.A. Tailings Area.
T.L. Tailings Lease.
W.R. Water Right.
S.L. Special License.
V. Vacuum Filter Presses.

WESTERN AUSTRALIA.

SUMMARY OF MINERAL PRODUCTS.

GOLD AND OTHER MINERALS PRODUCED DURING 1910, AND THE ESTIMATED VALUE THEREOF, TOGETHER WITH A COMPARISON FOR PREVIOUS YEARS, AND THE TOTAL PRODUCTION TO DATE.

Description of Mineral.	1910.		1909.		1908.		1907.		Previous to 1907.		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.	...	...	3	154	40	1,600	...	...	...	...	43	1,754
3. Coal ... ... (Reported) do.	262,166	113,699	214,302	90,965	175,248	75,694	142,373	55,158	984,069	486,908	1,778,158	822,424
4. Copper { Ore ... (Exported) do.	6,309	27,271	6,959	59,541	2,503	29,272	3,727	61,493	18,269	310,763	37,767	488,340
4. Copper { Ingot & Matte (Exported) do.	1,281	68,657	833	45,100	479	27,819	1,602	141,883	3,618	202,608	7,813	486,067
5. Gold (Exported and Minted) fine ounces	1,470,632	6,246,848	1,595,269	6,776,274	1,647,911	6,999,882	1,697,554	7,210,749	16,666,234	70,793,659	23,077,600	98,027,412
6. Ironstone ... ... (Reported) statute tons	10	12	...	...	...	...	1,094	438	56,726	36,245	57,830	36,695
7. Lead Ore ... ... (Exported) do.	...	...	...	...	...	...	...	...	33,644	364,756	33,644	364,756
8. Limestone ... ... (Reported) do.	...	...	...	...	...	...	3,602	1,382	90,104	16,908	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	176,139	18,777	176,843	18,778	168,455	18,877	189,265	25,382	1,382,103	167,348	2,092,805	249,162
13. Silver Lead Ore ... (Exported) statute tons	248	1,433	211	1,199	518	5,006	211	1,866	...	...	1,188	9,504
14. Tantalite ... ... (Exported) do.	...	...	...	...	†	400	...	...	18	5,729	18	6,129
15. Tin (Ore and Ingot) (Exported) do.	500	45,129	698	62,989	1,093	83,595	1,502	166,139	7,220	567,505	11,013	925,357
16. Wolfram ... ... (Exported) do.	2	190	1	100	...	...	...	...	...	...	3	290
17. Zinc (Spelter, etc.) ... (Exported) do.	12	147	19	244	11	98	73	3,390	...	...	115	3,879
Unenumerated ... (Exported)	...	100	...	735	...	2,750	...	817	...	1,379	...	5,781
Total Values	...	£6,522,263	...	£7,056,079	...	£7,245,003	...	£7,669,467	...	£72,967,638	...	£101,460,450

† 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 1910.

DESCRIPTION OF MINERAL.	Western Australia.		NEW SOUTH WALES.		QUEENSLAND.		VICTORIA.		TASMANIA.		SOUTH AUSTRALIA.		NEW ZEALAND.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
		£		£		£		£		£		£		£
Gold ... ... fine ounces	1,470,632	6,246,848	188,857	802,211	441,400	1,874,955	570,383	2,422,745	37,048	157,370	6,603	28,000	446,433	1,896,328
Copper ... ... statute tons	1,281	68,657	12,890	486,257	16,387	932,489	...	...	8,193	553,822	5,102	306,120	...	...
Copper Ore ... do	6,309	27,271			...	...	150	450	671	13,150	...	...	...	...
Lead (Pig, etc.) ... do	...	...	21,195	248,561	2,391	30,401	...	...	...	...	400	260	...	...
Manganese ... do	...	...	...	...	792	3,127	23	142	...	...	...	...	5	15
Platinum ... ... fine ounces	...	...	332	1,418	...	...	...	...	...	...	...	...	...	...
Silver ... ... do	176,139	18,777	1,773,913	173,775	861,202	92,685	18,800	2,090	...	...	6,250	625	1,711,235	171,562
Silver-Lead Ore statute tons	248	1,433	317,697	1,685,704	...	...	...	...	51,227	247,576	25	22	...	...
Tin ... ... do					2,953	243,271	...	...	...	...	...	...	...	...
Black Tin ... do	500	45,129	1,868	228,156	...	...	...	...	...	...	...	...	...	...
Tin Ore ... do					...	...	41	3,706	3,701	399,393	...	...	...	...
Scheelite ... ... do	...	...	151	15,747	3	286	...	...	...	...	...	...	143	15,070
Wolfram ... ... do	2	190	166	16,258	856	88,116	28	2,092	67	7,280	...	...	...	...
Zinc Spelter ... do	12	147	468,627	1,289,634	...	...	...	...	...	...	...	...	...	...
Antimony (Metal and Ore) ... do	...	...	97	1,450	...	...	1,262	6,255	...	...	...	...	...	...
Bismuth ... ... do	...	..	6	2,004	21	9,708	...	...	11	4,249	...	...	...	...
Alunite ... ... do	...	...	1,136	2,840	...	...	...	...	...	...	...	...	...	...
Coal ... ... do	262,166	113,699	8,173,508	3,009,657	871,166	322,822	368,859	188,914	82,445	48,609	...	...	277,011	259,462
Coke ... ... do	...	...	282,337	189,069	...	...	...	...	...	...	...	...	...	...
Shale Oil ... do	...	...	68,293	33,896	...	...	...	...	364	214	...	...	...	...
Iron ... ... do	...	...	40,487	161,948	...	...	...	...	...	...	...	...	...	...
Iron Oxide ... do	...	...	1,351	714	...	...	...	...	...	...	...	...	...	...
Ironstone ... do	10	12	1,648	1,321	37,138	35,429	...	...	...	...	46,200	21,945	...	...
Lime ... ... do	...	...	30,113	30,189	...	...	...	...	...	...	...	...	...	...
Limestone ... do	...	...	56,938	16,946	144,359	34,144	...	...	...	...	18,600	3,720	...	...
Molybdenite ... do	...	...	48	5,667	106	12,050	...	...	...	...	...	...	...	...
Phosphate Rock ... do	...	...	...	...	...	...	...	...	...	...	5,200	5,200	...	...
Precious Stones ... carats	...	...	...	69,081	...	24,200	...	...	...	...	...	...	...	...
Unenumerated	...	100	...	261,966	...	6,539	...	2,967	...	530	...	49,950	...	6,974
Total Values	...	£ 6,522,263	...	£8,736,469	...	£ 3,710,222	...	£ 2,629,361	...	£1,432,193	...	£415,842	...	£ 2,349,411

PART I.—GOLD.

TABLE I.

MONTHLY PRODUCTION OF GOLD, IN FINE OUNCES, SHOWING THE QUANTITY REPORTED TO THE MINES DEPARTMENT DURING 1910.

GOLDFIELD.	DISTRICT.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.		JULY.	
		District.	Goldfield.	District.	Goldfield.	District.	Goldfield.	District.	Goldfield.	District.	Goldfield.	District.	Goldfield.	District.	Goldfield.
		ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.
Kimberley ...	...	...	18·00	...	30·49	...	26·13	...	25·00	...	17·42	...	17·42	...	13·07
Pilbara	Marble Bar ...	64·21	150·72	54·51	143·92	300·67	1,029·43	133·28	375·64	48·50	193·44	24·95	405·12	120·96	314·56
Do.	Nullagine ...	86·51		89·41		728·76		242·36		144·94		380·17		193·60	
West Pilbara ...	...	...	123·44	...	17·07	...	320·57	...	135·43	...	272·64	...	129·92	...	143·04
Ashburton ...	...	...	85·80	...	...	...	16·97	...	13·95	...	46·98	...	...	...	17·60
Gascoyne	...	...	...	...	...	...	...	...	7·99	...	...	...	...	...	...
Peak Hill ...	...	...	332·48	...	425·02	...	331·31	...	357·92	...	512·11	...	660·60	...	...
East Murchison ...	Lawlers ...	4,508·37		5,025·68		3,784·75		3,549·45		3,844·77		3,885·24		3,524·03	
Do.	Wiluna ...	...	9,558·48	...	10,618·69	1,683·99	10,713·06	2,253·40	12,821·60	2,445·64	11,837·69	1,969·61	11,678·88	2,080·54	11,450·85
Do.	Black Range	5,050·11		5,593·01		5,244·32		7,018·75		5,547·28		5,824·03		5,846·28	
Murchison ...	Cue	525·80		996·04		614·46		1,347·42		628·80		934·52		729·49	
Do.	Nannine ...	3,762·50	9,187·55	3,860·27	9,775·78	5,852·98	12,437·81	4,488·44	11,380·45	3,926·84	9,793·03	2,367·32	8,732·73	5,071·45	11,189·76
Do.	Day Dawn ...	3,832·34		3,603·00		4,009·05		3,840·48		3,627·77		3,748·04		3,992·36	
Do.	Mt. Magnet ...	1,066·91		1,316·47		1,961·32		1,704·11		1,609·62		1,682·85		1,396·46	
Yalgoo	...	...	64·26	...	19·94	...	187·66	...	197·48	...	209·64	...	150·97	...	44·47
Mt. Margaret ...	Mt. Morgans	654·73		1,675·37		813·15		533·03		999·86		1,202·94		755·84	
Do.	Mt. Malcolm	7,172·22	11,500·52	6,793·10	11,780·55	8,679·73	14,069·90	8,061·69	12,535·70	8,146·73	13,704·36	9,523·43	15,169·83	8,222·55	13,319·62
Do.	Mt. Margaret	3,673·57		3,312·08		4,577·02		3,940·98		4,557·77		4,443·46		4,341·23	
North Coolgardie	Menzies ...	2,326·53		2,739·50		4,423·48		3,687·16		3,572·90		2,769·97		2,885·44	
Do.	Ularring ...	412·65	4,470·03	1,234·63	6,004·07	482·81	6,994·01	1,061·64	6,540·93	905·32	5,978·09	913·88	5,456·16	417·32	6,224·57
Do.	Niagara ...	654·37		1,144·27		798·71		1,380·64		1,072·40		913·40		1,313·06	
Do.	Yerilla ...	1,076·48		885·67		1,289·01		411·49		427·47		858·91		1,608·75	
Broad Arrow ...	...	...	1,262·52	...	983·65	...	704·67	...	1,372·12	...	1,551·57	...	1,932·24	...	1,148·06
N.E. Coolgardie ...	Kanowna ...	1,327·01	1,498·62	1,978·20	2,085·01	2,174·57	2,191·87	1,067·17	1,091·24	2,159·48	2,171·68	1,915·02	1,930·37	2,081·51	2,089·66
Do.	Kurnalpi ...	171·61		106·81		17·30		24·07		12·20		15·35		8·15	
East Coolgardie ...	East Coolgardie	52,943·24	52,943·24	67,821·71	67,885·51	66,094·30	66,094·30	64,071·97	64,071·97	59,338·28	59,431·15	68,895·81	68,927·45	54,193·85	54,219·46
Do.	Bulong ...	...		63·80		...		...		92·87		31·64		25·61	
Coolgardie ...	Coolgardie ...	2,359·42	3,052·51	2,191·66	2,961·58	3,077·33	3,557·62	3,319·91	3,613·73	2,327·39	2,714·05	2,266·82	2,650·62	3,503·12	4,174·73
Do.	Kunanalling	693·09		769·92		480·29		293·82		386·66		383·80		671·61	
Yilgarn	...	...	1,725·83	...	2,161·68	...	1,519·39	...	681·68	...	1,980·36	...	1,902·86	...	1,055·18
Dundas	...	...	2,222·87	...	2,579·07	...	2,186·19	...	2,102·52	...	2,380·73	...	2,650·38	...	2,100·67
Phillips River ...	...	...	355·53	...	585·68	...	890·79	...	1,011·10	...	1,093·08	...	259·01	...	577·41
State generally ...		...	...	...	...	...	...	...	729·33	...	...	...	...	...	108·35
TOTAL Fine ounces ...		...	98,552·40	...	118,057·71	...	123,271·68	...	119,065·78	...	113,888·02	...	122,654·56	...	108,191·06
TOTAL Sterling value		£418,624		£501,477		£523,625		£505,759		£483,766		£521,003		£459,566	

TABLE I.—*Monthly Production of Gold, in Fine Ounces*—continued.

GOLDFIELD.	DISTRICT.	AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.		TOTAL FOR 1910.	
		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	...	...	8·71	...	15·00	...	10·82	...	15·68	...	67·79	...	265·53
Pilbara	Marble Bar ...	310·15	375·72	317·12	510·82	445·70	657·53	395·46	395·46	397·89	817·58	2,613·40	5,369·94
Do.	Nullagine ...	65·57		193·70		211·83		...		419·69		2,756·54	
West Pilbara ...	...	...	224·98	...	16·30	...	44·59	...	42·61	...	13·03	...	1,483·62
Ashburton ...	...	...	9·46	...	...	...	30·89	...	25·98	...	...	...	247·63
Gascoyne	...	...	8·32	...	...	...	10·00	...	...	...	...	...	26·31
Peak Hill	...	...	326·57	...	440·24	...	31·31	...	816·55	...	92·91	...	4,327·02
East Murchison ...	Lawlers ...	3,826·90		3,398·53		3,225·63		3,718·95		2,911·20		45,203·50	
Do. ...	Wiluna ...	645·26	10,576·96	603·43	10,518·22	849·91	10,466·57	717·86	10,524·33	1,008·53	9,605·88	14,258·17	130,371·21
Do. ...	Black Range	6,104·80		6,516·26		6,391·03		6,087·52		5,686·15		70,909·54	
Murchison	Cue	532·29		816·70		938·41		663·48		848·88		9,576·29	
Do.	Nannine ...	4,509·35		3,934·78		4,170·51		4,439·27		3,662·89		50,046·60	
Do.	Day Dawn ...	3,944·48	10,321·47	4,045·97	10,457·04	3,956·80	10,724·01	3,959·90	10,431·24	3,913·94	9,920·51	46,474·13	124,351·38
Do.	Mt. Magnet ...	1,335·35		1,659·59		1,658·29		1,368·59		1,494·80		18,254·36	
Yalgoo	...	...	192·64	...	71·16	...	76·75	...	67·94	...	49·81	...	1,332·72
Mt. Margaret ...	Mt. Morgans	964·11		790·67		924·85		407·26		609·43		10,331·24	
Do. ...	Mt. Malcolm	8,889·03	14,605·05	9,533·28	15,347·59	7,358·24	12,416·13	7,572·44	12,166·47	7,737·24	13,715·46	97,689·68	160,281·18
Do. ...	Mt. Margaret	4,751·91		5,023·64		4,133·04		4,136·77		5,368·79		52,260·26	
North Coolgardie...	Menzies ...	2,816·24		3,994·84		3,106·85		3,728·31		4,196·47		40,247·69	
Do. ...	Ularring ...	602·93		449·58		862·68		352·43		974·09		8,669·96	
Do. ...	Niagara ...	765·31	5,207·62	1,258·99	6,918·45	748·04	5,914·19	966·67	5,979·76	991·21	7,059·67	12,007·07	72,747·55
Do. ...	Yerilla ...	1,023·14		1,215·04		1,196·62		932·35		897·90		11,822·83	
Broad Arrow ...	...	...	1,657·48	...	738·35	...	1,264·97	...	367·85	...	2,498·40	...	15,481·88
N.E. Coolgardie ...	Kanowna ...	1,971·65	1,980·61	1,753·43	1,787·75	2,130·30	2,218·52	1,451·64	1,462·28	2,193·98	2,519·66	22,203·96	23,027·27
Do.	Kurnalpi ...	8·96		34·32		88·22		10·64		325·68		823·31	
East Coolgardie ...	East Coolgardie	75,829·83	75,946·86	62,746·38	62,823·15	72,414·92	72,438·40	54,613·95	54,701·98	78,929·64	78,996·07	777,893·88	778,479·54
Do. ...	Bulong ...	117·03		76·77		23·48		88·03		66·43		585·66	
Coolgardie ...	Coolgardie ...	2,234·41	2,775·52	3,156·94	3,593·44	2,888·62	3,204·60	2,514·17	2,773·51	2,088·21	2,839·13	31,928·00	37,911·04
Do. ...	Kunanalling	541·11		436·50		315·98		259·34		750·92		5,983·04	
Yilgarn	...	...	1,799·09	...	1,833·33	...	2,438·06	...	6,180·75	...	4,579·72	...	27,857·93
Dundas	...	...	1,978·79	...	2,431·54	...	3,054·25	...	2,544·75	...	3,395·58	...	29,627·34
Phillips River ...	...	...	514·30	...	761·37	...	1,114·15	...	560·56	...	471·92	...	8,194·90
State generally		...	...	...	...	...	9·73	...	...	...	...	...	847·41
TOTAL Fine ounces ...		...	**128,510·15**	...	**118,263·75**	...	**126,125·47**	...	**109,007·70**	...	**136,643·12**	...	**1,422,231·40**
TOTAL Sterling value		**£545,876**		**£502,353**		**£535,747**		**£463,035**		**£580,423**		**£6,041,254**	

TABLE II.

TOTAL YEARLY PRODUCTION OF GOLD, IN FINE OUNCES, AS REPORTED TO THE MINES DEPARTMENT, TO 31ST DECEMBER, 1910.

GOLDFIELD.	DISTRICT.	1910.		1909.		1908.		1907.		1906.		1905.	
		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	... ...	...	265·53	...	134·52	...	150·16	...	336·57	...	165·72	...	496·14
Pilbara	Marble Bar ...	2,613·40	5,369·94	2,523·16	6,764·49	3,179·76	6,965·61	5,856·44	10,042·96	2,256·97	5,711·90	4,534·25	11,473·83
Do.	Nullagine ...	2,756·54		4,241·33		3,785·85		4,186·52		3,454·93		6,939·58	
West Pilbara ...	... ...	...	1,483·62	...	1,539·62	...	1,005·60	...	464·08	...	749·16	...	801·14
Ashburton	... ...	...	247·63	...	436·32	...	161·71	...	143·01	...	278·24	...	207·53
Gascoyne	... ...	...	26·31	...	...	...	...	...	...	...	...	...	...
Peak Hill	... ...	...	4,327·02	...	7,918·79	...	7,980·10	...	8,111·14	...	2,008·20	...	13,586·87
East Murchison ...	Lawlers	45,203·50	130,371·21	77,542·23	155,908·60	72,109·75	144,792·31	61,259·79	119,207·31	60,351·20	95,771·49	68,232·52	84,926·28
Do.	Wiluna	14,258·17		*		*		*		*		*	
Do.	Black Range ...	70,909·54		78,366·37		72,682·56		57,947·52		35,420·29		16,693·76	
Murchison	Cue	9,576·29	124,351·38	21,271·13	133,105·86	24,702 50	157,848·40	25,878·80	169,397·46	18,337·11	182,395·82	15,125·05	206,734·88
Do.	Nannine	50,046·60		50,992·21		38,820·52		31,792·41		26,572·08		18,549·17	
Do.	Day Dawn ...	46,474·13		44,447·89		84,422·44		101,591·06		124,047·58		161,507·28	
Do.	Mt. Magnet ...	18,254·36		16,394·63		9,902·94		10,135·19		13,439·05		11,553·38	
Yalgoo	... ...	...	1,332·72	...	1,805·31	...	551·03	...	4,371·38	...	4,450·19	...	4,742·77
Mt. Margaret ...	Mt. Morgans ...	10,331·24	160,281·18	25,722·76	155,864·99	28,912·13	153,597·15	28,755·18	169,466·07	30,206·54	166,258·94	35,130·45	188,712·21
Do.	Mt. Malcolm ...	97,689·68		90,436·33		86,018·61		81,709·00		94,095·06		96,644·33	
Do.	Mt. Margaret ...	52,260·26		39,705·90		38,666·41		59,001·89		41,957·34		56,937·43	
North Coolgardie ...	Menzies	40,247·69	72,747·55	35,851·38	79,398·99	37,023·37	91,251·59	37,053·24	86,790·67	33,237·86	110,957·04	41,895·33	148,771·00
Do.	Ularring ...	8,669·96		15,286·66		21,598·97		19,072·73		25,210·13		43,387·07	
Do.	Niagara	12,007·07		17,061·87		21,477·90		18,881·94		37,418·89		45,520·17	
Do.	Yerilla	11,822·83		11,199·08		11,151·35		11,782·76		15,090·16		17,968·43	
Broad Arrow ...	... ...	...	15,481·88	...	17,121·70	...	18,429·97	...	21,907·18	...	21,510·61	...	18,583·66
N.E. Coolgardie ...	Kanowna ...	22,203·96	23,027·27	23,785·63	25,462·38	26,355·22	27,072·72	29,244·99	31,197·96	37,267·87	38,098·74	42,341·66	43,174·38
Do.	Kurnalpi ...	823·31		1,676·75		717·50		1,952·97		830·87		832·72	
East Coolgardie ...	East Coolgardie	777,893·88	778,479·54	896,900·15	899,289·27	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
Do.	Bulong	585·66		2,389·12		2,357·33		3,932·33		6,474·63		9,772·88	
Coolgardie	Coolgardie ...	31,928·00	37,911·04	28,382·62	34,134·90	32,820·61	40,029·39	53,029·44	60,810·37	55,771·11	64,030·18	54,499·04	63,664·27
Do.	Kunanalling ...	5,983·04		5,752·28		7,208·78		7,780·93		8,259·07		9,165·23	
Yilgarn	... ...	...	27,857·93	...	20,909·12	...	22,162·87	...	19,291·98	...	23,546·75	...	19,291·42
Dundas	... ...	...	29,627·34	...	29,549·27	...	28,643·63	...	23,602·23	...	20,434·84	...	25,960·95
Phillips Kiver ...	... ...	...	8,194·90	...	6,713·52	...	4,404·69	...	4,313·87	...	2,779·89	...	2,563·26
† Donnybrook ...	... ...	...	...	...	...	...	...	...	...	...	...	...	...
State generally	...	...	847·41	...	348·09	...	271·13	...	1,367·70	...	1,315·71	...	...
TOTAL	Fine Ounces ...	...	1,422,231·40	...	1,576,405·74	...	1,596,090·76	...	1,671,992·88	...	1,736,295·29	...	1,840,656·49
	Sterling Value	£6,041,254		£6,696,146		£6,779,763		£7,102,174		£7,375,314		£7,818,612	

* Previous to 1st March, 1910, included in Lawlers District. † Abolished 4th March, 1908.

TABLE II.—*Total Yearly Production of Gold, in Fine Ounces, etc.*—continued.

GOLDFIELD.	DISTRICT.	1904.		1903.		1902.		1901.		PREVIOUS TO 1901.		TOTAL TO 31 DECEMBER, 1910.	
		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		...	205·84	...	644·54	...	301·71	...	262·25	...	13,606·69	...	16,569·67
Pilbara	Marble Bar	3,129·37	8,029·65	4,787·33	9,570·04	4,501·02	10,602·12	3,636·77	9,072·45	57,376·86	72,704·03	94,395·33	156,307·02
Do.	Nullagine	4,900·28		4,782·71		6,101·10		5,435·68		15,327·17		61,911·69	
West Pilbara		...	3,427·71	...	5,100·48	...	1,910·42	...	198·73	...	3,820·05	...	20,500·61
Ashburton		...	509·96	...	903·94	...	926·66	...	938·04	...	3,816·94	...	8,569·98
Gascoyne		...	...	...	...	...	...	...	85·10	...	420·17	...	531·58
Peak Hill		...	14,113·57	...	31,750·17	...	35,297·81	...	18,607·23	...	91,003·99	...	234,704·89
East Murchison	Lawlers	78,543·91	89,730·30	84,738·16	85,451·08	75,687·91	75,880·05	65,342·19	65,356·03	148,208·72	148,376·16	837,219·88	1,195,770·82
Do.	Wiluna	*		*		*		*		*		*14,258·17	
Do.	Black Range	11,186·39		712·92		192·14		13·84		167·44		344,292·77	
Murchison	Cue	15,286·71	214,403·13	20,688·78	204,181·85	21,016·82	172,914·32	18,755·54	123,865·85	103,645·28	416,229·19	294,284·01	2,105,428·14
Do.	Nannine	18,668·31		19,947·48		19,329·49		17,690·99		88,641·61		381,050·87	
Do.	Day Dawn	161,163·51		136,768·68		102,030·80		57,867·95		104,307·16		1,124,628·48	
Do.	Mt. Magnet	19,284·60		26,776·91		30,537·21		29,551·37		119,635·14		305,464·78	
Yalgoo		...	2,353·41	...	3,138·35	...	5,198·89	...	8,351·30	...	31,727·20	...	68,022·55
Mt. Margaret	Mt. Morgans	55,463·96	187,383·87	64,817·55	184,590·89	54,019·40	187,265·81	44,290·60	165,434·40	83,750·20	263,880·73	461,400·01	1,982,736·24
Do.	Mt. Malcolm	87,927·26		80,055·86		75,691·81		81,786·28		148,323·29		1,020,377·51	
Do.	Mt. Margaret	43,992·65		39,717·48		57,554·60		39,357·52		31,807·24		500,958·72	
North Coolgardie	Menzies	37,100·73	145,064·61	52,870·58	162,139·18	50,168·26	154,238·37	51,568·02	121,974·00	219,335·86	329,267·90	636,352·32	1,502,600·90
Do.	Ularring	21,769·41		19,142·55		25,766·96		17,821·18		26,215·17		243,940·79	
Do.	Niagara	67,230·33		77,013·02		69,877·50		42,146·08		56,522·42		465,157·19	
Do.	Yerilla	18,964·14		13,113·03		8,425·65		10,438·72		27,194·45		157,150·60	
Broad Arrow		...	22,180·19	...	26,021·17	...	17,092·95	...	29,885·18	...	129,936·54	...	338,151·03
N.E. Coolgardie	Kanowna	38,648·56	39,799·63	40,554·03	41,279·02	39,497·86	40,777·95	35,318·30	38,138·17	273,701·81	282,629·71	608,919·89	630,657·93
Do.	Kurnalpi	1,151·07		724·99		1,280·09		2,819·87		8,927·90		21,738·04	
East Coolgardie	East Coolgardie	1,050,922·89	1,062,078·27	1,062,898·06	1,076,078·12	941,436·40	958,285·90	856,748·86	874,193·90	2,280,059·36	2,347,949·66	11,679,063·84	11,831,096·07
Do.	Bulong	11,155·38		13,180·06		16,849·50		17,445·04		67,890·30		152,032·23	
Coolgardie	Coolgardie	53,505·01	63,199·76	58,692·50	71,285·59	65,002·37	74,502·96	59,973·11	73,083·48	329,709·26	414,317·89	823,313·07	996,969·83
Do.	Kunanalling	9,694·75		12,593·09		9,500·59		13,110·37		84,608·63		173,656·76	
Yilgarn		...	25,508·64	...	19,276·71	...	20,066·81	...	21,925·95	...	138,445·51	...	358,283·69
Dundas		...	31,830·27	...	33,845·76	...	28,579·34	...	29,843·03	...	125,124·59	...	407,041·25
Phillips River		...	4,016·63	...	7,050·73	...	7,441·30	...	665·83	...	36·72	...	48,181·34
†Donnybrook		...	...	...	53·21	...	61·36	...	3·54	...	723·65	...	841·76
State generally		...	...	...	...	...	...	...	108·93	...	1,280·37	...	5,539·34
TOTAL	**Fine Ounces**	...	**1,913,835·44**	...	**1,962,360·83**	...	**1,791,344·73**	...	**1,581,993·39**	...	**4,815,297·69**	...	**21,908,504·64**
	Sterling Value	**£8,129,456**		**£8,335,579**		**£7,609,149**		**£6,719,881**		**£20,454,084**		**£93,061,412**	

* Previous to March, 1910 included in Lawlers District.

† Abolished 4th March, 1908.

TABLE III.

GENERAL RETURN.

RETURN SHOWING, FOR THE RESPECTIVE GOLDFIELDS AND DISTRICTS, THE AREA IN SQUARE MILES, LEASES IN FORCE, PARTICULARS OF PLANT, MEN EMPLOYED AND DIGGERS, ALLUVIAL, DOLLIED, AND SPECIMEN GOLD AND ORE TREATED, WITH GOLD AND SILVER YIELD, IN FINE OUNCES, AS REPORTED TO THE MINES DEPARTMENT, FOR THE YEAR 1910.

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 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	..	..	..	45	1	..	..	..	..	..	13
Pilbara (Marble Bar, Nullagine)	..	Marble Bar	1-10-88	1-10-88	1-3-07	1-3-07	32,696	25,809	21	260	70	..	23	..	..	40	31	55
								6,887	16	142	40	..	10	2	..	27	36	10
West Pilbara	..	Roebourne	20-9-95	1-11-95	1-3-07	1-3-07	10,843	..	8	78	20	..	5	..	..	7	3	33
Ashburton	..	Onslow	11-12-90	11-12-90	18-10-01	14-10-01	14,230	..	3	48	..	..	..	..	..	..	..	19
Gascoyne	..	Carnarvon	25-6-97	15-4-97	18-10-01	14-10-01	5,313	..	..	..	..	..	..	..	..	..	..	3
Peak Hill	..	Cue	19-3-97	1-4-97	18-10-01	14-10-01	24,732	..	52	552	50	5	8	3	9	47	28	11
East Murchison (Lawlers, Wiluna, Black Range)	..	Lawlers	28-6-95	28-6-95	7-8-08	1-9-08	28,369	9,379	86	1,107	153	5	32	10	6	257	266	25
								10,496	70	1,181	70	1	28	..	3	131	139	16
								8,494	151	2,282	125	2	64	8	1	380	590	5
Murchison (Cue, Nannine, Day Dawn, Mt. Magnet)	..	Cue	24-9-91	24-9-91	1-3-07	1-3-07	20,650	8,970	71	756	118	..	50	2	..	102	142	9
								7,050	205	2,670	250	..	93	5	1	497	607	160
								895	49	474	65	..	31	11	5	230	212	14
								3,735	51	618	88	6	36	5	1	122	133	2
Yalgoo	..	Cue	8-2-95	23-1-95	..	..	18,833	..	38	425	100	6	18	..	..	28	30	1
Mt. Margaret (Mt. Morgans, Mt. Malcolm, Mt. Margaret)	..	Menzies	12-3-97	1-4-97	1-3-07	1-3-07	44,860	1,637	47	815	142	4	81	11	5	98	85	59
								3,330	126	2,314	240	4	104	22	6	338	552	13
								39,893	72	1,197	173	6	44	10	6	268	353	18
North Coolgardie (Menzies, Ularring, Niagara, Yerilla)	..	Menzies	28-6-95	28-6-95	7-8-08	1-9-08	29,936	6,805	76	1,053	145	4	96	9	4	223	320	12
								6,913	55	720	85	..	86	5	2	80	128	31
								688	46	580	117	..	38	4	3	120	194	34
								15,530	46	669	62	1	45	2	..	159	186	35
Broad Arrow	..	Coolgardie	17-11-96	20-11-96	8-6-06	1-7-06	1,038	..	63	803	123	3	60	..	..	97	149	60
North-East Coolgardie (Kanowna, Kurnalpi)	..	Coolgardie	20-3-96	15-4-96	27-3-08	1-4-08	20,604	1,094	58	682	148	3	82	2	3	156	241	42
								19,510	2	18	5	2	..	..	..	7	11	13
East Coolgardie (East Coolgardie, Bulong)	..	Coolgardie	21-9-94	1-10-94	27-3-08	1-4-08	1,800	810	200	2,868	655	137	279	163	126	2,466	3,142	50
								990	11	145	10	..	10	..	..	20	34	17
Coolgardie (Coolgardie, Kunanalling)	..	Coolgardie	6-4-94	6-4-94	1-3-07	1-3-07	11,702	9,384	100	1,372	304	2	144	4	2	232	382	22
								2,318	37	488	85	3	53	..	..	86	127	16
Yilgarn	..	Coolgardie	1-10-88	1-10-88	1-3-07	1-3-07	13,666	..	472	9,118	130	2	70	1	1	302	335	..
Dundas	..	Norseman	31-8-93	31-8-93	1-3-07	1-3-07	11,430	..	71	872	135	4	55	11	2	169	220	9
Phillips River	..	Ravensthorpe	21-9-00	14-9-00	1-3-07	1-3-07	5,572	..	15	237	46	3	12	..	..	45	59	1
State generally	..	Perth	..	..	..	..	..	..	..	..	..	2	..	..	..	2	..	..
		Total	..	..	..	..	330,107	..	2,318	34,544	3,799	206	1,657	290	186	6,736	8,735	808

TABLE III.—*Return showing for the respective Goldfields and Districts, etc.*—continued.

GOLDFIELD.	DISTRICT.	1910 GOLD AND SILVER YIELD—DISTRICTS.						1910 GOLD AND SILVER YIELD—GOLDFIELDS.					
		Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Total Gold.	Silver.	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Total Gold.	*Silver.
		Fine ozs.	Fine ozs.	tons (2,240 lbs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	tons (2,240 lbs.)	Fine ozs.	Fine ozs.	Fine ozs.
Kimberley		..	..	..	..	..	..	265·53	..	..	..	265·53	..
Pilbara	Marble Bar	624·89	291·24	1,706·80	1,697·27	2,613·40	..	885·01	297·43	2,981·30	4,187·50	5,369·94	..
	Nullagine	260·12	6·19	1,274·50	2,490·23	2,756·54	..						
West Pilbara		..	..	..	..	..	..	174·75	..	447·60	1,308·87	1,483·62	57·16
Ashburton		..	..	..	..	..	..	247·63	..	..	..	247·63	..
Gascoyne		..	..	..	..	..	..	26·31	..	..	..	26·31	..
Peak Hill		..	..	..	..	..	..	89·06	722·67	15,324·56	3,515·29	4,327·02	94·52
East Murchison	Lawlers	279·13	47·19	143,612·35	44,877·18	45,203·50	2,288·22	347·25	1,596·90	291,547·10	128,427·06	130,371·21	4,984·04
	Wiluna	..	90·43	37,128·50	14,167·74	14,258·17	6·93						
	Black Range	68·12	1,459·28	110,806·25	69,382·14	70,909·54	2,688·89						
Murchison	Cue	19·50	485·98	13,491·65	9,070·81	9,576·29	27·00	476·42	1,199·42	230,747·18	122,675·54	124,351·38	10,074·76
	Nannine	359·78	496·90	63,927·05	49,189·92	50,046·60	..						
	Day Dawn	48·75	145·81	114,403·50	46,279·57	46,474·13	10,047·76						
	Mt. Magnet	48·39	70·73	38,924·98	18,135·24	18,254·36	..						
Yalgoo		..	..	..	..	..	..	26·40	34·42	1,821·75	1,271·90	1,332·72	..
Mt. Margaret	Mt. Morgans	282·75	72·06	22,100·68	9,976·43	10,331·24	..	558·02	1,052·35	333,444·29	158,670·81	160,281·18	12,636·40
	Mt. Malcolm	113·52	515·49	189,176·51	97,060·67	97,689·68	4,888·82						
	Mt. Margaret	161·75	464·80	122,167·10	51,633·71	52,260·26	7,747·58						
North Coolgardie	Menzies	..	62·47	61,552·05	40,185·22	40,247·69	363·73	245·91	287·07	103,970·28	72,214·57	72,747·55	398·48
	Ularring	2·89	139·53	9,437·48	8,527·54	8,669·96	..						
	Niagara	170·76	3·22	21,391·75	11,833·09	12,007·07	34·75						
	Yerilla	72·26	81·85	11,589·00	11,668·72	11,822·83	..						
Broad Arrow		..	..	..	..	..	..	351·06	601·69	28,537·13	14,529·13	15,481·88	..
North-East Coolgardie	Kanowna	91·99	1,054·81	57,087·95	21,057·16	22,203·96	..	259·42	1,247·96	57,110·20	21,519·89	23,027·27	..
	Kurnalpi	167·43	193·15	22·25	462·73	823·31	..						
East Coolgardie	East Coolgardie	887·69	739·31	1,635,511·72	776,266·88	777,893·88	80,034·35	900·77	756·64	1,636,544·97	776,822·13	778,479·54	80,034·35
	Bulong	13·08	17·33	1,033·25	555·25	585·66	..						
Coolgardie	Coolgardie	789·88	63·14	73,196·35	31,074·98	31,928·00	23·52	795·68	73·90	83,999·23	37,041·46	37,911·04	23·52
	Kunanalling	5·80	10·76	10,802·88	5,966·48	5,983·04	..						
Yilgarn		..	..	..	..	..	..	..	72·12	34,114·57	27,785·81	27,857·93	218·55
Dundas		..	..	..	..	..	..	58·18	342·05	55,255·50	29,227·11	29,627·34	7,362·11
Phillips River		..	..	..	..	..	..	18·45	47·19	8,451·95	8,129·26	8,194·90	8,521·26
State generally		..	..	..	..	..	..	..	..	..	847·41	847·41	81·07
						Total for 1910		5,725·85	8,331·81	2,884,297·61	1,408,173·74	1,422,231·40	124,486·22

*By-product in the treatment of auriferous ore.

TABLE III.—*Return showing for the respective Goldfields and Districts, etc.*—continued.

GOLDFIELD.	DISTRICT.	TOTAL GOLD AND SILVER YIELD—DISTRICTS.						TOTAL GOLD AND SILVER YIELD—GOLDFIELDS.					
		Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Total Gold.	Silver.*	Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Total Gold.	Silver.*
		Fine ozs.	Fine ozs.	tons 2,240 bs.)	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	Fine ozs.	tons (2,240 lbs.)	Fine ozs.	Fine ozs.	Fine ozs.
Kimberley		..	..	..	..	..	..	2,442·42	..	17,597·50	14,127·25	16,569·67	..
Pilbara	Marble Bar	9,753·09	2,873·63	51,361·38	81,768·61	94,395·33	574·01	14,947·02	3,219·79	82,557·12	138,140·21	156,307·02	574·01
	Nullagine	5,193·93	346·16	31,195·74	56,371·60	61,911·69	..						
West Pilbara		..	..	..	..	..	..	4,685·85	220·73	14,636·45	15,594·03	20,500·61	225·67
Ashburton		..	..	..	..	..	..	8,254·34	315·64	..	..	8,569·98	162·02
Gascoyne		..	..	..	..	..	..	294·58	18·51	236·70	218·49	531·58	..
Peak Hill		..	..	..	..	..	..	600·32	3,144·66	472,984·41	230,959·91	234,704·89	2,287·59
East Murchison	Lawlers	5,263·27	5,948·01	1,852,071·24	826,008·60	837,219·88	22,813·44	6,655·86	10,888·05	2,296,012·66	1,178,226·91	1,195,770·82	25,732·18
	Wiluna	..	90·43	37,128·50	14,167·74	14,258·17	6·93						
	Black Range	1,392·59	4,849·61	406,812·92	338,050·57	344,292·77	2,911·81						
Murchison	Cue	951·44	3,759·29	329,110·52	289,573·28	294,284·01	382·79	12,899·23	19,117·48	2,754,966·63	2,073,411·43	2,105,428·14	132,441·69
	Nannine	8,648·59	6,027·05	445,283·19	366,375·23	381,050·87	1,174·98						
	Day Dawn	1,958·97	3,295·78	1,574,316·98	1,119,373·73	1,124,628·48	129,751·49						
	Mt. Magnet	1,340·23	6,035·36	406,255·94	298,089·19	305,464·78	1,132·43						
Yalgoo		..	..	..	..	..	..	547·89	778·05	97,678·98	66,696·61	68,022·55	3·30
Mt. Margaret	Mt. Morgans	1,310·16	3,216·56	779,295·64	456,873·29	461,400·01	5,682·67	4,967·32	10,754·13	3,414,076·93	1,967,014·79	1,982,736·24	58,618·05
	Mt. Malcolm	1,686·23	5,167·51	1,750,839·83	1,013,523·77	1,020,377·51	31,205·55						
	Mt. Margaret	1,970·93	2,370·06	883,941·46	496,617·73	500,958·72	21,729·83						
North Coolgardie	Menzies	962·58	2,268·74	657,354·58	633,121·00	636,352·32	9,242·56	3,376·64	12,056·81	1,892,819·32	1,487,167·45	1,502,600·90	20,162·95
	Ularring	21·46	1,055·82	239,663·49	242,863·51	243,940·79	5,432·74						
	Niagara	1,214·20	1,273·21	829,419·97	462,669·78	465 157·19	5,429·18						
	Yerilla	1,178·40	7,459·04	166,381·28	148,513·16	157,150·60	58·47						
Broad Arrow		..	..	..	..	..	..	18,391·24	3,112·66	491,313·47	316,647·13	338,151·03	517·26
North-East Coolgardie	Kanowna	104,140·40	9,209·65	767,448·47	495,569·84	608,919·89	2,494·54	115,479·77	11,709·64	772,246·42	503,468·52	630,657·93	2,505·76
	Kurnalpi	11,339·37	2,499·99	4,797·95	7,898·68	21,738·04	11·22						
East Coolgardie	East Coolgardie	25,229·25	20,321·48	14,434,663·57	11,633,513·11	11,679,063·84	781,591·74	51,717·26	34,373·17	14,553,010·24	11,745,005·64	11,831,096·07	781,591·74
	Bulong	26,488·01	14,051·69	118,346·67	111,492·53	152,032·23	..						
Coolgardie	Coolgardie	6,651·47	6,978·99	1,252,843·79	809,682·61	823,313·07	631·07	6,988·38	11,838·40	1,477,634·35	978,143·05	996,969·83	651·29
	Kunanalling	336·91	4,859·41	224,790·56	168,460·44	173,656·76	20·22						
Yilgarn		..	..	..	..	..	..	70·57	1,006·74	807,010·50	357,206·38	358,283·69	3,980·70
Dundas		..	..	..	..	..	..	1,967·82	6,547·44	515,398·28	398,525·99	407,041·25	33,714·58
Phillips River		..	..	..	..	..	..	429·88	713·14	54,086·14	47,038·32	48,181·34	12,378·33
† Donnybrook		..	..	..	..	..	..	23·24	..	1,653·30	818·52	841·76	..
State generally		..	..	..	..	..	..	124·89	155·90	27·00	5,258·55	5,539·34	562·84
						Total to 31–12–1910 ..		**254,864·52**	**129,970·94**	**29,715,946·40**	**21,523,669·18**	**21,908,504·64**	**1,076,109·96**

† 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 1910, AND THE TOTAL PRODUCTION TO DATE.

Kimberley Goldfield.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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. Dockerell	..	Voided leases	..	..	..	..	..	..	..	44·00	435·93	..
Ruby Creek ..	..	Voided leases	..	..	..	..	..	..	..	12,633·50	9,435·13	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	151·00	127·28	..
The Brockman	..	Voided leases	..	..	..	..	..	..	..	1,352·75	1,404·40	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	2,462·00	1,820·33	..
The Mary ..	..	Voided leases	..	..	..	..	..	..	..	399·00	210·03	..
The Panton ..	..	Voided leases	..	..	..	..	..	..	..	34·70	138·70	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	3·00	15·01	..
		From District generally :—										
		Reported by Banks and Gold Dealers	265·53	..	..	..	...	2,442·42	..	..	..	..
		Total	**265·53**	..	..	.	...	**2,442·42**	..	**17,597·50**	**14,127·25**	..

Pilbara Goldfield.

MARBLE BAR DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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	718	Bamboo Revenue	..	83·83	..	..	..	..	83·83	..	..	..
Do. ..	709	Blue Streak	..	44·96	..	..	..	..	44·96	..	..	..
Do. ..	(693)	Bobby Burns	..	..	..	..	..	..	..	1·50	23·67	..
Do. ..	695	Bulletin	..	..	163·00	305·13	..	..	..	177·00	446·17	..

Do. ..	..	Voided leases	..	..	..	..	..	..	..	..	11,269·25	18,626·71	..
Do. ..	..	Sundry claims	..	91·85	..	..	..	..	307·83	148·75	518·36	..
									143·22	..	..	..
Boodalyerrie ..	(701)	Boodalyerrie East	..	17·83	..	..	..	..	148·85	120·25	587·86	..
Do. ..	..	Voided leases	..	..	..	..	..	..	7·16	..	..	..
Do. ..	..	Sundry claims	..	..	..	..	..	..				
Breen's Find ..	..	Voided leases	..	..	..	..	..	..	..	14·00	66·82	..
Elsie	..	Voided leases	..	..	..	..	..	..	..	135·00	316·31	..
Lallarookh ..	..	Voided leases	..	..	..	..	..	..	..	224·50	2,186·65	574·01
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	6,308·00	5,530·86	..
Marble Bar ..	(687)	Devon	..	..	..	..	..	..	..	5·51	16·84	..
Do. ..	(673)	Enterprise	..	..	..	..	..	..	..	41·16	23·97	..
Do. ..	696	Franklin	..	..	98·50	21·88	..	..	..	98·50	21·88	..
Do. ..	703	Homeward Bound	..	..	53·00	10·63	..	..	..	53·00	10·63	..
Do. ..	694	Jo Jo	..	..	182·00	279·08	..	..	..	182·00	279·08	..
Do. ..	(698)	Lucky Hit	..	..	17·80	6·13	..	..	..	17·80	6·13	..
Do. ..	(672)	New Chum Railway	..	..	..	..	..	..	..	45·22	26·39	..
Do. ..	702	Railway Single	..	..	156·00	135·26	..	..	..	156·00	135·26	..
Do. ..	(615)	Roberts' Group: British Exploration of Australasia, Ltd.	..	..	152·00	76·03	..	..	..	433·40	517·85	..
Do. ..	704	True Blue	..	1·41	82·00	43·31	..	..	1·41	82·00	43·31	..
Do. ..	..	Voided leases	..	..	..	..	..	..	140·32	12,666·86	17,759·43	..
Do. ..	..	Sundry claims	..	43·56	587·00	579·79	..	38·68	102·68	1,917·89	2,533·66	..
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.	..	..	86·00	56·56	..	..	..	1,509·25	1,190·95	..
Do. ..	(675)	Britannia	..	..	..	..	..	..	..	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. ..	604	Klondyke Boulder	..	..	84·00	36·28	..	..	..	1,123·69	1,909·96	..
Do. ..	627	Klondyke Queen	..	..	18·00	17·32	..	..	3·80	402·25	445·02	..
Do. ..	(690)	Warrawoona Queen	..	..	..	..	..	..	..	17·00	20·22	..
Do. ..	..	Voided leases	..	..	..	..	..	..	13·19	3,008·11	8,356·91	..
Do. ..	..	Sundry claims	..	4·15	..	..	..	44·30	362·50	1,123·04	2,157·33	..
Western Shaw	708	Hilda N.	..	..	1·50	27·07	..	..	..	1·50	27·07	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	1,221·00	930·73	..
Do. ..	..	Sundry claims	..	..	..	..	..	12·52	63·55	..	..	..

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

Pilbara Goldfield—*continued.*

MARBLE BAR DISTRICT—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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.
Wyman's Well	(681)	Towers	..	..	26·00	54·78	..	..	..	26·00	54·78	..
Do. ..	..	Voided leases	..	..	..	..	..	..	33·55	89·04	439·20	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	16·72	220·86	464·22	..
Yandicoogina	..	Voided leases	..	..	..	..	..	..	140·76	2,664·50	5,597·99	..
Do. ..	..	Sundry claims	..	3·65	..	..	..	..	238·35	103·75	120·34	..
		From District generally :—										
		Sundry parcels treated at :										
		Sanderson Cyanide Works	..	..	..	48·02	..	..	..	..	48·02	..
		Osborne Cyanide Works	..	..	..	..	..	..	..	..	6·83	..
		Stray Shot Battery	..	..	..	..	..	..	..	..	9·75	..
		Various Works	..	..	..	..	..	..	..	237·95	1,140·31	..
		Reported by Banks and Gold Dealers	624·89	..	..	..	..	9,454·72	217·05	..	..	..
		Total	**624·89**	**291·24**	**1,706·80**	**1,697·27**	..	**9,753·09**	**2,873·63**	**51,361·38**	**81,768·61**	**574·01**

NULLAGINE DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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	..	..	61·00	126·11	..	..	..	536·75	984·45	..
Do. ..	176L	(Doherty Reward)	..	..	..	..	..	..	..	142·25	171·43	..
Do. ..	176L, 177L ..	Doherty Reward leases ..	..	..	17·00	428·79	..	..	..	17·00	428·79	..
Do. ..	177L	(Harp)	..	..	..	..	..	..	..	62·00	79·22	..
Do. ..	182L	Morning Star	..	..	78·00	128·29	..	..	..	233·00	425·93	..
Do. ..	179L	Rose	..	..	..	..	..	..	..	152·00	83·00	..
Do. ..	178L	Shamrock	..	..	..	..	..	..	..	118·25	195·13	..
Do. ..	(184L)	Thistle	..	..	..	..	..	..	..	33·50	33·02	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	20·00	18·76	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	3·77	10·00	16·31	..
Elsie	..	Voided leases	..	..	..	..	..	..	..	408·25	1,323·85	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	20·00	16·85	..

Middle Creek	106L	Barton	..	..	..	..	..	..	..	..	4,781·65	5,925·64	..
Do.	190L	Mundalla	..	..	..	46·00	169·42	..	..	..	46·00	169·42	..
Do.	(168L)	Yes–No	..	..	..	..	..	..	..	..	191·25	257·99	..
Do.	..	Voided leases	..	..	..	..	..	..	..	..	297·50	562·87	..
Do.	..	Sundry claims	..	..	..	58·00	121·19	..	..	..	126·00	210·12	..
Mosquito Creek	143L	Ard Patrick	..	..	..	298·50	443·70	..	..	..	1,067·25	2,858·19	..
Do.	(186L)	Belle Vue	..	..	..	7·00	12·03	..	..	..	13·00	25·16	..
Do.	189L	Cutty Sark	..	..	..	21·50	12·89	..	..	..	21·50	12·89	..
Do.	79L	(Galtee More)	..	..	..	..	..	..	..	..	586·00	1,648·33	..
Do.	79L, 145L	Galtee More leases	..	..	..	313·00	453·77	..	..	..	1,520·00	2,727·52	..
Do.	(171L)	Latest Surprise	..	..	..	..	..	..	..	21·42	209·50	246·55	..
Do.	..	Voided leases	..	..	..	..	..	..	1·07	..	3,603·55	4,444·35	..
Do.	..	Sundry claims	..	..	..	52·50	64·73	..	..	166·47	1,991·94	2,839·50	..
Nullagine	(119L, 120L, 121L, 122L)	British Exploration of Australasia, Ltd.		..	..	..	..	..	..	..	787·00	145·29	..
Do.	(122L)	(Grant's Hill)	..	..	..	..	..	..	..	..	1,658·00	701·61	..
Do.	..	Voided leases	..	..	..	..	..	..	..	13·96	4,991·75	10,405·80	..
Do.	..	Sundry claims	..	..	..	4·00	9·36	..	104·70	97·49	3,839·25	8,198·87	..
20-Mile Sandy	173L	Federation	..	..	..	78·50	124·06	..	..	..	173·75	377·57	..
Do.	136L	Little Wonder	..	..	..	39·00	163·31	..	..	..	881·00	3,470·03	..
Do.	167L	Mountain Maid	..	..	..	52·50	63·15	..	..	..	224·50	597·57	..
Do.	..	Voided leases	..	..	..	..	..	..	..	..	375·95	480·77	..
Do.	..	Sundry claims	..	33·10	6·19	148·00	100·10	..	33·10	20·55	2,005·90	3,149·70	..
	From District generally:—												
	Sundry parcels treated at:												
	Doherty's Works	..	..	..	..	..	..	..	..	..	..	48·86	..
	Enterprise Works	..	..	..	..	..	..	..	..	..	..	226·29	..
	Royer's Public Crushing Works	..	..	..	..	..	..	..	..	..	..	7·53	..
	State Battery—20-Mile Sandy	..	..	..	..	69·33	..	..	..	..	..	448·59	..
	Various Works	..	..	..	..	..	..	..	..	..	50·50	2,407·85	..
	Reported by Banks and Gold Dealers	..	227·02	..	..	..	..	5,055·06	22·50	..	..	..	
	Total	..	**260·12**	**6·19**	**1,274·50**	**2,490·23**	..	**5,193·93**	**346·16**	**31,195·74**	**56,371·60**	..	

West Pilbara Goldfield.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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	..	..	6·00	6·59	..	..	1·10	588·35	343·78	..
Do.	..	Voided leases	..	..	..	..	..	..	..	64·85	58·44	..
Do.	..	Sundry claims	..	..	..	..	..	10·44	2·71	10·00	11·51	..
Mallina	..	Voided leases	..	..	..	..	..	..	..	103·60	102·83	..

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

West Pilbara Goldfield—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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.
Pilbara ..	(146)	Pilbarra Broken Hill	..	..	..	..	..	..	48·12	..	..	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	148·00	293·42	..
Do. ..	..	Sundry claims	..	..	..	..	..	1·11	86·24	..	..	..
Roebourne ..	M.L. 135 ..	Wait-a-While	..	..	..	*4·65	..	..	..	..	4·65	..
Do. ..	..	Sundry claims	..	..	104·60	39·42	..	..	..	108·60	88·32	67·11
Station Peak	149	Prince Regent	..	..	..	755·25	..	177·74	..	..	1,496·29	..
Do. ..	150	Q. E.	..	..	37·00	76·70 *73·67	57·16	..	..	62·50	239·18	158·56
Do. ..	..	Voided leases	..	..	..	..	..	..	..	9,993·00	9,382·00	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	37·50	48·19	..
Towranna ..	..	Voided leases	..	..	..	..	..	..	..	1,934·80	2,088·26	..
Weerianna ..	151, 152 ...	Hillside leases	..	..	300·00	352·59	..	..	..	485·00	431·79	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	748·25	522·65	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	4·00	25·30	..
		From Goldfield generally :—										
		Reported by Banks and Gold Dealers	174·75	..	..	..	..	4,475·16	82·54	..	6·38	..
		Total	**174·75**	..	**447·60**	**1,308·87**	**57·16**	**4,685·85**	**220·73**	**14,636·45**	**15,594·03**	**225·67**

* From Copper Ore.

Ashburton Goldfield.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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	..	..	..
Uaroo ..	M.L. 81	Walga	..	..	..	..	..	..	..	..	..	162·02
		From Goldfield generally :—										
		Reported by Banks and Gold Dealers	247·63	..	..	..	..	7,899·97	..	..	..	..
		Total	**247·63**	..	..	..	..	**8,254·34**	**315·64**	..	..	**162·02**

Gascoyne Goldfield.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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	26·31	..	..	..	..	294·58	..	..	..	..
		Total	**26·31**	..	..	..	..	**294·58**	**18·51**	**236·70**	**218·49**	..

Peak Hill Goldfield.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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.
Egerton ..	349P	Mountain View Extended ..	..	·91	..	..	..	..	·91	..	..	..
Do. ..	..	Sundry claims	..	13·05	..	..	..	..	13·05	..	..	..
Horseshoe ..	327P	Brilliant	..	487·64	..	..	..	..	841·80	·04	53·63	..
Do. ..	(330P)	Groper	..	..	..	..	..	..	47·88	..	..	..
Do. ..	..	Voided leases	..	..	..	..	..	..	751·44	712·34	1,884·02	2·00
Do. ..	..	Sundry claims	..	..	..	..	..	..	397·32	16·05	45·14	..
Mt. Fraser ..	..	Voided leases	..	..	..	..	..	..	..	389·50	320·96	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	80·00	55·41	..
Peak Hill ..	3P	Atlantic No. 1 North: Peak Hill Goldfield, Ltd.	..	..	46·50	58·72	..	..	..	497·01	552·24	..
Do. ..	340P . ..	King George	..	10·41	..	..	..	..	10·41	..	..	..
Do. ..	1P	(North Star)	..	..	..	..	..	..	162·32	..	..	..
Do. ..	310P	Oversight	..	51·29	227·00	189·95	..	..	92·53	1,078·11	630·03	..

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

Peak Hill Goldfield—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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.
Peak Hill ..	1P, 2P, 4P, 5P, 6P, 8P, 9P, 13P, 15P, 16P, 26P, 27P, 28P, 29P, 35P, 36P, 43P, 53P, 54P, (63P), 146P, 152P, (190P), 213P, (222P), 239P, (248P), 252P, (262P), 274P, 306P, 313P	Peak Hill Goldfield, Ltd.	..	..	14,847·06	3,130·20	94·52	..	191·46	461,974·41	221,092·57	2,285·59
Do. ..	..	Voided leases	..	..	..	..	..	..	181·41	2,353·50	2,182·49	..
Do. ..	..	Sundry claims	..	2·00	163·50	80·83	..	..	104·97	904·50	250·05	..
Ravelstone ..	(336P)	Anglo Saxon	..	56·17	40·50	55·59	..	..	58·17	40·50	55·59	..
Do. ..	357P	Anglo Saxon	..	31·29	..	..	..	..	31·29	..	..	..
Do. ..	(323P)	Old Irish	..	..	..	..	..	..	..	299·50	188·48	..
Do. ..	(328P)	Redemption	..	..	..	..	..	..	..	224·00	116·28	..
Do. ..	..	Voided leases	..	..	..	..	..	..	6·08	3,655·85	2,757·33	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	553·60	283·17	..
Wilgeena ..	..	Voided leases	..	..	..	..	..	..	23·54	128·50	146·79	..
Wilthorpe ..	..	Voided leases	..	..	..	..	..	..	..	47·00	20·93	..
		From Goldfield generally :—										
		Sundry parcels treated at :										
		State Battery—Ravelstone	..	..	..	..	..	..	3·05	..	4·83	..
		Various Works	..	..	..	..	..	..	..	30·00	319·97	..
		Reported by Banks and Gold Dealers	89·06	69·91	..	..	..	600·32	227·03	..	..	..
		Total	**89·06**	**722·67**	**15,324·56**	**3,515·29**	**94·52**	**600·32**	**3,144·66**	**472,984·41**	**230,959·91**	**2,287·59**

East Murchison Goldfield.

LAWLERS DISTRICT.

Note.—From the 1st March, 1910, the Lawlers District was subdivided into Wiluna and Lawlers. The gold produced after that date by the mines at Wiluna will be found in the Wiluna District, and the lease numbers of both districts are shown in each case.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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.
Bronzewing ..	1017	Bronzewing	..	..	13·00	7·56	..	..	..	93·50	54·81	..
Do. ..	(1057)	Hawk	..	..	63·00	44·77	..	..	..	73·00	65·39	..
Do. ..	1020	Malbie	..	..	209·00	139·11	..	..	..	220·50	162·01	1·94
Cork Tree ..	..	Voided leases	..	..	..	..	..	..	29·90	3,767·00	3,292·87	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	25·50	13·00	9·32	..
Kathleen Valley	113	(Nil Desperandum)	..	..	..	..	..	..	..	17,960·00	7,618·73	..
Do. ..	113	Nil Desperandum	..	..	..	3·62	..	..	..	1,234·00	724·54	..
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: Yellow Aster G.M. Co., N.L.	..	..	1,557·00	723·01	..	..	..	8,204·75	3,626·51	..
Do. ..	..	Voided leases	..	..	..	..	..	..	141·57	1,288·50	1,292·34	..
Do. ..	..	Sundry claims	..	..	37·00	23·22	..	..	478·40	1,159·25	702·28	..
Lake Darlot ..	182	Amazon	..	..	85·00	21·54	..	..	7·92	3,523·00	5,844·91	..
Do. ..	93	Ballangarry	..	..	1,300·90	335·78	..	..	..	6,873·50	3,031·42	..
Do. ..	1127	Brittish King	..	..	101·00	52·50	..	..	..	101·00	52·50	..
Do. ..	626	Filbandint	..	..	..	..	..	..	..	999·00	918·19	..
Do. ..	375	King of the Hills	..	..	148·00	69·32	..	..	101·48	1,419·00	1,544·22	..
Do. ..	648, 654, 852 ..	Monte Christo leases	..	..	170·00	34·60	..	..	..	6,762·60	3,279·52	..
Do. ..	(1105)	Oakley	..	..	29·50	85·23	..	..	..	29·50	85·23	..
Do. ..	1118	Rosewood	..	..	41·50	97·38	..	..	..	41·50	97·38	..
Do. ..	273	St. George	..	..	47·50	34·10	..	..	2,927·22	779·50	7,903·48	..
Do. ..	633	(Zangbar)	..	..	..	..	..	..	..	997·00	505·75	..
Do. ..	633, 823 ..	Zangbar leases	..	..	455·00	163·61	..	..	..	19,243·00	7,224·44	..
Do. ..	..	Voided leases	..	..	..	..	..	..	827·65	20,259·20	15,610·55	..
Do. ..	..	Sundry claims	..	4·47	250·70	183·83	..	1·16	237·43	2,621·64	1,782·54	..
Lawlers ..	19, 414	Bounty leases	..	..	..	..	..	..	..	1,630·35	1,788·67	..
Do. ..	(532)	(Brilliant)	..	..	..	..	..	..	..	3,648·00	2,600·94	..
Do. ..	(532)	Brilliant	..	..	..	..	..	..	..	55·00	445·44	..
Do. ..	(532, 533) ..	(Brilliant leases)	..	..	..	..	..	..	..	8,741·00	5,704·36	7·00
Do. ..	(1094)	Brilliant North	..	..	30·50	53·54	..	..	..	30·50	53·54	..
Do. ..	(1069)	Dalmatia	..	..	..	..	..	..	..	44·00	65·59	..

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 1910.					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.
Lawlers ..	900	Dobra Scrica	..	..	127·50	143·12	..	..	..	1,203·50	1,143·64	..
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	(East Murchison United, Ltd.) ..	..	..	..	..	..	..	..	291,797·00	155,594·26	900·48
Do. ..	1125	Golden Swan	..	..	61·00	205·00	..	..	..	61·00	205·00	..
Do. ..	(1080)	Lillian Lass	..	..	366·00	42·95	..	..	..	438·00	56·15	..
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	..	..	149·00	106·80	..	..	..	310·00	310·54	..
Do. ..	1130	Mountain Queen	..	..	9·00	2·12	..	..	..	9·00	2·12	..
Do. ..	(1030)	Never-Can-Tell	..	..	..	..	..	..	..	71·00	20·14	..
Do. ..	(373)	New Holland	..	..	..	..	..	..	..	4,774·25	2,353·86	..
Do. ..	37, 58, 62, 70, 155, 156, 157, 158, 376, 377, 385, 459, 508, 509, 562, 563, 811, 840, 918, 1053, 1106, 1109, 1110, 1123	Northern Mines, Ltd.	..	..	80,660·50	23,467·71	1,829·70	..	..	322,222·50	76,172·67	6,404·53
Do. ..	(1131)	Perseverance	..	..	28·00	2·43	..	..	..	28·00	2·43	..
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	..	..	1,030·00	42·79	..	..	..	2,658·00	767·05	..
Do. ..	910	Sunrise	..	..	1,703·00	827·08	..	..	..	5,278·00	3,391·15	..
Do. ..	(1119)	Undaunted	..	..	57·00	9·04	..	..	..	57·00	9·04	..
Do. ..	521	(Vivien)	..	..	..	..	..	..	..	45·50	21·75	..
Do. ..	908	Vivien Gem	..	20·74	156·00	134·55	..	..	84·12	2,491·25	2,516·12	..
Do. ..	408, 521, 574, (624, 625), 719	Vivien G.M. Co., Ltd.	..	..	40,622·00	11,311·33	317·00	..	..	209,186·18	75,830·83	1,694·06
Do. ..	62, 562, 563, ..	(Waroonga South leases) ..	..	..	..	..	..	..	..	42,150·00	14,329·48	..
Do. ..	988	Wild Cat	..	..	100·00	25·26	..	..	..	3,893·50	2,849·91	..
Do. ..	58	(Woronga: London and Western Australian Exploration Co., Ltd.)	..	..	..	..	..	..	..	2,438·50	2,755·45	..
Do. ..	(1010)	Yongala	..	..	..	..	..	..	..	266·50	40·13	..
Do. ..	..	Voided leases	..	..	..	..	..	..	332·44	36,050·95	45,381·06	89·33
Do. ..	..	Sundry claims	..	2·75	477·50	419·48	..	14·81	66·02	5,551·85	3,509·12	..
New England ..	..	Voided leases	..	..	..	..	..	..	57·54	899·00	720·25	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	4·32	554·50	465·23	..
Sir Samuel ..	21, 24, 35, 38, 308, 310, 368, 439, 582, (584, 585), 615, 1126	Bellevue, Ltd.	..	..	2,378·00	1,985·18	141·52	..	..	35,493·00	20,536·09	2,110·43
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. ..	1078	Calliope	..	..	45·00	7·38	..	..	..	45·00	7·38	..
Do. ..	1073	Camperdown	..	..	355·00	193·91	..	..	..	355·00	193·91	..
Do. ..	1114	Cardiganshire	..	..	132·00	48·23	..	..	..	132·00	48·23	..
Do. ..	(1074)	Dedong	..	..	68·00	21·42	..	..	..	68·00	21·42	..
Do. ..	1092	Dreamland	..	..	271·00	249·75	..	..	..	271·00	249·75	..
Do. ..	(1070)	Goodenough	..	..	50·00	7·77	..	..	..	50·00	7·77	..
Do. ..	1072	Isidore	..	·71	92·00	25·28	..	..	·71	92·00	25·28	..
Do. ..	1122	Puzzle	..	..	176·00	193·83	..	..	..	176·00	193·83	..
Do. ..	1120	Unexpected	..	..	12·00	4·24	..	..	..	12·00	4·24	..
Do. ..	1043	Westralia	..	..	516·00	134·24	..	..	..	516·00	134·24	..
		Voided leases	..	..	..	..	..	..	..	13,429·00	6,386·25	..
		Sundry claims	..	5·56	401·75	221·90	..	..	21·37	1,646·25	1,352·84	..
Wiluna ..	(983 [38J]) ..	Adelaide Junction	..	..	..	..	..	..	..	66·00	23·48	..
Do. ..	(940 [91J], 973 [34J], 974 [35J], 1023 [45J])	Adelaide leases	..	..	..	..	..	..	..	616·00	148·53	..
Do. ..	1108 [87J] ..	Brothers	..	..	..	..	..	..	..	41·00	10·71	..
Do. ..	946 [23J] ..	(Bulletin)	..	..	..	..	..	..	..	5,605·00	2,144·82	..
Do. ..	959 [30J] ..	(Bulletin North)	..	..	..	..	..	..	..	391·00	91·44	..
Do. ..	1039 [51J] ..	Caledonia	..	..	..	..	..	..	..	78·00	138·38	..
Do. ..	(149 [3J]) ..	(Derwent)	..	..	..	..	..	..	..	164·30	350·97	..
Do. ..	(149 [3J]) ..	Derwent	..	..	..	..	..	..	..	49·00	17·88	..
Do. ..	(149 [3J]) ..	(Derwent: Lake Way Goldfields, 1899, Ltd.)	..	..	..	..	..	..	..	8,243·00	7,960·40	..
Do. ..	140 [2J] ..	Golden Age	..	..	..	..	..	..	..	752·00	870·93	..
Do. ..	1068 [67J] ..	Golden Age South	..	..	..	..	..	..	..	183·00	100·17	..

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 1910.					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 ..	140 [2J], 162 [4J], 163 [5J]	(Golden Age Consolidated, Ltd.) ..	..	..	..	..	..	..	..	42,521·00	19,750·45	..
Do. ..	140 [2J]	(Golden Age: Golden Age Lake Way, Ltd.)	..	..	..	..	..	..	..	12,899·00	7,468·69	..
Do. ..	(1016 [42J]) ..	Golden Bracelet	..	..	..	..	..	..	..	126·00	612·53	..
Do. ..	542 [6J], 548 [7J], 550 [8J], 906 [11J], 930 [13J], 931 [14J], 932 [15J], 937 [17J], 938 [18J], 943 [21J], 944 [22J], 952 [26J]	Gwalia Consolidated, Ltd.	..	..	8,769·00	2,652·72	..	..	..	210,230·32	74,536·14	69·03
Do. ..	1066 [65J], (1067 [66J])	Happy Jack No. 1 leases ..	..	..	..	..	..	..	..	96·00	85·06	..
Do. ..	(1033 [50J]) ..	Hill Rise	..	..	..	..	..	..	..	57·00	3·42	..
Do. ..	954 [28J] ..	(Indicator)	..	..	..	..	..	..	..	767·00	143·44	..
Do. ..	(933 [16J]) ..	Lady of the Lake	..	..	..	..	..	..	..	322·00	228·68	..
Do. ..	162 [4J], 163 [5J]	(Lake Way leases)	..	..	..	..	..	..	..	630·00	369·60	..
Do. ..	162 [4J]	(Lake Way: West Australian Goldfields, Ltd.)	..	..	..	..	..	..	..	2,786·00	1,238·44	..
Do. ..	(956 [29J]) ..	Lone Hand	..	..	..	..	..	..	..	332·50	44·21	..
Do. ..	137 [1J]	Monarch of the East	..	..	..	..	..	..	..	503·00	308·41	..
Do. ..	137 [1J]	(Monarch of the East: Monarch of the East G.M. Co., N.L.)	..	..	..	..	..	..	..	12,251·00	8,888·27	..
Do. ..	870 [10J] ..	Moonlight	..	..	..	..	..	..	..	1,856·00	787·66	..
Do. ..	967 [33J] ..	(Red Page)	..	..	..	..	..	..	..	457·00	434·50	..
Do. ..	917 [12J] ..	(Squib)	..	..	..	..	..	..	..	276·50	67·00	..
Do. ..	677 [9J]	(Try Again)	..	..	..	..	..	..	..	1,185·00	1,143·02	..
Do. ..	942 [20J] ..	(Try Again Extended)	..	..	..	..	..	..	..	306·00	363·87	..
Do. ..	677 [9J], 942 [20J]	Try Again leases	..	..	..	..	..	..	..	200·00	114·65	..
Do. ..	(1046 [52J]) ..	Woodcutter	..	..	..	..	..	..	..	110·00	60·17	..
Do. ..	..	Voided leases	..	..	..	..	..	..	537·27	12,341·95	9,649·52	124·00
Do. ..	..	Sundry claims	..	..	..	..	..	5·30	..	2,837·15	1,506·26	..
		From District generally:—										
		Sundry parcels treated at:										
		Black Swan Cyanide Works	..	..	..	..	..	..	..	..	115·69	11·60
		Cinderella Works	..	..	261·50	273·05	..	..	..	1,200·00	1,477·44	26·00

Cork Tree Cyanide Works	..	..	..	..	..	..	..	..	..	57·39	..
Lawlers Public Battery	..	..	..	..	..	..	..	..	214·00	1,335·84	..
State Battery—Lake Darlot	..	..	..	..	..	40·16	..	..	315·00	1,097·09	..
State Battery—Wiluna	..	..	..	..	..	..	..	..	390·00	2,047·17	20·00
Urquhart's Cyanide Works	..	..	..	..	..	..	..	..	..	4,276·70	200·00
Wilks Bros.' Cyanide Works	..	..	..	..	..	..	..	..	..	48·48	..
Various Works	..	..	..	..	..	..	..	..	117·50	3,881·31	506·73
Reported by Banks and Gold Dealers	..	..	..	279·13	12·96	..	5·74	..	5,242·00	67·15	..	5·74	..
Total	..	..	..	**279·13**	**47·19**	**143,612·35**	**44,877·18**	**2,288·22**	**5,263·27**	**5,948·01**	**1,852,071·24**	**826,008·60**	**22,813·44**

WILUNA DISTRICT.

Note.—Previous to the 1st March, 1910, Wiluna formed part of the Lawlers District. The gold produced by mines at Wiluna previous to that date will be found in the Lawlers District, and the lease numbers of both districts are shown in each case.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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.
New England	69J [1079] ..	Empire	..	..	592·00	165·24	..	..	..	592·00	165·24	..
Do. ..	90J [1116] ..	Golden Way	..	..	120·00	32·22	..	..	..	120·00	32·22	..
Do. ..	82J [1101] ..	Harris' Reward	..	..	86·00	43·56	..	..	..	86·00	43·56	..
Do. ..	71J [1083], 72J [1084]	May Queen leases	..	..	36·00	25·16	..	..	..	36·00	25·16	..
Do. ..	..	Sundry claims	..	..	115·00	100·62	..	..	..	115·00	100·62	..
Wiluna ..	94J	Aboriginalities	..	..	65·00	15·45	..	..	..	65·00	15·45	..
Do. ..	91J	Adelaide	..	..	149·00	15·55	..	..	..	149·00	15·55	..
Do. ..	98J	Andrew Fisher	..	..	88·00	41·67	..	..	..	88·00	41·67	..
Do. ..	101J	Band of Hope	..	..	102·00	20·68	..	..	..	102·00	20·68	..
Do. ..	87J [1108] ..	Brothers	..	..	180·00	110·47	..	..	..	180·00	110·47	..
Do. ..	107J	Butchers	..	..	24·00	35·23	..	..	..	24·00	35·23	..
Do. ..	23J [946] ..	(Bulletin)	..	..	5,787·00	1,427·81	..	..	..	5,787·00	1,427·81	..
Do. ..	51J [1039] ..	Caledonia	..	..	165·00	208·08	..	..	..	165·00	208·08	..
Do. ..	(3J [149]) ..	Derwent	..	..	26·00	12·41	..	..	..	26·00	12·41	..
Do. ..	(92J)	Diorite Queen	..	24·63	6·50	31·14	..	..	24·63	6·50	31·14	..
Do. ..	112J	Discovery	..	..	103·00	62·18	..	..	..	103·00	62·18	..
Do. ..	2J [140]	Golden Age: Wiluna Gold Mines, Ltd.	..	..	45·00	17·92	..	..	..	45·00	17·92	..
Do. ..	67J [1068] ..	Golden Age South	..	3·29	99·00	72·97	..	..	3·29	99·00	72·97	..
Do. ..	(42J [1016]) ..	Golden Bracelet	..	..	224·00	548·67	..	..	..	224·00	548·67	..
Do. ..	6J [542], 7J [548], 8J [550], 11J [906], 13J [930], 14J [931], 15J [932], 17J [937], 18J [938], 21J [943], 22J [944], 26J [952],	Gwalia Consolidated, Ltd.	..	..	20,898·00	7,311·49	6·93	..	..	20,898·00	7,311·49	6·93
Do. ..	65J [1066], 83J [1102]	Happy Jack, No. 1 leases ..	..	..	1,475·00	181·79	..	..	..	1,475·00	181·79	..

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

East Murchison Goldfield—*continued.*

WILUNA DISTRICT—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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 ..	114J	Joker	..	..	37·00	28·80	..	..	..	37·00	28·80	..
Do. ..	1J [137] ..	Monarch of the East	..	..	1,542·00	851·67	..	..	..	1,542·00	851·67	..
Do. ..	10J [870] ..	Moonlight	..	..	620·00	197·95	..	..	..	620·00	197·95	..
Do. ..	97J	Regina	..	..	21·00	9·54	..	..	..	21·00	9·54	..
Do. ..	9J [667], 20J [942], 12J [917], 23J [946], 28J [945], 30J [959], 33J [967], 36J [975], 43J [1018], 76J [1090], 113J	Try Again leases	..	..	258·00	163·90	..	..	..	258·00	163·90	..
		Wiluna Gold Mines, Ltd.	..	..	3,954·00	893·10	..	..	..	3,954·00	893·10	..
Do. ..	..	Sundry claims	..	62·51	311·00	226·46	..	..	62·51	311·00	226·46	..
		From District generally:— Sundry parcels treated at: State Battery—Wiluna	..	..	..	1,316·01	..	..	..	..	1,316·01	..
		Total	..	**90·43**	**37,128·50**	**14,167·74**	**6·93**	..	**90·43**	**37,128·50**	**14,167·74**	**6·93**

BLACK RANGE DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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 oz-	Tons (2,240lbs.)	Fine ozs.	Fine ozs.
Birrigrin ..	109B, (130B) ..	(Birrigrin G.Ms., Ltd.)	..	..	..	..	..	..	..	799·50	546·09	..
Do. ..	657B	Excellsior	..	..	63·50	29·70	..	..	..	63·50	29·70	..
Do. ..	109B	(Hawthorne)	..	..	..	..	..	..	..	1,555·00	2,013·25	..
Do. ..	109B, (130B) ..	(Hawthorne leases)	..	..	523·50	275·78	..	..	..	2,426·50	2,192·03	..
Do. ..	109B	Hawthorne	..	..	125·50	160·41	..	..	..	125·50	160·41	..
Do. ..	(130B)	(Ione)	..	..	..	..	..	..	..	24·00	20·83	..
Do. ..	128B	(Pelerin)	..	..	..	..	..	..	..	1,765·46	3,621·53	..
Do. ..	128B, 356B ..	Pelerin leases	..	..	292·00	265·90	..	..	..	1,004·00	1,403·41	..
Do. ..	(584B)	Possible	..	..	..	..	..	..	1·19	..	..	..
Do. ..	(159B)	Red Castle	..	..	66·50	20·48	..	..	..	407·00	462·27	..
Do. ..	(113B)	Stranger	..	..	..	..	..	..	..	611·50	803·63	..

Do. ..	(572B)	Wheel Ellen	..	..	..	..	..	..	21·89	25·00	27·26	..
Do. ..	..	Voided leases	..	..	..	..	..	..	797·60	1,832·95	2,657·81	..
Do. ..	..	Sundry claims	..	34·52	304·00	223·59	..	..	34·52	602·50	381·19	..
Curran's Find	641B	Red, White, and Blue	..	24·58	31·00	41·27	..	..	24·58	31·00	41·27	..
Do. ..	669B	Red, White, and Blue North ..	..	..	20·00	9·89	..	..	..	20·00	9·89	..
Do. ..	(550B)	Sunny Morn	..	..	8·00	10·77	..	..	96·62	17·50	28·95	..
Do. ..	..	Sundry claims	..	2·08	74·50	111·45	..	..	2·08	74·50	111·45	..
Hancocks ..	22B, (233B,) 290B, 300B, (309B, 314B,) 315B, (321B,) 322B	Black Range Kohinoor Mining Co., N.L.	..	..	827·00	1,389·81	29·58	..	..	5,650·00	6,760·24	29·58
Do. ..	(600B)	Blackstone	..	..	..	..	..	..	9·88	..	..	..
Do. ..	478B	Breakaway	..	111·17	118·50	181·81	..	..	239·97	475·50	427·07	..
Do. ..	382B	(Bull Oak)	..	..	..	..	..	..	..	725·00	956·77	..
Do. ..	369B, 379B, 382B, 383B	Comrades leases	..	..	696·00	425·39	..	..	..	4,566·50	3,397·00	..
Do. ..	389B	(Faugh a ballagh)	..	..	..	..	..	..	..	139·00	109·31	..
Do. ..	389B, 495B ..	Faugh a ballagh leases ..	..	59·63	235·00	370·28	..	..	59·63	459·00	650·33	..
Do. ..	(233B)	(Floater)	..	..	..	..	..	..	..	51·25	36·14	..
Do. ..	(621B)	Freedom	..	12·54	20·50	14·10	..	..	12·54	32·00	26·72	..
Do. ..	22B	(Koinoor)	..	..	..	..	..	..	..	331·25	1,122·39	..
Do. ..	330B	Koinoor North	..	1·04	239·00	103·54	..	..	29·76	1,228·00	703·17	..
Do. ..	139B	(Lady Ellen)	..	..	..	..	..	..	..	219·75	458·96	..
Do. ..	139B	Lady Ellen	..	19·57	42·00	55·65	..	..	19·57	61·00	108·30	..
Do. ..	139B, (234B) ..	(Lady Ellen leases)	..	..	..	..	..	..	..	259·50	488·61	11·00
Do. ..	633B, 637B ..	Lady Seddon leases	..	..	186·00	111·50	..	..	..	186·00	111·50	..
Do. ..	(286B)	Late Seddon	..	..	..	..	..	..	2·38	445·50	400·61	..
Do. ..	383B	(Maid Marion)	..	..	..	..	..	..	2·47	373·00	490·40	..
Do. ..	300B	(Sceptic)	..	..	..	..	..	..	3·75	..	..	..
Do. ..	(606B)	Sensation	..	..	27·00	8·79	..	..	..	27·00	8·79	..
Do. ..	(378B)	Worker	..	..	..	..	..	..	40·52	758·50	885·17	..
Do. ..	..	Sundry claims	..	1·41	234·00	156·07	..	..	1·41	234·00	156·07	..
Maninga Marley	644B	Bulletin	..	..	126·00	258·66	..	..	..	126·00	258·66	..
Do. ..	203B	(Havilah)	..	..	..	..	..	..	..	1,507·50	2,315·74	..
Do. ..	203B, 243B, 249B 254B, 287B, 288B, 289B, 305B, 350B, 504B	Havilah G.M. Co., N.L.	..	..	7,042·00	3,662·64	22·55	..	..	32,735·00	18,073·70	22·55
Do. ..	203B, 243B, 249B 254B, 287B, 288B, 289B, 305B	(Havilah leases)	..	..	..	..	..	..	..	2,240·00	2,432·48	..
Do. ..	(513B)	Kurrajong	..	..	..	..	..	..	..	47·00	31·30	..
Do. ..	53B	(Maninga Marley)	..	..	..	..	..	..	..	222·75	274·92	..
Do. ..	53B, 77B, 100B ..	Maninga Marley leases	..	..	304·00	585·43	..	..	..	6,089·33	7,027·26	..
Do. ..	67B	Maninga Marley North	..	..	120·00	53·70	..	..	..	2,769·50	3,693·59	..
Do. ..	..	Voided leases	..	..	..	..	..	..	3·99	516·75	329·26	..
Do. ..	..	Sundry claims	..	..	102·00	133·76	..	..	..	412·50	428·63	..
Montagu ..	185B	(Caledonian)	..	..	..	..	..	..	..	346·90	785·20	..
Do. ..	185B, 351B ..	Caledonian leases	..	..	..	..	..	..	..	310·00	343·41	..
Do. ..	135B	Montagu Boulder	..	..	2,769·00	1,436·28	..	..	..	3,919·00	2,132·25	..
Do. ..	(175B)	Montagu Monarch	..	..	95·00	72·17	..	..	..	557·50	749·22	..
Do. ..	624B	Prince Foote	..	56·67	98·00	66·46	..	..	56·67	116·00	133·92	..

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 1910.					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 ..	578B	Sefton	..	5·69	75·00	16·45	..	..	5·69	254·00	116·72	..
Do. ..	..	Voided leases	..	..	..	..	..	..	21·31	304·75	228·86	..
Do. ..	..	Sundry claims	..	..	99·50	28·28	..	..	..	350·00	204·31	..
Nunngarra ..	616B	Dead Beat	..	105·02	..	..	..	..	105·02	10·00	8·83	..
Do. ..	(607B)	Glanmire	..	..	..	..	..	..	..	21·00	7·64	..
Do. ..	(457B)	Indomitable	..	..	..	..	..	..	..	98·00	18·85	..
Do. ..	568B	Mac's Addition	..	..	36·00	40·84	..	..	..	101·00	130·95	..
Do. ..	285B	Missing Link	..	..	..	..	..	..	..	284·50	481·53	..
Do. ..	205B	Nunngarra	..	..	805·00	153·88	..	..	..	1,105·50	264·22	..
Do. ..	619B	Nungarra Junction	..	..	209·00	128·11	..	..	..	231·50	145·50	..
Do. ..	..	Voided leases	..	..	..	..	..	25·94	126·29	6,409·50	6,052·45	3·64
Do. ..	..	Sundry claims	..	..	39·00	14·39	..	46·67	1,269·97	2,011·15	1,707·87	..
Sandstone ..	4B	(Adelaide)	..	..	..	..	..	..	7·21	7,443·00	12,675·94	..
Do. ..	4B, 5B, 11B, 17B, 26B, 70B, 140B, 150B	(Adelaide leases)	..	..	..	..	..	..	..	21,010·00	30,255·28	..
Do. ..	5B	(Black Range)	..	..	..	..	..	..	152·68	637·00	1,477·66	5·60
Do. ..	4B, 5B, 9B, 11B, 17B, 26B, 70B, 140B, 150B, 256B, 494B, 509B, 620B, 627B	Black Range Mining Co., N.L. ..	4·75	199·90	29,328·00	21,600·82	503·00	4·75	199·90	80,557·00	65,670·63	503·00
Do. ..	623B	Black Range South Extended ..	..	13·39	..	..	..	..	23·98	..	..	..
Do. ..	643B	Cardigan	..	306·56	89·00	68·03	..	..	306·56	89·00	68·03	..
Do. ..	659B	Coonabar	..	149·10	..	..	..	..	149·10	..	..	..
Do. ..	(211B)	Eclipse	..	..	33·00	22·56	..	..	..	526·75	348·76	..
Do. ..	149B	(Golden Gate)	..	..	..	..	..	..	..	113·75	62·98	..
Do. ..	151B	(Golden Key)	..	..	..	..	..	..	..	883·00	1,412·75	..
Do. ..	634B	Irishman	..	..	339·00	200·74	..	..	..	339·00	200·74	..
Do. ..	16B	(Kingoonya)	..	..	..	..	..	..	..	1,406·00	1,850·40	..
Do. ..	509B	Mary S.	..	..	..	..	..	..	275·60	70·00	84·09	..
Do. ..	(604B)	Orion	..	103·71	..	..	..	..	290·28	..	..	..
Do. ..	6B, 10B, 16B, 74B, 81B, 114B, 149B, 151B, 189B, 193B, 206B, 216B, 238B, 463B, 477B, 498B, 553B	Oroya Black Range, Ltd.	..	..	48,073·00	25,558·90	1,978·46	..	..	163,336·00	102,978·48	2,034·61

Do.	573B	Oroya Extended	..	..	146·50	97·17	..	..	..	282·00	223·05	..
Do.	187B	(Sandridge: Sandstone Development G.M. Co., N.L.)	..	..	..	..	..	..	..	263·00	102·22	..
Do.	6B	(Sand Stone)	..	..	..	..	..	..	..	1,439·50	1,938·54	..
Do.	174B, 187B, 196B, 229B, 231B, 232B, 236B, 283B, 284B	Sandstone Development G.M. Co., N.L.	..	..	11,588·00	5,769·41	155·30	..	..	21,342·50	12,862·16	242·30
Do.	510B	Storekeeper	..	..	..	..	..	..	9·36	..	..	..
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.	663B	Victory	..	2·47	..	..	..	..	2·47	..	..	..
Do.	(8B)	Wanderie	..	..	..	..	..	..	..	2,417·50	2,401·44	..
Do.	(597B)	Wanderie North	..	..	114·00	51·25	..	..	..	114·00	51·25	..
Do.	(589B)	Wanderie North Extended	..	..	..	..	..	..	22·07	..	..	..
Do.	(23B)	Wanderie No. 1 West	..	..	126·00	92·07	..	..	..	2,715·00	1,426·14	..
Do.	174B	(Wonoka)	..	..	..	..	..	..	..	68·50	36·35	..
Do.	174B	(Wonoka: Sandstone Development G.M. Co., N.L.	..	..	..	..	..	..	..	165·00	156·12	..
Do.		Voided leases	..	..	..	..	..	..	50·46	2,192·38	2,245·53	..
Do.		Sundry claims	24·01	250·23	270·00	126·88	..	24·01	300·07	830·50	476·11	..
Youanme	(543B)	Battler's Relief	..	..	..	..	..	..	..	16·00	32·35	..
Do.	(538B)	Commonwealth	..	..	224·00	129·46	..	..	..	352·25	221·68	..
Do.	(523B)	Continental	..	..	23·25	28·17	..	..	..	123·75	97·04	..
Do.	(529B, 534B)	Dark Horse leases	..	..	42·00	7·41	..	..	..	80·50	18·71	..
Do.	622B	Edna	..	..	320·00	210·17	..	..	..	320·00	210·17	..
Do.	(517B)	Golden Crown	..	..	12·00	6·27	..	..	..	80·00	66·00	..
Do.	526B	Great Western	..	..	..	..	..	..	9·71	553·75	417·43	..
Do.	532B	Grosvenor	..	..	71·00	12·95	..	..	..	71·00	12·95	..
Do.	660B	Golden Slipper	..	..	5·00	2·99	..	..	..	5·00	2·99	..
Do.	519B	Hill End	..	..	962·50	318·56	..	..	..	1,098·25	421·59	..
Do.	564B	Junction	..	..	947·50	647·06	..	..	..	975·50	668·33	..
Do.	(544B)	Lady Agnes	..	..	..	..	..	..	..	28·00	12·88	..
Do.	(582B)	Marloo	..	..	..	..	..	..	..	10·00	6·13	..
Do.	(554B)	Oaks	..	..	..	..	..	·36	39·28	..	..	..
Do.	630B	Oversight	..	..	98·00	32·76	..	..	..	98·00	32·76	..
Do.	521B	Peru	..	..	13·00	18·94	..	..	..	98·00	126·86	..
Do.	613B	Rebel	..	..	284·00	67·60	..	..	..	284·00	67·60	..
Do.	(535B)	Retreat	..	..	21·00	9·43	..	..	..	78·00	27·33	..
Do.	(530B)	Thompson's Luck	..	..	..	..	..	..	6·18	15·50	3·01	..
Do.	514B	United	..	..	1,557·00	684·89	..	..	..	2,084·00	1,193·84	..
Do.	(563B)	Wairarapa	..	..	..	..	..	..	..	26·50	6·97	..
Do.	(545B)	White Boulder	..	..	..	..	..	..	..	58·00	7·12	..
Do.		Voided leases	..	..	..	..	..	..	3·97	14·00	3·18	..
Do.		Sundry claims	..	..	66·50	14·94	..	..	..	155·50	48·34	..
		From District generally:—										
		Sundry parcels treated at:										
		Reply Works	..	..	..	343·23	..	..	..	37·00	2,373·52	..
		State Battery—Black Range	..	..	..	1,825·51	..	..	..	202·00	7,600·18	59·53
		State Battery—Youanme	..	..	..	816·74	..	..	..	..	1,200·74	..
		Various Works	..	..	..	..	..	..	..	..	3,133·23	..
		Reported by Banks and Gold Dealers	39·36	..	..	..	..	1,290·86	11·43	..	..	..
		Total	**68·12**	**1,459·28**	**110,806·25**	**69,382·14**	**2,688·89**	**1,392·59**	**4,849·61**	**406,812·92**	**338,050·57**	**2,911·81**

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 1910.					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. ..	..	..	1,865·00	1,009·02	27·00	..	..	14,872·33	12,833·85	108·28
Do. ..	1467, 1488 ..	Barrambie South G.M. Co., N.L. ..	..	..	91·00	52·51	..	..	..	281·00	116·37	..
Do. ..	1467	(Dawn of Hope)	..	..	..	..	..	..	9·99	5·09	29·70	..
Do. ..	1458	(Golden Treasure)	..	..	..	..	..	..	6·54	..	..	..
Do. ..	(1709)	Ironclad	..	..	..	..	..	..	..	22·00	10·11	..
Do. ..	1712	Mystery	..	16·63	184·00	128·88	..	..	16·63	423·00	514·32	..
Do. ..	(1708)	Sugarstone	..	..	..	..	..	..	..	847·00	551·30	..
Do. ..	..	Voided leases	..	..	..	..	..	..	5·96	83·50	64·07	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	9·50	4·41	..
Cuddingwarra	1741	Emily	..	..	158·50	216·63	..	..	..	158·50	216·63	..
Do. ..	(1643)	Rhinegold	..	..	31·00	20·39	..	..	..	475·00	161·61	..
Do. ..	(1780)	Victory United	..	..	13·00	19·88	..	..	..	13·00	19·88	..
Do. ..	(595, 1122) ..	Victory United G.M. Co., N.L. ..	..	..	2·00	5·77	..	..	..	21,272·00	31,536·33	15·42
Do. ..	..	Voided leases	..	..	..	..	..	..	36·52	12,486·25	11,069·40	..
Do. ..	..	Sundry claims	..	5·15	3·50	10·06	..	..	11·86	341·50	293·58	..
Cue	1047	(Agamemnon)	..	..	..	..	..	..	..	2,276·33	1,564·83	..
Do. ..	1047, 1310 ..	Agamemnon leases	..	..	..	..	..	..	..	4,792·00	2,708·09	..
Do. ..	1047	(Agamemnon: Agamemnon, Ltd.) ..	..	..	..	..	..	..	..	7,053·50	4,649·42	..
Do. ..	(1750)	Belgravia	..	..	16·00	6·11	..	..	..	86·50	32·98	..
Do. ..	1703	Countess	..	..	265·50	91·58	..	..	..	1,496·00	306·12	..
Do. ..	203, 1148 ..	(Cue Consolidated G.Ms., Ltd.) ..	..	..	..	..	..	..	..	23,427·50	18,382·10	..
Do. ..	203	Cue No. 1	..	..	39·00	48·83	..	..	..	7,679·50	12,628·70	..
Do. ..	(1446)	Cue Town No. 3	..	..	..	..	..	..	..	639·00	287·68	..
Do. ..	(1446, 1447) ..	Cue Town No. 3 leases ..	..	..	6·00	2·26	..	..	..	232·50	114·84	..
Do. ..	1762	Depôt	..	..	206·00	131·85	..	..	..	206·00	131·85	..
Do. ..	1714	(Dew Drop)	..	..	..	..	..	..	..	111·00	105·47	..
Do. ..	1714, 1723, 1742	Dew Drop leases	..	..	190·00	63·83	..	..	..	190·00	63·83	..
Do. ..	(1751)	Dreadnought	..	..	18·00	4·25	..	..	..	99·50	50·03	..
Do. ..	(1684)	Duke of York	..	..	348·00	78·46	..	..	..	1,614·50	694·47	..
Do. ..	1796	Duke of York	..	..	48·00	54·20	..	..	..	48·00	54·20	..
Do. ..	1772	Fleur de Mai	..	..	62·50	11·00	..	..	..	62·50	11·00	..
Do. ..	1637	(Gem of Cue)	..	..	..	..	..	..	..	214·50	233·79	..
Do. ..	1722	Gem of Cue East	..	..	386·50	222·14	..	..	..	536·50	304·37	..
Do. ..	1020	Gem of Cue Extended ..	..	..	16·50	9·70	..	..	..	36·50	3,582·77	..
Do. ..	1637, 1663 ..	Gem of Cue leases	..	..	300·50	218·83	..	..	..	3,206·50	1,921·55	..
Do. ..	1020, 1044 ..	(Gem of Cue, Ltd.)	..	..	..	..	..	..	..	11,724·00	6,746·05	..

Do.	1509	Happy Jack	..	..	..	..	87·00	57·30	..	..	..	983·00	713·75	.		
Do.	(1681)	Hidden Treasure	..	..	..	..	428·00	656·06	..	..	..	813·50	1,043·95	..		
Do.	1783	Hidden Treasure	..	..	..	..	75·00		..	..	..	75·00	34·85	..		
Do.	(1777)	Innisfail	..	..	..	..	400·00	1 92	..	..	..	400·00	24·92	..		
Do.	1794	Jolly Beggar	..	..	..	..	21·00	23·73	..	..	..	21·00	23·73	..		
Do.	1148	(Light of Asia)	..	..	..	..	..	..	..	..	..	10,175·00	7,302·20	..		
Do.	1148, (1299), 1300, 1634,(1666), 1667	Light of Asia leases	..	..	..	..	1,560·00	761·68	..	..	..	14,024·00	9,078·43	..		
Do.	1674	Lily	..	..	..	..	..	28·50	13·33	..	..	..	603·00	729·06	..	
Do.	(1718)	Lord Nolan	..	..	..	..	9·45	54·00	24·14	..	..	9·45	138·00	117·09	..	
Do.	1778	Lord Nolan	..	..	..	..	..	673·50	524·94	..	..	..	673·50	524·94	..	
Do.	1691	Lucky Hit	..	..	..	..	..	92·00	99·10	..	..	..	202·50	185·70	..	
Do.	(1732)	Normanby	..	..	..	..	..	70·00	40·83	..	..	..	228·50	134·46	..	
Do.	(1775)	Perseverance	..	..	..	..	..	105·00	14·83	..	..	..	105·00	14·83	..	
Do.	(1433)	Princess Ada	..	..	..	..	..	..	..	..	..	..	4,159·50	1,462·72	..	
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	..	..	..	..	..	1,369·50	568·62	..	..	..	6,338·50	5,336·28	..	
Do.	1151, 1252, 1362, (1391), 1498, (1689)	Queen of the May leases	..	..	..	..	..	..	..	..	..	..	6,926·00	6,974·06	..	
Do.	1248	Rising Sun	..	..	..	..	..	4·00	6·60	..	..	..	1,283·00	886·09	..	
Do.	(1576)	Rose	..	..	..	..	..	..	..	..	..	..	481·50	301·62	..	
Do.	(1374)	Salisbury	..	..	..	..	..	..	..	..	..	..	579·00	324·64	..	
Do.	(1374)	Salisbury	..	..	..	..	..	..	..	..	..	..	2,239·00	955·94	..	
Do.	(1374, 1407, 1408, 1413)	Salisbury leases	..	..	..	..	..	..	..	..	..	..	4,279·00	3,081·67		43·35
Do.	(1759)	Sixteeners	..	..	..	..	4·46	..	..	..	..	4·46	..	..	..	
Do.	(1044)	South Volunteer	..	..	..	..	..	155·00	25·14	..	..	..	6,550·00	3,249·11	..	
Do.	1325	(Starlight)	..	..	..	..	..	..	..	..	..	..	1,506·50	1,473·40	..	
Do.	1325, 1539	Starlight leases	..	..	..	..	..	268·00	151·63	..	..	..	898·00	1,016·54	..	
Do.	(1767)	Star of Hope	..	..	..	..	66·38	2·15	78·92	..	..	66·38	2·15	78·92	..	
Do.	1706	St. Catherine's Bank	..	..	..	..	..	185·50	103·11	..	..	..	223·00	132·31	..	
Do.	1757	Sunrise	..	..	..	..	..	104·50	82·99	..	..	..	104·50	82·99	..	
Do.	1779	Volunteer	..	..	..	..	..	144·50	91·49	..	..	..	144·50	91·49	..	
Do.	(1785)	Volunteer Deeps	..	..	..	..	..	13·00	5·62	..	..	..	13·00	5·62	..	
Do.	(1739)	Volunteer South Extended	..	..	..	..	..	79·50	53·51	..	..	..	214·50	154·24	..	
Do.		Voided leases	..	..	..	..	..	..	..	..	34·72	355·28	84,577·30	56,642·13	..	
Do.		Sundry claims	..	..	7·13	..	..	904·50	278·89	..	7·58	263·16	8,730·35	5,856·40	..	
Eelya	1786	Girofla	..	..	..	..	..	28·50	49·72	..	..	..	28·50	49·72	..	
Do.	1696	Jasper Queen	..	..	..	..	8·78	437·00	546·38	..	..	8·78	611·00	1,022·21	..	
Do.		Voided leases	..	..	..	..	..	..	..	..	..	..	300·50	644·75	..	
Do.		Sundry claims	..	..	..	..	26·40	97·00	92·03	..	..	73·65	243·80	289·79	..	
Erroll's	1743	Great Saddle	..	..	..	..	..	574·00	320·97	..	..	..	1,654·00	576·73	..	
Do.	1764	Three Star	..	..	..	..	..	209·00	251·41	..	..	..	209·00	251·41	..	
Do.		Voided leases	..	..	..	..	..	..	..	..	..	3·62	7,565·00	4,762·05	..	
Do.		Sundry claims	..	..	..	..	..	..	..	..	..	..	153·00	82·20	..	
Mindoolah	(1707)	Double Barrell	..	..	..	..	..	..	..	..	..	..	12·50	9·93	..	
Do.	(1735)	Excelsior	..	..	..	..	..	..	..	..	..	..	15·00	9·62	..	
Do.	1768	Excelsior	..	..	..	..	..	131·00	22·82	..	..	..	131·00	22·82	..	
Do.		Voided leases	..	..	..	..	..	..	..	..	3·07	..	7,737·00	4,715·66		42·97
Do.		Sundry claims	..	..	..	..	..	14·50	11·34	..	..	9·81	904·00	1,078·70	..	

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 1910.					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.
Reedy's Find	(1720)	Balaclava	..	..	..	..	..	..	..	7·00	12·42	..
Do.	(1744)	Big Lode	..	..	..	23·02	..	..	..	..	23·02	..
Do.	(1675)	New Year's Gift	..	..	..	..	..	..	29·66	41·00	23·55	..
Do.	(1727)	Rosandora	..	..	..	..	..	..	39·51	2·00	50·05	..
Do.	(1737)	Rejected	..	..	70·00	20·85	..	..	..	86·00	25·65	..
Do.	..	Voided leases	..	..	..	..	..	..	141·48	404·00	538·51	..
Do.	..	Sundry claims	..	..	..	..	..	136·94	17·76	195·05	116·52	..
Tuckanarra	(1665)	Boyd's Extended	..	..	..	..	..	..	..	55·00	141·03	..
Do.	(1583)	Cable	..	..	..	..	..	..	..	953·00	643·05	..
Do.	(1725)	Douglas Boulder	..	27·29	..	..	..	..	54·26	83·50	174·58	..
Do.	1752	El Dorado	..	1·52	153·00	55·18	..	..	1·52	199·00	75·24	..
Do.	1527	Ensign	..	215·27	10·00	·85	..	..	694·13	315·00	665·52	48·48
Do.	1688	Judy's Gift	..	..	..	..	..	..	..	15·00	2·07	..
Do.	1773	Lucknow	..	..	79·50	15·12	..	..	..	79·50	15·12	..
Do.	1788	Maybell	..	..	103·00	26·75	..	..	..	103·00	26·75	..
Do.	(1749)	Maybell	..	..	22·00	3·72	..	..	..	22·00	3·72	..
Do.	1337	Nemesis	..	..	178·00	179·58	..	..	608·78	1,945·00	5,298·30	..
Do.	(1756)	Orient	..	..	..	..	..	..	..	10·00	2·97	..
Do.	1766	Oversight	..	..	18·00	3·31	..	..	..	18·00	3·31	..
Do.	(1729)	Prince Albert	..	85·04	12·00	7·43	..	..	352·42	19·00	42·90	..
Do.	1771	Risk	..	..	230·00	30·96	..	..	..	230·00	30·96	..
Do.	1763	Surprise	..	10·84	4·50	7·30	..	..	10·84	4·50	7·30	..
Do.	(1717)	Try Again	..	..	..	..	..	..	..	50·00	24·68	..
Do.	(1432)	Union Jack	..	..	..	..	..	..	..	858·00	2,932·05	124·29
Do.	..	Voided leases	..	..	..	..	..	14·65	878·91	12,497·60	9,549·41	..
Do.	..	Sundry claims	..	8·77	46·00	15·72	..	3·76	40·39	2,390·25	5,165·67	..
		From District generally:—										
		Sundry parcels treated at:										
		Cue No. 1 Works	..	..	..	723·19	..	..	..	1,870·50	3,687·10	..
		Gem of Cue Extended Works	..	..	..	293·23	..	..	..	..	377·29	..
		Great Saddle Works	..	..	..	..	..	..	..	..	68·56	..
		Mindoolah Main Reef Works	..	..	..	37·33	..	..	..	..	542·40	..
		State Battery—Tuckanarra	..	..	..	204·19	..	..	..	518·50	2,731·23	..
		Various Works	..	..	..	..	..	..	..	5,055·02	16,982·67	..
		Reported by Banks and Gold Dealers	12·37	..	..	..	..	750·72	7·54	..	..	..
		Total	**19·50**	**485·98**	**13,491·65**	**9,070·81**	**27·00**	**951·44**	**3,759·29**	**329,110·52**	**289,573·28**	**382·79**

NANNINE DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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 ..	807N	Crescent	..	..	93·00	81·61	..	..	..	198·10	202·07	..
Do. ..	(827N)	Just-in-Time	..	..	..	..	..	..	..	8·50	4·40	..
Do. ..	(172N, 247N, 248N)	New Murchison King Gold Mines ..	..	..	..	..	..	..	..	21,356·00	24,463·53	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	13,603·00	12,433·60	..
Do. ..	..	Sundry claims	..	..	11·00	15·32	..	..	..	27·00	53·73	..
Burnakura ..	(238N)	Alliance	..	..	..	..	..	..	..	4,008·00	3,461·61	5·87
Do. ..	509N, 527N ..	(Federal City leases)	..	..	1,126·00	394·99	..	..	..	14,583·00	7,288·96	..
Do. ..	509N, 527N, 949N	(Federal City leases)	..	..	2,084·00	1,120·21	..	..	..	2,084·00	1,120·21	..
Do. ..	408N, 517N ..	New Alliance leases	..	..	..	..	..	..	..	12,475·00	15,414·98	13·12
Do. ..	(693N)	Perseverance	..	..	..	..	..	..	206·11	286·00	335·30	..
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	..	21·85	..	..	..	..	50·91	256·00	437·48	..
Do. ..	(943N)	Gift	..	..	..	..	..	..	..	2·00	24·64	..
Do. ..	1034N	Little Ben	..	..	80·00	99·95	..	..	..	80·00	99·95	..
Do. ..	(361N)	Margueritta	..	..	..	..	..	..	106·92	3,810·51	3,837·47	·80
Do. ..	(753N)	Margueritta North	..	..	..	..	..	..	..	14·00	5·65	..
Do. ..	(858N)	Margueritta North Extended ..	..	..	..	..	..	..	..	51·00	158·63	..
Do. ..	971N	Nugget	..	5·65	49·00	58·87	..	..	5·65	49·00	58·87	..
Do. ..	..	Voided leases	..	..	..	..	..	29·02	39·57	2,462·75	2,721·77	..
Do. ..	..	Sundry claims	..	7·86	30·00	26·04	..	..	7·86	251·50	211·27	..
Gabanintha ..	(787N, 788N) ..	Golden Hope leases	..	..	50·00	20·47	..	..	..	354·00	165·86	..
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) ..	..	..	85·00	151·71	..	..	..	1,476·00	957·27	..
Do. ..	379N, 504N, 505N, 577N	Mountain View leases	..	..	100·00	144·57	..	..	..	100·00	144·57	..
Do. ..	(874N)	Mountain View South	..	..	..	..	..	..	..	30·00	8·02	..
Do. ..	(32N, 46N) ..	Nannine Goldfields, Ltd.	..	..	..	..	..	..	..	8,620·00	3,705·34	451·49
Do. ..	(930N)	Sovereign	..	..	141·00	74·06	..	..	..	141·00	74·06	..
Do. ..	(32N)	Tumbulgum	..	..	..	..	..	..	..	670·50	255·47	..
Do. ..	(46N)	Tumbulgum Extended	..	..	..	..	..	..	..	63·00	83·02	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	4,284·50	3,884·21	..
Do. ..	..	Sundry claims	..	..	30·00	19·73	..	1·33	..	260·00	236·59	..

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 1910.					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.
Garden Gully	(798N)	Jasper Star	..	..	..	..	..	26·36	27·88	·15	24·59	..
Do. ..	928N	Kyarra	..	..	408·00	893·95	..	..	..	429·00	948·69	..
Do. ..	1047N	Once More	..	..	79·00	90·39	..	..	..	79·00	90·39	..
Do. ..	(797N)	Sabbath	..	..	..	..	..	..	..	139·00	166·30	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	260·00	525·11	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	160·50	195·36	..
Gum Creek ..	977N	Cardiff	..	..	30·00	7·92	..	..	..	30·00	7·92	..
Do. ..	953N	Connecticut	..	..	12·00	7·30	..	..	..	12·00	7·30	..
Do. ..	1067N	Hero	..	..	28·00	46·79	..	..	..	28·00	46·79	..
Do. ..	672N	Hilda No. 1	..	..	78·00	77·58	..	..	..	196·25	205·26	..
Do. ..	895N	Jupiter	..	..	181·00	183·14	..	..	..	281·00	337·69	..
Do. ..	..	Voided leases	..	..	..	..	..	25·27	88·12	1,211·33	1,299·79	..
Do. ..	..	Sundry claims	..	..	111·50	151·86	..	..	..	275·00	254·16	..
Jillawarra ..	982N	Gibraltar Rock	..	61·94	..	..	..	..	61·94	..	..	..
Do. ..	904N	Midge	..	89·90	18·00	237·09	..	..	207·45	36·35	623·92	..
Do. ..	..	Voided leases	..	..	..	..	..	..	252·47	1,380·00	1,594·45	..
Do. ..	..	Sundry claims	..	62·47	..	..	..	169·02	120·55	12·00	25·25	..
Meeka Pools	1054N	Meeka Eldorado	..	..	56·00	46·24	..	..	..	56·00	46·24	..
Do. ..	..	Sundry claims	..	2·84	162·50	131·16	..	..	2·84	162·50	131·16	..
Meekatharra ..	597N	(Commodore)	..	..	..	..	..	..	..	498·00	1,268·71	..
Do. ..	555N	Commodore Block	..	..	..	..	..	..	..	279·00	1,022·82	..
Do. ..	477N	(Fenian)	..	..	..	..	..	..	..	8,831·75	18,289·22	..
Do. ..	477N, 814N ..	Fenian leases	..	..	11,642·00	14,954·38	..	..	..	21,043·00	27,304·67	..
Do. ..	912N	Globe	..	..	55·00	32·77	..	..	..	55·00	32·77	..
Do. ..	313N	Halcyon	..	..	580·00	109·56	..	..	2·11	3,461·75	1,415·71	..
Do. ..	635N	Halcyon Extended	..	..	105·00	57·16	..	..	..	621·50	722·57	..
Do. ..	236N	Haveluck	..	..	444·00	123·10	..	..	..	3,250·25	2,065·23	..
Do. ..	475N	(Ingliston Consols Extended) ..	..	..	..	..	..	..	..	1,536·25	4,248·25	·30
Do. ..	475N, 515N, 729N, 822N	Ingliston Consols Extended leases	..	..	11,869·00	7,115·68	..	..	..	18,124·50	15,747·16	..
Do. ..	544N	Ingliston Consols South ..	..	..	15·00	18·60	..	..	..	35·50	43·09	..
Do. ..	398N	(Ingliston Extended)	..	..	..	..	..	..	..	1,320·25	1,106·46	..
Do. ..	398N, 437N, 462N, 529N, 539N, 847N, 881N, 1033N	Ingliston Extended G.Ms., Ltd. ..	..	..	8,531·00	6,260·67	..	..	..	57,091·00	27,453·05	..
Do. ..	637N	Ingliston South Extended ..	..	..	..	..	..	..	..	10·00	10·60	..

Do.	507N	Ingliston United								293·25	147·95		
Do.	852N	Lone Hand			149·00	306·56				202·10	353·52		
Do.	915N	Macquarrie			1,222·00	152·41				1,813·00	253·11		
Do.	734N	Macquarie North							7·63	59·00	10·48		
Do.	533N	Marmont			6,587·00	4,179·24				29,699·00	23,829·41		
Do.	580N	Marmont Extended								43·00	38·03		
Do.	580N, 888N	Marmont Extended leases			152·00	129·61				152·00	129·61		
Do.	(855N)	Mount Ralph						2·00					
Do.	(610N)	Multum-in-Parvo			3·00	8·71				62·13	2,175·04		
Do.	969N	Multum-in-Parvo			266·00	37·64				266·00	37·64		
Do.	93N	N. 93			661·50	594·41			36·47	6,156·00	3,151·13		
Do.	832N	(Occidental)								319·50	73·12		
Do.	372N	Pioneer			907·00	580·94				5,440·25	5,415·34		
Do.	890N	(Pioneer Continuation)			75·50	16·53				110·50	33·93		
Do.	743N, 832N, 890N	Pioneer North leases			62·00	14·77				62·00	14·77		
Do.	866N	Pioneer South			16·50	16·19				43·50	23·35		
Do.	931N	Queen of the Hill			419·00	123·90				549·00	158·59		
Do.	989N	Radium			48·00	5·87				48·00	5·87		
Do.	(803N)	Recovery								244·00	51·93		
Do.	(531N)	Revenue								15·25	4,689 98		
Do.	(773N)	St. Francis								458·00	69·54		
Do.	(978N)	Swastika			81·00	29·40				81·00	29·40		
Do.		Voided leases							140·22	14,845·98	8,514·74		3·00
Do.		Sundry claims			289·50	154·37		177·68		1,597·85	1,055·36		
Munara Gully		Voided leases								13,167·75	6,489·65		
Do.		Sundry claims		7·95					7·95	63·00	21·75		
Nannine	840N	Annie and Margaret							1·40	179·00	108·77		
Do.	791N	Black Snake			265·10	91·87				802·60	293·67		
Do.	273N	(Caledonian)								887·00	1,225·50		
Do.	8N	Caledonian Extended			31·50	15·03				1,723·00	2,576·51		
Do.	273N, 543N	Caledonian leases								2,793·50	1,119·64		
Do.	(754N)	Champion							2·15	1,256·50	508·97		
Do.	817N	Champion South		6·55	88·50	38·45			19·19	373·00	173·86		
Do.	1028N	Iron Clad			18·50	4·10				18·50	4·10		
Do.	1039N	Irymple		11·53					11·53				
Do.	972N	Klondyke		41·53	12·00	25·82			41·53	12·00	25·82		
Do.	617N	Lady Mary line of reef								478·00	157·41		
Do.	16N, 25N, 166N	Mt. Hall, Royalist Consolidated, and Nannine leases			1,754·00	2,961·23				17,242·60	21,383·31		127·60
Do.	(942N)	Queen			15·00	3·39				15·00	3·39		
Do.	(785N)	Queenslander								54·00	70·47		
Do.	25N	(Royalist Consolidated)							19·18	762·53	3,500·70		
Do.	984N	Welcome Stranger		15·00	89·00	74·64			15·00	89·00	74·64		
Do.		Voided leases						34·02	251·97	54,210·40	31,756·26		39·85
Do.		Sundry claims		54·78	212·20	170·38		7·63	54·78	2,018·70	1,650·32		
Quinn's	835N	Commonwealth			173·00	165·93				246·00	235·29		
Do.	1032N	Corona			56·00	47·68				56·00	47·68		
Do.	905N	Millionaire			27·00	6·73			1·50	27·00	6·73		
Do.	622N	Phœnix			521·00	194·02				3,111·00	1,625·43		90·70
Do.	776N	Phœnix Extended			878·00	395·66				1,293·11	593·62		
Do.	958N	Prince Dagmar			159·00	65·37				159·00	65·37		
Do.	843N	Princess Dagmar			532·00	238·46				1,110·00	541·40		
Do.		Voided leases						7·30	270·32	2,260·75	1,265·59		
Do.		Sundry claims		10·33	115·00	43·46		2·25	297·23	313·00	166·31		

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 1910.					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.
Stake Well ..	566N	Kohinoor	..	..	420·00	192·39	..	..	..	2,121·50	862·99	..
Do. ..	593N	(Koh-i-Noor South)	..	..	..	..	..	..	..	2,714·50	991·63	..
Do. ..	593N, 604N ..	Kohinoor South G.M. Co., Ltd. ..	..	..	5,829·00	2,292·70	..	..	..	10,929·00	4,650·30	..
Do. ..	(975N)	Once Again	..	7·00	..	..	..	..	7·00	..	..	..
Do. ..	..	Voided leases	..	..	..	..	..	..	187·73	1,503·50	934·32	..
Do. ..	..	Sundry claims	..	7·44	15·00	16·76	..	..	14·14	72·00	62·83	..
Star of the East ..	..	Voided leases	..	..	..	..	..	..	..	27,244·00	20,305·40	..
Do. ..	..	Sundry claims	..	..	8·00	3·76	..	..	..	8·00	3·76	..
Yaloginda ..	(578N)	Batavia	..	1·90	20·00	8·95	..	..	1·90	156·00	164·17	..
Do. ..	834N	Black Jack	..	..	..	..	..	..	332·86	19·00	1,112·80	..
Do. ..	833N	Black Jack South	..	..	9·50	39·91	..	..	..	9·60	113·72	..
Do. ..	760N	Criterion	..	..	127·00	67·64	..	..	..	512·00	335·94	..
Do. ..	(929N)	Ecrin	..	..	46·00	17·24	..	..	..	46·00	17·24	..
Do. ..	708N, 731N ..	Gibraltar leases	..	..	420·50	58·73	..	..	..	626·50	97·11	..
Do. ..	(924N)	Great Jack	..	..	24·50	5·83	..	..	..	24·50	5·83	..
Do. ..	666N	Karangahaki	..	..	1,297·00	466·96	..	..	..	12,627·50	6,201·23	..
Do. ..	771N	Kelpy	..	..	70·00	31·28	..	..	..	70·00	31·28	..
Do. ..	897N	Lady Mary	..	..	..	..	..	..	..	34·00	20·02	..
Do. ..	(883N)	Lewes Castle	..	..	..	..	..	..	..	11·00	3·29	..
Do. ..	899N	Maranui	..	..	108·00	100·95	..	..	..	160·00	209·24	..
Do. ..	923N	New Chum	..	62·80	75·50	150·68	..	..	62·80	83·50	201·83	..
Do. ..	937N	North Pole	..	..	89·00	38·36	..	..	..	89·00	38·36	..
Do. ..	1062N	Problem	..	..	105·00	10·77	..	..	..	105·00	10·77	..
Do. ..	541N	Revenue North	..	..	236·00	239·38	..	..	..	755·50	462·72	..
Do. ..	709N	(Rocklee)	..	..	..	..	..	..	..	336·00	273·30	..
Do. ..	709N, 857N ..	Rocklee leases	..	..	225·50	107·01	..	..	·44	293·50	163·82	..
Do. ..	857N	(Rock Lee South)	..	..	..	..	..	..	..	41·00	34·85	..
Do. ..	891N	Romsey	..	..	181·00	73·39	..	..	..	347·00	174·24	..
Do. ..	845N	Saracen	..	..	..	..	..	..	..	60·00	9·93	..
Do. ..	675N	(Two Bells)	..	..	..	..	..	..	..	154·50	200·70	..
Do. ..	810N	Two Bells North	..	1·75	82·00	72·57	..	..	1·75	102·00	113·43	..
Do. ..	675N, 859N ..	Yaloginda Consols G.M. Co., Ltd. ..	..	..	58·00	31·16	..	..	..	58·00	31·16	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	37·50	26·86	..
Do. ..	..	Sundry claims	..	15·83	310·75	102·61	..	..	36·53	638·90	469·26	..

From District generally :—											
Sundry parcels treated at :											
Champion Cyanide Works	..	..	..	..	229·46	..	..	..	..	856·44	1·04
Champion Extended Cyanide Works	..	..	..	..	..	..	..	..	..	149·71	6·22
Karangahaki Works	..	..	..	..	42·06	..	..	..	..	42·06	..
Purcell's Cyanide Works	..	..	..	..	103·42	..	..	..	..	103·42	..
Margueritta Cyanide Works	..	..	..	..	..	..	..	..	..	21·08	..
State Battery—Meekatharra	..	..	..	..	1,040·31	..	..	..	14·00	5,942·38	19·00
State Battery—Nannine	..	..	..	..	..	..	..	..	..	319·11	..
Various Works	..	..	..	..	..	..	..	..	139·75	2,076·68	334·91
Reported by Banks and Gold Dealers	..	..	..	359·78	..	..	..	8,155·36	..	..	..	..
Total	..	..	..	**359·78**	**496·90**	**63,927·05**	**49,189·92**	..	**8,648·59**	**6,027·05**	**445,283·19**	**366,375·23**	**1,174·98**

DAY DAWN DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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	(Creme D'Or)	..	..	..	..	..	..	..	150·00	175·18	..
Do.	389D, 421D, 422D	Creme D'Or leases	..	..	260·00	276·01	..	..	..	1,208·00	1,092·84	..
Do.	14D	(Crœsus)	..	..	..	..	..	..	..	1,138·00	1,640·41	..
Do.	26, 264D, (265D, 319D, 323D, 344D, 352D, 411D)	East Fingall G.Ms., Ltd.	..	..	..	..	..	..	..	1,208·00	773·29	..
Do.	26D	(Eureka No. 5)	..	..	..	..	..	..	..	1,280·25	1,292·49	..
Do.	1D, 2D, 86D, 87D, 99D, 119D, 129D, 158D, 159D, 170D, 185D, 191D, 209D, 210D, 211D, 212D, 213D, 224D, 225D, 249D, 424D, 453D, 455D, 467D	Great Fingall Consolidated, Ltd.	..	..	112,385·00	44,895·33	10,047·76	..	..	1,491,060·00	1,016,448·46	129,751·25
Do.	464D	Lone Hand	..	77·51	162·00	298·92	..	..	77·51	182·00	374·64	..
Do.	14D, 138D, 166D, 167D, 180D, 254D, 255D, 256D, 260D, 337D, 432D	Murchison Associated G.Ms., Ltd.	..	..	703·00	227·47	..	..	..	5,414·50	2,727·08	..
Do.	(462D)	Nil Desperandum	..	..	..	..	..	..	..	43·50	84·69	..
Do.	321D	Richmond	..	..	..	..	..	..	4·12	..	..	..
Do.	119D	(West Fingall No. 6)	..	..	..	..	..	..	..	43·00	15·32	..
Do.	..	Voided leases	..	..	..	..	..	123·81	310·08	28,832·95	19,179·75	..
Do.	..	Sundry claims	..	..	49·50	26·72	..	..	125·32	877·25	850·59	·24

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 1910.					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.
Island ..	446D	Central	..	·63	..	..	..	5·81	·63	..	..	..
Do. ..	443D	Eureka	..	26·73	33·00	74·13	..	51·08	50·78	53·50	720·26	..
Do. ..	407D	First Chip	..	2·48	10·50	3·53	..	..	269·85	81·88	748·89	..
Do. ..	..	Voided leases	..	..	..	..	..	456·43	288·30	28,803·00	43,370·60	..
Do. ..	..	Sundry claims	..	..	..	..	..	17·74	130·01	8·50	42·02	..
Mainland ..	450D	Austin Hill	..	..	38·50	56·16	..	..	..	134·00	200·68	..
Do. ..	..	Voided leases	..	..	..	..	..	·41	1,821·46	7,026·40	22,888·24	..
Do. ..	..	Sundry claims	..	..	..	..	..	3·24	7·64	22·00	59·35	..
Webb's Patch	(370D)	(Hill End)	..	..	..	..	..	..	·69	36·00	110·12	..
Do. ..	(370D, 391D) ..	(Hill End leases)	..	..	..	..	..	4·90	..	4,103·00	3,575·61	..
Do. ..	(370D, 391D) ..	Hill End Murchison G.M. Co., N.L. ..	..	..	735·00	416·40	..	..	..	1,395·00	740·42	..
Do. ..	..	Voided leases	..	..	..	..	..	..	83·07	214·50	424·22	..
Do. ..	..	Sundry claims	..	38·46	27·00	4·90	..	..	106·23	61·00	300·51	..
		From District generally :—										
		Sundry parcels treated at :										
		Various Works	..	..	..	..	..	..	16·61	940·75	1,537·30	..
		Reported by Banks and Gold Dealers	48·75	..	..	..	..	1,295·55	3·48	..	·77	..
		Total	**48·75**	**145·81**	**114,403·50**	**46,279·57**	**10,047·76**	**1,958·97**	**3,295·78**	**1,574,316·98**	**1,119,373·73**	**129,751·49**

MOUNT MAGNET DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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 ..	(573M, 591M, 610M)	Brooklyn leases	..	..	..	..	..	..	..	334·25	426·72	..
Do. ..	(984M)	City View	..	..	37·05	93·18	..	..	129·82	37·05	93·18	..
Do. ..	(996M)	City View	..	..	25·00	34·66	..	..	..	25·00	34·66	..
Do. ..	1000M	City View	..	..	51·00	48·91	..	..	..	51·00	48·91	..
Do. ..	(965M)	Dunboyne	..	..	223·00	22·96	..	..	..	333·00	33·19	..

Do.	964M	Empress	..	..	..	100·00	253·77	..	..	..	100·00	253·77	..
Do.	767M	(Galtee Moore)	..	..	..	..	..	..	..	6·80	3,025·00	1,180·85	..
Do.	767M	Galtee Moore	..	..	..	1,512·00	272·96	..	..	..	2,178·00	514·43	..
Do.	963M	Galtee Moore Extended	..	..	..	282·00	57·64	..	..	..	382·00	75·12	..
Do.	767M, (807M)	(Galtee Moore leases)	..	..	..	..	..	..	..	..	578·00	171·97	..
Do.	932M	Good Hope	..	..	..	237·00	121·20	..	..	..	680·00	340·51	..
Do.	985M	Moonstone	..	..	..	81·00	33·77	..	..	..	81·00	33·77	..
Do.	(966M)	Splendour	..	..	..	..	..	..	..	..	7·00	22·50	..
Do.	(968M)	St. Michael	..	..	..	..	..	..	..	..	343·00	28·28	..
Do.	(876M)	Turn of the Tide	..	..	..	16·00	10·49	..	..	..	114·95	118·37	..
Do.	877M	Victoria	..	..	..	36·00	18·03	..	..	1·74	194·90	174·67	..
Do.	(970M)	Welcome Stranger	..	..	..	23·50	7·08	..	..	..	136·60	71·13	..
Do.	(974M)	Wheel North No. 1	..	..	..	..	..	..	..	..	35·25	7·36	..
Do.	971M	Wheel of Fortune	..	..	..	52·00	19·57	..	..	..	52·00	19·57	..
Do.	(962M)	Wheel of Fortune Central	..	..	..	..	..	..	..	..	12·40	2·11	..
Do.	1008M	Wheel of Fortune North	..	..	..	74·50	17·78	..	..	..	74·50	17·78	..
Do.	(992M)	Yule Tide	..	..	..	19·02	..	..	..	355·17	..	..	..
Do.	..	Voided leases	..	..	..	..	..	..	..	2,699·08	119,603·27	105,633·92	458·82
Do.	..	Sundry claims	..	..	..	43·50	16·94	..	..	13·36	1,368·90	712·22	..
Mount Magnet	1003M	Alicia	..	..	..	118·00	15·09	..	..	..	118·00	15·09	..
Do.	317M	(Birthday)	..	..	..	..	..	..	..	..	184·50	29·11	..
Do.	314M, 317M, 320M, 988M, 989M	Black Hill Development Co., Ltd.	..	..	..	10,128·43	6,405·00	..	..	..	12,202·43	7,708·38	..
Do.	(995M)	Briars	..	..	..	6·25	7·11	..	..	..	6·25	7·11	..
Do.	953M	Brittannia	..	..	..	99·00	28·85	..	..	..	189·00	50·55	..
Do.	507M	(Bronzewing)	..	..	..	..	..	..	..	43·48	..	..	..
Do.	853M	(Brown Hill North)	..	..	..	..	..	..	..	..	771·02	417·40	..
Do.	853M	Brown Hill North	..	..	..	106·00	9·33	..	..	..	106·00	9·33	..
Do.	853M, (882M)	(Brown Hill North leases)	..	..	..	545·50	56·22	..	..	..	1,269·50	274·29	..
Do.	979M	(Carbine)	..	..	..	..	..	..	..	..	167·50	137·29	..
Do.	979M, 980M	Carbine leases	..	..	..	404·50	261·93	..	..	..	404·50	261·93	..
Do.	942M	Coronet	..	..	..	232·00	69·56	..	..	..	848·00	256·28	..
Do.	490M	(Cushie Doo)	..	..	..	..	..	..	..	76·71	166·00	263·35	..
Do.	905M	Cushie Doo East	..	..	..	..	..	..	..	..	30·00	5·41	..
Do.	490M, 507M	Cushie Doo leases	..	..	..	14·00	13·29	..	..	73·65	1,578·02	642·11	3·05
Do.	(960M)	Daisy	..	..	..	6·50	3·99	..	..	..	55·50	15·19	..
Do.	1002M	Emancipator	..	..	..	58·00	10·47	..	..	..	58·00	10·47	..
Do.	752M, 826M, 833M	Great Boulder No. 1, Ltd.	..	..	..	21,796·00	7,693·64	..	..	..	60,254·50	18,018·90	..
Do.	761M	Havelock	..	..	..	49·00	107·93	..	..	25·00	746·30	629·86	..
Do.	(463M)	Hesperus Dawn	..	..	..	..	..	..	..	..	2,895·60	4,728·46	..
Do.	(872M)	Invercauld	..	..	..	233·00	36·81	..	..	..	1,612·00	222·18	..
Do.	771M	Jupiter	..	..	..	34·50	18·62	..	..	..	1,148·58	857·55	..
Do.	(959M)	Lady Mollie	..	..	..	..	..	..	..	34·18	71·00	68·80	..
Do.	1016	Mabel Dorothy	..	..	..	24·00	34·56	..	..	..	24·00	34·56	..
Do.	1013M	Mars	..	..	..	21·00	4·52	..	..	..	21·00	4·52	..
Do.	(956M)	Mollie's Luck	..	..	..	..	..	..	..	..	76·50	31·26	..
Do.	314M, 317M, 320M	(Morning Star leases)	..	..	..	..	..	..	..	..	63,938·00	35,059·35	..
Do.	972M	Morning Star North	..	..	..	..	..	..	..	..	13·50	37·10	..
Do.	314M, 317M, 320M	(Morning Star Quartz Co., N.L.)	..	..	..	..	..	..	..	..	50,750·59	28,994·38	655·73
Do.	1017M	Mount View	..	..	..	22·50	35·00	16·48	..	22·50	35·00	16·48	..
Do.	445M	Neptune	..	..	..	21·32	117·50	40·34	..	868·97	1,802·41	2,386·60	..
Do.	892M	Revenue	..	..	..	..	32·00	178·52	..	..	173·00	888·75	..
Do.	911M	(Saturn)	..	..	..	..	..	..	..	..	305·00	78·29	..
Do.	911M	Saturn: Black Hill Development Co., Ltd	..	..	..	..	64·00	38·50	..	..	64·00	38·50	..
Do.	696M	Sirdar	..	..	..	1,629·50	536·36	..	..	..	9,747·50	3,096·48	..
Do.	752M	(St. George)	..	..	..	..	..	..	..	..	3,335·00	1,439·07	..
Do.	..	Voided leases	..	..	..	..	..	..	27·83	599·52	44,350·54	51,187·02	13·83
Do.	..	Sundry claims	..	..	..	7·89	213·50	123·87	..	208·94	9,288·21	5,614·46	..

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 1910.					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.
Mount Magnet East	..	Voided leases	..	..	..	..	..	63·29	753·94	5,506·25	2,798·49	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	37·22	214·50	144·10	..
Moyagee ..	(940M)	Break of Day	..	..	..	..	..	..	..	3·60	3·81	..
Do. ..	1001M	Comet	..	..	41·00	134·98	..	..	..	41·00	134·98	..
Do. ..	973M	Moonlight	..	..	103·75	531·82	..	..	..	103·75	531·82	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	1,510·00	973·62	..
Do. ..	..	Sundry claims	..	..	19·50	18·73	..	..	84·93	202·25	318·84	..
Youanme ..	..	Sundry claims	..	..	..	..	..	..	..	33·00	44·58	..
		From District generally :—										
		Sundry parcels treated at :										
		State Battery—Boogardie	..	..	..	568·82	..	..	..	45·01	6,220·01	..
		State Battery—Lennonville	..	..	..	140·96	..	..	..	18·06	6,224·55	..
		State Battery—Mount Magnet	..	..	..	..	..	..	..	..	114·79	..
		Various Works	..	..	..	..	..	..	..	25·00	7,028·75	1·00
		Reported by Banks and Gold Dealers	48·39	..	..	..	..	1,249·11	·35	..	..	..
		Total	**48·39**	**70·73**	**38,924·98**	**18,135·24**	..	**1,340·23**	**6,035·36**	**406,255·94**	**298,089·19**	**1,132·43**

Yalgoo Goldfield.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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 ..	..	Voided leases	..	..	..	..	..	..	..	947·32	524·72	3·30
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	114·00	71·96	..

Field's Find ..	588	Commodore	..	6·58	71·00	67·94	..	..	6·58	71·00	67·94	..
Do. ..	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. ..	(575)	Killarney	..	..	..	..	..	..	..	20·00	6·41	..
Do. ..	414, 441, 442, 443, 519	Reward Gold Mines, Ltd.	..	..	759·00	669·62	..	..	60·78	2,409·00	2,307·54	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	11·50	5·23	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	42·13	161·75	148·72	..
Gullewa ..	(591)	Dreadnought	..	..	44·00	10·76	..	..	..	44·00	10·76	..
Do. ..	170, 171, 174 ..	(Monarch G.M. Syndicate)	..	..	..	..	..	..	..	12·00	9·04	..
Do. ..	170, 171, 174 ..	(Monarch leases)	..	..	..	..	..	..	..	5,571·00	1,640·88	..
Do. ..	586	Shannadoah	..	..	234·00	113·08	..	..	..	447·00	337·87	..
Do. ..	170, 171, 174, 562, 576, 577, 578, 579	Victory United G.M. Co., N.L. ..	..	..	178·00	65·00	..	..	..	178·00	65·00	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	12,556·50	11,159·26	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	169·50	127·99	..
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	580	Black Johnson	..	18·71	..	..	..	..	18·71	..	..	..
Do. ..	(546)	Caledonian	..	..	..	..	..	..	..	78·50	23·78	..
Do. ..	581	Crescent	..	..	140·50	22·95	..	..	..	212·50	45·07	..
Do. ..	(548)	Marloo	..	..	9·75	6·93	..	..	227·88	38·70	69·64	..
Do. ..	(570)	McDonald and Hampton Lease Syndicate	..	..	..	..	..	..	..	14·00	2·52	..
Do. ..	(541)	Mugs Blow	..	4·99	16·00	37·18	..	..	52·29	46·00	87·93	..
Do. ..	596	Mugs Blow	..	..	84·00	21·13	..	..	..	84·00	21·13	..
Do. ..	(584)	Vatican	..	..	..	..	..	..	..	40·50	13·92	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	73·00	41·90	..
Do. ..	..	Sundry claims	..	..	21·00	8·04	..	463·12	..	304·30	181·28	..
Nyounda ..	..	Voided leases	..	..	..	..	..	..	217·63	416·00	183·91	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	18·00	21·67	..
Pinyalling ..	501, 523, 533, 534, 536, 537	Baron Rothschild G.Ms., Ltd. ..	..	..	..	..	..	..	..	216·00	40·60	..
Do. ..	501	(Beryl)	..	..	..	..	..	..	..	432·00	249·01	..
Do. ..	..	Voided leases	..	..	..	..	..	..	1·36	1,543·50	577·47	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	42·50	22·14	..
Rothesay ..	..	Voided leases	..	..	..	..	..	..	..	8,971·00	3,300·07	..
Wadgingarra	(561)	Mt. Kersey	..	..	..	..	..	..	..	19·00	3·11	..
Do. ..	(515)	Wadgingarra Main Reef ..	..	..	..	..	..	..	..	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 ..	..	..	91·00	73·79	..	..	..	697·00	209·46	..
Do. ..	518	(Ivanhoe Extended: Ivanhoe G.M. Co., N.L., Yalgoo)	..	..	..	..	..	..	..	123·00	41·69	..
Do. ..	(549)	Royal Mint	..	..	58·00	93·02	..	..	..	288·50	177·93	..
Do. ..	..	Voided leases	..	..	..	..	..	..	·36	4,732·50	9,412·11	..
Do. ..	..	Sundry claims	..	4·14	115·50	49·82	..	..	4·14	362·50	158·63	..

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 1910. Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Total Gold Production. 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.
Yuin ..	409, 469, 470 ..	Royal Standard leases	..	..	..	..	..	..	..	20,289·50	11,113·24	..
Do. ..	..	Voided leases	..	..	..	..	..	..	127·12	139·00	20·76	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	4·70	276·50	57·88	..
		From Goldfield generally :—										
		Sundry parcels treated at :										
		Royal Mint Cyanide Plant	..	..	..	32·64	..	..	..	..	32·64	..
		Various Works	..	..	..	..	..	9·42	..	664·00	961·86	..
		Reported by Banks and Gold Dealers	26·40	..	..	..	..	63·80	..	..	..	..
		Total	**26·40**	**34·42**	**1,821·75**	**1,271·90**	..	**547·89**	**778·05**	**97,678·98**	**66,696·61**	**3·30**

Mount Margaret Goldfield.

MOUNT MORGANS DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910. Alluvial.	Dollied and Specimens.	Ore treated.	Gold therefrom.	Silver.	Total Gold Production. 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	(267F)	Bow Bells	..	..	..	..	..	..	35·35	..	..	..
Do. ..	(95F)	Lurline	..	..	..	..	..	..	11·99	281·53	708·34	1·76
Do. ..	..	Voided leases		..	..	..	..	..	1,864·29	15,581·66	22,520·00	..
Do. ..	..	Sundry claims	..	..	47·00	98·92	..	..	175·67	781·50	2,010·43	..
Federation Well	..	Voided leases	..	..	..	..	..	..	..	1,248·50	1,782·71	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	63·50	33·20	..
Korong ..	254F	Alicia	..	..	..	..	..	..	..	..	112·83	..
Do. ..	..	Voided leases		..	..	..	..	17·95	72·23	2,558·00	3,336·43	..
Do. ..	..	Sundry claims	..	..	124·00	60·91	..	..	34·97	258·00	167·06	..

Mt. Margaret	277F	Bonanza	..	..	30·00	17·46	..	..	..	30·00	17·46	..
Do.	(266F)	Excelsior	..	..	..	4·27	..	..	..	490·00	259·89	..
Do.	66F	Mt. Morven	..	..	501·00	391·08	..	·37	..	1,831·00	1,314·22	12·55
Do.	..	Voided leases	..	..	..	..	..	..	..	1,540·00	969·30	..
Do.	..	Sundry claims	..	9·40	54·50	59·04	..	..	9·40	365·50	281·86	..
Mt. Morgans	278F	Australian	..	..	45·00	14·44	..	..	..	45·00	14·44	..
Do.	285F	David III.	..	..	..	4·52	..	..	..	..	4·52	..
Do.	6F.	Lily of the Valley South : Westralia Mt. Morgans G.M. Co., Ltd.	..	..	357·00	183·85	..	..	..	1,587·50	808·18	..
Do.	8F.	Millionaire : Millionaire, Ltd.	..	..	110·00	107·62	..	..	..	12,387·00	6,468·44	..
Do.	29F, 30F	(Mt. Morgans Transvaal G.Ms., Ltd.)	..	..	..	..	..	..	..	3,276·00	1,133·47	..
Do.	29F, 30F	(Transvaal leases)	..	..	..	..	..	..	..	2,309·00	3,605·48	..
Do.	29F, 30F	(Transvaal leases)	..	..	92·75	45·22	..	..	..	5,526·75	1,516·54	..
Do.	29F, 30F, 260F, 261F	Transvaal leases	..	..	200·00	85·48	..	..	..	200·00	85·48	..
Do.	100F	(Turn of the Tide)	..	..	..	..	..	..	..	214·00	84·52	..
Do.	287F	Waratah	..	40·00	9·50	89·11	..	..	40·00	9·50	89·11	..
Do.	5F, 10F, 19F, 22F, 32F, 73F	Westralia Mt. Morgans G.Ms. Co., Ltd.	..	..	4,494·00	3,099·08	..	..	..	575,113·00	293,469·60	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	..	..	..	..	..	..	..	5,772·00	5,088·07	2·10
Do.	..	Sundry claims	..	22·66	114·00	130·56	..	6·61	22·66	1,112·25	1,005·02	..
Murrin Murrin	208F	(Alex Junior)	..	..	..	..	..	..	..	2,182·25	2,791·98	..
Do.	208F	Alex Junior	..	..	170·00	88·73	..	..	..	170·00	88·73	..
Do.	208F, (250F)	(Alex Junior leases)	..	..	150·00	61·30	..	..	..	4,981·00	3,504·29	..
Do.	195F	(Elbe)	..	..	..	..	..	..	..	60·00	116·41	..
Do.	195F	Elbe	..	..	..	..	..	..	..	12·00	59·17	..
Do.	195F, (197F)	(Elbe leases)	..	..	..	..	..	..	..	2,731·75	2,891·06	3·60
Do.	194F	(Murrin Murrin Proprietary)	..	..	..	..	..	..	..	3,767·00	4,461·70	..
Do.	196F	(Perseverance)	..	..	..	..	..	..	..	6,074·50	6,198·52	..
Do.	200F	(Princess Alix)	..	..	..	..	..	..	..	4,893·00	8,839·80	20·00
Do.	200F	(Princess Alix)	..	..	10·93	89·66	..	..	..	22·93	175·01	..
Do.	200F, (213F)	(Princess Alix G.M. Co., Ltd.)	..	..	..	..	..	..	..	1,090·00	890·65	..
Do.	200F, (213F)	(Princess Alix leases)	..	..	..	..	..	..	44·33	929·25	1,873·51	..
Do.	193F	(Proprietary Extended)	..	..	..	..	..	..	..	1,454·50	1,172·33	..
Do.	193F, 194F, 198F, 199F, 201F, 202F	Proprietary Extended leases	..	..	15,591·00	5,331·02	..	..	..	42,290·00	19,869·93	6·00
Do.	..	Voided leases	..	..	..	..	..	10·43	178·60	50,592·07	41,905·75	..
Do.	..	Sundry claims	..	..	..	..	..	..	154·48	786·75	756·17	..
Redcastle	..	Voided leases	..	..	..	..	..	4·49	436·54	2,509·95	2,169·63	..
Do.	..	Sundry claims	..	..	..	..	..	..	103·58	116·00	155·56	..
		From District generally :—										
		Sundry parcels treated at :										
		Orotava Works—Kalgoorlie	..	..	..	14·16	..	..	..	..	14·16	..
		Various Works	..	..	..	..	..	..	..	788·50	2,995·91	84·03
		Reported by Banks and Gold Dealers	..	282·75	..	..	..	1,270·31	32·47	..	..	..
		Total	..	**282·75**	**72·06**	**22,100·68**	**9,976·43**	..	**1,310·16**	**3,216·56**	**779,295·64**	**456,873·29**	**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 1910.					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	(1293c)	Diorite Queen	..	..	..	..	..	..	..	144·05	46·37	..
Do. ..	1172c	(Homeward Bound)	..	..	..	..	..	..	..	1,127·00	625·59	..
Do. ..	1179c	King of the Hills	..	..	242·00	268·93	..	..	..	1,412·00	1,342·45	..
Do. ..	1172c, 1205c ..	Leeta G.M. Co., Ltd.	..	..	1,300·00	461·50	..	..	..	3,683·00	1,459·10	..
Do. ..	1332c	Middlesex	..	..	12·00	16·73	..	..	..	12·00	16·73	..
Do. ..	1220c	Mount Stirling	..	..	110·00	186·45	..	..	..	349·25	689·29	..
Do. ..	(1256c)	New Chum	..	..	..	..	..	..	..	184·00	248·95	..
Do. ..	1336c	Queen of the Hills	..	..	173·00	303·32	..	..	..	173·00	303·32	..
Do. ..	..	Voided leases	..	..	..	..	..	..	774·66	24,065·98	23,079·33	..
Do. ..	..	Sundry claims	..	..	24·00	54·60	..	..	59·84	2,135·05	2,664·47	..
Dodger's Well	1331c	Champion	..	..	48·50	15·17	..	..	..	48·50	15·17	..
Do. ..	1317c	Ivy	..	..	51·00	27·33	..	..	..	88·50	50·93	..
Do. ..	1270c	Myrtle	..	..	28·50	87·81	..	..	..	180·25	641·77	..
Do. ..	..	Voided leases	..	..	..	..	..	..	54·97	537·80	970·87	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	3·37	581·25	356·04	..
Leonora ..	1314c	Auckland	..	..	48·00	91·38	..	..	..	113·60	137·23	..
Do. ..	1309c	Camel	..	..	59·00	104·01	..	..	..	59·00	104·01	..
Do. ..	1288c	Casino	..	..	87·00	291·25	..	..	133·18	214·45	815·40	..
Do. ..	(1212c)	Dawn of Hope	..	..	..	..	..	..	..	154·00	299·55	..
Do. ..	198c	(Eastern)	..	..	..	..	..	..	..	302·00	321·72	..
Do. ..	210c, 253c ..	(Forest leases)	..	..	..	..	..	..	60·69	843·00	1,109·34	..
Do. ..	218c, 219c, 776c, 902c, 903c, 904c, (1106c, 1109c, 1110c, 1111c, 1142c, 1157c), 1167c	(Great Tower Hill G.Ms., Ltd.) ..	..	..	..	..	..	..	..	62,255·00	20,034·56	10·71
Do. ..	218c, 219c, 776c, 902c, 903c, 904c, 1167c	Gwalia Proprietary, Ltd.	..	..	94·00	12·64	..	..	..	94·00	12·64	..
Do. ..	1056c	(Harbour Lights)	..	..	..	..	..	..	..	6,989·25	1,665·07	..
Do. ..	1056c, (1214c) ..	Harbour Lights leases	..	..	2,022·50	408·94	..	..	..	7,775·50	1,533·40	..
Do. ..	1322c	Jasper Hill	..	..	78·00	45·29	..	..	..	78·00	45·29	..

Do. ..	195c, 196c ..	Leonora Gold Blocks leases ..	..	..	1,543·00	846·03	..	..	..	13,151·00	12,366·46	..		
Do. ..	210c, 253c ..	Leonora Main Reefs, Ltd.	..	..	..	..	..	..	..	14,586·00	5,692·10	..		
Do. ..	1315c	North Gwalia	..	..	10·00	1·02	..	..	..	10·00	1·02	..		
Do. ..	218c, 219c ..	(Octagon Explorers, Ltd.)	..	..	..	..	..	..	..	5,000·00	1,569·68	..		
Do. ..	1217c	Ping Pong	..	..	453·50	499·07	..	..	..	1,085·50	1,928·38	..		
Do. ..	1216c	Rajah	..	..	34·50	16·78	..	..	..	258·50	494·31	..		
Do. ..	190, 207c, 352c, 353c, 380c, 446c, 447c, 450c, 476c, 489c, 490c, 504c, 523c, 741c, 742c, 807c, 809c, 811c, 812c, 813c, 814c, 980c, 981c, 1225c, 1226c, 1227c, 1228c, 1229c, 1230c, 1231c, 1232c, 1291c, 1292c, 1341c, 1342c, 1343c, 1344c, 1345c, 1346c, 1347c	Sons of Gwalia, Ltd.	..	..	144,390·00	67,099·67	4,888·82	..	..	1,282,669·50	687,166·47	29,505·61		
Do. ..	198c, 1082c ..	(Sons of Gwalia South G.M. Co., N.L.)	..	..	..	..	..	..	..	631·00	903·61	..		
Do. ..	198c, 1082c, 1257c, 1258c, 1259c, 1284c, 1285, 1300c, 1301c	Sons of Gwalia South G.Ms., Ltd. ..	..	..	24,642·00	10,555·68	..	..	..	70,723·00	41,787·20	8·66		
Do. ..	263c	Trump	..	..	169·00	595·13	..	..	..	169·00	595·13	..		
Do. ..	263c, 774c, 793c	(Trump leases)	..	..	..	..	..	..	..	21,794·45	16,002·07	..		
Do. ..	1307c	Victor	..	31·78	16·05	48·71	..	..	31·78	16·05	48·71	..		
Do. ..	..	Voided leases	..	..	..	..	..	..	532·09	8,243·65	5,596·10	..		
Do. ..	..	Sundry claims	..	..	193·00	93·05	..	..	8·81	4,794·55	4,365·18	..		
Malcolm ..	(1058c)	Alice	..	..	22·50	10·34	..	..	..	702·00	555·50	..		
Do. ..	(1313c)	Barrington	..	..	..	..	..	..	..	8·27	6·67	..		
Do. ..	1294c	Great Northern	..	..	52·00	55·62	..	..	..	128·00	95·77	..		
Do. ..	1175c	Malcolm Prospecting Co., N.L. ..	..	..	3,324·50	2,093·41	..	..	..	13,135·00	7,896·50	..		
Do. ..	(1308c)	Midas	..	..	122·00	52·84	..	..	..	288·00	163·93	..		
Do. ..	991c	Richmond Gem	..	..	2,135·50	1,155·43	..	..	..	8,945·50	7,260·39	..		
Do. ..	1306c	Sunday	..	..	148·00	41·45	..	..	..	184·00	101·64	..		
Do. ..	..	Voided leases	..	..	..	..	..	..	41·71	25,039·01	23,358·78	..		
Do. ..	..	Sundry claims	..	..	48·15	30·12	..	..	6·64	2,652·25	1,846·31	..		
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. ..	..	..	3,677·50	2,136·09	..	..	..	75,232·50	36,725·49	1,497·58		
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. ..	(1289c)	Sinn Fein	..	..	188·50	64·92	..	..	..	358·50	183·00	..		
Do. ..	1311c	Toss Up	..	..	50·50	25·96	..	..	..	99·50	51·82	..		
Do. ..	..	Voided leases	..	..	..	..	..	..	..	524·00	427·81	..		
Do. ..	..	Sundry claims	..	..	71·00	77·47	..	..	30·86	952·00	673·35	..		

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 1910.					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. Clifford ..	(1261c)	(Bannockburn)	..	..	..	..	..	..	9·98	93·00	53·02	..
Do. ..	(1261c)	Bannockburn : Bannockburn G.M. Co., Ltd.	..	..	..	..	..	..	..	130·00	25·22	..
Do. ..	(1303c)	Emancipator	..	..	7·00	36·51	..	..	44·87	7·00	36·51	..
Do. ..	1337c	Just in Time	..	479·58	..	..	..	..	479·58	..	..	..
Do. ..	1329c	Victory No. 1	..	..	27·21	3,793·22	..	..	..	27·21	3,793·22	..
Do. ..	1305c	Yes–No	..	..	7·00	33·98	..	..	451·45	28·00	346·27	..
Do. ..	..	Voided leases	..	..	..	..	..	..	66·36	2,997·50	6,262·48	..
Do. ..	..	Sundry claims	..	..	..	..	..	9·75	208·44	517·25	698·76	..
Pig Well ..	1271c	Ada Crossley	..	..	..	..	..	..	..	168·00	15·47	..
Do. ..	1272c	Ada Crossley North	..	..	..	..	..	..	..	42·00	10·96	..
Do. ..	1089c	(Gambier Lass)	..	..	..	..	..	..	..	4,320·50	4,485·26	26·40
Do. ..	1089c, 1210c ..	Gambier Lass leases	..	..	2,203·50	1,263·76	..	..	..	4,415·50	3,588·50	..
Do. ..	(1203c)	Gambier Lass North	..	..	..	..	..	..	..	104·00	19·35	..
Do ..	1326c	Morning Star	..	..	21·00	5·03	..	..	..	21·00	5·03	..
Do. ..	1295c	Starlight	..	..	87·50	349·46	..	..	..	181·50	695·73	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	3,911·07	5,413·63	37·28
Do. ..	..	Sundry claims	..	..	234·00	152·21	..	..	34·06	2,324·40	1,000·81	..
Randwick ..	1334c	Kia-Ora	..	..	118·00	55·72	..	..	..	118·00	55·72	..
Do. ..	978c	Randwick	..	..	122·00	89·30	..	..	234·23	4,096·75	2,312·65	..
Do. ..	(1325c)	Triangle	..	..	16·00	59·44	..	..	..	23·50	89·95	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	3,916·50	4,926·57	..
Do. ..	..	Sundry claims	..	4·13	217·60	127·52	..	66·57	79·80	1,180·35	807·72	..
Webster's Find	(1254c)	Handsworth	..	..	..	..	..	..	..	35·25	32·30	..
Do. ..	..	Voided leases	..	..	..	..	..	25·00	..	21,724·75	13,937·87	..
Do. ..	..	Sundry claims	..	..	11·00	54·41	..	..	15·73	1,294·30	875·66	..
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, 1127c, 1130c	Great Western leases	..	..	203·00	131·75	..	..	..	12,815·50	5,678·56	..
Do. ..	1348c	Tentonic	..	..	25·00	4·27	..	..	..	25·00	4·27	..
Do. ..	..	Voided leases	..	..	..	..	..	..	99·38	2,206·10	1,187·85	1·05
Do. ..	..	Sundry claims	..	..	208·00	77·48	..	..	1·50	553·30	306·52	..

From District generally :—											
Sundry parcels treated at :											
Allsop and Howell's Works—Kalgoorlie	.. ..	..	..	..	5·00	..	..	..	..	5·00	..
Drew and Mason's Cyanide Works	.. ..	..	..	..	..	..	..	..	..	93·97	..
King of the Hills Works	.. .. ..	..	..	..	538·57	..	..	..	19·00	544·70	..
Lang's Cyanide Works	.. .. ..	..	..	..	..	..	..	..	..	751·23	..
Mount Clifford Battery	.. .. ..	..	..	..	20·19	..	..	..	..	526·76	..
Mulcahy's Cyanide Works	.. .. ..	..	..	..	18·37	..	..	..	..	116·47	..
Orotava Works—Kalgoorlie	.. .. ..	..	..	..	..	..	..	..	..	15·90	..
Randwick Battery	.. .. ..	..	..	..	69·55	..	..	..	88·50	121·21	..
State Battery—Leonora	.. .. ..	..	..	..	1,972·86	..	..	..	45·50	7,567·43	98·14
State Battery—Pig Well	.. .. ..	..	..	..	297·93	..	..	..	22·00	2,281·92	20·12
Various Works	.. .. ..	..	..	..	..	..	..	..	242·00	1,398·34	..
Reported by Banks and Gold Dealers	.. .. ..	113·52	..	..	..	..	1,584·91	131·00	..	..	..
Total	.. .. ..	**113·52**	**515·49**	**189,176·51**	**97,060·67**	**4,888·82**	**1,686·23**	**5,167·51**	**1,750,839·83**	**1,013,523·77**	**31,205·55**

MOUNT MARGARET DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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. ..	1857T	Away from Home	..	..	6·00	7·52	..	..	..	6·00	7·52	..
Do. ..	1041T, 1087T ..	Away from Home leases ..	..	..	..	..	..	..	2·34	1,432·00	2,572·28	..
Do. ..	1832T	Boomerang	..	..	117·00	229·89	..	..	..	233·00	354·94	..
Do. ..	1770T	(Dog Star)	..	..	..	..	..	..	..	10·00	2·21	..
Do. ..	1770T, 1778T ..	Dog Star leases	..	..	42·00	27·23	..	..	..	436·00	267·18	..
Do. ..	1553T	Golden Bell	..	..	72·00	138·59	..	..	..	2,463·00	6,889·87	..
Do. ..	(1806T)	Golden Bell North	..	..	315·00	362·22	..	..	..	923·00	1,306·18	..
Do. ..	1859T	Intricate	..	..	20·00	15·48	..	..	..	20·00	15·48	..
Do. ..	1010T	(Karridale)	..	..	..	..	..	..	..	3,727·08	11,278·43	200·00
Do. ..	1010T, 1655T ..	Karridale leases	..	..	123·00	173·48	..	..	..	172·00	252·71	..
Do. ..	1655T	(Karridale South)	..	..	..	..	..	..	..	17·00	17·20	..
Do. ..	1782T	Maori King	..	..	52·00	61·57	..	..	..	127·00	193·85	..
Do. ..	(1815T)	Maori King North	..	..	..	..	..	..	..	32·00	32·60	..
Do. ..	943T	(Mikado)	..	..	..	..	..	..	..	342·00	206·14	..
Do. ..	943T, 1124T ..	Mikado G.M. Co., Ltd. ..	..	..	78·00	36·33	..	..	..	11,081·10	8,958·09	8·30
Do. ..	(1750T)	Mikado North	..	..	..	..	..	..	..	23·00	30·65	..
Do. ..	1044T	Nil Desperandum	..	..	328·00	490·85	..	..	..	3,282·00	6,245·54	..
Do. ..	1841T	Reedeemed	..	..	225·00	278·80	..	..	..	275·00	304·93	..
Do. ..	1695T	Rock of Ages	..	..	..	..	..	..	..	689·00	891·98	..

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 1910.					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 ..	781T	(Sailor Prince)	..	..	..	..	..	1·27	..	4,771·00	4,725·83	16·00
Do. ..	1089T	Savage Captain	..	..	42·00	70·34	..	..	..	1,749·20	5,159·04	..
Do. ..	1644T, 1747T ..	Specimen Hill leases	..	..	20·00	9·68	..	..	..	2,628·00	1,397·73	..
Do. ..	(1726T)	Sunrise	..	..	114·00	83·30	..	..	..	425·00	440·05	..
Do. ..	(1716T)	Surprise	..	..	..	..	..	..	..	379·00	1,431·32	..
Do. ..	(1836T)	Tempus	..	..	..	..	..	..	..	8·00	3·62	..
Do. ..	1860T	True Blue	..	..	33·00	21·34	..	..	..	33·00	21·34	..
Do. ..	..	Voided leases	..	..	..	..	..	1·02	50·35	18,860·30	33,332·88	..
Do. ..	..	Sundry claims	..	..	371·50	309·07	..	..	54·75	2,376·15	2,280·32	..
Duketon ..	..	Voided leases	..	..	..	..	..	..	110·53	29,502·00	20,300·54	..
Eagle's Nest	..	Voided leases	..	..	..	..	..	..	145·34	331·00	1,215·78	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	55·00	42·21	..
Erlistoun ..	(1843T)	Famous	..	..	8·00	2·10	..	..	..	8·00	2·10	..
Do. ..	1679T	Hootanui	..	..	20·00	38·63	..	..	..	455·00	2,027·20	..
Do. ..	(1382T)	King of Creation	..	..	140·00	7·41	..	..	11·66	819·00	249·43	..
Do. ..	(1801T)	Riccaboni	..	..	183·00	51·40	..	..	..	563·00	293·51	..
Do. ..	1858T	South Earlston Proprietary ..	..	..	99·00	13·81	..	..	..	99·00	13·81	..
Do. ..	1665T	Westralia Tasmania	..	..	3,687·00	668·67	..	..	..	7,891·00	1,583·23	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	11,354·40	13,058·31	..
Do. ..	..	Sundry claims	..	..	555·00	399·24	..	1,175·43	..	1,607·90	1,339·71	..
Euro	1771T	Childe Harold	..	..	50·00	294·96	..	..	..	50·00	294·96	..
Do. ..	1546T	(Euro)	..	..	..	..	..	..	..	352·00	289·24	..
Do. ..	1546T, (1625T) ..	Euro leases	..	..	306·00	121·40	..	..	..	16,767·00	6,616·59	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	66,795·25	28,730·27	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	209·00	87·27	..
Laverton ..	371T	(Augusta)	..	..	..	..	..	..	..	11,216·00	11,670·72	..
Do. ..	371T, 1650T ..	Augusta G.M. Co., N.L.	..	..	..	972·00	..	..	..	1,753·00	1,990·85	..
Do. ..	(1767T)	British Flag	..	..	..	..	..	..	..	226·00	264·87	..
Do. ..	1822T	Brothers United	..	..	25·00	34·70	..	..	8·93	74·00	244·98	..

Do. ..	(1848T)	Comet	..	119·01	·10	73·36	..	..	119·01	·10	73·36	..
Do. ..	(1779T)	Constance	..	..	..	..	..	..	..	26·50	44·99	..
Do. ..	1797T, 1798T ..	Craiggiemore leases	..	..	9,306·00	1,800·65	..	..	..	20,063·00	4,215·33	..
Do. ..	838T	(General Wabash)	..	..	..	..	..	..	..	100·00	288·72	..
Do. ..	371T	(Golden Rhine G.Ms., (W.A.), Ltd.)	..	..	..	..	..	..	..	15,497·50	11,031·75	..
Do. ..	1849T	Halley's Comet	..	..	31·00	26·10	..	..	..	31·00	26·10	..
Do. ..	829T	(Ida H.)	..	..	..	..	..	..	..	111·00	285·13	..
Do. ..	829T, 838T, 846T 1219T, 1310T, 1671T	Ida H G.M. Co., Ltd.	..	..	13,750·00	7,826·23	..	..	..	129,247·00	94,985·52	4,674·69
Do. ..	1783T	Just-in-Time	..	..	265·00	118·90	..	..	..	671·00	267·57	..
Do. ..	1783T, 1784T ..	(Just-in-Time G.M. Co., N.L.) ..	..	..	..	..	..	..	..	469·00	180·50	..
Do. ..	715T, 806T, 1206T, 1207T, 1483T, 1523T, 1524T, 1525T, 1542T, 1544T, 1548T,	(Lancefield G.M. Co., Ltd.)	..	..	..	..	..	..	..	153,829·00	58,842·47	5,824·39
Do. ..	715T, 806T, 1206T, 1207T, 1483T, 1523T, 1524T, 1525T, 1542T, 1544T, 1548T	(Lancefield G.M. Co., Ltd.)	..	..	..	..	..	..	..	102,179·78	39,402·81	..
Do. ..	715T, 806T, 1206T, 1207T, 1483T, 1523T, 1524T 1525T, 1542T, 1544T, 1548T	Lancefield G.M. Co., Ltd.	..	..	90,789·00	35,299·63	7,747·58	..	..	137,750·00	54,757·71	11,006·45
Do. ..	1840T	Mary Mac										
Do. ..	1828T	Normanton	..	..	839·00	697·39	..	..	..	1,189·00	970·17	..
Do. ..	(1795T)	Wanda	..	11·31	84·00	61·51	..	..	11·31	163·00	193·32	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	6·00	3·95	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	1,107·98	112,261·00	40,903·15	..
			..	334·48	71·50	76·11	..	43·56	679·60	2,244·20	1,815·71	..
Mt. Barnicoat	..	Voided leases										
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	652·00	359·12	..
			..	..	..	..	..	..	..	23·00	23·37	..
Quartz Hill ..	..	Voided leases										
			..	..	..	..	..	..	..	10·00	3·86	..
	From District generally :—											
	Sundry parcels treated at:											
	Caledonia Works		..	..	..	..	..	..	..	7·00	53·58	..
	Craiggiemore Works		..	..	..	..	..	..	..	..	110·28	..
	Mulga Queen Works		..	..	..	38·93	..	..	..	..	140·39	..
	Mulcahy Works		..	..	..	67·90	..	..	..	..	67·90	..
	Orotava Works—Kalgoorlie		..	..	..	..	..	..	..	..	19·54	..
	Prosser's Cyanide Works		..	..	..	..	..	..	..	..	31·28	..
	State Battery—Burtville		..	..	..	556·62	..	..	..	62·00	3,379·73	..
	State Battery—Laverton		..	..	..	70·37	..	..	..	49·50	605·81	..
	Various Works		..	..	..	..	..	..	..	82·00	2,769·40	..
	Reported by Banks and Gold Dealers		161·75	..	..	..	..	749·65	..	..	..	..
	Total		**161·75**	**464·80**	**122,167·10**	**51,633·71**	**7,747·58**	**1,970·93**	**2,370·06**	**883,941·46**	**496,617·73**	**21,729·83**

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

North Coolgardie Goldfield.

MENZIES DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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)	..	..	..	..	..	..	..	749·50	417·12	..
Do. ..	5217z	(Gladsome)	..	..	..	..	..	..	..	10,879·50	8,678·16	95·29
Do. ..	5217z, 5333z ..	Gladsome leases	..	..	6,433·00	3,577·10	65·00	..	..	8,887·00	5,584·90	65·00
Do. ..	5300z	(Happy Jack)	..	..	..	..	..	..	..	1,363·50	776·10	..
Do. ..	5300z, 5325z ..	Happy Jack leases	..	..	784·50	634·14	..	..	..	935·50	725·70	..
Do. ..	5325z	(Iron King)	..	..	..	..	..	..	..	41·50	20·62	..
Do. ..	5211z	(Sand Queen)	..	..	..	..	..	..	..	3,436·75	3,639·12	2·00
Do. ..	(5208z), 5211z, 5224z, 5320z	Sand Queen G.Ms., Ltd.	..	..	3,660·00	2,419·30	..	..	..	9,021·50	4,864·64	..
Do. ..	..	Voided leases	..	..	..	..	..	..	409·70	9,190·10	5,091·61	2·00
Do. ..	..	Sundry claims	..	..	88·00	54·32	..	..	23·00	381·25	337·42	..
Goongarrie ..	5346z	Great Luck	..	..	31·00	23·89	..	..	..	62·00	56·24	..
Do. ..	..	Voided leases	..	..	..	..	..	·94	329·39	14,666·14	9,290·87	..
Do. ..	..	Sundry claims	..	..	23·00	13·32	..	27·93	23·11	477·25	431·98	..
Menzies ..	5253z	(Africander)	..	..	..	..	..	..	..	236·50	557·54	..
Do. ..	5253z, 5267z ..	(Africander leases)	..	..	226·00	57·66	..	..	..	987·00	704·65	4·13
Do. ..	5364z	Alathea	..	..	815·00	209·63	..	..	..	815·00	209·63	..
Do. ..	3011z	Alpha	..	..	234·25	151·38	..	..	..	541·75	426·94	..
Do. ..	5354z	Balkis	..	..	200·50	185·85	..	..	..	200·50	185·85	..
Do. ..	5319z	Black Jack	..	..	292·00	169·23	..	..	..	522·50	858·14	..
Do. ..	(5338z)	Black Jack North	..	..	..	..	..	..	..	58·50	11·15	..
Do. ..	5362z	Clay	..	..	439·50	35·59	..	..	..	439·50	35·59	..
Do. ..	2823z	(Crusoe Gold Claims, Ltd.) ..	..	..	..	..	..	..	..	33,135·00	32,978·74	1,038·47
Do. ..	5352z	Dart	..	..	25·00	40·97	..	..	..	25·00	40·97	..
Do. ..	5294z	(Dreadnought)	..	..	..	..	..	..	..	465·00	408·35	..
Do. ..	5294	Dreadnought G.M. Co., N.L..	..	..	799·50	375·26	..	..	..	2,153·50	942·94	..
Do. ..	(4965z), 4966z ..	(Etrenna and Aurelia) ..	..	..	..	..	..	..	..	655·25	371·14	..
Do ..	2821z	(Florence)	..	..	..	..	..	..	..	3,425·00	3,306·86	..
Do. ..	2821z, 2829z ..	Florence G.Ms., Ltd.	..	..	256·50	357·98	..	..	..	6,637·50	5,427·27	4·01
Do. ..	5089z	Flying Fish	..	..	336·50	441·08	..	..	..	1,466·00	2,164·39	..
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	..
Do. ..	(5257z)	Hills View	..	..	..	..	..	..	2·37	87·50	93·80	..
Do. ..	(5337z)	Ishtar	..	..	..	..	..	..	..	23·00	12·94	..
Do. ..	5368z	Lady Adelaide	..	..	48·50	6·63	..	..	..	48·50	6·63	..
Do. ..	5302z	Lady Harriet	..	..	465·00	530·93	..	..	4·74	2,113·00	1,804·04	..
Do. ..	2820z, 3006z ..	(Lady Shenton G.M., Ltd.) ..	..	..	..	..	..	..	..	96,611·00	132,656·24	..

Menzies	2835z	Lady Sherry	..	..	92·00	48·67	..	..	4·74	1,509·96	665·88	..
Do.	2835z, (3914z)	(Lady Sherry leases)	..	..	..	..	..	..	60·77	904·25	683·88	3·11
Do	5353z	Lincoln	..	..	54·50	76·46	..	..	..	54·50	76·46	..
Do.	(5244z)	Lion	..	14·58	27·50	36·32	..	..	44·85	298·00	506·27	..
Do.	(5339z)	Little Wonder	..	..	36·00	16·70	..	..	..	276·50	203·52	90·64
Do.	5230z	Lone Hand	..	..	44·50	19·09	..	..	..	493·00	859·29	..
Do.	4855z, (4901z, 4977z)	Lusitania leases	..	..	65·00	13·15	..	..	..	367·00	303·98	170·94
Do.	4987z	Maori Chief	..	..	344·00	86·42	..	..	5·44	1,295·75	877·72	..
Do.	4895z, 4944z, 5251z, 5252z	Maranora leases	..	..	2,125·00	2,329·25	..	..	..	5,805·30	6,555·94	2·50
Do	3011z, 3031z	(Menzies Alpha leases, Ltd.)	..	..	..	..	..	..	..	11,807·50	16,330·18	..
Do.	4931z, 4934z, 4935z, 4936z, 5074z, 5075z, 5260z, 5261z, 5315z	Menzies Consolidated Gold Mines, Ltd.	..	..	26,727·00	11,542·20	..	..	..	204,076·00	118,416·61	78·67
Do.	2820z, 3006z	(Menzies Gold Mine leases)	..	..	2,396·00	1,110·72	140·36	..	..	29,247·25	14,788·25	754·13
Do.	2820z, 3006z, 3031z	Menzies Gold Mine leases	..	..	2,609·00	886·27	158·37	..	..	2,609·00	886·27	158·37
Do.	2835z	(Menzies Lady Sherry G. M. Co., N.L.)	..	..	..	..	..	10·88	..	2,208·00	2,330·60	..
Do.	2829z	(Menzies, Ltd.)	..	..	..	..	..	..	..	308·00	457·23	..
Do.	2832z, 2844z, 3100z, 3138z, 4966z	Menzies Mining and Exploration Corporation, Ltd.	..	..	2,495·80	1,390·41	..	..	..	24,426·75	29,044·35	..
Do.	(5258z, 5298z),	Menzies Prospecting and Development Co., N.L.	..	..	..	..	..	..	..	62·00	31·38	..
Do.	5359z	No Name	..	..	219·50	118·84	..	..	..	219·50	118·84	..
Do.	5266z	Olive Branch	..	..	..	..	..	..	..	251·00	124·08	..
Do.	5360z	Q.M.	..	..	92·00	25·81	..	..	..	92·00	25·81	..
Do.	(2836), 4855, (4901, 4977, 5275z)	(Queensland Menzies G. M. Co., N.L.)	..	..	..	..	..	..	..	50,321·50	76,928·28	6,486·90
Do.	2823z	Robinson Crusoe	..	..	478·00	201·54	..	..	13·24	1,511·50	723·53	..
Do.	5345z	Seemore	..	..	100·00	95·36	..	..	..	100·00	95·36	..
Do.	3031z	(Stirling)	..	..	63·00	41·22	..	..	..	827·00	277·81	..
Do.	5318z	Surprise	..	47·89	61·00	172·74	..	..	385·04	137·00	433·27	..
Do.	3048z	Warrior	..	..	1,061·50	537·35	..	..	..	5,740·50	3,296·67	5·00
Do.	3048z	(Warrior : Menzies G.M. Co., N.L.)	..	..	..	..	..	..	..	1,165·00	731·48	..
Do.	(2836z)	Wedderburn	..	..	..	..	..	..	..	272·75	186·96	..
Do.	(2836z)	Wedderburn : Queensland Menzies G.M. Co., N.L.	..	..	..	..	..	..	..	104·50	123·92	..
Do.	(2836z)	Wedderburn : Westralian Machinery Corporation, Ltd.	..	..	..	..	..	..	..	122·00	171·93	..
Do.	(5299z)	White Rock	..	..	13·50	14·74	..	..	..	178·50	518·72	..
Do.		Voided leases	..	..	..	..	..	34·54	425·21	34,821·50	42,982·07	34·38
Do.		Sundry claims	..	..	1,855·50	854·12	..	6·69	255·02	10,276·75	5,929·39	..
Mt. Ida	5307z	(Copperfield)	..	..	..	..	..	..	..	120·00	24·89	..
Do.	5307z	Copperfield	..	..	349·00	433·53	..	..	..	835·00	1,047·35	..
Do.	(5306z),5307z	(Copperfield leases)	..	..	..	..	..	..	..	158·00	89·34	..
Do.	5035z	Federation	..	..	55·00	144·21	..	..	..	1,758·00	4,607·96	..
Do.	5250z	Forest Belle	..	..	647·00	704·88	..	..	..	1,992·00	1,698·47	..
Do.	5243z	Mt. Ida Meteor	..	..	2,155·00	1,742·84	..	..	..	8,727·00	6,731·16	39·00
Do.	(5344z)	Sandstone	..	..	153·00	125·67	..	..	..	174·00	152·86	..
Do.	5349z	South Timoni	..	..	87·00	222·44	..	..	..	150·00	319·42	..
Do.	5321z	Timoni	..	..	..	..	..	..	..	20·00	36·62	..
Do.	5177z	Unexpected	..	..	470·00	601·45	..	..	..	2,901·00	6,533·42	..
Do.	5290z	Unexpected South	..	..	1,106·00	1,802·15	..	..	..	2,952·00	6,019·76	35·64

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 1910.					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. Ida ..	5363z	Unexpected North	..	..	38·00	28·84	..	..	..	38·00	28·84	..
Do. ..	5292z	Wild Rose	..	..	189·00	194·23	..	..	..	520·00	431·52	..
Do. ..	..	Voided leases	..	..	..	..	..	..	77·07	22,524·58	27,508·05	23·74
Do. ..	..	Sundry claims	..	..	92·00	79·05	..	..	9·57	3,161·50	2,054·89	..
		From District generally :—										
		Sundry parcels treated at :										
		Allsop and Howell's Works—Kalgoorlie	..	..	..	..	..	..	..	..	3·00	..
		Fremantle Trading Company, Ltd.	..	..	..	1·19	..	..	..	..	1·19	..
		Lady Harriet Battery	..	..	..	63·93	..	..	..	33·50	79·43	..
		Goongarrie Cyanide Works	..	..	..	..	..	..	..	..	288·51	..
		Menzies Milling Co., Ltd.	..	..	..	81·98	..	..	..	..	274·90	..
		Menzies Mining and Exploration Corporation Ltd., Works	..	..	..	..	..	..	..	639·50	732·04	..
		Mt. Ida Cyanide Works	..	..	..	240·37	..	..	..	..	3,029·08	..
		Orotava Works—Kalgoorlie	..	..	..	..	..	..	..	..	82·42	..
		State Battery—Menzies	..	..	..	3,259·91	..	..	..	859·00	10,505·91	..
		State Battery—Mt. Ida	..	..	93·00	1,556·91	..	..	..	1,783·25	3,124·43	..
		Various Works	..	..	..	..	..	..	..	763·55	2,371·64	122·93
		Reported by Banks and Gold Dealers	..	..	..	..	..	881·60	195·48	..	..	..
		Total	..	**62·47**	**61,552·05**	**40,185·22**	**363·73**	**962·58**	**2,268·74**	**657,354·58**	**633,121·00**	**9,242·56**

ULARRING DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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 ..	854u, 860u ..	Callion G.M. Co., W.A., N.L. ..	..	..	206·00	73·00	..	..	..	606·00	157·14	..
Do. ..	860u	(Callion Gold Mining Syndicate, N.L.)	..	..	..	..	..	..	..	307·00	109·01	..
Do. ..	(883u)	Eileen	..	..	..	..	..	..	..	114·00	602·06	..
Do. ..	(925u)	Golden Lode	..	..	296·00	60·40	..	..	..	749·00	150·55	..
Do. ..	459u	(Golden Pole)	..	..	..	..	..	..	..	34·00	47·51	..

Do.	..	459U, 461U, 468U, 484U, 786U, 873U	Golden Pole G.Ms., Ltd.	..	..	..	..	1,808·90	1,265·14	..	..	..	72,717·90	71,366·22	..	
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	559·10	311·83	..	
Do.	..	613U, 884U, 857U, 864U, 878U, 907U, 924U	Great Ophir Gold Corporation, Ltd.	..	..	..	..	152·00	35·24	..	..	..	3,152·00	443·67	..	
Do.	..	440U	(Homeward)	..	..	..	..	..	..	..	..	..	418·50	681·40	..	
Do.	..	440U, 496U	Homeward G.M. Co., Ltd.	..	..	..	..	249·98	241·06	..	..	..	1,267·23	1,006·73	118·60	
Do.	..	440U, 496U	(Homeward leases)	..	..	..	..	..	..	..	..	..	139·00	146·37	..	
Do.	..	(897U)	Iron Cross	..	..	..	..	..	..	..	..	..	264·50	45·62	..	
Do.	..	(915U)	King Edward	..	..	..	..	..	..	..	..	..	156·00	44·92	..	
Do.	..	(908U)	Lady Alice	..	..	..	..	..	..	..	..	..	31·00	7·19	..	
Do.	..	882U	Lady Ellen	..	..	..	..	173·50	203·33	..	..	14·67	484·00	557·94	..	
Do.	..	898U	Light of Israel	..	..	8·89	..	360·10	160·94	..	..	..	382·60	173·40	..	
Do.	..	914U	Light of Israel North	..	..	..	..	76·00	18·98	..	..	..	76·00	18·98	..	
Do.	..	931U	Lone Hand	..	..	6·99	..	73·00	36·38	..	..	6·99	73·00	36·38	..	
Do.	..	877U	(Melrose)	..	..	..	..	..	..	..	..	..	29·00	11·27	..	
Do.	..	(896U)	North Callion	..	..	..	..	..	..	..	..	..	31·00	8·11	..	
Do.	..	901U	Old Judge	..	..	..	..	..	..	..	..	..	45·00	10·45	..	
Do.	..	928U	Pirate	..	..	..	..	159·00	333·17	..	..	..	159·00	333·17	..	
Do.	..	874U	(Resurgam)	..	..	..	..	..	..	..	..	..	415·00	769·72	..	
Do.	..	874U, 877U	Resurgam leases	..	..	..	..	116·00	506·04	..	..	..	430·00	1,149·83	..	
Do.	..	(920U)	Trier	..	..	..	..	..	..	..	..	..	1·50	6·07	..	
Do.	..	438U	(Waihi)	..	..	..	..	..	..	..	..	4·51	243·50	851·09	..	
Do.	..	496U	(Waihi Consols)	..	..	..	..	..	..	..	..	..	95·00	153·55	..	
Do.	..	438U	Waihi: Westralia Waihi G.Ms., N.L.	..	..	..	..	199·50	80·90	..	..	..	686·50	465·60	..	
Do.	..	438U	Waihi: Westralia Waihi G.Ms., N.L.	..	..	..	..	..	..	..	..	..	1,437·00	1,526·94	58·90	
Do.	..	438U, (792U)	(Westralia Waihi G.Ms., N.L.)	..	..	..	..	..	..	..	..	..	26,192·00	15,004·51	5,225·54	
Do.	..	(903U)	Wheel of Fortune	..	..	..	..	..	..	..	..	..	101·00	140·15	..	
Do.	..		Voided leases	..	..	..	..	..	..	..	2·93	103·82	18,594·90	13,680·54	..	
Do.	..		Sundry claims	..	..	3·70	..	478·00	350·35	..	..	30·12	4,381·60	2,269·53	..	
Mulline	..	916U	Bella Maie	..	..	..	..	158·00	98·90	..	..	..	271·00	149·78	..	
Do.	..	(918U)	Claymore	..	..	..	..	3·50	4·68	..	..	..	12·00	20·06	..	
Do.	..	(917U)	Clingstone	..	..	..	..	12·50	5·36	..	..	..	42·50	76·75	..	
Do.	..	(922U)	Evening Star	..	..	..	..	17·50	42·05	..	..	..	17·50	42·05	..	
Do.	..	871U	Golden Horn	..	..	..	..	38·50	111·46	..	..	..	321·50	622·48	1·93	
Do.	..	894U	Great Leviathan	..	..	..	..	51·00	94·90	..	..	27·53	188·50	373·98	..	
Do.	..	(921U)	Jack	..	..	..	..	..	..	..	..	..	13·50	5·57	..	
Do.	..	139U, 235U, 555U, 670U, 671U, 679U, 732U, 826U	Lady Gladys G.M. Co., N.L.	..	..	..	..	1,592·50	1,658·61	..	..	..	16,354·00	17,403·04	..	
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	..	..	..	..	25·50	22·56	..	..	..	159·00	182·33	..	
Do.	..	872U	Peachtree	..	..	..	..	80·50	82·32	..	..	..	226·00	270·77	..	
Do.	..	(923U)	Prodigal	..	..	..	..	50·50	49·17	..	..	..	50·50	49·17	..	
Do.	..	324U, 600U, 730U	Riverena South leases	..	..	..	..	785·00	325·86	..	..	43·87	12,342·50	8,876·23	..	
Do.	..	123U	Riverina	..	..	..	..	1,070·00	423·58	..	..	..	3,494·00	2,401·53	..	
Do.	..	123U, (773U)	(Riverina G.M. Co., N.L.)	..	..	..	..	..	..	..	..	..	11,254·00	7,096·21	..	
Do.	..	763U	Young Australian	..	..	..	..	106·00	511·66	..	..	..	694·50	1,731·86	..	
Do.	..	910U	Young Australia North	..	..	..	..	10·00	15·21	..	..	..	24·50	22·32	..	
Do.	..		Voided leases	..	..	..	..	..	..	..	..	31·80	19,538·97	20,070·74	·78	
Do.	..		Sundry claims	..	..	..	..	352·00	461·94	..	..	18·01	3,108·50	2,712·63	·69	

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

North Coolgardie Goldfield—*continued.*

ULARRING DISTRICT—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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.
Mulwarrie ..	(912U)	Golden Agate	..	..	..	..	..	..	..	10·00	27·62	..
Do. ..	932U	Golden Agate	..	12·47	6·50	22·31	..	..	12·47	6·50	22·31	..
Do. ..	909U	Killaloe	..	..	74·50	87·95	..	..	..	192·50	270·10	..
Do. ..	919U	Mulwarrie	..	..	144·50	63·66	..	..	..	144·50	63·66	..
Do. ..	494U	Mulwarrie Main Reef	..	..	148·50	125·33	..	..	..	1,920·50	3,010·23	20·81
Do. ..	(855U)	Ularring Westralia	..	..	48·00	15·95	..	..	3·06	1,091·00	511·14	..
Do. ..	..	Voided leases	..	..	..	..	..	..	36·16	13,850·89	20,573·29	5·49
Do. ..	..	Sundry claims	..	..	133·00	109·93	..	..	5·36	959·75	675·98	..
Ularring ..	900U	Cardinal	..	107·48	29·50	158·02	..	..	518·76	732·00	1,358·86	..
Do. ..	(911U)	Clinker	..	..	..	..	..	..	..	42·50	33·41	..
Do. ..	888U	Shamrock	..	..	152·00	67·02	..	..	6·01	799·30	599·48	..
Do. ..	..	Voided leases	..	..	..	..	..	..	1·86	7,313·85	10,854·90	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	143·00	113·15	..
		From District generally :—										
		Sundry parcels treated at :										
		Orotava Works—Kalgoorlie	..	..	..	..	..	..	..	..	54·39	..
		State Battery—Mulline	..	..	..	407·86	..	..	..	442·50	10,109·53	..
		State Battery—Mulwarrie	..	..	..	196·32	..	..	..	579·45	2,649·45	..
		Various Works	..	..	..	..	..	..	15·82	77·25	44·75	..
		Reported by Banks and Gold Dealers	2·89	..	..	..	..	18·53	·77	..	..	..
		Total	**2·89**	**139·53**	**9,437·48**	**8,527·54**	..	**21·46**	**1,055·82**	**239,663·49**	**242,863·51**	**5,432·74**

NIAGARA DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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.
Armidale ..	..	Sundry claims	..	..	20·50	9·52	..	..	..	20·50	9·52	..
Desdemona ..	(707G)	Apollo	..	..	..	..	..	..	..	36·00	5·71	..
Do. ..	673G	(Desdemona)	..	..	..	..	..	..	..	4,289·00	4,894·18	12·04
Do. ..	664G, 673G, (715G)	(Desdemona leases)	..	..	847·00	261·19	..	..	..	1,736·00	776·31	..
Do. ..	664G, 673G ..	Desdemona leases	..	..	1,123·75	323·43	..	..	..	1,123·75	323·43	..

Do.	..	(695G)	Harriet	..	..	62·00	28·99	..	..	..	313·00	139·91	..	
Do.	..	725G	Hawk	..	..	121·00	240·12	..	..	..	121·00	240·12	..	
Do.	..	685G	Othello	..	..	..	117·86	..	..	5·73	1,442·00	615·85	..	
Do.	..	664G	(Rising Sun)	..	..	131·00	58·69	..	..	..	246·50	143·81	..	
Do.	..	..	Sundry claims	..	..	..	..	..	..	8·99	1,164·20	577·52	..	
Kookynie	..	27G	Altona: Cosmopolitan Proprietary, Ltd.	..	..	..	..	..	..	..	4,396·00	4,102·63	..	
Do.	..	27G, 28G ..	Altona leases: Cosmopolitan Proprietary, Ltd.	..	..	..	..	..	..	..	538·00	423·30	..	
Do.	..	31G	Altona No. 1 North: Cosmopolitan Proprietary, Ltd.	..	..	21·00	25·88	..	..	..	596·50	441·64	..	
Do.	..	28G	Altona No. 1 South: Cosmopolitan Proprietary, Ltd.	..	..	520·50	636·31	..	..	..	5,171·50	5,076·57	..	
Do.	..	(717G)	Batavia	..	..	..	..	..	..	..	92·00	64·14	..	
Do.	..	(265G, 269G) ..	Battery leases: Cosmopolitan Proprietary, Ltd.	..	..	..	..	..	..	..	..	47·50	..	
Do.	..	(316G)	Canadian: Cosmopolitan Proprietary, Ltd.	..	..	..	..	..	..	..	41·20	62·63	..	
Do.	..	320G	Champion	..	..	6,114·00	2,838·04	2·28	..	..	12,316·50	6,537·57	2·28	
Do.	..	320G, (335G, 347G)	(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.	..	26G	Englishman: Cosmopolitan Proprietary, Ltd.	..	..	2,428·00	1,893·31	34·47	..	..	543,302·62	263,990·20	4,948·37	
Do.	..	(194G)	Diamontina	..	..	..	..	..	..	..	117·05	118·02	..	
Do.	..	(194G)	Diamontina: Cosmopolitan Proprietary, Ltd.	..	..	..	..	..	..	..	83·50	84·65	..	
Do.	..	647G	(Happy-go-Lucky)	..	..	..	..	..	..	..	106·50	57·78	..	
Do.	..	647G	Happy-go-Lucky: Mulwarrie Exploration Co., Ltd.	..	..	134·50	32·43	..	..	..	2,288·00	1,027·43	..	
Do.	..	24G	Irishman: Cosmopolitan Proprietary, Ltd.	..	..	..	..	..	..	..	44·50	44·14	..	
Do.	..	25G	Scotchman: Cosmopolitan Proprietary, Ltd.	..	..	..	..	..	..	..	508·00	241·62	..	
Do.	..	696G	Two D's	..	..	76·00	85·64	..	..	..	216·00	190·25	..	
Do.	..	(720G)	Victoria	..	..	40·00	28·53	..	..	..	169·50	129·32	..	
Do.	..	(22G)	Welshman: Cosmopolitan Proprietary, Ltd,	..	..	..	..	..	..	..	202·50	179·54	..	
Do,	..	(23G)	Welshman No. 1: Cosmopolitan Proprietary, Ltd.	..	..	..	..	..	..	..	50·50	78·12	..	
Do.	..	..	Voided leases	..	..	..	..	..	..	256·48	42,788·60	40,350·34	..	
Do.	..	..	Sundry claims	..	..	233·00	86·38	..	30·59	74·79	3,258·75	1,999·47	..	
Niagara	..	(714G)	Challenge	..	..	..	..	..	..	..	60·50	35·82	..	
Do.	..	518G, 529G, 577G	(Eagle Hawk Heather Co., N.L.) ..	..	..	..	..	..	..	..	6,650·00	2,423·32	..	
Do.	..	718G	Ettocsam	..	..	448·50	208·44	..	..	..	625·00	298·92	..	
Do.	..	419G, 461G ..	(Hannan's Main Reef G.M. Co., Ltd)..	..	..	..	..	..	..	..	11,119·00	5,910·89	..	
Do.	..	661G	Justice	..	..	109·50	140·31	..	..	..	602·00	618·92	..	
Do.	..	734G	Lubra Queen	..	..	382·00	197·17	..	..	..	382·00	197·17	..	
Do.	..	(314G)	Lily	..	..	7·00	21·39	..	..	13·90	639·50	1,333·09	..	
Do.	..	(694G)	Mara Mines, Ltd.	..	..	59·00	66·95	..	..	..	168·00	182·39	..	
Do.	..	732G	Mara: Mara Mines, Ltd.	..	..	13·50	29·84	..	..	..	13·50	29·84	..	

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

North Coolgardie Goldfield—*continued.*

NIAGARA DISTRICT—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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.
Niagara ..	721G	May	..	..	187·00	173·40	..	..	..	374·50	296·63	..
Do. ..	518G	(Missing Link)	..	..	..	..	..	..	23·93	431·00	563·27	..
Do. ..	518G, 529G, 577G	Missing Link leases	..	..	344·00	162·85	..	..	..	440·00	201·91	..
Do. ..	419G	(Opal)	..	..	..	..	..	..	..	552·50	490·53	..
Do. ..	419G	Opal: Hannan's Main Reef G.M. Co., Ltd.	..	..	..	..	..	..	..	119·00	70·99	..
Do. ..	419G, 461G, 679G, 688G, 689G	Orion Mines Ltd.	..	..	6,286·50	2,232·87	..	..	..	17,734·00	8,628·44	..
Do. ..	461G	Pearl: Hannan's Main Reef G.M. Co., Ltd.	..	..	..	..	..	..	..	398·00	224·38	..
Do. ..	674G	Pine Lodge	..	..	137·00	135·41	..	..	..	514·00	468·58	..
Do. ..	733G	Rally Again	..	..	30·00	15·92	..	..	..	30·00	15·92	..
Do. ..	611G	W. E. G. Extended	..	..	..	..	..	..	..	85·00	51·32	..
Do. ..	505G, 611G ..	W. E. G. leases	..	..	304·00	104·07	..	..	..	7,266·00	5,257·88	..
Do. ..	..	Voided leases	..	..	..	..	..	..	53·07	20,801·50	16,030·81	..
Do. ..	..	Sundry claims	3·53	..	652·00	417·82	..	13·27	42·50	6,421·75	3,954·83	
Tampa ..	278G	(Fortuna)	..	..	..	..	..	..	..	109·00	187·42	..
Do. ..	278G, 349G ..	Fortuna leases	..	..	98·00	205·77	..	..	..	1,618·50	2,241·95	..
Do. ..	349G	(Grafter)	..	..	..	..	..	..	..	1,751·00	2,487·00	..
Do. ..	722G	Gregory	..	..	70·00	12·31	..	..	..	235·00	59·36	..
Do. ..	692	Sunbeam	..	..	143·00	83·05	..	..	..	352·00	330·06	..
Do. ..	..	Voided leases	..	..	..	..	..	..	14·86	13,612·05	8,872·49	..
Do. ..	..	Sundry claims	..	2·06	207·50	145·31	..	5·07	2·06	2,329·00	1,323·25	..
		From District generally:—										
		Sundry parcels treated at:										
		Cumberland Cyanide Works	..	..	..	..	..	..	..	53·00	569·04	..
		Eagle Hawk Heather Works	..	..	..	..	..	..	..	128·00	862·26	..
		Grafter Battery	..	..	..	..	..	..	..	82·00	209·74	..
		State Battery—Niagara	..	..	41·00	813·89	..	..	..	622·50	6,300·08	..
		Various Works	..	..	..	..	..	..	..	270·00	4,687·72	41·17
		Reported by Banks and Gold Dealers	167·23	1·16	..	..	..	1,165·27	776·90	..	..	..
		Total	**170·76**	**3·22**	**21,391·75**	**11,833·09**	**34·75**	**1,214·20**	**1,273·21**	**829,419·97**	**462,669·78**	**5,429·18**

YERILLA DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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. ..	418R, 497R ..	Gawler G.M. Co., Ltd.	..	..	691·50	1,493·81	..	..	..	777·50	1,722·75	..
Do. ..	948R	Highland Mary	..	..	143·50	130·16	..	..	..	143·50	130·16	..
Do. ..	401R	(Neta)	..	..	..	..	..	..	..	4,280·50	5,466·29	..
Do. ..	418R	(Neta Extended)	..	..	..	..	..	..	..	1,182·50	1,421·81	..
Do. ..	401R, (418R, 497R), 500R	(Neta leases)	..	..	..	..	..	..	..	5,217·00	9,968·12	34·58
Do. ..	401R, 500R ..	Neta leases	..	..	927·00	853·33	..	..	..	1,274·50	1,264·91	..
Do. ..	(934R)	Old Edjudina	..	..	..	..	..	..	..	22·50	49·66	..
Do. ..	539R, 557R ..	Senate leases	..	..	378·00	351·21	..	..	..	4,519·00	8,392·73	..
Do. ..	(944R)	Three Crosses	..	..	..	..	..	..	..	89·00	172·97	..
Do. ..	..	Voided leases	..	..	..	..	..	..	3·65	8,061·75	6,918·03	3·21
Do. ..	..	Sundry claims	..	..	212·50	167·57	..	..	..	1,498·50	1,287·24	..
Eucalyptus ..	..	Voided leases	..	..	..	..	..	..	2,864·77	1,351·35	3,020·68	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	367·50	170·50	194·49	..
Linden ..	871R	Democrat	..	..	320·00	484·70	..	..	9·01	608·00	1,830·97	..
Do. ..	(915R)	Devon Deep Levels	..	..	..	..	..	..	..	62·50	35·75	..
Do. ..	898R	Dreadnought	..	..	106·00	77·18	..	..	..	199·50	183·41	..
Do. ..	949R	Dreadnought South	..	..	28·00	14·24	..	..	..	28·00	14·24	..
Do. ..	928R	Great Carbine	..	..	319·00	234·81	..	7·53	..	623·00	382·28	..
Do. ..	942R	Great Junction	..	..	133·00	341·06	..	..	..	275·00	390·30	..
Do. ..	937R	Linden Star	..	..	135·50	83·91	..	..	..	157·50	210·83	..
Do. ..	(939R)	Maudsley	..	..	125·50	81·02	..	..	..	241·50	198·80	..
Do. ..	(940R)	Oakover	..	..	..	..	..	..	..	39·00	18·54	..
Do. ..	869R	Rock	..	..	7·00	26·11	..	..	52·57	12·00	70·69	..
Do. ..	(938R)	Success	..	..	9·00	8·89	..	..	..	9·00	8·89	..
Do. ..	(862R)	Wimmera	..	..	..	..	..	..	..	137·50	75·66	..
Do. ..	..	Voided leases	..	..	..	..	..	..	461·77	7,066·90	10,807·08	..
Do. ..	..	Sundry claims	..	..	910·00	550·11	..	77·81	25·30	2,949·50	2,239·11	..
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	..	..	821·50	651·68	..	..	..	4,764·40	4,311·81	..
Do. ..	(886R)	Anglo-Saxon North	..	..	144·50	119·10	..	..	..	363·50	234·79	..
Do. ..	910R	Coles	..	..	820·50	285·90	..	..	..	1,327·50	417·10	..

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

North Coolgardie Goldfield—*continued.*

YERILLA DISTRICT—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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.
Pinjin ..	953R	King Pin	..	..	60·00	28·39	..	..	..	60·00	28·39	..
Do. ..	(932R)	Undaunted	..	..	60·50	47·30	..	..	..	60·50	47·30	..
Do. ..	..	Voided leases	..	..	..	..	..	..	46·99	5,213·90	3,723·97	..
Do. ..	..	Sundry claims	..	..	638·00	332·18	..	..	99·36	2,384·35	1,704·81	..
Yarri ..	788R	Dostmund	..	..	120·00	248·78	..	..	..	559·50	1,228·61	..
Do. ..	947R	Dostmund West	..	..	78·00	220·52	..	..	..	78·00	220·52	..
Do. ..	581R	Wallaby	..	..	798·00	272·06	..	..	41·36	6,948·00	3,138·67	..
Do. ..	580R	(Wallaby Central)	..	..	..	..	..	..	..	2,411·00	2,335·30	..
Do. ..	580R	Wallaby Central	..	..	316·50	105·86	..	..	..	316·50	105·86	..
Do. ..	580R	(Wallaby Central: Lake View South, Ltd.)	..	..	886·00	232·14	..	..	..	10,109·00	4,488·20	..
Do. ..	(919R)	Wallaby North	..	..	355·00	89·30	..	..	..	1,229·50	426·91	..
Do. ..	(936R)	White Elephant	..	..	..	..	..	..	..	14·00	5·91	..
Do. ..	737R	Yarrie South	..	..	130·00	85·81	..	..	..	1,013·00	1,194·00	..
Do. ..	..	Voided leases	..	..	..	..	..	6·30	30·81	4,503·75	2,850·96	..
Do. ..	..	Sundry claims	..	..	370·50	268·66	..	..	3·31	3,210·00	1,811·94	..
Yerilla ..	850R	(Central East)	..	..	..	..	..	..	..	244·00	166·12	..
Do. ..	(923R)	Desert Queen	..	..	..	..	..	..	..	10·00	4·76	..
Do. ..	752R, 850R ..	Viola leases	..	9·64	365·00	462·51	..	..	9·64	876·00	741·38	2·82
Do. ..	684R	Yerilla Central	..	..	18·00	6·04	..	..	..	2,036·00	2,602·69	..
Do. ..	851R	Yerilla King	..	..	460·00	553·24	..	..	..	1,710·00	1,273·28	..
Do. ..	..	Voided leases	..	..	..	..	..	..	3,078·91	4,651·46	2,924·49	8·54
Do. ..	..	Sundry claims	..	..	16·00	7·27	..	19·30	15·88	1,506·00	837·54	..
Yilgangie ..	..	Voided leases	..	..	..	..	..	..	..	218·75	295·45	..
Do. ..	..	Sundry claims	..	..	..	..	..	121·67	19·14	25·50	46·17	..
Yundamindera	931R	Battles Ville	..	..	64·00	59·34	..	..	..	131·00	156·35	..
Do. ..	(935R)	Federal Capital	..	..	..	..	..	..	..	11·00	8·06	..
Do. ..	457R, 479R ..	Golden Treasure leases ..	..	..	49·00	71·81	..	..	..	524·00	331·97	..
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.)	..	..	..	..	..	..	..	40,693·85	21,307·98	..

Do. ..	450R, 456R ..	Potosi leases	..	..	54·00	657·98	..	..	..	1,092·00	2,153·29	..
Do. ..	466R	(Queen of the May)	..	..	..	..	..	..	..	1,810·60	1,719·92	..
Do. ..	466R	Queen of the May	..	..	190·00	241·15	..	..	..	392·00	385·01	..
Do. ..	(493R), 541R ..	(Treasure East leases)	..	..	..	..	..	..	..	450·00	313·70	..
Do. ..	(493R), 541R, (916R)	Treasure East leases	..	..	322·00	323·60	..	..	..	671·00	561·49	5·82
Do. ..	..	Voided leases	..	..	..	..	..	..	71·37	6,148·65	8,025·13	..
Do. ..	..	Sundry claims	..	72·21	..	..	..	..	85·22	1,882·00	1,522·18	..
		From District generally:—										
		Sundry parcels treated at:										
		State Battery—Linden	..	..	..	541·92	..	..	..	72·00	1,436·53	..
		State Battery—Pinjin	..	..	6·50	263·11	..	..	..	115·50	1,101·94	..
		State Battery—Yarri	..	..	..	517·90	..	..	..	218·00	2,234·05	3·50
		State Battery—Yerilla	..	..	..	77·06	..	2·17	..	72·00	285·84	..
		Various Works	..	..	..	..	..	..	..	660·85	3,179·33	..
		Reported by Banks and Gold Dealers	72·26	..	..	..	..	943·62	154·74	..	..	..
		Total	**72·26**	**81·85**	**11,589·00**	**11,668·72**	..	**1,178·40**	**7,459·04**	**166,381·28**	**148,513·16**	**58·47**

Broad Arrow Goldfield.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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	..	..	30·00	19·08	..	..	..	312·50	218·08	..
Do. ..	(1408w)	Baden Powell	..	..	35·50	47·44	..	..	..	35·50	47·44	..
Do. ..	1392w	Excelsior	..	..	318·00	25·08	..	..	..	388·00	35·25	..
Do. ..	1393w	Excelsior Extended	..	..	106·00	41·14	..	..	..	106·00	41·14	..
Do. ..	(1404w)	Golden Eagle	..	..	46·15	119·39	..	..	..	65·65	162·00	..
Do. ..	1423w	Golden Eagle	..	..	17·50	115·82	..	..	..	17·50	115·82	..
Do. ..	1272w	Mt. Pleasant	..	..	..	..	..	..	..	..	1·40	..
Do. ..	1272w	(Mt. Pleasant: Zoroastrian, Ltd.) ..	..	..	..	..	..	..	..	946·00	417·85	..
Do. ..	(1422w)	Old Half Mile	..	..	172·00	59·13	..	..	..	172·00	59·13	..
Do. ..	(1377w)	Vetters	..	..	..	..	..	..	..	237·75	164·31	..
Do. ..	..	Voided leases	..	..	..	..	..	..	256·68	69,569·66	48,843·20	203·60
Do. ..	..	Sundry claims	..	122·90	335·35	297·34	..	..	122·90	2,214·93	1,573·61	..
Black Flag ..	1406w	Ajax	..	8·50	115·75	78·01	..	..	8·50	115·75	78·01	..
Do. ..	1398w	Crown	..	..	50·00	9·35	..	..	..	244·00	60·14	..
Do. ..	1177w	(King Edward)	..	..	..	..	..	..	..	172·00	429·74	..
Do. ..	1177w	King Edward	..	2·35	25·00	68·01	..	..	4·31	570·70	476·32	..
Do. ..	1177w, (1182w, 1208w)	(King Edward leases)	..	..	..	..	..	..	..	370·86	1,293·21	..

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

Broad Arrow Goldfield—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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 Flag ..	1378w	King Edward North	..	..	25·00	17·09	..	..	..	64·00	55·23	..
Do. ..	1384w	Lady Bountiful	..	..	73·55	169·35	..	..	..	147·05	213·94	..
Do. ..	(1385w)	Lady Bountiful West	..	..	50·50	14·88	..	..	..	50·50	14·88	..
Do. ..	1383w	Westella	..	..	100·00	31·32	..	..	..	113·00	35·77	..
Do. ..	..	Voided leases	..	..	..	..	..	27·81	340·64	37,938·31	21,290·77	..
Do. ..	..	Sundry claims	4·06	..	17·00	26·97	..	686·51	154·78	1,841·95	1,750·25	..
Broad Arrow	1334w	(Claremont)	..	..	..	..	..	..	..	118·00	33·50	..
Do. ..	3w, 138w, 139w, 173w, 1334w	Claremont G.Ms., Ltd.	..	..	766·00	720·10	..	..	..	6,177·00	4,378·66	..
Do. ..	1415w	Credo	..	..	13·00	17·99	..	..	..	13·00	17·99	..
Do. ..	1209w	Dixie	..	..	..	..	..	..	60·72	468·35	511·04	..
Do. ..	1391w	Duke	..	..	330·00	67·76	..	..	..	330·00	67·76	..
Do. ..	3w, 138w, 139w, 173w	(Golden Arrow Mine, Ltd.)	..	..	..	..	..	..	..	35,878·75	20,187·46	15·85
Do. ..	1411w	Panhandle	..	..	152·50	131·18	..	..	..	152·50	131·18	..
Do. ..	1256w	Talbot	..	12·75	56·00	42·70	..	..	21·13	971·00	1,148·68	..
Do. ..	1357w	Tara	..	..	414·00	61·02	..	..	..	608·00	428·83	..
Do. ..	643w, 1178w ..	Victory leases	..	3·50	..	..	..	..	266·40	1,310·00	1,583·02	..
Do. ..	..	Voided leases	..	..	..	..	..	54·85	468·96	66,777·06	65,647·18	..
Do. ..	..	Sundry claims	10·99	103·30	343·08	318·91	..	958·29	418·88	5,876·62	3,399·93	..
Paddington ..	53w, 57w, 60w, 61w, 128w, 1050w	Gwalia Proprietary, Ltd.	73·02	..	1,222·00	285·10	..	73·02	..	2,428·00	453·21	..
Do. ..	(1262w)	Kalgurli G.M. Syndicate, Ltd. ..	..	..	..	..	..	..	..	645·00	374·73	..
Do. ..	45w	Mount Corlic	13·98	..	577·00	171·30	..	243·89	4·37	10,153·75	4,303·27	..
Do. ..	(1374w) ..	New Mona	..	..	1,112·00	96·24	..	..	..	4,521·00	399·03	..
Do. ..	53w, 57w, 60w, 61w, 128w, 1050w	(New Standard Exploration Co., Ltd.)	..	..	..	..	..	5,240·81	..	133,036·00	60,672·23	18·96
Do. ..	1351w	Pakeha	..	..	..	..	..	..	..	226·00	28·09	..
Do. ..	1356w	Recovery	..	..	162·00	131·37	..	..	..	565·00	872·61	..
Do. ..	1047w	Star of W.A.	..	..	259·00	223·18	..	..	253·38	10,783·00	8,976·81	..
Do. ..	(1352w)	Unexpected	..	..	61·50	21·02	..	..	..	3,614·50	500·19	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	6,700·90	3,225·36	..
Do. ..	..	Sundry claims	75·02	..	668·50	142·76	..	1,714·16	..	9,200·09	5,324·68	..

Siberia ..	(1368w)	Anticipation	..	..	..	..	..	..	..	237·50	140·62	..
Do. ..	(1316w)	Band of Hope	..	..	..	..	..	..	27·51	45·00	18·07	..
Do. ..	1345w	Cave Hill	..	..	350·00	94·42	..	..	..	611·00	1,748·16	..
Do. ..	1372w	Denver City	..	..	..	..	..	..	8·94	..	..	..
Do. ..	1347w	Expectation	..	..	183·00	163·29	..	..	..	257·00	249·24	..
Do. ..	1382w	Federal	..	..	31·00	59·87	..	..	..	87·00	109·89	..
Do. ..	(1400w)	Gimblet Extended	..	..	..	..	..	..	..	34·00	48·16	..
Do. ..	1371w	Gimblet South	..	..	6,143·50	1,229·62	..	..	..	7,767·50	1,840·60	..
Do. ..	1399w	Gimblet South Extended ..	..	..	474·50	711·78	..	..	..	519·50	731·86	..
Do. ..	1338w	Gimblet West	..	..	..	..	..	..	..	680·50	482·83	..
Do. ..	1286w	Golden	..	96·64	13·00	56·41	..	..	275·75	110·41	387·49	..
Do. ..	1390w	Golden Gimblet	..	..	49·00	33·19	..	..	1·23	202·00	150·42	..
Do. ..	1358w	Golden Mount	..	..	297·00	195·28	..	..	4·26	921·00	532·97	..
Do. ..	1292w	Invincible	..	..	..	8·66	..	..	..	1,084·00	299·60	..
Do. ..	1289w, 1308w ..	Lady Evelyn leases	..	..	280·00	106·01	..	..	6·90	2,317·25	2,441·21	..
Do. ..	(1367w)	Lochiel	..	..	..	..	..	..	16·51	..	..	..
Do. ..	1293w	Mexico	..	..	28·00	23·19	..	..	..	329·00	717·53	..
Do. ..	1291w	Missouri	..	..	279·00	87·96	..	..	8·64	1,063·50	362·02	..
Do. ..	(1348w)	Old Identities	..	..	23·75	17·39	..	..	..	161·75	135·02	..
Do. ..	(1299w)	Palmerston North	..	..	158·00	23·72	..	..	..	820·00	116·17	..
Do. ..	1416w	Prince Foote	..	..	22·50	23·26	..	..	..	22·50	23·26	..
Do. ..	(1300w)	Pole	..	..	..	..	..	..	..	170·00	704·12	..
Do. ..	1420w	Slug Hill Bend	..	17·29	..	..	..	..	17·29	..	..	..
Do. ..	1375w	Siberia Consols	..	..	118·50	233·27	..	..	..	183·50	1,367·86	..
Do. ..	1336w	Slippery Gimblet	..	..	11,857·00	4,376·15	..	..	..	26,110·50	8,217·79	..
Do. ..	(1405w)	Stirling	..	..	35·00	4·49	..	..	..	35·00	4·49	..
Do. ..	1409w	Stirling Extended	..	..	125·00	23·40	..	..	..	125·00	23·40	..
Do. ..	1283w	Waverley	..	..	91·00	56·95	..	..	..	966·00	337·12	..
Do. ..	..	Voided leases	..	..	..	..	..	..	77·09	9,730·00	2,217·98	..
Do. ..	..	Sundry claims	..	234·46	324·50	543·47	..	84·34	286·89	2,662·75	3,485·17	..
Smithfield ..	..	Voided leases	..	..	..	..	..	..	..	1,027·00	200·90	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	20·00	9·54	..
		From Goldfield generally :—										
	Sundry parcels treated at :											
	Allsop and Howell's Works—Kalgoorlie		..	..	..	..	..	..	..	..	6·70	271·76
	Braybrook's Cyanide Works		..	..	..	..	..	..	..	..	427·54	..
	Broad Arrow Consols Works		..	..	..	..	..	..	..	..	118·29	..
	New Arrow Proprietary Works		..	..	..	..	..	299·35	..	5,229·08	4,666·06	..
	Northey's Venture Works		..	..	..	91·93	..	..	..	..	91·93	..
	Ora Banda Works		..	..	..	1,207·22	..	..	..	77·00	2,383·53	..
	Orotava Works—Kalgoorlie		..	..	..	21·67	..	..	..	..	94·89	..
	Paddington Slimes Plant		..	..	..	289·38	..	..	..	..	289·38	..
	Paddington Consols Works		..	..	..	272·49	..	..	..	9·75	6,839·74	..
	Regan's Works		..	..	..	289·67	..	..	..	27·00	348·42	..
	State Battery—Siberia		..	..	..	138·42	..	..	..	..	138·42	..
	Vettersburg Cyanide Works		..	..	..	513·95	..	..	..	..	612·29	..
	Zoroastrian Works		..	..	..	62·59	..	..	..	116·50	1,082·23	..
	Various Works		..	..	..	..	..	1,971·82	..	11,306·85	12,401·29	7·09
	Reported by Banks and Gold Dealers		173·99	..	..	..	..	7,036·39	..	..	..	..
	Total		**351·06**	**601·69**	**28,537·13**	**14,529·13**	..	**18,391·24**	**3,112·66**	**491,313·47**	**316,647·13**	**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 1910.					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	..	..	..	..	..	..	3·53	2,415·00	1,103·70	..
Do. ..	878x	Camellia Extended	..	..	140·00	161·42	..	..	..	838·00	857·86	..
Do. ..	..	Voided leases	..	..	..	..	..	..	35·20	1,226·50	971·93	·07
Do. ..	..	Sundry claims	..	..	..	88·21	..	24·70	245·94	858·75	750·42	..
Gindalbie ..	1047x	Eclipse	..	..	141·00	67·90	..	..	..	939·00	749·07	..
Do. ..	1267x	Edith	..	..	184·50	179·11	..	..	..	184·50	179·11	..
Do. ..	(1123x)	Gindalbie	..	..	..	..	..	..	..	101·00	36·97	..
Do. ..	(1258x)	Jack's Dream	..	..	19·00	8·91	..	..	..	42·00	22·50	..
Do. ..	392x, 394x, 396x, 1048x, 1207x	(Melton Gold Mining Co., N.L.) ..	..	..	..	..	..	..	..	654·00	485·80	..
Do. ..	392x, 394x, 396x, 1048x, 1207x	(Queen Margaret G.M. Co., Ltd.) ..	..	..	..	..	..	..	..	25,540·03	24,642·71	38·31
Do. ..	392x, 394x, 396x	(South Gippsland leases) ..	..	..	..	..	..	..	..	3,697·00	3,805·05	..
Do. ..	392x, 394x, 396x, 1048x, 1207x	South Gippsland leases ..	..	..	1,000·00	1,096·79	..	..	..	1,000·00	1,096·79	..
Do. ..	1174x, 1176x ..	United leases	..	..	569·00	203·60	..	..	..	2,298·50	2,085·89	..
Do. ..	..	Voided leases	..	..	..	..	..	..	19·94	3,163·05	3,138·14	..
Do. ..	..	Sundry claims	..	..	92·00	46·17	..	..	674·82	981·75	1,028·01	..
Gordon ..	(1233x)	(Mount Eba)	..	..	..	..	..	..	..	34·00	36·14	..
Do. ..	(1233x)	Mount Eba G.Ms., Ltd.	..	..	112·00	25·31	..	..	..	391·00	105·97	..
Do. ..	891x	(Sirdar)	..	..	..	..	..	..	32·60	168·50	1,319·35	..
Do. ..	891x, 1222x, 1223x, 1229x	Sirdar G.M. Co., Ltd.	..	..	13,235·00	2,708·39	..	..	..	20,808·00	3,928·62	..
Do. ..	..	Voided leases	..	..	..	..	..	..	205·17	1,145·80	932·67	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	54·65	586·50	525·61	..
Kanowna ..	1279x	Anatana	..	..	80·00	13·80	..	..	..	80·00	13·80	..
Do. ..	1270x	Andrew Fisher	..	161·23	..	..	..	..	161·23	..	..	..
Do. ..	35x, 64x ..	Ballarat and Prince Oscar Co., Ltd.	..	298·25	1,656·50	433·01	..	3·59	400·41	7,759·00	2,942·73	205·16
Do. ..	35x, 64x, (345x)	(Ballarat and Prince Oscar Syndicate, Ltd.)	..	..	..	..	..	..	47·79	5,497·00	2,926·09	..

Do. ..	1160x	Bulong United	..	218·76	68·00	113·16	..	..	355·64	296·00	353·83	..
Do. ..	367x	(Commonwealth G.Ms., Ltd.) ..	..	..	..	..	..	..	..	4,266·00	1,685·13	..
Do. ..	(1151x)	Evelyn Amalgamated	..	..	..	..	..	..	20·85	2,352·50	449·76	..
Do. ..	(1246x)	Fitzroy	..	..	..	..	..	..	..	30·00	5·49	..
Do. ..	1274	Four-in-Hand	..	..	17·00	1·92	..	..	..	17·00	1·92	..
Do. ..	1062	Gentle Polly	..	..	1,109·00	707·29	..	..	23·82	6,304·25	12,312·25	359·00
Do. ..	83x, (180x, 200x), 201x	(Golden Cement claims) ..	..	..	..	..	..	..	..	5,848·00	2,570·51	..
Do. ..	55x	(Golden Crown)	..	..	..	..	..	..	290·71	2,070·75	1,534·42	..
Do. ..	1224x	(Golden Crown Extended) ..	..	..	..	..	..	..	..	16·00	46·33	..
Do. ..	55x, 1224x ..	Golden Crown leases	..	..	1,717·00	406·02	..	..	7·19	1,928·00	536·88	..
Do. ..	(1257x)	Golden Dump	..	..	74·00	11·44	..	..	..	423·00	52·37	..
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. ..	(1260x)	Goodenough	..	..	..	..	..	..	..	48·00	8·89	..
Do. ..	1256x	Havilah	..	..	..	..	..	..	..	140·00	156·78	..
Do. ..	1019x	Kanowna	..	3·86	523·50	376·23	..	..	691·94	5,034·50	7,931·79	..
Do. ..	(1252x)	Kanowna Fitzroy: Kanowna Prospecting Co., Ltd.	..	..	89·00	20·66	..	..	..	89·00	20·66	..
Do. ..	1055x	Kintore	..	..	187·00	87·49	..	..	..	1,666·75	2,326·00	..
Do. ..	52x	(Lake View South G.M. (W.A.), Ltd.)	..	..	..	..	..	..	..	23,579·65	10,136·28	24·33
Do. ..	52x	Marquis of Queensbury: Lake View South, Ltd.	..	..	621·75	403·40	..	..	..	779·25	520·16	..
Do. ..	18x, 19x ..	(Lily Australis G.Ms., Ltd.)	..	..	..	..	..	..	..	197·00	119·18	..
Do. ..	1269x	Lode	..	1·50	20·00	5·29	..	..	1·50	20·00	5·29	..
Do. ..	(1231x)	Lydon's Dream	..	..	..	..	..	..	..	28·50	13·85	..
Do. ..	1076x	Madame Melba	..	3·96	108·00	55·84	..	..	39·83	1,863·50	2,782·61	18·00
Do. ..	(1254x)	My Daisy	..	..	21·00	12·74	..	..	..	51·00	31·39	..
Do. ..	55x	(New Standard Exploration Co., Ltd.)	..	..	..	..	..	..	11·49	2,128·50	2,740·13	..
Do. ..	(1196x)	North Lead Lode	..	1·22	30·00	6·79	..	..	20·31	456·00	94·80	..
Do. ..	(1152x)	North Lead Lode Consols ..	..	..	384·00	62·41	..	..	9·83	2,891·50	540·39	..
Do. ..	(3x), 14x, 15x, 18x, 19x, (60x, 81x, 938x,) 974x, 1035x, 1103x, 1263x	North White Feather G.Ms., Ltd. ..	..	..	22,675·00	6,545·99	..	..	..	164,243·75	78,665·49	159·19
Do. ..	1268x	Oldham	..	..	402·00	81·52	..	..	..	402·00	81·52	..
Do. ..	1261x	Prince Foote	..	..	332·00	108·05	..	..	..	381·00	141·26	..
Do. ..	52x	(Robinson G.Ms., Ltd.)	..	..	..	..	..	..	..	16,478·75	16,213·33	..
Do. ..	(1121x)	Sunbeam	..	..	410·00	75·25	..	..	..	2,324·50	1,525·19	..
Do. ..	1232x	Try Again	..	..	308·50	131·83	..	..	..	1,168·50	410·54	..
Do. ..	12x, 13x, 14x, 15x, 855x, 1001x, 1012x, 1103x, (1107x), 1108x, (1109x)	(White Feather Main Reefs, Ltd.) ..	..	..	..	..	..	..	..	123,327·56	82,334·52	1,675·68
Do. ..	9x, 10x, 12x, 13x, 72x, 83x, 201x, 855x, 1001x, 1012x, 1108x, 1249x	White Feather Main Reefs (1906), Ltd.	..	..	3,736·00	1,812·87	..	..	20·45	22,176·50	8,072·02	..
Do. ..	9x, 10x, 72x, 83x, (180x, 200x), 201x, (431x)	(White Feather Reward, Ltd.) ..	..	..	..	..	..	..	..	42,767·75	22,255·23	14·80

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 1910.					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.
Kanowna ..	367x	Wood's Find	..	..	1,171·00	664·42	..	..	..	3,772·50	1,909·24	..
Do. ..	..	Voided leases	..	..	..	..	..	..	966·77	70,153·31	33,708·40	..
Do. ..	..	Sundry claims	..	350·87	1,366·20	463·11	..	88·57	1,202·74	11,071·06	5,454·77	..
Mulgarrie ..	(1251x)	Lady Clara	..	..	..	..	..	..	..	82·50	70·59	..
Do. ..	(1272x)	Lady Mary	..	15·16	55·00	10·17	..	..	15·16	55·00	10·17	..
Do. ..	1228x	Lady Pratt	..	..	156·00	49·12	..	..	148·46	216·00	87·82	..
Do. ..	(1213x)	Mount Jewell	..	..	..	..	..	..	15·74	33·00	15·60	..
Do. ..	..	Voided leases	..	..	..	..	..	..	977·20	3,002·50	1,661·43	..
Do. ..	..	Sundry claims	..	..	299·50	83·91	..	..	13·29	405·50	244·11	..
Six Mile ..	(1238x)	Signal Success	..	..	..	..	..	..	5·26	..	..	..
Do. ..	..	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 :										
		Edquist, Truman & Co.'s Works	..	..	..	1,514·27	..	..	..	..	1,514·27	..
		Last Chance Cyanide Works	..	..	..	116·25	..	..	..	..	1,314·62	..
		Middleton's Cyanide Works	..	..	..	..	..	..	..	..	1,765·01	..
		Morrison's Cyanide Works	..	..	..	..	..	..	..	..	377·07	..
		North White Feather Filter Press Plant ..	..	..	..	..	..	..	..	..	797·46	..
		Old Cement Works	..	..	..	721·40	..	..	..	52·00	4,120·96	..
		Riedel and Norton's Works	..	..	..	497·13	..	..	..	642·00	779·43	..
		Robinson's Cyanide Works	..	..	..	..	..	..	..	..	5,657·98	..
		State Battery Cyanide Works—Kalpini	..	..	..	95·12	..	..	..	..	95·12	..
		W.A. Slimes Co., Ltd.	..	..	..	166·25	..	..	..	..	166·25	..
		Various Works	..	..	..	..	..	25·01	..	903·10	8,244·57	..
		Total for Leases and Quartz Claims ..	..	1,054·81	53,109·45	20,439·96	..	141·87	8,341·27	623,481·31	387,822·64	2,494·54
		Cement from Alluvial Claims :—										
		Reported by Owners	..	..	290·00	72·19	..	305·41	867·52	25,835·40	12,664·13	..
		Treated locally (not reported by owners) at :										
		Old Cement Works	..	..	825·50	181·54	..	..	..	6,791·00	2,549·86	..
		Riedel and Norton's Works	..	..	2,863·00	363·47	..	..	..	6,186·00	818·84	..
		State Battery—Kalpini	..	..	..	..	..	..	..	260·00	22·69	..
		Various Works	..	..	..	..	..	..	..	77,090·21	54,895·82	..
		Treated outside District (not reported by owners) ..	..	..	..	..	..	..	..	27,804·55	36,711·17	..
		Reported by Banks and Gold Dealers	91·99	..	..	..	..	103,693·12	·86	..	84·69	..
		Total	**91·99**	**1,054·81**	**57,087·95**	**21,057·16**	..	**104,140·40**	**9,209·65**	**767,448·47**	**495,569·84**	**2,494·54**

KURNALPI DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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.
Jubilee ..	..	Voided leases	..	..	..	..	..	..	145·13	1,810·50	1,400·54	..
Do. ..	..	Sundry claims	..	..	..	..	..	18·87	..	46·00	28·91	..
Kurnalpi ..	(316K)	Spion Kop	..	187·41	..	21·14	..	..	398·11	..	37·85	..
Do. ..	..	Voided leases	..	..	..	..	..	371·18	26·61	2,677·05	1,661·10	6·27
Do. ..	..	Sundry claims	..	..	18·00	39·82	..	217·92	33·81	86·50	104·67	..
Mulgabbie ..	(263K)	Cables	..	..	..	..	..	..	309·79	2·50	337·93	..
Do. ..	303K	Hope	..	..	1·00	148·64	..	..	147·70	16·00	1,657·13	..
Do. ..	312K	Mulgabbie Perseverance ..	..	..	3·00	250·73	..	..	..	14·90	1,238·71	4·95
Do. ..	(320K)	Overflow	..	3·52	..	..	..	..	3·52	..	..	..
Do. ..	..	Voided leases	..	..	..	..	..	..	50·67	7·00	629·67	..
Do. ..	..	Sundry claims	..	2·22	·25	2·40	..	6·50	1,365·03	81·00	614·78	..
		From District generally :—										
		Sundry parcels treated at :										
		Various Works	..	..	..	..	..	..	..	56·50	187·39	..
		Reported by Banks and Gold Dealers	167·43	..	..	..	..	10,724·90	19·62	..	..	..
		Total	**167·43**	**193·15**	**22·25**	**462·73**	..	**11,339·37**	**2,499·99**	**4,797·95**	**7,898·68**	**11·22**

East Coolgardie Goldfield.

EAST COOLGARDIE DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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.
Binduli ..	..	Voided leases	..	..	..	..	..	..	..	120·00	76·93	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	25·00	24·60	..
Boorara ..	(4297E)	Golden Ridge	..	..	..	..	..	..	132·74	128·00	166·96	..
Do. ..	3908E, 3910E, 3912E, 4033E, 4045E, 4327E	Golden Ridge G.M. Co., Ltd. ..	..	..	25,801·00	18,021·37	..	..	..	90,754·75	59,855·03	..
Do. ..	(4297E, 4298E) ..	Golden Ridge Reclaimed G.M. Co., N.L.	..	..	..	..	..	..	..	880·00	303·46	..

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 1910.					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.
Boorara ..	(4314E)	Pearl	..	..	35·35	2·40	..	..	..	117·85	22·83	..
Do. ..	(4298E)	Reclaimed	..	..	..	..	..	..	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	..
Do. ..	..	Sundry claims	..	..	10·00	3·41	..	·49	2·30	45·00	20·87	..
Boulder ..	392E	(Acrobat : Paringa Consolidated Mines, Ltd.)	..	..	..	..	..	..	..	10·25	37·15	..
Do. ..	38E, 71E, 72E, 101E	Associated G.Ms. of W.A., Ltd. ..	..	..	114,480·00	41,351·08	893·00	..	8·49	1,015,098·70	739,065·04	25,350·18
Do. ..	49E, 4211E ..	Associated Northern Blocks (W.A.) Ltd.	..	..	26,349·04	12,126·93	532·50	..	524·18	278,381·66	363,332·37	1,921·20
Do. ..	4426E	Boko	..	..	525·00	36·06	..	..	..	525·00	36·06	..
Do. ..	890E	Boomerang	..	..	359·00	185·94	..	..	..	1,086·75	320·02	..
Do. ..	(682E), 902E, 923E, 986E, (1064E), 1124E, 1196E	(Boulder Deep Levels, Ltd.) ..	..	..	..	..	..	..	..	3,043·00	1,778·10	26·71
Do. ..	902E, 923E, 986E, 1124E, 1196E, 4075E	Boulder Deep Levels (1907), Ltd. ..	..	..	..	..	..	..	..	787·50	210·30	..
Do. ..	281E	(Brookman Bros. : Boulder G.M. Co., Ltd.)	..	..	..	..	..	..	..	8,655·00	8,417·00	..
Do. ..	989E	(Brown Hill Central G.Ms., Ltd.) ..	..	..	..	..	..	..	..	2,957·50	2,071·92	..
Do. ..	558E, 1175E, 3961E	Brown Hill Extended, Ltd.	..	..	2,676·96	979·72	..	..	..	29,506·96	42,413·20	..
Do. ..	1163E	Cassidy's North	..	..	..	..	..	..	..	67·00	7·95	..
Do. ..	24E, 888E, 949E ..	Central and West Boulder G.M., Ltd.	..	..	947·00	231·09	..	..	..	31,255·43	18,648·63	..
Do. ..	352E	(Chaffer's G.M. Co., Ltd.)	..	..	..	..	..	..	..	4,256·00	1,299·03	161·50
Do. ..	352E, 873E, 4334E	Chaffer's G.M. Co., Ltd.	..	..	44,272·00	17,040·61	..	..	..	84,246·50	34,366·91	..
Do. ..	4307E	Confidence	..	..	131·00	7·23	..	..	8·20	201·00	86·05	..
Do. ..	238E	Crœsus North No. 1, Ltd.	..	..	245·00	43·88	..	..	..	10,821·25	4,050·76	..
Do. ..	1621E	(Crœsus Proprietary G.M. Co.) ..	..	..	..	..	..	..	..	79·00	45·87	..
Do. ..	13E, 90E, 302E, 989E	Crœsus South G.Ms., Ltd.	..	..	4,793·28	1,621·33	..	..	..	54,125·28	22,303·78	..
Do. ..	351E, 1001E, 1002E, 1085E, 1113E, 1219E, 1326E	Golden Horseshoe Estates Co., Ltd. ..	..	..	257,333·00	97,885·44	23,378·87	..	..	2,161,923·00	1,813,870·93	188,320·56
Do. ..	750E	(Golden Link Consolidated G.Ms., Ltd.)	..	..	..	..	..	..	..	10,729·00	6,096·80	..

Do.	..	2325E, 2326E	..	(Golden Link Consolidated G.Ms., Ltd.)	..	..	..	..	..	..	..	1,525·00	733·48	..
Do.	..	750E, 1621E	..	(Golden Links, Ltd.)	..	..	..	..	..	..	..	87,115·02	43,504·60	19·06
Do.	..	1294E ..	..	Golden Pike and Lake View East Mines, Ltd.	..	..	..	..	..	..	..	490·50	131·44	..
Do.	..	873E ..	..	(Great Boulder Main Reef, Ltd.) ..	..	..	..	..	..	..	..	143,292·39	119,541·14	761·98
Do.	..	50E ..	..	Great Boulder No. 1, Ltd.	..	..	916·05	903·66	..	..	..	12,148·79	10,899·64	..
Do.	..	66E ..	..	Great Boulder Perseverance G.M. Co., Ltd.	..	..	82,009·00	26,832·39	2,883·23	..	..	1,524,588·23	1,159,848·61	78,668·46
Do.	..	16E, 51E, 61E, 102E, 280E, 1109E, 4366E		Great Boulder Proprietary G.Ms., Ltd.	..	..	195,407·00	138,707·05	16,955·18	..	..	1,597,471·00	1,736,804·58	119,928·64
Do.	..	902E, 1124E	..	(Great Boulder South G.M. Co., Ltd.)	..	..	..	..	..	..	..	437·00	122·11	..
Do.	..	3643E ..	..	Hainault G.Ms., Ltd.	..	..	65,616·00	21,651·15	..	..	..	399,613·70	147,575·17	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, 902E, 923E, 986E, 1116E, 1124E		(Hannan's Star Consolidated, Ltd.) ..	..	..	360·00	175·59	..	..	..	360·00	175·59	..
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.)	..	..	..	..	..	..	..	13,470·50	4,716·66	191·22
Do.	..	4317E, 4318E	..	Idaho leases	..	477·07	2,808·00	4,490·17	..	..	1,033·54	9,051·75	9,287·59	..
Do.	..	946E ..	..	Ironsides North	..	..	5,639·00	5,696·08	..	..	..	15,353·50	16,450·99	..
Do.	..	946E ..	..	(Ironsides North G.M. Co., N.L.) ..	..	..	..	..	..	..	..	1,348·00	807·48	..
Do.	..	31E, 1357E, (1412), 1413E, 1507E, 4399E		Ivanhoe Gold Corporation, Ltd. ..	..	..	207,891·00	116,147·68	22,199·40	..	..	1,902,180·00	1,465,558·58	192,106·86
Do.	..	1507E, (2899E, 3712E, 3713E)		(Ivanhoe Junction G.M. Co., N.L.) ..	..	..	..	..	..	..	..	1,764·00	121·43	..
Do.	..	4379E ..	..	Ivanhoe Venture	..	..	..	..	..	18·42	..	65·00	8·95	..
Do.	..	6E, 131E, 245E, 269E, 301E, 739E, 743E, 794E, 969E		(Kalgoorlie Amalgamated, Ltd.) ..	..	..	..	..	..	..	..	32,589·00	8,859·95	..
Do.	..	6E, 131E, 245E, 269E, 301E, 739E, 743E, 794E, 969E		(Kalgoorlie Amalgamated (new), Ltd.)	..	..	..	..	..	..	..	27,145·00	6,265·27	..
Do.	..	6E, 131E, 245E, 269E, 301E, 739E, 743E, 794E, 969E		(Kalgoorlie Amalgamated (1909), Ltd.)	..	..	..	..	..	..	..	7,940·50	1,568·40	..
Do.	..	33E ..	..	(Kalgoorlie Bank of England G.M. Co., Ltd.)	..	..	..	..	..	..	..	11,775·50	7,080·49	..
Do.	..	73E, (74E)	..	(Kalgoorlie Mint and Iron King Gold Estates, Ltd.)	..	..	..	..	..	..	..	3,020·00	1,762·00	..
Do.	..	73E, (74E)	..	(Kalgoorlie Mint and Iron King G.M., Ltd.)	..	..	..	..	..	..	..	3,647·00	7,454·80	..
Do.	..	1004E ..	..	(Kalgurli Golden Eagle) ..	..	..	..	..	..	..	..	4,891·50	1,289·65	..
Do.	..	1004E ..	..	(Kalgurli Golden Eagle : Golden Links, Ltd.)	..	..	..	..	..	..	..	193·00	31·63	..
Do.	..	22E, 34E	..	Kalgurli G.Ms., Ltd.	..	..	115,517·00	78,595·23	..	..	..	799,050·98	631,336·30	..
Do.	..	15E, 25E, 32E, 60E, 902E, 923E, 986E, 1116E, 1124E, 1196E, 2325E, 2326E, 4075E, 4432E, 4433E, 4434E		Lake View and Star, Ltd.	..	..	67,049·98	24,261·22	2,449·13	..	..	67,049·98	24,261·22	2,449·13

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 1910.					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 ..	25E, 32E, 2325E, 2326E	(Lake View Consols, Ltd.)	..	..	58,889·27	20,915·75	3,337·57	..	..	1,179,303·55	1,016,875·27	38,491·89
Do. ..	75E	(Lake View South G.M. (W.A.), Ltd.)	..	..	..	..	..	..	..	10,712·98	11,393·57	..
Do. ..	75E	Lake View South, Ltd.	..	..	2,702·83	685·64	..	..	..	4,340·83	1,064·72	..
Do. ..	443oE	Lake View Extended	..	..	76·50	19·72	..	..	..	76·50	19·72	..
Do. ..	(4301E)	Lilly G.M. Co., N.L.	..	..	..	..	..	..	..	182·00	43·00	..
Do. ..	(4301E)	Lily	..	..	..	..	..	..	..	176·50	65·49	..
Do. ..	33E, 35E, 975E ..	New North Boulder G.Ms., Ltd. ..	..	..	2,397·54	2,533·05	..	..	..	3,206·81	4,091·49	..
Do. ..	33E, 35E, 975E ..	(North Boulder G.M. Co., Ltd.) ..	..	..	..	..	..	..	..	33,549·15	47,532·52	..
Do. ..	33E, 35E, 975E ..	(North Boulder G.Ms., Ltd.) ..	..	..	..	..	..	..	..	4,542·50	4,256·55	·63
Do. ..	281E, 287E, 444E	North Kalgurli Co., Ltd.	..	..	10,291·14	8,105·13	..	43·99	..	79,350·69	45,537·43	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.Ms. (W.A.), Ltd.)	..	..	..	..	..	..	..	1,657·00	859·11	..
Do. ..	535E	(Octagon Explorers, Ltd.)	..	..	..	..	..	..	..	3,180·00	1,069·29	..
Do. ..	73E, 410E, 448E, 532E, 578E, 698E, 944E, 1395E, 3031E, 4180E	(Oroya Brownhill Co., Ltd.) ..	..	..	21,961·25	23,484·86	504·51	..	..	1,075,862·55	1,163,881·77	61,682·30
Do. ..	4211E	(Oroya East (Hannan's) G.M., Ltd.)	..	..	..	..	..	..	..	625·00	288·39	..
Do. ..	6E, 73E, 131E, 245E, 269E, 301E, 410E, 448E, 532E, 578E, 698E, 739E, 743E, 750E, 794E, 944E, 969E, 1004E, 1395E, 1621E, 3031E, 4180E	Oroya Links, Limited	..	..	101,145·45	32,597·28	4,433·68	..	..	101,145·45	32,597·28	4,433·68
Do. ..	4E	(Paringa Consolidated Mines, Ltd.) ..	..	..	..	..	..	..	..	216·00	157·80	..
Do. ..	1208E, 3612E ..	South Kalgurli G.Ms., Ltd.	..	..	98,873·00	34,086·47	1,728·43	..	..	582,581·00	268,052·38	12,126·20
Do. ..	(4403E)	Star of the East	..	..	..	..	..	..	..	39·00	6·62	..
Do. ..	(4360E)	Talisman	..	..	94·00	14·74	..	..	..	279·00	55·49	..
Do. ..	3031E	(Trafalgar G.M. (W.A.), Ltd.) ..	..	..	..	..	..	..	..	189·95	56·84	..
Do. ..	(4187E)	Trurant	..	..	..	..	..	..	714·35	8,441·50	10,067·58	..
Do. ..	535E	(Union Jack)	..	..	..	..	..	..	..	23·00	4·49	..
Do. ..	..	Voided leases	..	..	..	..	..	91·48	5,058·31	33,112·75	23,357·18	..
Do. ..	..	Sundry claims	..	..	357·00	60·73	..	24·58	..	1,072·00	851·66	..

Feysville ..	Block 48 ..	Hampton Plains Estate, Ltd. ..	..	..	..	..	..	4,565·62	..	20,562·00	2,371·95	..	
Do. ..	Block 50 ..	(Hampton Plains Estate (1906), Ltd.)	..	..	..	..	..	..	..	85·00	108·82	..	
Do. ..	Block 50 ..	(Hampton Properties. Ltd.)	..	..	..	..	..	..	7·26	6,348·00	3,956·22	..	
Do. ..	Block 45 ..	Hampton Properties, Ltd.	..	..	..	..	..	..	52·75	51·75	76·63	..	
Do. ..	Block 50 ..	Hampton Properties, Ltd.	..	..	218·50	180·27	..	..	6·26	349·65	349·65	..	
Do. ..	..	Voided leases	..	..	..	..	..	..	22·86	214·85	106·88	..	
Do. ..	..	Sundry claims	..	..	75·00	18·38	..	..	..	134·00	42·81	..	
Kalgoorlie ..	1101E, (4051E, 4230, 4275E, 4281E, 4302E, 4124E)	A.W.A. United leases	..	..	641·00	1,720·77	..	..	..	59,446·50	13,994·58		8·57
Do. ..	4438E	Battle East	..	..	44·00	3·70	..	..	..	44·00	3·70	..	
Do. ..	(4364E)	Bailey's	..	..	10·00	1·04	..	..	..	10·00	1·04	..	
Do. ..	(4419E)	Belgravia	..	..	80·00	7·04	..	..	..	80·00	7·04	..	
Do. ..	796E, 1228E ..	(Bonnie Lass leases)	..	..	410·00	680·61	..	..	160·69	6,011·00	5,945·22	..	
Do. ..	796E, 1228E, 3771E	Bonnie Lass leases	..	..	585·00	1,152·59	..	..	..	585·00	1,152·59	..	
Do. ..	4088E	Bonnie Play	..	..	15·00	1·22	..	..	..	21·00	4·23	..	
Do. ..	1101E	(Brown Hill Junction G.M. Co., N.L.)	..	..	..	..	..	..	..	1,122·00	327·15	..	
Do. ..	4436E	Cæsar	..	..	41·51	14·14	..	..	..	41·51	14·14	.	
Do. ..	3880E, 4146E ..	(Devon Consols leases)	..	..	..	..	..	..	36·73	26,777·00	11,650·19	..	
Do. ..	4037E, 4039E, 4054E	(Devon Consols South Extended leases)	..	..	..	..	..	..	..	2,251·00	1,400·94	..	
Do. ..	4037E, 4039, 4054E, 4231E 4368E	Devon Consols South Extended leases	..	..	1,968·14	1,256·10	..	..	..	4,558·14	2,193·54	..	
Do. ..	3770E	Eagle Hawk United	..	25·37	507·50	211·92	..	..	595·77	1,728·00	1,741·59	..	
Do. ..	4052E, 4063E, 4139E	Fair Play leases	..	..	457·76	684·00	..	..	4·77	2,144·79	3,570·67	..	
Do. ..	4107E, 4371E ..	Federal Gold Mine, Ltd.	..	..	5,282·00	445·27	..	..	..	11,324·00	1,188·63	..	
Do. ..	4331E	Gem	..	..	..	..	..	..	30·75	57·00	10·40	..	
Do. ..	1694E	(Golden Zone)	..	..	..	..	..	..	..	5,614·50	2,639·52	..	
Do. ..	1694E	(Golden Zone)	..	..	..	..	..	..	489·50	2,106·00	3,295·08	..	
Do. ..	1694E, 4273E, 4274E, 4331E, 4380E	Golden Zone leases	..	..	9,491·00	9,855·17	..	..	28·25	19,891·00	27,771·03	..	
Do. ..	4412E	Gordon	..	..	501·00	48·17	..	..	..	501·00	48·17	..	
Do. ..	4397E	Great Golden Lead	..	..	13·00	·89	..	..	..	68·00	1·64	..	
Do. ..	(4124E)	Great Secret	..	..	100·00	22·93	..	..	201·53	291·00	79·66	..	
Do. ..	14CE, 415E, 1163E	Hannans Consols leases ..	..	..	19,280·00	2,218·98	..	..	..	31,264·00	3,624·80	..	
Do. ..	14CE, 415E, 1163E	(Hannans Consols, Ltd.)	..	..	..	..	..	..	..	6,584·00	3,806·65	..	
Do. ..	(4056E)	Hannan's Find	..	..	29·00	7·09	..	6·06	..	1,506·00	285·68	..	
Do. ..	(4381E)	Hannan's Find Extended ..	..	..	..	..	..	..	..	45·00	2·28	..	
Do. ..	983E	(Hannan's Golden Group, Ltd.) ..	..	..	..	..	..	..	..	6·00	17·27	..	
Do. ..	4273E, 4274E ..	Hannan's North G.Ms., Ltd. ..	..	..	..	..	..	..	..	1,244·00	392·72	..	
Do. ..	4224E, 4225E, 4226E, 4382E	Hannan's Proprietary, Ltd.	..	..	196·00	16·59	..	35·08	12·10	7,311·50	1,253·51	..	
Do. ..	97E, 160E, 211E, 212E, 213E, 1653E	(Hannan's Reward and Mt. Charlotte, Ltd.)	..	..	..	..	..	..	2·58	121,605·10	47,203·84	..	
Do. ..	97E, 160E, 211E, 212E, 213E, 1653E	Hannan's Reward, Ltd.	..	..	28,646·50	4,078·54	..	..	..	99,394·50	13,608·96	..	
Do. ..	796E, 1228E ..	Hannan's Reward North G.M. Co., N.L.	..	..	..	..	..	..	16·87	334·00	247·34	..	
Do. ..	4001E, 4035E, 4036E	Hidden Secret leases	..	..	2,710·37	805·67	128·00	..	..	5,016·17	13,381·35		43,383·29
Do. ..	4107E	(Hidden Secret West)	..	..	..	..	..	..	..	561·00	68·04	..	

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 1910.					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.
Kalgoorlie ..	3991E	Hird's lease	..	..	233·75	103·48	..	..	42·85	920·25	1,134·51	..
Do. ..	(4256E)	Homeward Bound	..	..	..	..	..	..	..	1,690·50	253·23	..
Do. ..	4406E	Hyman	..	..	80·00	3·44	..	..	..	80·00	3·44	..
Do. ..	4304E	Inkray	..	..	..	..	..	..	26·35	19·00	21·80	..
Do. ..	983E	Isabel	..	..	256·57	74·96	..	..	98·63	4,793·07	1,062·09	..
Do. ..	4346E	Little Wonder	..	..	2,469·00	469·69	..	..	..	3,438·00	1,439·79	..
Do. ..	4345E	Lone Hand	..	..	991·00	92·52	..	..	..	1,672·00	176·36	..
Do. ..	(4359E)	Lord Nolan	..	..	80·00	3·25	..	..	..	582·50	60·45	..
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.	..	27·12	6,579·00	1,090·66	..	..	32·27	11,373·50	4,628·55	..
Do. ..	4393E	Medindie Hill	..	..	143·00	22·22	..	..	..	143·00	22·22	..
Do. ..	4293E	Milanese	..	..	4,923·00	677·04	..	..	..	5,746·00	808·64	..
Do. ..	(4337E)	Mount Fern	..	..	..	..	..	..	..	54·00	16·13	..
Do. ..	4347E	Mystery	..	..	4,426·00	915·30	..	..	..	6,654·00	1,450·87	..
Do. ..	4025E	Napoleon	..	..	..	..	..	..	..	2,721·00	1,431·25	..
Do. ..	1694E	(New Golden Zone Co., N.L.) ..	..	..	..	..	..	..	..	344·00	175·61	..
Do. ..	4284E	(New Reefers)	..	..	..	..	..	..	..	196·50	79·11	..
Do. ..	4284E	New Reefers	..	..	184·00	49·34	..	..	..	290·00	57·22	..
Do. ..	4284E, (4341E) ..	(New Reefers G.M. Co., Ltd.) ..	..	..	..	..	..	..	..	868·00	50·24	..
Do. ..	983E	(New Standard Exploration Co., Ltd.)	..	..	..	..	..	..	..	213·00	86·76	..
Do. ..	4037E, 4039E, 4054E	(North End Mines, Ltd.)	..	..	..	..	..	..	..	5,876·00	2,425·03	4·00
Do. ..	4037E, 4039E, 4054E	(North End Mines, Ltd.)	..	..	..	..	..	..	..	1,812·00	883·27	..
Do. ..	4277E	Off Chance	..	..	787·75	52·03	..	..	98·80	1,504·75	240·17	..
Do. ..	4405E	Omeo	..	..	3,101·00	443·55	..	..	..	3,101·00	443·55	..
Do. ..	4E, 392E ..	(Paringa Mines, Ltd.)	..	..	4,604·50	678·28	..	..	..	37,962·98	16,779·96	..
Do. ..	4E, 392E ..	Paringa Mines (1909), Ltd.	..	..	10,615·78	3,244·70	..	..	..	10,615·78	3,244·70	..
Do. ..	4309E	Poseidon	..	..	42·30	19·68	..	..	63·66	117·30	313·48	..
Do. ..	4422E	Pride of the Hills	..	..	50·00	5·41	..	..	..	50·00	5·41	..

Do. ..	4428E	Prince George	..	..	407·00	41·27	..	..	..	407·00	41·27	..
Do. ..	1228E	(Red, White, and Blue) ..	..	..	..	..	..	..	..	130·00	25·56	..
Do. ..	4039E	(Rising Sun)	..	..	..	..	..	..	..	170·00	28·50	..
Do. ..	4039E	(Rising Sun)	..	..	..	..	..	..	..	16·00	1·88	..
Do. ..	4054E, 4231E, 4039E, 4037E	(Rising Sun leases)	..	..	..	..	..	..	..	294·00	98·78	..
Do. ..	4121E	Royal	..	..	48·00	1·01	..	..	..	58·00	3·81	..
Do. ..	3771E	Sons of Gwalia, Kalgoorlie ..	..	..	40·00	24·47	..	..	..	1,428·00	844·54	..
Do. ..	(4402E)	Territoria	..	..	60·00	33·35	..	..	..	192·50	92·58	..
Do. ..	4289E	(Union Club)	..	..	..	..	..	..	..	700·00	257·45	..
Do. ..	4289E, 4320E ..	Union Club leases	..	34·04	2,890·00	800·95	..	..	53·28	3,690·00	986·61	..
Do. ..	4383E	Wandin	..	..	14·00	7·05	..	..	..	34·00	12·91	..
Do. ..	3880E, 4146E ..	Westralian Machinery Corporation, Ltd.	..	..	750·00	156·49	..	..	..	2,864·00	848·23	..
Do. ..	..	Voided leases	..	..	..	..	..	4·21	470·15	81,770·54	53,246·13	578·07
Do. ..	..	Sundry claims	25·84	37·76	2,327·52	340·58	..	207·69	73·51	4,031·02	695·49	..
Wombola ..	4349E	Sudden Jerk	..	137·95	..	..	..	..	301·49	..	..	..
Do. ..	..	Voided leases	..	..	..	..	..	..	312·37	4,708·78	1,882·55	..
Do. ..	..	Sundry claims	..	..	147·63	14·65	..	..	..	469·13	97·16	..
		From District generally :—										
		Sundry claims	..	..	..	..	..	10,907·93	431·95	5,208·00	1,560·12	..
	Sundry parcels treated at :											
	Adeline Mill		..	..	..	480·50	..	..	..	..	480·50	..
	Allsop and Howell's Works		..	..	..	..	..	..	..	..	89·63	231·72
	Barnes' Works		..	..	..	108·11	..	..	..	..	1,522·50	..
	Bonnie Lass Works		..	..	..	6·24	..	..	..	55·00	1,297·73	..
	Boulder Puddling Works		..	..	..	5·07	..	2·54	..	..	72·89	..
	Brown Hill Consols Works		..	..	..	2,663·44	..	..	..	673·35	24,884·62	..
	Crœsus South Works		..	..	..	1,197·50	..	..	..	9,230·35	13,912·25	..
	Fremantle Trading Company's Works		..	..	..	600·43	610·85	..	..	..	672·00	939·40
	Glenartney's Works		..	..	..	..	..	..	..	..	830·97	..
	Golden Dream Works		..	..	..	85·87	..	..	..	..	85·87	..
	Golden Zone Works		..	..	..	..	..	..	..	..	340·97	..
	Hannan's Central Works		..	..	..	4,796·08	..	..	..	100·00	21,200·85	..
	Hannan's Proprietary Works		..	..	..	2,768·92	..	..	..	..	7,898·77	..
	Ironsides North Works		..	..	..	1,168·11	..	..	..	23·00	7,145·93	..
	Orotava Works		..	..	..	76·42	..	..	..	..	1,458·29	..
	Whitehart Works		..	..	..	13·66	..	..	..	..	13·66	..
	Various Works		..	..	..	..	..	381·82	15·15	29,477·55	43,449·54	403·37
	Reported by Banks and Gold Dealers		861·85	..	..	..	..	8,939·34	9,013·32	..	4·57	..
	Total		**887·69**	**739·31**	**1,635,511·72**	**776,266·88**	**80,034·35**	**25,229·25**	**20,321·48**	**14,434,663·57**	**11,633,513·11**	**781,591·74**

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

East Coolgardie Goldfield—*continued.*

BULONG DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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 ..	(1068Y)	Balagundi Consolidated ..	..	..	..	7·15	..	..	..	432·00	123·87	..
Do. ..	1055Y ..	Lady Molly	..	17·33	5·00	44·38	..	..	88·24	24·00	181·11	..
Do. ..	(1070Y)	May Queen	..	..	..	..	..	..	..	42·00	32·27	..
Do. ..	..	Voided leases	..	..	..	..	..	..	1,727·29	558·00	889·38	..
Do. ..	..	Sundry claims	..	..	21·15	20·38	..	..	..	125·65	66·37	..
Bulong ..	(1063Y)	Bull's Eye	..	..	..	..	..	..	..	289·00	48·00	..
Do. ..	(1062)	Bulong Proprietary	..	..	..	..	..	..	..	1,081·00	292·04	..
Do. ..	1074Y	Gorge	..	..	5·30	53·78	..	..	..	5·30	53·78	..
Do. ..	(11Y)	(Melbourne United G.M. Co., N.L.)	..	..	..	..	..	..	..	236·20	200·79	..
Do. ..	(1020Y)	Melbourne United North ..	..	..	..	..	..	..	102·45	3·00	17·66	..
Do. ..	(1065Y)	New Golden West	..	..	9·80	10·49	..	..	109·79	40·11	276·06	..
Do. ..	(957Y)	Oversight	..	..	..	..	..	..	12·61	74·61	299·25	..
Do. ..	(9Y, 11Y, 14Y, 74Y, 142Y, 564Y, 693Y, 1020Y)	(Queen Margaret G.M. Co., Ltd.) ..	..	..	..	..	..	·79	2,807·07	62,707·05	61,895·42	..
Do. ..	1067Y	Southern Cross	..	..	204·00	62·75	..	..	..	748·66	237·83	..
Do. ..	(14Y)	(White Horse)	..	..	..	..	..	..	730·72	336·50	745·65	..
Do. ..	(14Y)	White Horse	..	..	..	..	..	..	..	390·50	82·40	..
Do. ..	(14Y)	(White Horse: Queen Margaret G.M. Co., Ltd.)	..	..	..	..	..	..	..	2,230·00	1,623·61	..
Do. ..	..	Voided leases	..	..	..	..	..	106·75	4,525·95	17,272·29	14,724·47	..
Do. ..	..	Sundry claims	8·31	..	13·00	12·55	..	1,636·61	911·09	6,226·52	13,941·89	..
Hogan's Find	..	Voided leases	..	..	..	..	..	..	908·82	309·50	276·51	..
Majestic ..	..	Voided leases	..	..	..	..	..	..	..	1,001·25	318·78	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	43·20	..	..	..
Mt. Monger ..	..	Voided leases	..	..	..	..	..	..	1,862·57	1,121·35	969·69	..
Do. ..	..	Sundry claims	..	..	..	..	..	215·60	..	345·00	218·37	..
Randall's ..	910Y	Agnes	..	..	..	..	..	..	..	1,676·25	512·80	..
Do. ..	805Y, 892Y, 990Y	New Santa Claus G.M. Co., Ltd. ..	..	..	..	9·89	..	..	..	7,342·80	3,827·39	..
Do. ..	805Y, 892Y ..	(Santa Claus G.M. Co., Ltd.) ..	..	..	..	..	..	..	..	50·00	41·29	..
Do. ..	..	Voided leases	..	..	..	..	..	..	60·04	2,384·05	1,210·68	..
Do. ..	..	Sundry claims	..	..	775·00	210·75	..	20·45	..	1,616·55	421·57	..

Sudden Jerk..	..	Voided leases	..	..	..	..	..	..	63·91	14·25	53·67	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	·15	10·23	..
Taurus ..	..	Voided leases	..	..	..	..	..	2·06	3·70	1,678·15	760·83	..
Do. ..	..	Sundry claims	..	..	..	..	..	112·69	..	260·00	346·86	..
Woodline ..	..	Voided leases	..	..	..	..	..	..	..	792·75	610·57	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	39·33	61·57	..
		From District generally :—										
		Sundry claims	2·30	..	..	..	..	5·64	41·85	790·75	284·26	..
	Sundry parcels treated at :											
	Hilda Mill		..	..	..	123·13	..	..	..	..	138·14	..
	State Battery—Randall's		..	..	..	..	..	..	..	..	131·73	..
	Various Works		..	..	..	..	..	..	..	6,102·15	5,565·74	..
	Reported by Banks and Gold Dealers		2·47	..	..	..	..	24,387·42	52·39	..	..	..
		Total	**13·08**	**17·33**	**1,033·25**	**555·25**	..	**26,488·01**	**14,051·69**	**118,346·67**	**111,492·53**	..

Coolgardie Goldfield.

COOLGARDIE DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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 ..	4404	Burgess	..	..	67·00	11·04	..	..	..	67·00	11·04	..
Do. ..	4313	New Victoria South	..	..	623·00	120·79	..	..	..	1,065·00	324·87	..
Do, ..	1552, (3947) ..	Vale of Coolgardie	..	..	264·00	169·00	..	..	..	264·00	169·00	..
Do. ..	4353	(Vale of Coolgardie G.Ms., Ltd.) ..	..	..	..	..	..	..	..	74,835·00	38,993·49	..
Do. ..	144, 1151, 4375, 4376, 4397	Westralia and East Extension Mines, Ltd.	..	..	3,147·00	628·86	..	..	..	229,437·15	116,683·71	..
Do. ..	..	Voided leases	..	..	..	..	..	..	2·26	40,494·70	28,751·36	..
Do. ..	..	Sundry claims	..	..	271·00	52·22	..	..	..	774·50	368·10	..
Bulla Bulling	4403	Golden Gate	..	..	54·00	33·09	..	..	..	54·00	33·09	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	426·50	281·51	..
Do. ..	..	Sundry claims	..	..	18·00	2·39	..	..	12·82	305·50	181·23	..
Burbanks ..	(4378)	Brothers Home	..	..	61·00	43·04	..	..	..	136·50	141·10	..
Do. ..	134, 135, 136, 1527, 1705, 2761, 3571	(Burbanks Birthday Gift G.M., Ltd.)	..	..	..	..	..	..	..	132,706·00	126,351·59	..

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 1910.					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.
Burbanks ..	134, 135, 136, 1527, 1705, 2761, 3571, 3661, (3806, 3996, 4025, 4032)	Burbanks Birthday G.Ms., Ltd. ..	..	..	4,839·00	2,000·94	23·52	..	..	35,249·00	24,146·57	310·79
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. ..	..	..	16,124·00	9,698·36	..	..	..	72,555·10	42,248·72	..
Do. ..	4409	Burbanks Mainstay	..	..	609·00	165·62	..	..	..	609·00	165·62	..
Do. ..	1705	(Burbanks North G.M., Ltd.) ..	..	..	..	..	..	..	..	22·50	7·70	..
Do. ..	4412	Burbanks Ursula	..	..	23·50	18·80	..	..	..	23·50	18·80	..
Do. ..	4381	Coalition	..	..	48·00	99·64	..	..	..	54·50	115·28	..
Do. ..	4168	Glenloth South	..	..	107·00	147·76	..	..	79·67	426·00	667·46	..
Do. ..	4310	(Grosmont)	..	..	..	..	..	..	..	1,225·50	421·27	..
Do. ..	4310, 4355, 4380	Grosmont leases	..	..	5,183·00	385·85	..	..	..	5,183·00	385·85	..
Do. ..	4379	Ivanhoe Burbanks	..	..	190·50	137·53	..	..	..	266·00	192·61	..
Do. ..	2160	(Lady Robinson)	..	..	..	..	..	..	..	5,315·40	3,327·12	..
Do. ..	2160, 3950, 4125	Lady Robinson G.M. Co., N.L. ..	..	..	380·00	82·98	..	..	..	16,643·50	7,768·75	..
Do. ..	4241	(Lord Bobs)	..	..	..	..	..	..	..	1,264·00	2,829·90	..
Do. ..	4241	Lord Bobs	..	..	264·00	641·06	..	..	..	414·00	788·13	..
Do. ..	4241, (4286, 4287)	(Lord Bobs G.M. Syndicate) ..	..	..	..	..	..	..	..	1,744·00	2,151·90	..
Do. ..	(4362)	Quartette	..	..	..	..	..	..	..	139·00	101·68	..
Do. ..	4296	Sunbeam	..	..	..	..	..	..	..	35·00	51·70	..
Do. ..	..	Voided leases	..	..	..	..	..	13·36	105·24	15,205·63	14,302·91	80·73
Do. ..	..	Sundry claims	..	..	159·50	192·91	..	..	56·60	1,941·50	1,342·07	..
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	..	..	272·00	213·44	..	..	164·50	4,685·00	6,237·33	..
Do. ..	133, 139, 142 ..	(Bayley's Mines, Ltd.)	..	..	..	..	..	15·10	10·59	2,319·74	2,323·66	..
Do. ..	(4261)	Big Blow	..	..	30·50	18·25	..	..	45·18	1,186·50	496·25	..
Do. ..	4067	Clydesdale	..	..	9·00	24·48	..	..	..	9·00	24·48	..
Do. ..	4389	Columbia Park	..	..	104·50	60·01	..	..	..	139·50	275·75	..
Do. ..	4363	Coolgardie Enterprise	..	..	113·00	17·25	..	..	..	365·00	116·07	..

Do.	4093, 4117	Coolgardie Prospecting Development and Mining Co., N.L.	..	..	..	97·00	18·73	..	..	..	915·00	294·21	..	
Do.	3918	(Coolgardie Redemption)	..	..	..	..	..	..	..	1,257·62	4,419·00	3,747·28	..	
Do.	3918, 4052	Coolgardie Redemption G.M. Co., N.L.	..	..	..	..	..	..	..	..	202·00	68·80	..	
Do.	(4094)	Coolgardie Redemption Extended	..	..	..	76·00	45·16	..	..	..	318·00	237·86	..	
Do.	1865	Empress of Coolgardie	..	..	..	717·00	249·11	..	..	..	1,815·50	713·31	..	
Do.	1865	(Empress of Coolgardie G.M., 1896, Ltd.)	..	..	..	..	..	..	..	..	2,868·00	950·53	..	
Do.	4395	Evelyn	..	2·74	122·50	80·70	..	..	2·74	122·50	80·70	..		
Do.	(4359)	Excelecon	..	..	..	..	..	..	..	..	483·00	65·92	..	
Do.	(4392)	Garden Gully	..	..	90·00	22·82	..	..	..	..	90·00	22·82	..	
Do.	3827	Garfield	..	..	30·50	39·12	..	..	462·21	880·50	1,322·96	..		
Do.	4391	Gladys	..	..	184·00	13·92	..	..	..	184·00	13·92	..		
Do.	73, 1902, 3556, 3701, 3811, 3813, 3998	Griffiths leases	..	..	2,414·00	1,107·98	..	..	..	34,349·00	14,101·36	..		
Do.	Block 53	Hampton Plains Estate, Ltd.	..	..	..	..	..	..	358·42	67·00	112·49	..		
Do.	Block 59	Hampton Plains Estate, Ltd.	..	..	433·00	164·80	..	..	..	5,785·00	5,578·04	..		
Do.	4288	Indicator	..	..	25·00	6·58	..	2·94	19·26	135·00	139·61	..		
Do.	4288, (4294)	(Indicator leases)	..	..	..	..	..	..	81·52	98·00	114·85	..		
Do.	4370	Iron Duke	..	..	42·00	10·06	..	..	..	140·00	56·32	..		
Do.	4122	(King's Cross)	..	..	..	..	..	..	..	792·00	561·39	..		
Do.	4297	King Solomon	..	10·45	498·50	410·21	..	..	10·45	1,054·50	758·28	..		
Do.	4369	Lady Mary	..	..	..	..	..	..	..	45·00	5·56	..		
Do.	3556	(Lily)	..	..	..	..	..	..	..	342·75	217·64	..		
Do.	4411	May Queen	..	..	18·00	19·07	..	..	..	18·00	19·07	..		
Do.	3701	Morning Star South	..	..	..	..	..	..	..	250·00	30·63	..		
Do.	(4306)	New Australasian	..	..	81·00	23·40	..	..	..	241·00	250·99	..		
Do.	4067, 4122, 4372	New Bayley's Mines, Ltd.	..	..	..	..	..	..	..	77·00	37·62	..		
Do.	1865	(Phœnix G.Ms., Ltd.)	..	..	..	..	..	..	..	12,028·50	4,524·96	..		
Do.	4152	Queen's Cross leases	..	..	782·50	415·29	..	..	26·20	27,691·50	4,594·44	..		
Do.	4373	Redeemer	..	..	103·00	197·35	..	..	..	142·00	260·90	..		
Do.	(4383)	Resource	..	..	..	..	..	..	..	40·00	6·76	..		
Do.	4295, 4319	Richmond G.M. Syndicate	..	..	351·00	410·00	..	..	..	457·00	607·40	..		
Do.	4295, 4319	(Richmond leases)	..	..	..	..	..	..	..	144·00	171·95	..		
Do.	73	(Star of the South)	..	..	..	..	..	..	..	975·00	819·75	..		
Do.	4396	Surprise	..	..	49·50	93·15	..	..	..	49·50	93·15	..		
Do.	33, 3824, 3830, 4227, 4323, 4326	Tindal's Coolgardie G.M. Co., N.L.	..	..	21,323·00	5,311·25	..	..	..	102,638·25	25,235·09	..		
Do.	4410	Try Again	..	..	34·00	32·89	..	..	..	34·00	32·89	..		
Do.	4093	(Undaunted)	..	..	..	..	..	..	..	565·81	156·39	..		
Do.	4093, 4117	(Undaunted leases)	..	..	..	..	..	..	..	1,737·00	462·21	..		
Do.	4407	Union Jack South	..	..	16·00	51·47	..	..	..	16·00	51·47	..		
Do.	4377	Victor	..	..	173·50	53·60	..	..	..	173·50	53·60	..		
Do.	4260	W.A. Mint	..	5·37	37·00	14·98	..	..	42·78	528·50	145·99	..		
Do.	4067, 4122	(W.A. Sluicing Syndicate, Ltd.)	..	..	..	..	..	..	..	742·00	373·22	..		
Do.	4368	Waterfall Prospecting Syndicate	..	..	124·00	492·62	..	..	..	240·00	1,078·48	..		
Do.	(4402)	Waterfall Prospecting Syndicate, West	..	..	25·00	7·12	..	..	..	25·00	7·12	..		
Do.		Voided leases	..	..	..	..	..	389·14	695·26	191,623·87	121,811·32		·96	
Do.		Sundry claims	..	4·43	1,740·50	761·94	..	..	599·79	12,199·95	6,160·93	..		
Eundynie	(4361)	Brilliant South	..	..	..	..	..	..	..	32·00	23·98	..		
Do.	(4255)	Brilliant Syndicate	..	..	..	..	..	..	..	1,108·00	500·70		1·75	

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 1910.					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.
Eundynie ..	(4302)	(Hidden Secret Central) ..	..	..	..	..	..	..	..	94·00	22·42	..
Do. ..	(4301, 4302) ..	Hidden Secret leases	..	..	15·00	11·01	..	..	..	201·00	80·81	..
Do. ..	4253	(Hidden Secret North)	..	..	..	..	..	..	..	68·00	60·72	..
Do. ..	4253, 4266, 4351 4405, 4406	Hidden Secret North leases ..	..	..	4,919·00	1,994·84	..	..	..	6,389·00	2,751·82	..
Do. ..	(4366)	Rainbow	..	..	..	..	..	..	..	18·50	8·10	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	20·00	8·30	..
Do. ..	..	Sundry claims	..	..	38·00	11·21	..	..	..	117·00	31·11	..
Gibraltar ..	..	Voided leases	..	..	..	..	..	..	..	227·50	70·20	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	29·00	16·64	..
Gnarlbine ..	(4365)	Kim	..	..	..	..	..	..	..	90·00	7·68	..
Do. ..	..	Voided leases	..	..	..	..	..	..	10·94	1,627·75	1,014·50	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	1·31	63·50	28·21	..
Higginsville ..	4382	Fair Play	..	..	2,647·00	296·61	..	..	..	3,450·00	404·37	..
Do. ..	4184, 4185, 4191, 4206, 4207	(Red Hill Westralia G.Ms., Ltd.) ..	..	..	1,002·00	714·76	..	..	..	16,983·00	6,848·02	127·78
Do. ..	4184, 4185 ..	(Sons of Erin G.M. Co., N.L.) ..	..	..	..	..	..	..	285·20	4,742·00	2,938·77	..
Do. ..	4184, 4185, 4191, 4206, 4207	Sons of Erin leases	..	..	1,088·00	605·73	..	..	..	1,088·00	605·73	..
Do. ..	4191	(Sons of Erin North Extended)..	..	..	..	..	..	..	..	172·00	194·44	..
Do. ..	..	Voided leases	..	..	..	..	..	..	2·06	1,652·00	421·64	..
Do. ..	..	Sundry claims	..	..	52·50	41·53	..	..	16·52	455·50	375·19	..
Londonderry	3834	Cheapside	..	..	199·00	127·79	..	..	..	2,939·75	1,718·74	..
Do. ..	4352	Cheapside North: Westralia Waihi G.Ms., N.L.	..	..	204·00	79·17	..	..	..	439·00	159·80	..
Do. ..	4394	Fenian Cat	..	..	92·00	105·29	..	..	..	92·00	105·29	..
Do. ..	..	Voided leases	..	..	..	..	..	..	46·25	13,680·66	12,776·16	..
Do. ..	..	Sundry claims	..	..	52·00	23·52	..	..	..	620·85	332·82	..
Mungari ..	(4385)	Good Luck	..	..	..	..	..	..	..	19·50	2·90	..
Do. ..	..	Voided leases	..	..	..	..	..	..	17·71	715·50	328·88	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	106·00	32·72	..
Red Hill ..	4331	Edquist	..	11·80	17·50	48·65	..	..	11·80	17·50	48·65	..
Do. ..	..	Voided leases	..	..	..	..	..	..	1,427·62	40,775·70	31,015·40	..
Do. ..	..	Sundry claims	..	13·17	·30	5·89	..	..	13·67	110·30	12·18	..

Widgiemooltha	(4364)	Doyle's Choice	..	..	..	..	..	..	..	13·00	4·79	..	
Do. ..	4028	Flinders	..	..	30·10	144·40	..	..	23·11	334·10	1,787·99	..	
Do. ..	(4357)	Flinders South	..	..	..	..	..	..	..	29·00	8·09	..	
Do. ..	(4383)	Lone Hand	..	..	..	..	..	..	..	11·00	2·94	..	
Do. ..	(4350)	Nottingham Castle	..	..	1·00	2·55	..	..	..	46·00	27·47	..	
Do. ..	3906	Yorkshire Lass	..	..	172·45	169·24	..	..	..	1,783·70	1,102·97	..	
Do. ..	..	Voided leases	..	..	..	..	..	..	439·18	6,439·40	2,181·89		·17
Do. ..	..	Sundry claims	..	15·18	117·50	55·19	..	3·62	18·06	1,818·65	755·14	..	
	From District generally :—												
	Sundry parcels treated at :												
	Allsop and Howell's Works—Kalgoorlie		..	..	..	..	..	..	..	..	360·85	..	
	Burbanks Main Lode Works		..	..	..	220·07	..	2·77	..	15·50	232·45	..	
	Carswell's Cyanide Works		..	..	..	28·05	..	..	..	..	54·61	..	
	Fremantle Smelting Works		..	..	..	..	..	..	..	..	15·65	..	
	Fremantle Trading Co., Ltd.		..	..	..	19·21	..	..	..	..	19·21	..	
	Highgate Works		..	..	..	..	..	..	..	100·00	268·71	..	
	King Solomon Works		..	..	..	365·42	..	..	..	..	835·10	..	
	Lady Robinson Cyanide Works		..	..	..	189·69	..	..	..	..	324·92	..	
	Moss' Cyanide Works		..	..	..	78·39	..	..	..	..	2,958·84	..	
	Orotava Works—Kalgoorlie		..	..	..	8·53	..	..	..	..	171·81	..	
	Red Hill Westralia Works		..	..	..	53·96	..	..	..	..	70·25	..	
	State Battery—Coolgardie		..	..	..	530·05	..	..	..	647·50	1,977·51	..	
	State Battery—Widgiemooltha		..	..	..	125·60	..	..	..	38·50	301·96	..	
	Various Works		..	..	..	..	..	4·98	..	3,657·11	10,258·97	108·89	
	Reported by Banks and Gold Dealers		789·88	..	..	..	..	5,337·42	543·04	..	..	..	
	Total		**789·88**	**63·14**	**73,196·35**	**31,074·98**	**23·52**	**6,651·47**	**6,978·99**	**1,252,843·79**	**809,682·61**	**631·07**	

KUNANALLING DISTRICT.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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	..	..	300·00	134·01	..	..	8·53	1,253·50	687·39	..
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	..	..	..	..	..	..	18·57	912·25	358·01	..
Carbine ..	33s	Carbine	..	..	3,299·00	1,534·55	..	..	687·98	15,342·50	8,319·70	..
Do. ..	758s	(Carbine South)	..	..	..	..	..	..	..	22·00	10·29	..
Do. ..	776s	Spearmint	..	..	112·00	86·06	..	..	..	336·00	445·69	..
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 1910.					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 ..	716s	Lady Evelyn	..	..	..	..	..	..	..	241·75	479·81	..
Do. ..	..	Voided leases	..	..	..	..	..	67·51	793·44	7,187·90	6,395·33	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	6·16	116·00	67·61	..
Chadwin ..	818s	Chadwin	..	..	229·50	126·98	..	..	..	229·50	126·98	..
Do. ..	813s	Magdala	..	..	146·00	64·45	..	..	..	324·00	165·32	..
Do. ..	822s	Resolute	..	..	75·00	329·93	..	..	..	75·00	329·93	..
Do. ..	816s	Wheel of Fortune	..	..	69·25	186·98	..	..	..	69·25	186·98	..
Do. ..	..	Sundry claims	..	..	224·50	117·92	..	..	·86	463·00	404·19	..
Dunnsville ..	(815s)	Dunnsville North	..	2·98	13·00	17·19	..	..	2·98	13·00	17·19	..
Do. ..	796s	Herbert	..	..	8·00	·99	..	..	..	193·00	163·41	..
Do. ..	..	Voided leases	..	..	..	..	..	..	178·14	17,067·00	7,723·12	..
Do. ..	..	Sundry claims	..	..	8·00	1·24	..	..	..	275·08	202·75	..
Jourdie Hills	789s	Derry's Own	..	..	..	..	..	..	18·00	730·00	293·72	..
Do. ..	733s, 786s ..	Jourdie Enterprise leases ..	..	..	3,707·00	1,224·47	..	..	..	8,469·00	3,077·28	..
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.	..	..	255·00	199·95	..	..	..	1,113·00	827·92	..
Do. ..	514s	Pride of Jourdie North	..	..	216·00	242·93	..	..	..	2,027·00	1,688·28	..
Do. ..	369s	(Pride of the Jourdies) ..	..	..	..	..	..	..	..	410·74	465·47	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	724·00	365·32	..
Do. ..	..	Sundry claims	..	..	13·00	9·18	..	..	..	760·50	405·00	..
Kundana ..	..	Voided leases	..	..	..	..	..	..	..	465·00	68·12	..
Kintore ..	802s	Last Chance	..	..	74·33	61·47	..	..	..	127·33	229·35	..
Do. ..	808s	London	..	..	44·50	20·65	..	..	..	75·50	27·84	..
Do. ..	797s	Sugarloaf	..	..	180·00	82·15	..	..	..	362·00	424·24	..
Do. ..	..	Voided leases	..	..	..	..	..	..	143·66	42,289·81	30,778·32	..
Do. ..	..	Sundry claims	..	..	96·50	67·73	..	..	..	766·00	825·51	..
Siberia ..	674s [1286w] ..	Golden	..	..	..	..	..	..	82·17	22·40	120·37	..
Do. ..	720s [1292w] ..	Invincible	..	..	..	..	..	..	..	185·00	368·63	..
Do. ..	728s [1293w] ..	Mexico	..	..	..	..	..	..	..	216·50	427·07	..
Do. ..	718s [1291w] ..	Missouri	..	..	..	..	..	..	..	196·00	79·88	..
Do. ..	(746s [1300w]) ..	Pole	..	..	..	..	..	..	..	100·00	79·87	..
Do. ..	124s [1283w] ..	Waverley	..	..	..	..	..	..	496·67	1,466·80	1,873·81	..
Do. ..	..	Voided leases	..	..	..	..	..	1·07	978·97	6,030·15	7,580·51	..
Do. ..	..	Sundry claims	..	..	..	..	..	30·91	..	223·00	349·86	..

25-Mile ..	696s	(Blue Bell)	..	..	..	..	..	..	8·05	697·00	429·47	..
Do. ..	727s	(Blue Bell Extended)	..	..	..	..	..	..	..	113·00	71·32	..
Do. ..	696s, 727s ..	Blue Bell leases	..	..	201·00	168·40	..	..	..	1,390·00	1,445·09	..
Do. ..	(777s)	Bows Mine No. 1	..	..	..	..	..	..	..	933·59	329·51	..
Do. ..	783s	Hopeful	..	1·60	126·00	95·72	..	..	1·60	551·50	732·00	..
Do. ..	(757s)	Inkermann	..	..	142·00	64·49	..	..	..	979·00	1,614·08	..
Do. ..	826s	Kookaburra	..	..	3·20	64·41	..	..	..	3·20	64·41	..
Do. ..	824s	Our Birthday	..	5·98	6·00	58·76	..	..	5·98	6·00	58·76	..
Do. ..	823s	Premier	..	..	346·00	123·57	..	..	..	346·00	123·57	..
Do. ..	586s, 602s ..	Shamrock leases	..	..	338·00	361·00	..	..	192·12	3,587·35	4,703·48	..
Do. ..	(812s)	Sons of Australia	..	..	32·00	6·88	..	..	..	32·00	6·88	..
Do. ..	645s	Star of Fremantle	..	..	85·50	40·23	..	..	..	4,853·50	3,084·35	..
Do. ..	603s	Sydney Mint	..	·20	..	..	..	..	169·94	701·75	2,456·82	..
Do. ..	..	Voided leases	..	..	..	..	..	..	251·06	77,036·85	56,547·51	18·84
Do. ..	..	Sundry claims	..	..	430·50	213·21	..	..	87·17	3,222·35	1,649·82	..
		From District generally :—										
		Sundry parcels treated at :										
		Blue Bell Works	..	..	..	127·27	..	..	..	26·00	141·38	..
		Bow and Carswell's Works	..	..	..	..	..	9·22	..	239·00	640·13	..
		Lindsay's Works	..	..	..	..	..	..	..	..	6·40	..
		Orotava Works—Kalgoorlie	..	..	..	..	..	..	..	..	71·90	..
		Stanley Works	..	..	22·10	133·71	..	..	..	108·60	280·70	..
		Various Works	..	..	..	..	..	14·86	..	1,331·66	1,339·88	..
		Reported by Banks and Gold Dealers	5·80	..	..	..	..	26·36	1·10	..	..	..
		Total	**5·80**	**10·76**	**10,802·88**	**5,966·48**	..	**336·91**	**4,859·41**	**224,790·56**	**168,460·44**	**20·22**

Yilgarn Goldfield.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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 ..	887	Blackbourne	..	..	366·50	88·63	..	..	..	462·50	111·06	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	796·00	226·88	..
Bullfinch ..	914, 915, 916, 926, 928, 942, 960	Bullfinch leases	..	..	1,027·52	10,958·88	..	..	..	1,027·52	10,958·88	..
Golden Valley	927	Baby Queen	..	..	20·00	49·83	..	..	..	20·00	49·83	..
Do. ..	922	Lily of the Valley	..	..	23·00	6·29	..	..	..	23·00	6·29	..
Do. ..	924	Mountain Oaks	..	..	72·00	115·36	..	..	..	72·00	115·36	..
Do. ..	829	Pioneer	..	..	22·00	298·39	..	..	..	22·00	317·99	..
Do. ..	835	Violet	..	..	125·00	88·47	..	..	..	190·00	221·73	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	137·00	220·76	..
Do. ..	..	Sundry claims	..	..	95·00	31·31	..	..	..	137·50	78·77	..

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 1910.					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, 555	Greenmount Mines, N.L.	..	..	1,021·00	469·92	..	..	..	64,176·00	14,868·38	364·72
Do.	550	(Sunbeam)	..	..	..	..	..	14·00	..	4,472·00	1,427·25	..
Do.	550	Sunbeam	..	..	67·00	51·66	..	..	..	127·00	69·25	..
Do.	550, (565)	(Sunbeam leases)	..	..	..	..	..	..	..	3,191·00	816·42	..
Do.	536	Transvaal	..	..	..	..	..	..	..	30,233·00	7,317·08	579·78
Do.	503	(United Australia)	..	..	..	..	..	..	..	410·00	120·15	..
Do.	..	Voided leases	..	..	..	..	..	31·99	21·62	5,640·00	1,538·75	..
Do.	..	Sundry claims	..	..	20·00	4·99	..	..	4·12	221·00	120·10	..
Hope's Hill	893	Corinthian	..	..	145·00	138·65	..	..	..	187·00	169·51	..
Do.	932	Debtor's Friend	..	..	150·00	29·20	..	..	..	150·00	29·20	..
Do.	795	Hopes Hill	..	..	100·00	29·92	..	..	..	304·00	133·05	..
Do.	880	Hopes Hill North	..	..	165·00	31·83	..	..	..	165·00	31·83	..
Do.	895	Hopes Hill Perseverance	..	..	238·00	260·17	..	..	..	280·00	307·52	..
Do.	(809)	Hope Still	..	..	38·00	6·17	..	..	..	38·00	6·17	..
Do.	841	Lady Kathe	..	2·53	..	..	..	..	2·53	30·00	5·44	..
Do.	(877)	Maud	..	..	114·00	26·03	..	..	..	228·00	53·01	..
Do.	899	Norwood	..	..	40·00	53·41	..	..	..	40·00	53·41	..
Do.	1432	Phoenix	..	37·61	10·00	9·27	..	..	37·61	10·00	9·27	..
Do.	(815)	Reward South	..	..	..	..	..	..	..	20·00	2·44	..
Do.	921	Roddas Reward	..	..	50·00	7·90	..	..	..	50·00	7·90	..
Do.	910	Willbee	..	..	20·00	2·77	..	..	..	20·00	2·77	..
Do.	..	Voided leases	..	..	..	..	..	..	..	125,350·35	31,858·44	..
Do.	..	Sundry claims	..	..	60·00	30·50	..	..	2·71	338·50	144·36	..
Jacoletti	923	Bohemian	..	..	488·00	171·82	..	..	..	488·00	171·82	..
Do.	1465	Comet	..	..	100·00	300·55	..	..	..	100·00	300·55	..
Do.	925	Dell	..	24·77	100·00	38·04	..	..	24·77	100·00	38·04	..
Do.	(884)	Democrat	..	..	102·00	53·43	..	..	..	289·00	154·50	..
Do.	768	(Donovan's Find)	..	..	..	..	..	..	..	1,768·00	1,999·43	..
Do.	768	Donovans Find: Greenmount Mines N.L.	..	..	280·00	209·03	..	..	..	957·00	865·30	..
Do.	1463	Eclipse	..	..	98·00	53·88	..	..	..	98·00	53·88	..
Do.	869	(Eveless Eden)	..	..	104·00	44·29	..	..	..	104·00	44·29	..
Do.	823	Exhibition	..	..	375·00	114·65	..	..	..	914·00	368·51	..
Do.	(858)	Firelight	..	..	..	..	..	..	..	200·00	49·80	..
Do.	779	Frances Firness	..	3·68	413·00	195·18	..	..	3·68	1,825·00	822·79	..
Do.	(825)	Geelong	..	..	15·00	7·13	..	..	..	155·00	102·93	..
Do,	820	Gentle Annie	..	..	309·00	147·46	..	..	..	585·00	242·52	..
Do.	851	Green Jacket	..	..	8·00	6·37	..	..	..	8·00	6·37	..
Do.	490, 517, 558, (804)	Jacoletti G.M., Ltd.	..	..	2,139·00	471·73	..	..	..	5,761·00	2,075·61	..

Do. ..	490, 517, 558 ..	(Lady Loch Mines, Ltd.)	..	..	..	..	..	..	..	2,091·00	674·01	..
Do. ..	714	(Marvel Loch)	..	..	..	..	..	..	..	500·00	316·81	..
Do. ..	714, 723, 822, 869	Marvel Loch G.M. Co., N.L. ..	..	..	15,077·00	5,696·33	166·85	..	..	25,045·00	10,249·51	379·96
Do. ..	739	Marvel Loch North	..	..	297·00	93·28	..	..	..	626·00	398·76	..
Do. ..	805	Mountain Prince	..	..	10·00	11·31	..	..	..	10·00	11·31	..
Do. ..	852	May Queen	..	..	57·00	315·90	..	..	..	115·00	778·75	..
Do. ..	803, 838, 948, 949, 950	Mountain Queen leases ..	..	..	..	..	..	..	..	748·00	208·39	..
Do. ..	839	Scorpio	..	..	434·00	262·19	..	..	..	823·00	704·14	..
Do. ..	490, 517 ..	(Turnbull leases)	..	..	..	..	..	..	..	2,143·00	1,481·72	..
Do. ..	..	Voided leases	..	..	..	..	..	..	..	2,860·50	1,472·44	..
Do. ..	..	Sundry claims	..	..	525·00	231·45	..	..	28·14	2,220·25	1,367·28	..
Kennyville ..	813	Catherine	..	..	60·00	14·05	..	..	..	239·50	100·95	..
Do. ..	776	Cornishman	..	..	276·00	266·15	..	..	..	812·00	937·53	..
Do. ..	(828)	Croesus	..	..	21·00	4·40	..	..	..	31·00	5·81	..
Do. ..	856	Glen Dower	..	..	120·00	76·81	..	..	..	187·00	129·90	..
Do. ..	570	(Great Leviathan)	..	..	..	..	..	..	..	3,821·85	2,948·67	..
Do. ..	570	Great Leviathan	..	..	548·00	480·11	..	..	..	1,254·00	970·33	..
Do. ..	570	(Northern Blocks Syndicate, Ltd.) ..	..	..	..	..	..	..	..	10,705·00	2,974·64	..
Do. ..	911	Trafalgar	..	..	340·00	310·75	..	..	..	340·00	310·75	..
Do. ..	..	Voided leases	..	..	..	..	..	..	5·58	225·00	78·56	·09
Do. ..	..	Sundry claims	..	..	10·00	2·21	..	..	..	204·00	129·98	..
Koolyanobbing	(641)	Chadwick's Reward	..	..	..	..	..	..	..	6·00	2·65	..
Do. ..	(909)	Jupiter	..	..	12·00	9·15	..	..	..	12·00	9·15	..
Do. ..	(917)	Saturn	..	..	28·00	2·07	..	..	..	28·00	2·07	..
Do. ..	(783)	St. Clair No. 2 South	..	..	239·00	86·80	..	..	..	262·00	102·87	..
Mt. Jackson ..	..	Voided leases	..	..	..	..	..	..	..	30,148·50	19,658·34	2,305·28
Mt. Rankin ..	(870)	No Trumps	..	..	144·00	30·19	..	..	..	244·00	52·67	..
Do. ..	..	Voided leases	..	..	..	..	..	3·84	5·20	252·00	69·50	..
Parker's Range	508	Australia	..	..	20·00	4·87	..	..	..	2,227·00	1,429·00	..
Do. ..	(830)	Brilliant	..	..	..	..	..	..	..	278·50	163·22	..
Do. ..	707	Golden Cube	..	..	138·00	83·38	..	..	12·85	1,344·00	505·95	..
Do. ..	719	Great Victoria	..	..	..	..	..	..	..	1,356·00	281·53	..
Do. ..	(908)	L.S.D.	..	..	140·00	33·84	..	..	..	140·00	33·84	..
Do. ..	665	Never Never	..	..	1,160·00	360·40	..	..	..	29,345·00	7.654·59	..
Do. ..	824	Newry	..	..	378·00	80·83	..	..	..	890·50	195·00	..
Do. ..	827	New Year's Gift	..	..	102·00	31·53	..	..	..	1,676·00	416·32	..
Do. ..	724	Spring Hill	..	..	1,502·00	345·34	..	..	..	6,178·00	1,637·31	..
Do. ..	760	Spring Hill North	..	..	..	..	..	..	..	20·00	5·56	..
Do. ..	..	Voided leases	..	..	..	..	..	..	50·37	4,553·75	4,336·47	..
Do. ..	..	Sundry claims	..	..	103·50	54·41	..	..	..	542·25	178·28	..
Southern Cross	881, 882, 888, 889, 890	British and Foreign Development Syndicate, Ltd.	..	..	3,704·00	2,935·13	51·70	..	..	8,705·75	62,471·77	306·27
Do. ..	890	(Central)	..	..	..	..	..	..	..	44,958·00	19,702·85	..
Do. ..	749	Central Extended	..	..	89·00	159·54	..	..	28·39	760·82	833·79	8·00
Do. ..	889	(Fraser's G.M. Co., N.L.) ..	..	..	..	..	..	..	..	151,771·00	67,870·33	..
Do. ..	888	(Fraser's South G.M. Co., N.L.) ..	..	..	..	..	..	..	..	48,233·00	20,013·23	..
Do. ..	..	Voided leases	..	..	..	..	..	..	182·83	88,062·38	33,056·03	·06
Do. ..	..	Sundry claims	..	..	60·05	38·47	..	3·73	592·81	1,001·30	269·73	..

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 1910.					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 Goldfield generally:—										
		Sundry parcels treated at:										
		Allsop and Howell's Works	..	..	..	190·91	..	..	..	..	977·32	..
		Andre's Cyanide Works	..	..	..	39·97	..	..	..	..	207·42	..
		Barnett's Cyanide Works	..	..	..	..	..	..	..	..	40·88	..
		British and Foreign Development Works	..	..	..	..	..	..	..	..	199·85	..
		Fraser's South Extended Tailings Works	..	..	..	..	..	..	..	..	1,443·31	2·64
		Fremantle Smelting Works	..	..	..	..	..	..	..	21·28	576·69	33·90
		Greenmount Works	..	..	..	67·19	..	..	..	..	154·77	..
		Higgins' Cyanide Works	..	..	..	..	..	..	..	..	39·19	..
		Hopes Hill Cyanide Works	..	..	..	5·81	..	..	..	..	5·81	..
		Jacoletti Works	..	..	..	232·45	..	..	..	..	901·48	..
		Jones' Cyanide Works	..	..	..	..	..	..	..	..	127·39	..
		Layther's Cyanide Works	..	..	..	94·89	..	..	..	..	475·89	..
		Miller's Cyanide Works	..	..	..	65·61	..	..	..	..	120·57	..
		Never Never Works	..	..	..	53·83	..	..	..	..	53·83	..
		Orotava Works—Kalgoorlie	..	..	..	..	..	..	..	..	238·22	..
		Spring Hill Works	..	..	..	..	..	..	..	..	140·34	..
		Sunbeam Works	..	..	..	411·15	..	..	..	8·00	993·13	..
		Various Works	..	..	..	..	..	..	..	59·00	4,610·30	..
		Reported by Banks and Gold Dealers	..	3·53	..	..	..	17·01	3·53	..	..	..
		Total	..	**72·12**	**34,114·57**	**27,785·81**	**218·55**	**70·57**	**1,006·74**	**807,010·50**	**357,206·38**	**3,980·70**

Dundas Goldfield.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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	(1040)	Pathway: Pathway Hill, N.L.	..	..	..	..	..	..	..	244·50	91·71	..
Do.	..	Voided leases	..	..	..	..	..	..	..	497·55	504·95	..
Do.	..	Sundry claims	..	..	80·00	166·66	..	..	..	191·00	261·83	..
Dundas	..	Voided leases	..	..	..	..	..	..	..	4,543·23	2,208·48	..
Do.	..	Sundry claims	..	..	53·00	43·20	..	..	385·37	172·50	139·65	..
Killaloe	..	Voided leases	..	..	..	..	..	..	..	20·65	6·98	..

Norseman ..	1044	(Acme)	..	..	..	..	..	..	..	266·50	82·15	..
Do. ..	1044	Acme: North Mararoa G.M. Co., N.L.	..	..	115·50	24·77	..	..	..	115·50	24·77	..
Do. ..	987	After Years	..	..	142·00	29·95	..	..	..	181·00	90·96	..
Do. ..	(39, 97)	(All Nations G.Ms., Ltd.)	..	..	..	..	..	..	..	200·00	47·74	..
Do. ..	999	(Austral Mararoa)	..	..	..	..	..	..	..	605·00	169·42	..
Do. ..	1018	Bandit King	..	8·86	37·00	15·97	..	..	8·86	237·10	133·86	..
Do. ..	(1051)	Battler	..	..	..	..	..	..	8·71	54·00	6·73	..
Do. ..	(1121)	Better Luck	..	..	96·50	9·89	..	..	..	96·50	9·89	..
Do. ..	(1061)	Bohemian	..	..	..	..	..	..	..	36·00	8·10	..
Do. ..	42, 43, 53, 579, 690, 889, 898, 1011	Cumberland G.M. Co., N.L.	..	..	3,614·00	3,475·94	..	..	..	46,082·60	45,015·15	..
Do. ..	(1095)	Enterprise	..	..	19·00	5·53	..	..	..	19·00	5·53	..
Do. ..	966	Esperanza No. 2	..	..	42·50	107·78	..	..	..	596·00	923·75	..
Do. ..	1105	Great Empire	..	..	110·00	74·38	..	..	..	110·00	74·38	..
Do. ..	938, 945, 988 ..	(Hampton Plains Estate (1906), Ltd.)	..	9·50	..	277·43	..	..	9·50	8,493·00	2,229·24	..
Do. ..	938, 945, 988 ..	Hampton Uruguay, Ltd.	..	..	..	424·22	..	..	..	..	424·22	..
Do. ..	(1112)	Heather Bell	..	..	19·00	12·38	..	..	..	19·00	12·38	..
Do. ..	(1079)	Hill End	..	..	..	..	..	..	..	10·00	3·53	..
Do. ..	(1005)	Hopetoun	..	..	25·50	21·81	..	..	..	318·50	154·99	..
Do. ..	(908)	(Iris)	..	..	..	..	..	..	..	70·00	23·14	..
Do. ..	(908)	Iris G.M. Co., N.L.	..	..	..	..	..	..	..	12·50	9·60	..
Do. ..	53	(John Bull)	..	..	..	..	..	..	..	314·00	281·93	..
Do. ..	1123	Jupiter	..	61·05	..	..	..	..	61·05	..	..	..
Do. ..	956, 1032 ..	Kirkpatrick leases	..	1·10	47·50	60·04	..	..	1·10	99·00	144·19	..
Do. ..	956	(Kirkpatrick West)	..	..	..	..	..	..	3·68	214·00	329·54	..
Do. ..	(1002)	Lady Gladys Gwendolen ..	..	..	36·00	4·96	..	..	..	303·50	86·89	..
Do. ..	945	(Lady Miller South)	..	..	..	..	..	..	..	17·00	4·36	..
Do. ..	(1052)	Lucky Call	..	..	..	..	..	..	55·37	..	..	..
Do. ..	852	(Mararoa)	..	..	..	..	..	..	..	9,167·00	4,484·90	..
Do. ..	992	(Mararoa Extended)	..	..	..	..	..	..	..	169·50	24·08	..
Do. ..	852, 912, 977, 979, 980, 985, 1031	Mararoa G.M. Co., N.L.	..	..	27,985·00	13,626·39	6,549·19	..	..	72,143·00	37,170·35	21,868·38
Do. ..	991	(Mararoa North No. 1) ..	..	..	..	..	..	..	..	17·00	13·35	..
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. ..	964	(New Moon)	..	..	..	..	..	..	..	983·00	940·25	64·27
Do. ..	964, 1017, 1025 ..	New Moon leases	..	..	960·50	714·96	41·46	..	..	2,254·00	1,844·31	157·04
Do. ..	991, 992, 999 ..	North Mararoa G.M. Co., N.L.	..	..	16·50	3·04	..	..	..	564·50	110·05	..
Do. ..	(1053)	North Star No. 1	..	..	20·00	1·57	..	..	..	20·00	1·57	..
Do. ..	821	(Northern Star)	..	..	..	..	..	..	355·36	717·00	1,137·32	..
Do. ..	903	O.K.	..	..	13·00	10·11	..	..	21·23	1,117·25	1,277·35	..
Do. ..	995	O.K. Extended	..	..	171·00	104·12	..	..	..	831·00	639·77	..
Do. ..	914	(Oversight)	..	..	..	..	..	..	..	373·00	534·12	..
Do. ..	914, 1020, 1037 ..	Oversight leases	..	..	1,026·00	373·13	..	..	..	2,319·00	2,071·24	..
Do. ..	1094	Pearl	..	..	181·50	35·74	..	..	..	205·50	44·27	..
Do. ..	1104	Penneshaw	..	..	323·50	164·94	..	..	..	323·50	164·94	..
Do. ..	106, 187, 587, 840, 972	Princess Royal G.M. Co., N.L. ..	..	..	5,764·00	2,015·13	199·06	..	..	165,634·50	140,222·66	9,364·14
Do. ..	1021	Princess Royal North	..	..	150·00	215·10	..	..	..	593·00	724·10	..
Do. ..	1021	(Princess Royal North G.M. Co., N.L.)	..	..	..	..	..	..	..	1,311·00	1,197·01	..
Do. ..	187	(Princess Royal South) ..	..	..	..	..	..	..	..	358·00	568·05	..
Do. ..	1086	Scandinavian	..	..	43·00	7·60	..	..	..	43·00	7·60	..
Do. ..	(1063)	Southern Cross	..	..	..	..	..	..	..	8·50	3·99	..
Do. ..	849	St. Patrick	..	..	94·50	82·51	..	..	160·91	1,011·00	2,350·34	..
Do. ..	1092	Sun	..	..	211·00	287·57	..	..	..	402·50	420·72	..
Do. ..	1099	Sunrise	..	23·73	23·00	40·08	..	..	23·73	23·00	40·08	..
Do. ..	989	Surprise	..	..	246·00	60·65	..	..	..	574·00	287·60	..
Do. ..	1103	Swanage	..	..	227·00	68·12	..	..	..	227·00	68·12	..
Do. ..	(1100)	Tanami	..	4·01	..	..	..	..	102·73	..	..	..
Do. ..	1026	Venture	..	..	148·00	52·29	..	..	..	164·50	70·64	..
Do. ..	1016	(Viking Extended)	..	23·25	..	..	..	..	133·35	72·50	419·67	4·90

TABLE IV.—*Production of Gold and Silver from all sources, etc.*—continued.

Dundas Goldfield—*continued.*

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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.
Norseman ..	990	(Viking No. 1)	..	..	..	..	..	..	..	1,274·00	3,095·95	..
Do. ..	990, 1060 ..	(Viking No. 1 leases)	..	..	328·50	411·27	16·89	..	..	775·50	1,176·13	16·89
Do. ..	990, 1060, 1016 ..	Viking No. 1 leases	..	..	811·50	1,427·03	16·89	..	..	811·50	1,427·03	16·89
Do. ..	986	Veni, Vidi, Vici	..	..	..	..	..	..	1,732·75	258·00	655·90	..
Do. ..	821, 1038 ..	Westralia Waihi G.Ms., N.L. ..	..	..	10,133·00	2,780·54	538·62	..	..	10,244·00	2,836·19	561·04
Do. ..	1106	White Reef	..	..	292·50	137·41	..	..	..	292·50	137·41	..
Do. ..	..	Voided leases	..	..	..	..	..	4·23	2,785·00	151,275·35	107,878·50	128·58
Do. ..	..	Sundry claims	..	210·55	1,542·50	880·10	..	996·60	626·61	11,056·65	5,762·04	·59
Peninsula ..	..	Voided leases	..	..	..	..	..	..	17·61	7,764·00	4,705·10	..
		From Goldfield generally :—										
		Sundry parcels treated at :										
		Break-o'-Day Cyanide Works	..	..	..	..	..	..	..	..	179·38	..
		Lady Mary Works	..	..	16·00	211·52	..	..	..	16·00	984·04	..
		Little Wonder Cyanide Works	..	..	..	..	..	..	..	..	174·54	..
		Mararoa Crushing and Cyanide Works	..	..	..	..	..	..	..	80·00	409·67	..
		Pike and Ross' Works	..	..	..	2·73	..	..	..	..	2·73	..
		State Battery—Norseman	..	..	90·50	758·55	..	..	..	316·00	9,659·49	885·41
		Various Works	..	..	..	..	..	..	54·52	255·50	4,708·35	646·45
		Reported by Banks and Gold Dealers	58·18	..	..	..	..	966·99	..	..	..	..
		Total	**58·18**	**342·05**	**55,255·50**	**29,227·11**	**7,362·11**	**1,967·82**	**6,547·44**	**515,398·28**	**398,525·99**	**33,714·58**

Phillips River Goldfield.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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 ..	99	Alice Mary	..	..	..	*8·69	20·44	..	10·61	23·28	21·53	20·44
Do. ..	M.L. 184 ..	Christmas Gift	..	26·34	121·50	87·77	..	..	26·34	1,056·50	594·32	71·55
Do. ..	147	Fair Play	..	..	10·50	6·12	..	..	..	42·75	46·85	12·63
Do. ..	136, 137, 138, (139)	Flag Gold and Copper Mining Co., Ltd.	..	..	3,467·00	{ 1,252·37 *288·65 }	280·91	..	..	7,031·50	4,729·53	1,078·38
Do. ..	65	(Gem)	..	..	..	..	..	..	..	687·50	613·34	..
Do. ..	151	Gem Consolidated	..	..	264·50	157·38	..	..	..	777·50	616·30	..

Do. ..	65, 79	Gem leases	..	..	2,440·00	1,224·61	..	..	..	7,798·35	3,211·69	..
Do. ..	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	..	..	..	..	..	..	..	500·00	235·77	1·88
Do. ..	98	Hillsborough	..	..	129·00	73·71	..	..	..	786·34	1,813·44	118·03
Do. ..	(150)	Kundip	..	..	..	..	..	..	..	108·50	50·58	5·59
Do. ..	M.Ls. 52, 94 ..	(Ravensthorpe G.M. Syndicate, N.L.)	..	..	..	..	..	..	..	1,124·00	433·94	164·98
Do. ..	74	Two Boys	..	..	1,676·00	1,222·89	..	..	3·90	4,070·62	3,962·45	..
Do. ..	..	Voided leases	..	..	..	..	..	113·28	135·46	4,513·47	3,686·58	1,883·48
Do. ..	..	Sundry claims	11·08	..	..	*1·07	·89	59·76	15·50	293·54	250·46	15·45
Mt. Desmond	M.L. 203 ..	(British Flag)	..	..	..	..	..	..	..	..	7·76	..
Do. ..	M.L. 335 ..	Comstock	..	..	..	*2·42	4·02	..	..	..	2·42	4·02
Do. ..	M.L. 208 ..	(Desmond)	..	..	..	..	..	..	..	..	·77	..
Do. ..	M.L. 95 ..	Elverdton: Phillips River Gold and Copper Co., Ltd.	..	..	..	*1,228·61	4,349·86	..	..	..	1,416·80	4,428·67
Do. ..	M.L. 95	(Elverdton: Phillips River Options Syndicate, N.L.)	..	..	..	..	..	..	..	..	9·63	..
Do. ..	M.L. 275 ..	Ironclad	..	..	..	*53·89	93·06	..	..	..	67·67	93·06
Do. ..	M.L. 109 ..	(Mt. Desmond)	..	..	..	..	..	..	1·40	..	36·97	..
Do. ..	M.L. 109 ..	Mt. Desmond: Phillips River Gold and Copper Co., Ltd.	..	..	..	*57·23	155·85	..	..	..	181·21	169·95
Do. ..	M.L. 199 ..	P.L.P.	..	..	..	*2·78	7·41	..	..	..	13·69	7·41
Do. ..	..	Voided leases	..	..	..	..	..	..	..	9·00	24·14	4·21
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	..	·56	..
Mt. Purchas..	89	Mt. Agnes Reward	..	..	56·00	59·82	..	..	..	281·00	230·51	..
Do. ..	..	Voided leases	..	..	..	..	..	..	4·38	17·05	30·45	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	4·75	4·68	..
Ravensthorpe	(M.L. 205) ..	Ballarat	..	..	..	..	..	..	..	..	2·84	..
Do. ..	(M.L. 295) ..	Commonwealth	..	..	..	..	..	..	..	..	3·30	..
Do. ..	(82)	Gilbert G.Ms., Ltd.	..	..	..	..	..	..	..	236·00	148·47	..
Do. ..	155	Kooyoura	..	20·85	106·78	70·50	2·16	..	20·85	106·78	70·50	2·16
Do. ..	(M.L. 310) ..	Kurracca	..	..	..	*1·77	3·35	..	..	..	1·77	3·35
Do. ..	M.L. 116 ..	Last Chance	..	..	..	*6·61	44·58	..	..	..	11·92	44·58
Do. ..	153	Maori Queen	..	..	21·67	25·88	..	..	..	93·67	71·99	..
Do. ..	M.L. 16	(Marion Martin)	..	..	..	..	..	..	..	..	20·09	..
Do. ..	M.L. 16	Marion Martin: Phillips River Gold and Copper Co., Ltd.	..	..	..	*52·41	116·49	..	..	..	131·90	159·89
Do. ..	(M.L. 7)	Mary	..	..	..	*1·44	12·17	..	..	..	20·15	42·35
Do. ..	M.L. 175 ..	Mount Benson	..	..	..	..	..	..	..	..	287·88	..
Do. ..	M.L. 331 ..	Mount Benson Extended ..	..	..	..	*·36	..	..	..	..	·36	..
Do. ..	M.L. 175 ..	Mt. Benson: Phillips River Gold and Copper Co., Ltd.	..	..	..	*39·00	76·20	..	..	..	458·77	199·83
Do. ..	M.L. 15	(Mt. Cattlin)	..	..	..	..	..	..	·49	200·00	85·50	..
Do. ..	M.L. 15	(Mt. Cattlin: Mt. Cattlin Copper Mining Co., Ltd.)	..	..	..	..	..	..	..	..	1,496·92	52·22
Do. ..	M.L. 15	(Mt. Cattlin: Phillips River Gold and Copper Co., Ltd.)	..	..	..	..	..	..	..	..	387·33	..
Do. ..	M.L. 15	Mt. Cattlin: Phillips River Gold and Copper Co., Ltd.	..	..	..	*1,776·72	2,944·31	..	..	..	2,602·78	3,265·14
Do. ..	M.L. 219 ..	Mt. Cattlin West	..	..	..	*11·05	6·72	..	..	..	13·76	13·00
Do. ..	(M.L. 204) ..	New Moon	..	..	..	..	..	..	..	..	·70	..
Do. ..	..	Voided leases	..	..	..	..	..	..	114·35	20,152·44	16,633·67	..
Do. ..	..	Sundry claims	..	..	159·00	152·49 *·81	4·02	134·79	..	552·35	444·81	20·65

* From Copper Ore.

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 1910.					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.
West River ..	(M.L. 293) ..	Last Venture	..	..	..	..	..	..	..	..	10·13	31·06
Do. ..	..	Voided leases	..	..	..	..	..	..	..	..	·21	..
Do. ..	..	Sundry claims	..	..	..	..	..	..	..	..	1·69	3·44
		From Goldfield generally :—										
		Sundry parcels treated at :										
		Phillips River Smelter	..	..	..	*161·26	398·82	..	..	..	170·27	398·82
		Two Boys Works	..	..	..	100·95	..	..	..	..	100·95	..
		Various Works	..	..	..	..	..	..	..	..	4·76	..
		Reported by Banks and Gold Dealers	7·37	..	..	..	..	122·05	..	..	..	..
		Total	**18·45**	**47·19**	**8,451·95**	**8,129·26**	**8,521·26**	**429·88**	**713·14**	**54,086·14**	**47,038·32**	**12,378·33**

* From Copper Ore.

* Donnybrook Goldfield.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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**	..

* Abolished, 4th March, 1908.

State generally.

Mining Centre.	Number of Lease.	Registered Name of Company or Lease.	Total for 1910.					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	..
		Fremantle Trading Co., Ltd.—Fremantle	..	..	..	847·41	81·07	..	..	..	847·41	81·07
		Hacke's Works—Boulder	..	..	..	..	..	..	..	..	22·16	..
		Hannan's Proprietary Works—Kalgoorlie	..	..	..	..	..	..	..	10·00	·90	..
		Oratava Works—Kalgoorlie	..	..	..	..	..	..	..	..	164·67	..
		Rasmussen's Works—Boulder	..	..	..	..	..	..	..	..	1,082·21	..
		Seabrook Works—Northam	..	..	..	..	..	..	..	..	348·09	..
		Various Works	..	..	..	..	..	..	..	17·00	2,723·98	481·77
		Sundry specimens	..	..	..	..	..	..	2·87	..	..	..
		Reported by Banks and Gold Dealers	..	..	..	..	..	124·89	153·03	..	..	..
		Total	..	..	..	**847·41**	**81·07**	**124·89**	**155·90**	**27·00**	**5,258·55**	**562·84**

TABLE

TOTAL OUTPUT OF GOLD BULLION ENTERED FOR EXPORT, AND RECEIVED AT THE PERTH BRANCH OF THE MINT, AND QUANTITY OBTAINED EACH YEAR FROM THE RESPECTIVE

Year.	KIMBERLEY.			PILBARA.			*a* WEST PILBARA.			ASHBURTON.		
	Export.	Mint.	Total.	Export.	Mint.	Total.	Export.	Mint.	Total.	Export.	Mint.	Total.
	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.
1886 ...	270·17	...	270·17	...	...	...	...	...	...	...	...	...
1887 ...	4,359·37	...	4,359·37	...	...	...	...	...	...	...	...	...
1888 ...	3,124·82	...	3,124·82	...	...	...	...	...	...	...	...	...
1889 ...	2,204·28	...	2,204·28	9,992·63	...	9,992·63	...	...	...	...	...	...
1890 ...	4,002·42	...	4,002·42	14,363·01	...	14,363·01	...	...	...	...	...	...
1891 ...	2,415·07	...	2,415·07	10,623·32	...	10,623·32	...	...	...	750·31	...	750·31
1892 ...	974·08	...	974·08	11,533·84	...	11,533·84	...	...	...	·63	...	·63
1893 ...	1,450·77	...	1,450·77	10,465·43	...	10,465·43	...	...	...	418·43	...	418·43
1894 ...	526·59	...	526·59	14,541·20	...	14,541·20	...	...	...	255·20	...	255·20
1895 ...	784·27	...	784·27	17,464·65	...	17,464·65	...	...	...	483·76	...	483·76
1896 ...	797·85	...	797·85	10,565·27	...	10,565·27	...	...	...	598·64	...	598·64
1897 ...	495·67	...	495·67	10,695·67	...	10,695·67	...	...	...	928·75	...	928·75
1898 ...	257·54	...	257·54	10,433·27	...	10,433·27	1,814·48	...	1,814·48	402·46	...	402·46
1899 ...	728·52	275·94	1,004·46	17,888·69	473·96	18,362·65	1,749·39	...	1,749·39	214·26	252·10	466·36
1900 ...	29·16	576·14	605·30	8,629·83	6,703·99	15,333·82	522·76	122·85	645·61	44·82	424·27	469·09
1901 ...	...	601·26	601·26	36·68	10,223·75	10,260·43	78·38	357·46	435·84	7·70	50·24	57·94
1902 ...	1·48	378·02	379·50	...	9,199·50	9,199·50	...	2,822·20	2,822·20	...	...	...
1903 ...	...	433·71	433·71	2·26	12,049·52	12,051·78	...	5,493·23	5,493·23	...	114·67	114·67
1904 ...	...	31·51	31·51	...	6,931·27	6,931·27	...	4,320·82	4,320·82	...	125·96	125·96
1905 ...	...	545·95	545·95	48·33	13,353·49	13,401·82	...	1,164·92	1,164·92	...	42·05	42·05
1906 ...	...	647·77	647·77	...	4,956·14	4,956·14	...	755·35	755·35	...	138·84	138·84
1907 ...	...	362·06	362·06	...	4,130·48	4,130·48	...	332·30	332·30	...	41·85	41·85
1908 ...	...	338·00	338·00	...	8,172·26	8,172·26	...	1,076·68	1,076·68	...	45·87	45·87
1909 ...	...	168·95	168·95	...	5,529·19	5,529·19	...	1,396·22	1,396·22	...	228·16	228·16
1910 ...	...	487·25	487·25	...	5,894·32	5,894·32	63·66	1,387·66	1,451·32	...	173·06	173·06
Total ...	22,422·06	4,846·56	27,268·62	147,284·08	87,617·87	234,901·95	4,228·67	19,229·69	23,458·36	4,104·96	1,637·07	5,742·03

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
1908 ...	...	456·43	456·43	19,324·02	147,879·90	167,203·92	6,701·28	76,700·77	83,402·05	3,613·64	7,946·35	11,559·99
1909 ...	...	626·80	626·80	24,123·15	135,974·94	160,038.09	6,389·19	66,631·79	73,020·98	6,711·37	4,863·50	11,574·87
1910 ...	...	725·79	725·79	28,507·31	131,976·01	160,483·32	1,889·24	60,886·71	62,775·95	...	321·40	321·40
Total ...	11,346·58	43,956·72	55,303·30	579,097·97	1,420,266·26	1,999,364·23	259,582·86	1,236,160·90	1,495,743·76	121,363·85	148,990·12	270,353·97

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	5,614·83	1,450·08	7,094·91
1901 ...	5,411·46	29,752·16	35,163·62	...	...	...	...	4·20	4·20	215·91	1,511·63	1,727·54
1902 ...	4,401·31	26,714·16	31,115·47	2,946·53	4,422·56	7,369·09	4·94	57·64	62·58	7·77	2,115·52	2,123·29
1903 ...	1,311·53	33,905·88	35,217·41	2,136·09	5,441·68	7,577·77	...	82·64	82·64	53·44	2,839·44	2,892·88
1904 ...	1,834·03	31,347·06	33,181·09	936·76	2,047·59	2,984·35	...	...	...	·86	1,344·25	1,345·11
1905 ...	1,324·48	27,411·31	28,735·79	2,060·46	1,458·44	3,518·90	...	...	...	70·41	1,515·58	1,585·99
1906 ...	1,111·18	20,198·62	21,309·80	945·65	1,439·03	2,384·68	...	...	...	284·38	763·15	1,047·53
1907 ...	...	22,830·71	22,830·71	4,043·86	1,514·90	5,558·76	...	...	...	799·48	285 47	1,084·95
1908 ...	...	41,203·39	41,203·39	969·00	3,631·02	4,600·02	...	...	...	15·91	1,953·56	1,969·47
1909 ...	...	35,894·72	35,894·72	4,025·81	3,605·75	7,631·56	...	..	..	46·78	455·34	502·12
1910 ...	...	43,260·55	43,260·55	3,271·89	5,031·60	8,303·49	...	...	...	48·67	222·89	271·56
Total ...	113,895·09	341,196·46	455,031·55	21,336·05	28,592·57	49,928·62	282·21	557·53	839·74	7,188·44	15,265·98	22,454·42

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.

V.

ROYAL MINT, FROM 1st JANUARY, 1886, TO 31st DECEMBER, 1910, SHOWING, IN FINE OUNCES, THE GOLDFIELDS, AND THE TOTAL ANNUAL VALUE.

Year.	*b* GASCOYNE.			*c* PEAK HILL			*c* EAST MURCHISON.			MURCHISON.		
	Export.	Mint.	Total.	Export.	Mint.	Total.	Export.	Mint.	Total.	Export.	Mint.	Total.
	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.	fine ozs.
1886 ..	...	...	...	...	...	...	...	...	...	...	...	...
1887 ...	...	...	...	...	...	...	...	...	...	...	...	...
1888 ...	..	...	...	...	...	...	...	...	...	...	...	...
1889 ...	...	...	...	...	...	...	...	...	...	...	...	...
1890 ...	...	...	...	...	...	...	...	...	...	...	...	...
1891 ...	...	...	...	...	..	...	..	...	...	1,846·83	...	1,846·83
1892 ...	...	...	...	...	...	...	...	...	..	21,789·19	...	21,789·19
1893 ...	..	...	...	...	...	...	...	...	...	18,974·77	...	18,974·77
1894 ...	...	...	...	...	...	...	...	...	...	47,365·54	...	47,365·54
1895 ...	...	...	...	...	...	...	...	...	...	58,575·66	...	58,575·66
1896 ...	...	...	...	...	...	...	...	...	...	63,769·17	...	63,769·17
1897 ..	...	...	...	4,571·38	...	4,571·38	8,457·34	...	8,457·34	74,154·67	...	74,154·67
1898 ...	...	...	...	12,288·93	...	12,288·93	35,393·19	...	35,393·19	83,794·22	...	83,794·22
1899 ...	297·96	76·63	374·59	14,064·24	14,558·64	28,622·88	33,826·08	3,361·95	37,188·03	61,586·09	22,074·71	83,660·80
1900 ..	...	77·02	77·02	9,528·14	16,119·79	25,647·93	23,545·54	28,671·55	52,217·09	53,815·70	43,423·77	97,239·47
1901 ...	6·59	16·82	23·41	231·85	19,352·44	19,584·29	29,780·63	40,557·07	70,337·70	92,149·56	38,996·10	131,145·66
1902 ...	...	107·29	107·29	85·93	28,044·55	28,130·48	25,450·63	53,583·10	79,033·73	141,731·91	40,926·08	182,657·99
1903 ...	...	30·76	30·76	203·60	29,395·32	29,598·92	21,878·06	65,334·05	87,212·11	154,012·88	54,348·53	208,361·41
1904 ...	...	10·95	10·95	...	17,475·33	17,475·33	21,296·85	64,550·36	85,847·21	165,232·67	52,683·16	217,915·83
1905 ...	...	21·34	21·34	125·01	13,371·75	13,496·76	1,361·68	89,249·93	90,611·61	131,656·36	92,742·05	224,398·41
1906 ...	...	78·73	78·73	...	2,038·62	2,038·62	140·68	95,168·89	95,309·57	79,172·69	109,936·80	189,109·49
1907 ...	...	8·44	8·44	...	5,918·75	5,918·75	2,891·66	117,735·69	120,627·35	54,811·74	115,497·50	170,309·24
1908 ...	...	31·82	31·82	...	9,864·36	9,864·36	10,701·24	137,028·14	147,729·38	45,483·05	111,540·54	157,023·59
1909 ...	...	7·37	7·37	...	7,322·29	7,322·29	11,599·83	136,637·67	148,237·50	24,682·47	107,167·27	131,849·74
1910 ...	...	26 31	26·31	...	3,057·25	3,057·25	1,557·78	137,190·44	138,748·22	19,568·85	111,414·23	130,983·08
Total ...	304·55	493·48	798·03	41,099·08	166,519·09	207,618·17	227,881·19	969,068·84	1,196,950·03	1,394,174·02	900,750·74	2,294,924·76

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
1908 ...	925·44	23,902·44	24,827·88	267,748·62	657,936·89	925,685·51	871·76	40,982·65	41,854·41	...	20,866·10	20,866·10
1909 ...	1,774·45	24,566·87	26,341·32	306,462·21	620,612·07	927,074·28	350·91	36,311·70	36,662·61	204·41	20,958·23	21,162·64
1910 ...	...	19,082·01	19,082·01	179,062·94	653,211·05	832,273·99	...	38,264·02	38,264·02	...	24,049·13	24,049·13
Total ...	234,553·85	370,038·23	604,592·08	6,439,274·20	5,906,398·41	12,345,672·61	661,131·91	653,001·23	1,314,133·14	197,033·06	275,427·20	472,460·26

Year.	GRAND TOTAL.			
	Export.	Mint.	Total.	Value.
	fine ozs.	fine ozs.	fine ozs.	£ s. d.
1886 ...	270·17	...	270·17	1,147 12 2½
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 5½
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	519,923·59	1,414,310·86	6,007,610 13 4½
1901 ...	923,686·96	779,729·56	1,703,416·52	7,235,653 9 1
1902 ...	707,039·75	1,163,997·60	1,871,037·35	7,947,661 9 7¾
1903 ...	833,685·78	1,231,115·62	2,064,801·40	8,770,718 17 0¼
1904 ...	810,616·04	1,172,614·03	1,983,230·07	8,424,225 17 3¾
1905 ...	655,089·88	1,300,226·00	1,955,315·88	8,305,653 18 5⅝
1906 ...	562,250·59	1,232,296·01	1,794,546·60	7,622,749 8 7
1907 ...	431,803·14	1,265,750·45	1,697,553·59	7,210,749 6 2¼
1908 ...	356,353·96	1,291,557·17	1,647,911·13	6,999,881 10 10½
1909 ...	386,370·58	1,208,898·83	1,595,269·41	6,776,273 14 7¼
1910 ...	233,970·34	1,236,661·68	1,470,632·02	6,246,847 15 0
TOTAL ...	10,487,584·68	12,590,014·95	23,077,599·63	98,027,412 5 6

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 VI.

COMPARATIVE RETURN OF GOLD BULLION ENTERED FOR EXPORT AND RECEIVED AT THE PERTH BRANCH OF THE ROYAL MINT, DURING THE YEARS 1908, 1909, AND 1910, SHOWING IN FINE OUNCES THE QUANTITY RECORDED EACH MONTH, AND ITS VALUE.

MONTHS AND QUARTERS.	1908.						1909.						1910.					
	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	35,246·82	114,572·09	149,818·91	636,390	5	6¾	34,327·33	97,959·53	132,286·86	561,918	17	3¼	24,206·18	103,144·78	127,350·96	540,952	9	10¼
FEBRUARY	29,629·79	101,865·97	131,495·76	558,558	9	8¼	35,169·25	87,947·32	123,116·57	522,965	18	11½	25,506·60	85,528·41	111,035·01	471,646	14	10¼
MARCH	20,476·89	108,849·37	129,326·26	549,343	0	8¼	26,514·54	100,478·57	126,993·11	539,432	8	10¼	16,694·17	100,781·15	117,475·32	499,003	8	10
1st January to 31st March ...	85,353·50	325,287·43	410,640·93	1,744,291	15	11¼	96,011·12	286,385·42	382,396·54	1,624,317	5	1	66,406·95	289,454·34	355,861·29	1,511,602	13	6½
APRIL	32,497·52	113,217·14	145,714·66	618,956	10	7¾	30,240·42	107,523·57	137,763·99	585,184	4	8	18,825·54	106,422·32	125,247·86	532,019	1	10
MAY	34,143·82	99,811·37	133,955·19	569,005	9	7¼	29,243·46	100,165·38	129,408·84	549,693	16	3	22,175·53	105,608·31	127,783·84	542,791	5	0½
JUNE	28,802·38	107,905·66	136,708·04	580,698	16	10½	35,294·44	97,207·00	132,501·44	562,830	6	10	14,297·96	106,390·61	120,688·57	512,652	9	2¼
1st January to 30th June ...	180,797·22	646,221·60	827,018·82	3,512,952	13	0½	190,789·44	591,281·37	782,070·81	3,322,025	12	10	121,705·98	607,875·58	729,581·56	3,099,065	9	7
JULY	27,365·04	106,058·47	133,423·51	566,747	0	11	31,986·34	101,131·82	133,118·16	565,450	0	0½	18,038·08	105,752·04	123,790·12	525,827	0	1½
AUGUST	32,904·49	103,783·24	136,687·73	580,612	11	5½	36,027·77	100,590·16	136,617·93	580,316	1	7	17,969·46	98,431·56	116,401·02	494,440	2	1¼
SEPTEMBER	26,400·06	111,840·80	138,240·86	587,209	16	11⅛	34,787·10	110,131·24	144,918·34	615,573	19	7¼	13,138·22	111,093·68	124,231·90	527,703	11	4½
1st January to 30th September	267,466·81	967,904·11	1,235,370·92	5,247,522	2	4¼	293,590·65	903,134·59	1,196,725·24	5,083,365	14	0¾	170,851·74	923,152·86	1,094,004·60	4,647,036	3	2¼
OCTOBER	30,695·67	105,684·54	136,380·21	579,306	6	2½	34,776·69	96,522·47	131,299·16	557,723	7	7⅛	21,910·77	101,183·29	123,094·06	522,870	6	7½
NOVEMBER	31,443·67	105,556·62	137,000·29	581,940	4	10	31,877·03	101,287·40	133,164·43	565,646	10	10½	27,279·79	99,341·66	126,621·45	537,853	14	7¾
DECEMBER	26,747·81	112,411·90	139,159·71	591,112	17	6	26,126·21	107,954·37	134,080·58	569,538	2	0½	13,928·04	112,983·87	126,911·91	539,087	10	6⅛
Total	**356,353·96**	**1,291,557·17**	**1,647,911·13**	**6,999,881**	**10**	**10½**	**386,370·58**	**1,208,898·83**	**1,595,269·41**	**6,776,273**	**14**	**7½**	**233,970·34**	**1,236,661·68**	**1,470,632·02**	**6,246,847**	**15**	**0**

TABLE VII.

MONTHLY RETURN OF GOLD, CONTAINED IN BULLION, FURNACE PRODUCTS, AND ORE, ENTERED FOR EXPORT DURING 1910.

MONTH.	UNITED KINGDOM.			VICTORIA.			U.S. OF AMERICA.			GERMANY.			TOTALS.			Minted Gold Exported.*
	Bullion.	Furnace Products.	Ore.	Bullion.	Furnace Products.	Ore.	Bullion.	Furnace Products.	Ore.	Bullion.	Furnace Products.	Ore.	**Bullion.**	**Furnace Products.**	**Ore.**	
1910.	Fine ozs.	Estimated fine ozs.	Estimated fine ozs.	Fine ozs.	Estimated fine ozs.	Estimated fine ozs.	fine ozs.	Estimated fine ozs.	Estimated fine ozs.	Fine ozs.	Estimated fine ozs.	Estimated fine ozs.	Fine ozs.	Estimated fine ozs.	Estimated fine ozs.	Fine ozs.
January ...	19,920·95	296·55	...	3,853·83	...	...	...	134·85	...	...	...	...	**23,774·78**	**431·40**	...	9,477·85
February ...	21,967·52	2,084·84	...	1,130·02	...	...	...	324·22	...	...	...	...	**23,097·54**	**2,409·06**	...	2,371·13
March ..	14,402·66	597·83	...	1,288·92	...	...	...	404·76	...	...	...	...	**15,691·58**	**1,002·59**	...	† 74·42 1,186·79
April ...	17,514·06	106·64	...	854·58	...	...	...	350·26	...	...	...	...	**18,368·64**	**456·90**	...	14,226·04
May ...	19,473·73	1,024·11	...	1,271·27	...	...	...	406·42	...	...	...	...	**20,745·00**	**1,430·53**	...	† 20·52 29,691·99
June ...	11,592·70	1,284·73	·71	1,047·62	...	...	...	372·20	...	...	...	...	**12,640·32**	**1,656·93**	·71	† 103·14 14,241·59
July ...	16,121·50	1,386·16	...	517·92	...	...	...	12·50	...	...	...	...	**16,639·42**	**1,398·66**	...	15,443·15
August ...	16,523·33	664·54	51·80	729·79	...	...	...	...	...	...	...	...	**17,253·12**	**664·54**	**51·80**	† 96·56 2,368·18
September	11,843·75	504·44	...	631·63	...	...	...	154·40	...	...	...	...	**12,479·38**	**658·84**	...	1,183·77
October ...	19,890·67	909·70	...	812·20	...	...	...	298·20	...	...	...	...	**20,702·87**	**1,207·90**	...	1,190·94
November...	23,020·51	2,582·33	...	1,330·13	...	...	...	309·15	...	...	...	37·67	**24,350·64**	**2,891·48**	**37·67**	† 108·24 11,884·45
December...	12,558·40	323·24	...	541·47	...	...	...	504·93	...	...	...	...	**13,099·87**	**828·17**	...	14,251·15
TOTALS ...	204,829·78	11,765·11	52·51	14,013·38	...	...	...	3,271·89	...	...	...	37·67	**218,843·16**	**15,037·00**	**90·18**	117,919·91

* 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 Mi
† To United Kingdom. All the other amounts in this column were fine bars of minted gold exported to India.

TABLE VIII.

RETURN OF GOLD BULLION RECEIVED AT THE PERTH BRANCH OF THE ROYAL MINT FROM MAY, 1899, TO THE 31ST DECEMBER, 1910, SHOWING IN GROSS OUNCES THE QUANTITY OBTAINED FROM THE RESPECTIVE GOLDFIELDS AND OTHER COUNTRIES, AND THE ACTUAL VALUE THEREOF.

Year.	Kimberley.	Pilbara.	West Pilbara.	Ashburton.	Gascoyne.	Peak Hill.	East Murchison.	Murchison.	Yalgoo.	Mt. Margaret.	North Coolgardie.	Broad Arrow.	North-East Coolgardie.
	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.
1899	308·45	529·80	...	281·80	85·65	16,274·00	3,758·07	24,675·64	5,190·05	16,911·54	44,779·38	8,503·50	16,700·90
1900	644·02	7,493·88	137·33	474·26	86·10	18,019·08	32,049·74	48,540·12	8,851·52	67,748·45	88,688·14	14,376·10	40,503·12
1901	663·37	11,279·93	394·38	55·42	18·56	21,351·67	44,746·88	43,024·65	9,191·01	126,703·91	135,493·31	18,829·13	43,055·63
1902	439·93	10,706·03	3,284·37	...	124·86	32,637·17	62,357·98	47,628·18	5,116·94	144,663·12	182,543·06	15,903·42	53,901·58
1903	511·75	14,217·53	6,481·58	135·30	36·29	34,684·27	77,089·29	64,127·18	1,687·99	148,006·49	197,229·08	21,528·20	42,649·25
1904	37·69	8,293·58	5,170·06	150·73	13·10	20,909·99	77,237·31	63,037·71	3,345·82	143,453·51	166,939·82	24,721·53	39,799·55
1905	656·34	16,053·42	1,400·46	50·54	25·65	16,075·36	107,295·17	111,493·34	5,469·06	184,178·87	175,057·14	18,394·17	48,352·22
1906	785·23	6,007·79	915·63	168·30	95·43	2,471·21	115,363·22	133,264·79	5,919·37	166,097·63	130,784·60	20,415·43	37,509·91
1907	431·72	4,924·97	396·22	49·89	10·06	7,057·22	140,382·15	137,713·43	3,815·06	183,693·29	86,685·09	16,228·85	30,285·39
1908	400·19	9,676·11	1,292·97	54·32	37·68	11,679·58	162,243·76	132,066·00	2,625·14	175,092·47	90,815·08	9,408·64	28,300·91
1909	203·59	6,662·82	1,682·49	274·93	8·89	8,823·58	164,652·43	129,139·74	755·31	163,781·55	80,293·29	5,860·66	29,603·84
1910	586·44	7,094·46	1,670·20	208·31	31·67	3,679·72	165,123·37	134,098 94	873·58	158,847·24	73,283·66	386·84	22,967·23
Total	**5,668·72**	**102,940·32**	**22,825·69**	**1,903·80**	**573·94**	**193,662·85**	**1,152,299·37**	**1,068,809·72**	**52,840·85**	**1,679,178·07**	**1,452,591·65**	**174,556·47**	**433,629·53**

Year.	East Coolgardie.	Coolgardie.	Yilgarn.	Dundas.	* Phillips River.	Donnybrook. †	State generally.	TOTAL. Western Australia. Quantity.	Western Australia. Actual Value.	Other Countries. Quantity.	Other Countries. Actual Value.	GRAND TOTAL. Quantity.	Grand Total. Actual Value.
	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	ozs.	£ s. d.	ozs.	£ s. d.	ozs.	£ s. d.
1899	33,051·33	27,611·24	9,070·70	473·63	...	196·17	904·39	**209,306·24**	**762,546 11 6**	103·46	336 18 3	209,409·70	762,883 9 9
1900	139,845·60	51,607·26	28,648·51	31,583·20	...	265·55	1,620·93	**581,182·91**	**2,096,212 14 2**	17·49	44 15 7	581,200·40	2,096,257 9 9
1901	263,514·75	78,026·07	29,433·84	32,825·75	...	4·64	1,667·79	**860,280·69**	**3,033,311 0 4**	92·25	297 5 8	860,372·94	3,033,608 6 0
1902	636,536·52	94,134·17	25,873·68	31,088·91	5,146·80	67·08	2,461·98	**1,354,615·78**	**4,791,303 18 1**	16·27	38 10 2	1,354,632·05	4,791,342 8 3
1903	685,289·82	82,218·79	26,856·28	40,006·39	6,420·79	97·52	3,350·32	**1,452,624·11**	**5,139,852 11 9**	294·78	703 14 10	1,452,918·89	5,140,556 6 7
1904	699,475·35	73,076·66	35,854·87	37,508·11	2,450·03	...	1,608·47	**1,403,083·89**	**4,955,870 9 0**	263·05	614 11 9	1,403,346·94	4,956,485 0 9
1905	737,065·14	74,615·36	30,404·65	32,953·56	1,753·32	...	1,821·99	**1,563,115·76**	**5,475,841 2 10**	525·80	1,491 0 7	1,563,641·56	5,477,332 3 5
1906	742,525·99	73,307·24	30,996·76	24,484·65	1,744·38	...	925·10	**1,493,782·66**	**5,330,245 12 1**	413·86	974 16 0	1,494,196·52	5,331,220 8 1
1907	766,846·83	73,532·99	27,795·35	27,222·21	1,806·30	...	340·39	**1,509,217·41**	**5,416,812 0 7**	640·51	1,663 4 3	1,509,857·92	5,418·475 4 10
1908	779,009·10	48,524·18	22,835·58	48,785·54	4,299·19	...	2,080·42	**1,529,226·86**	**5,386,858 15 8**	1,313·84	3,885 2 3	1,530,540·70	5,390,743 17 11
1909	747,856·04	43,756·68	25,255·30	43,254·22	4,345·04	...	548·71	**1,456,759·11**	**5,143,035 17 1**	882·56	1,109 1 3	1,457,641·67	5,144,145 3 8
1910	786,209·41	46,054·82	28,945·68	52,068·70	6,056·08	...	268·26	**1,488,454·61**	**5,163,100 17 11**	2,251·71	1,670 11 7	1,490,706·32	5,164,771 9 6
Total ...	**7,017,225·88**	**766,465·46**	**321,971·20**	**402,254·87**	**34,021·93**	**630·96**	**17,598·75**	**14,901,650·03**	**52,694,991 11 0**	6,815·58	12,829 12 2	14,908,465·61	52,707,821 3

* 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 1910, AND PREVIOUS YEARS.

BLACK TIN.

Period.	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	403·03	30,636	13·90	562·43	576 33	41,046	44·90	934·46	979·36	71,682
1909	81·75	212·21	293·96	22,431	44·40	414·35	458·75	34,786	126·15	*628·08	*754·23	†57,335
1910	33·75	119·75	153·50	12,899	25·06	292·65	317·71	27,974	58·81	412·40	471·21	40,873
Total ...	**287·22**	**4,327·47**	**4,614·69**	**381,237**	**149·94**	**7,486·05**	**7,635·99**	**538,656**	**437·16**	***11,815·04**	***12,252·20**	**†920,011**

* Includes tons 1·52, the produce of Cue District. † Includes £118, value of tons 1 52, the produce of Cue District.

TANTALITE.

Period.	Pilbara Goldfield—Marble Bar District.				Greenbushes Mineral Field.				Total.			
	Quantity.			Value.	Quantity.			Value.	Quantity.			Value.
	Lode.	Stream.	Total.		Lode.	Stream.	Total.		Lode.	Stream.	Total.	
	tons.	tons.	tons.	£	tons.	tons.	tons.	£	tons.	tons.	tons.	£
Previous to 1899 ...	...	...	...	...	...	...	...	...	...	...	...	...
1899	...	...	...	...	...	...	...	...	...	...	...	...
1900	...	...	...	...	...	...	...	...	...	...	...	...
1901	...	...	...	...	...	...	...	...	...	...	...	...
1902	...	...	...	...	...	...	...	...	..	...	...	...
1903	...	...	...	...	...	...	...	...	...	...	...	...
1904	...	...	...	...	...	...	...	...	...	...	...	...
1905	.	70·95	70·95	8,925	...	2·34	2·34	1,590	...	73·29	73·29	10,515
1906	1·80	12·85	14·65	2,644	...	...	...	...	1·80	12·85	14·65	2,644
1907	...	...	...	...	...	...	...	...	...	...	...	...
1908	...	...	...	...	...	...	...	...	...	...	...	...
1909	·45	...	·45	113	...	·85	·85	214	·45	·85	1·30	327
1910	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	**2·25**	**83·80**	**86·05**	**11,682**	...	**3·19**	**3·19**	**1,804**	**2·25**	**86·99**	**89·24**	**13,486**

COPPER ORE.

Period.	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	...	...	13·91	91	...	...
1907 ...	7·77	190	3,365·50	63,548	...	...	...	...	...	...	31·71	274	10·00	130	...	...
1908 ...	...	...	1,486·00	17,691	188·00	2,311	6·77	69	...	...	...	...	9·50	97	...	...
1909 ...	...	...	7,135·50	62,447	10·75	259	...	...	608·00	2,823	...	...	...	. .	...	...
1910 ...	...	...	8,479·80	64,861	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	**7·77**	**190**	**32,806·80**	**321,325**	**198·75**	**2,570**	**6·77**	**69**	**741·50**	**5,639**	**47·36**	**441**	**33·41**	**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	7,411·66	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
1909 ...	...	...	...	...	...	...	...	...	...	...	7,330·70	29,815	...	...	15,084·95	95,344
1910 ...	...	...	...	...	...	...	...	...	...	...	25,871·65	96,745	...	...	34,351·45	161,606
Total	**171·55**	**1,889**	**47,857·67**	**230,820**	**2·85**	**26**	**6·12**	**51**	**50·67**	**330**	**57,308·28**	**284,073**	**16·58**	**233**	**139,392·58**	**849,966**

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
1909 ...	...	...	...	...	...	...	...	...	...	...	440·00	3,520	214,301·98	90,965
1910 ...	...	...	...	...	† 10·50	† 12	10·50	12	185·10	1,777	...	...	262,166·06	113,699
Total	**100·00**	**300**	**450·00**	**247**	**57,280·00**	**36,148**	**57,830·00**	**36,695**	**602·85**	**3,811**	**1,224·15**	**10,863**	**1,778,158·29**	**822,424**

† Iron ore from Koolan Island, Yampi Sound.

Period.	WOLFRAM ORE.	ASBESTOS.	LIMESTONE.						DIAMONDS.	
	†STATE GENERALLY.	PILBARA GF. Marble Bar D.	MURCHISON GF. Cue District.		YILGARN GOLDFIELD.		STATE GENERALLY.		TOTAL.		PILBARA GF. Nullagine District.	
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.
	tons.	£	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	...	...	...	...	...	...	...	...	...	...	...
1909 ...	5·00	90	2·83	154	...	...	...	...	...	...	...	...	...	...
1910 ...	42·00	115	...	...	...	...	...	...	...	...	...	...	...	...
Total ...	**47·00**	**205**	**42·83**	**1,754**	**298·00**	**772**	**2,548·85**	**1,607**	**90,858·88**	**15,911**	**93,705·73**	**18,290**	...	**24**

NOTE.—As the collection of Statistics of Minerals other than Gold commenced during 1899, the total production from the different localities can only be approximately estimated by the Customs Records, the latest available returns of which are to be found in Table XXI., pages 104–107. * Weight unknown. † Produced within the West Kimberley Magisterial District, 93 miles N.W. of Derby.

TABLE X.

QUANTITY AND VALUE OF BLACK TIN REPORTED TO THE MINES DEPARTMENT DURING 1910, AND TOTALS TO DATE.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1910.				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	...	62·25	62·25	5,267	...	1,326·29	1,326·29	104,279
Mills Find ...	...	Sundry claims	...	...	...	...	...	·85	·85	69
Moolyella ...	...	Voided leases	...	...	...	...	...	330·53	330·53	21,340
Do. ...	...	Sundry claims	...	57·50	57·50	5,109	...	2,384·06	2,384·06	210,326
Old Shaw ...	...	Voided leases	...	...	...	...	...	6·75	6·75	424
Do. ...	...	Sundry claims	...	...	...	...	...	214·04	214·04	14,525
Wodgina ...	84 ...	(Mount Cassiterite)	...	...	...	...	133·52	13·85	147·37	14,184
Do. ...	89, 93, 148	Mount Cassiterite leases ...	31·75	...	31·75	2,343	123·25	...	123·25	8,685
Do. ...	93 ...	(Mount Cassiterite North) ...	...	...	...	...	9·67	...	9·67	971
Do. ...	178 ...	Sifflet's Reward	2·00	...	2·00	180	2·00	...	2·00	180
Do. ...	(89) ...	Tinstone	...	...	...	...	14·70	...	14·70	1,390
Do. ...	...	Voided leases	...	...	...	...	3·30	6·10	9·40	869
Do. ...	...	Sundry claims	...	...	...	...	·78	45·00	45·78	3,995
		Totals	**33·75**	**119·75**	**153·50**	**12,899**	**287·22**	**4,327·47**	**4,614·69**	**381,237**
MURCHISON GOLDFIELD.										
CUE DISTRICT.										
Poona ...	...	Sundry claims	...	...	...	...	...	1·52	1·52	118
		Totals	...	...	...	...	...	**1·52**	**1·52**	**118**
GREENBUSHES MINERAL FIELD.										
Greenbushes...	472 ...	Aqua	...	1.50	1.50	128	...	1.50	1.50	128
Do. ...	(478) ...	Aqua West	.20	...	.20	16	.20	...	.20	16
Do. ...	436 ...	Battery Hill	2.64	...	2.64	228	2.64	...	2.64	228
Do. ...	296 ...	(Central)	...	...	...	...	...	100.16	100.16	9,728
Do. ...	511 ...	Champion	...	10.50	10.50	746	...	10.50	10.50	746
Do. ...	356 ...	Cornwall	12.60	...	12.60	1,106	44.85	13.63	58·48	5,056
Do. ...	508 ...	Cornwall Extended	.05	...	.05	4	.05	...	.05	4
Do. ...	369 ...	Enterprise	...	...	...	...	...	3.67	3.67	284
Do. ...	510 ...	Excelsior Extended	...	.05	.05	5	...	.05	.05	5
Do. ...	497 ...	Excelsior Tin Mining Co., Ltd. ...	...	...	...	...	...	4.05	4.05	281
Do. ...	337 ...	Gladstone	...	4.51	4.51	366	...	60.96	60.96	5,194
Do. ...	375 ...	(Glasgow)	...	...	...	...	.93	.61	1.54	150
Do. ...	35, 169, 218, 272, 287, 295, 296, 331, 375, 395, 421, 425	Greenbushes Development Co., Ltd.	...	124.50	124.50	10,790	.35	584.75	585.10	46,532
Do. ...	(147) ...	Haphazard	...	...	...	...	.28	8.79	9.07	573
Do. ...	35 ...	(Horan's)	...	...	...	...	...	188.35	188.35	11,605
Do. ...	169 ...	(Horan's No. 1 North) ...	...	...	...	...	...	9.50	9.50	684
Do. ...	515 ...	Kapanga	2.85	...	2.85	261	2.85	...	2.85	261
Do. ...	73, 233, 271	King Tin leases	...	8.30	8.30	688	3.76	27.13	30.89	2,882
Do. ...	331 ...	(Lady Esther)	...	...	...	...	...	10.00	10.00	744
Do. ...	454 ...	Legado	...	4.30	4.30	273	...	9.90	9.90	828
Do. ...	470 ...	Little Wonder	...	6.85	6.85	690	5.00	37.93	42.93	3,998
Do. ...	374 ...	Lost and Found	2.06	...	2.06	183	10.41	.85	11.26	1,120
Do. ...	507 ...	Lost and Found North ...	2.15	...	2·15	184	2.15	...	2.15	184
Do. ...	460, 461 ...	Mt. Jones leases	...	31.25	31.25	3,250	...	45.00	45.00	4,560
Do. ...	73 ...	(Nelson)	...	...	...	...	...	22.40	22.40	1,675
Do. ...	73, 233 ...	(Nelson leases)	...	...	...	...	...	61.01	61.01	4,164
Do. ...	513 ...	New Moon	...	.31	.31	26	...	.31	.31	26
Do. ...	17, 24 ...	New Zealand Syndicate, N.L. ...	...	...	...	...	...	.80	.80	50
Do. ...	(413, 423, 424), 425, 470, (471)	(Nickel Kramer Tin Mining Co., N.L.)	...	...	...	...	...	9.17	9.17	726

TABLE X.—*Quantity and Value of BLACK TIN, etc.*—continued.

Locality.	Number of Lease, Claim, or Area.	Registered Name of Company or Lease.	1910. Quantity. Lode.	1910. Quantity. Stream.	1910. Quantity. Total.	1910. 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.	£
GBEENBUSHES MINERAL FIELD—*continued.*										
Greenbushes ..	(396, 397), 460, 461, (479, 480)	(Norilup Tin Mining and Dredging Co., Ltd.)	...	...	...	...	...	3.82	3.82	291
Do. ...	504 ...	Old Bunbury	...	10.00	10.00	829	...	18.65	18.65	1,434
Do. ...	271 ...	(Pioneer)	...	...	...	...	...	1.84	1.84	117
Do. ...	505 ...	Scotia	...	7.02	7.02	545	...	12.27	12.27	877
Do. ...	(300) ...	South Cornwall	.85	...	.85	62	.85	...	.85	62
Do. ...	450, 458, 485, 486, 487, 488, 489	Stanhope United leases ...	...	26.80	26.80	2,756	...	138.29	138.29	12,036
Do. ...	218 ...	(W.A. Mt. Bischoff) ...	...	...	...	...	...	5.38	5.38	342
Do. ...	501 ...	Westralia	...	.90	.90	64	...	.90	.90	64
Do. ...	(391), 454	(Westralia and Legado leases)	...	...	...	...	...	20.89	20.89	1,645
Do. ...	454, 501	(Westralia and Legado leases)	...	...	...	...	...	13.99	13.99	944
Do. ...	436 ...	(Westralian Gully Tin Co., Ltd.)	.85	..	.85	52	.85	...	.85	52
Do. ...	(381, 435), 436, 472, (478)	(Westralian Gully Tin Co., Ltd.)	...	...	...	...	5.53	34.38	39.91	3,183
Do. ...	35, 169 (195), 218, (221, 228), 272, 287, (293), 295, (299, 310), 375	(Westralian Stanneries, Ltd.) ...	...	...	...	...	...	109.33	109.33	8,171
Do. ...	...	Voided leases	...	...	...	...	52.74	329.87	382.61	29,870
Do. ...	Loc. 289, 290	Freehold Ground (Clarth and others)	...	...	...	...	...	318.04	318.04	28,959
Do. ...	...	Sundry claims	.81	55.86	56.67	4,722	16.50	5,267.38	5,283.88	348,177
		Totals	**25.06**	**292.65**	**317.71**	**27,974**	**149.94**	**7,486.05**	**7,635.99**	**538,656**

TABLE XI.

QUANTITY AND VALUE OF TANTALITE REPORTED TO THE MINES DEPARTMENT DURING 1910, AND TOTALS TO DATE.

Locality.	Number of Lease, Claim, or Area.	Registered Name of Company or Lease.	1910. Quantity. Lode.	1910. Quantity. Stream.	1910. Quantity. Total.	1910. 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	...	...	...	...	2·25	32·30	34·55	5,558
Do. ...	...	Sundry claims ...	...	...	...	...	...	51·50	51·50	6,124
		Totals	...	...	...	...	**2·25**	**83·80**	**86·05**	**11,682**
GREENBUSHES MINERAL FIELD.										
Greenbushes	369 ...	Enterprise	...	...	...	...	...	3·19	3·19	1,804
		Totals	...	...	...	...	...	**3·19**	**3·19**	**1,804**

TABLE XII.

QUANTITY AND VALUE OF COPPER ORE REPORTED TO THE MINES DEPARTMENT DURING 1910, AND TOTALS TO DATE.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1910.			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 Copper Mine	...	...	...	7·77	1·90	190
		Totals	...	...	...	**7·77**	**1·90**	**190**
WEST PILBARA GOLDFIELD.								
Croydon ...	31 ...	Evelyn: British Exploration of Australasia, Ltd.	...	...	...	549.00	96.00	6,463
Do.	...	Voided leases	...	...	...	55.00	12.65	870
Egina	...	Voided leases	...	...	...	542.00	104.15	6,643
Roebourne ...	118 ...	Ena Reward	...	...	...	20.00	2.87	150
Do.	64 ...	Fortune	20.67	4.94	297	51.07	11.68	690
Do.	77 ...	Lilly Blanche	...	...	...	997.00	186.99	17,541
Do.	G.M.L. 150	Q.E.	94.00	9.95	573	135.10	16.60	964
Do.	P.A. 100 ...	(Smallpage, F.)	...	...	...	37.00	8.43	482
Do.	135 ...	Wait-a-while	20.00	5.91	383	20.00	5.91	383
Do.	...	Voided leases	...	...	...	274.50	62.14	4,316
Whim Creek ...	34 ...	(Balla Balla Copper Mines, Ltd.) ...	...	...	...	2,009.00	166.33	12,036
Do.	Loc. 71 ...	Whim Well Copper Mines, Ltd. ...	8,345.13	1,059.81	63,608	28,087.13	4,426.10	270,537
Do.	...	Voided leases	...	...	...	30.00	5.50	250
		Totals	**8,479.80**	**1,080.61**	**64.861**	**32,806.80**	**5,105.35**	**321,325**
ASHBURTON GOLDFIELD.								
Red Hill ...	...	Voided leases...	...	...	...	175·50	33·85	2,126
Uaroo	81 ...	Walgo Copper Mine	...	...	...	10·75	4·31	259
Do. ...	...	Voided leases...	...	...	...	12·50	2·94	185
		Totals	...	...	...	**198·75**	**41·10**	**2,570**
EAST MURCHISON GOLDFIELD.								
LAWLERS DISTRICT.								
Kathleen Valley	12 ...	Shepherd	...	...	...	6·77	1·32	69
		Totals	...	...	...	**6·77**	**1·32**	**69**
MURCHISON GOLDFIELD.								
NANNINE DISTRICT.								
Gabanintha ...	(4N) ...	(Lady Alma)	...	...	...	6·50	1·50	135
Do. ...	(4N) ...	Lady Alma: Star of the East G.M., Co., Ltd.	...	...	...	608·00	44·00	2,823
Do. ...	G.M.Ls.379N, 504N, 505N	Mountain View leases	...	...	...	127·00	38·10	2,681
		Totals	...	...	...	**741·50**	**83·60**	**5,639**
DAY DAWN DISTRICT.								
Day Dawn ...	G.M.L. 14D	Croesus: Murchison Associated G.Ms., Ltd.	...	...	...	6·50	1·02	84
Do. ...	P.A. 65D	(Canning, G.C.)	...	...	...	25·21	2·50	190
Do. ...	...	Voided leases...	...	...	...	15·65	3·15	167
		Totals	...	...	...	**47·36**	**6·67**	**441**

TABLE XII.—*Quantity and Value of COPPER ORE, etc.*—continued.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1910. Quantity. Ore.	1910. Quantity. Metallic Copper.	1910. Value.	TOTALS TO DATE. Quantity. Ore.	TOTALS TO DATE. Quantity. Metallic Copper.	TOTALS TO DATE. Value.
			tons.	tons.	£	tons.	tons.	£
YALGOO GOLDFIELD.								
Twin Peaks ...	P.A. 155...	(Summers, S.D.)	...	...	...	19·50	3·49	227
Wadgingarra ...	6 ...	Olive Queen	...	...	...	13·91	·98	91
		Totals	...	...	...	**33·41**	**4·47**	**318**
NORTHAMPTON MINERAL FIELD.								
Geraldine ...	...	Voided leases...	...	...	...	136·50	36·05	1,992
		Totals	...	...	...	**136·50**	**36·05**	**1,992**
YANDANOOKA MINERAL FIELD.								
Arrino	...	Sundry claims	...	...	...	126·05	18·48	1,386
Yandanooka ...	Freehold Gd.	Muggawa Copper Mine	...	...	...	7·50	1·20	96
Do. ...	...	Voided leases...	...	...	...	38·00	7·95	407
		Totals	...	...	...	**171·55**	**27·63**	**1,889**
MOUNT MARGARET GOLDFIELD.								
MOUNT MORGANS DISTRICT.								
Eulaminna ...	[10c, 11c], (12c, 37c.)	(Mount Malcolm Copper Mine) ...	...	...	...	13,516·00	1,001·98	70,754
Do. ...	[10c, 11c,] 4f, 5f	(Mount Malcolm Copper Mine)...	...	...	...	3,839·00	418·00	17,065
Do. ...	[10c, 11c], (12c, 37c)	(Murrin Copper Mines, Ltd.) ...	...	...	...	19,165·00	798·50	45,817
Do. ...	4f, 5f, 11f, 12f	West Australian Copper Co., Ltd....	...	...	...	9,794·05	1,976·08	80,199
Murrin Murrin...	18f ...	Nangeroo	...	...	...	6·80	3·00	160
Do. ...	...	Voided leases...	...	...	...	1,525·29	248·04	16,662
Mt. Margaret ...	G.M.L. 66f	Mt. Morven	...	...	...	11·53	2·40	163
		Totals	...	...	...	**47,857·67**	**4,448·00**	**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	·42	33
Do. ...	...	Sundry claims	...	...	...	1·42	·40	18
		Totals	...	...	...	**6·12**	**·82**	**51**
EAST COOLGARDIE GOLDFIELD.								
EAST COOLGARDIE DISTRICT.								
Boorara... ...	100e ...	Premier Copper Mine	...	...	...	50·67	6·22	330
		Totals	...	...	...	**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.	1910.			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	22.53	2.80	159	33.06	4.00	256
Do.	184 ...	Christmas Gift	...	...	...	189.05	19.84	1,226
Do.	G.M.L. 147	Fair Play	...	...	...	34.04	.03	2
Do.	G.M.Ls. 136, 137, 138 (139)	Flag Gold and Copper Mining Co., Ltd.	398.00	23.99	1,376	2,107.84	144.75	8,494
Do.	52, 94 ...	(Harbour View leases)	...	...	...	604.36	76.80	4,524
Do.	52, 94 ...	Harbour View leases	...	...	...	435.29	51.66	2,667
Do.	G.M.L. 98	Hillsborough	...	...	...	667.84	10.04	666
Do.	(G.M.L. 150)	Kundip	...	...	...	5.08	.93	56
Do.	52, 94 ...	Ravensthorpe G.M. Syndicate, N.L.	...	...	...	132.56	24.36	1,382
Do.	...	Voided leases	...	...	...	705.36	78.01	5,126
Do.	...	Sundry claims	8.95	.97	55	64.53	9.13	660
Mt. Desmond ...	335 ...	Comstock	17.99	1.99	115	17.99	1.99	115
Do.	95 ...	(Elverdton)	...	...	...	130.00	5.70	570
Do.	95 ...	(Elverdton: Phillips River Options Syndicate, N.L.).	...	...	...	2,946.02	401.43	22,657
Do.	95 ...	Elverdton: Phillips River Gold and Copper Co., Ltd.	14,631.90	1,011.11	57,777	17,146.68	1,246.30	70,951
Do.	168 ...	(Elverdton South)	...	...	...	18.48	2.39	119
Do.	275 ...	Ironclad	171.51	32.55	1,870	245.28	42.93	2,388
Do.	109 ...	(Mt. Desmond)	...	...	...	198.87	30.77	1,640
Do.	109 ...	Mt. Desmond: Phillips River Gold and Copper Co., Ltd.	359.12	53.27	3,045	1,645.03	196.22	16,820
Do.	119 ...	P.L.P.	14.83	2.54	151	208.66	33.69	2,277
Do.	...	Voided leases	...	...	...	600.61	95.58	5,776
Do.	...	Sundry claims	...	...	...	34.10	6.58	433
Ravensthorpe ...	(205) ...	Ballarat	...	...	...	199.70	21.70	1,876
Do.	(295) ...	Commonwealth	...	...	...	19.98	2.08	103
Do.	(124) ...	Emily Hale	...	...	...	132.27	21.43	1,192
Do.	(310) ...	Kurracca	3.35	.29	17	3.35	.29	17
Do.	116 ...	Last Chance	47.24	9.68	581	991.07	157.03	9,363
Do.	16 ...	(Marion Martin)	...	...	...	865.69	130.61	6,650
Do.	16 ...	Marion Martin: Phillips River Gold and Copper Co., Ltd.	274.83	39.62	2,259	1,151.75	113.21	7,424
Do.	(7) ...	Mary	9.36	1.19	71	884.62	120.53	6,245
Do.	175 ...	(Mount Benson)	...	...	...	605.19	73.64	3,702
Do.	175 ...	Mount Benson: Phillips River Gold and Copper Co., Ltd.	54.74	7.61	465	1,142.40	80.21	5,692
Do.	331 ...	Mount Benson Extended ...	8.91	2.38	132	8.91	2.38	132
Do.	15 ...	(Mount Cattlin)	...	...	...	281.56	31.35	1,716
Do.	15 ...	(Mt. Cattlin: Mt. Cattlin Copper Mining Co., Ltd.)	...	...	...	6,608.76	333.59	28,841
Do.	15 ...	(Mt. Cattlin: Phillips River Gold and Copper Co., Ltd.)	...	...	...	1,263·76	80.26	7,646
Do.	15 ...	Mt. Cattlin: Phillips River Gold and Copper Co., Ltd.	8,964.65	416.20	23,993	11,831.30	583.15	32,898
Do.	219 ...	Mt. Cattlin West	76.64	12.95	772	138.14	20.07	1,259
Do.	(204) ...	New Moon	...	...	...	62.37	7.82	618
Do.	114 ...	Surprise	...	...	...	471.62	57.70	3,605
Do.	...	Voided leases	...	...	...	1,362.10	153.47	9,359
Do.	...	Sundry claims	8.06	.77	43	148.87	12.51	695
West River ...	(293) ...	Last Venture	...	...	...	35.57	5.23	276
Do.	...	Voided leases	...	...	...	8.47	2.18	138
Do.	...	Sundry claims	...	...	...	118.29	22.20	1,698
		From Goldfield generally	799.04	65.10	3,864	801.81	68.75	4,123
		Totals	**25,871.65**	**1,685.03**	**96,745**	**57,308.28**	**4,584.52**	**284,073**
STATE GENERALLY.								
Jerramungup ...	(59H) ...	(Netty Copper Mine)	...	...	...	3·08	1·26	40
Twin Peaks ...	(P.A. 105H)	(Tibbetts, W.H.)	...	...	...	13·50	2·27	193
		Totals	...	...	...	**16·58**	**3·53**	**233**

TABLE XIII.

QUANTITY AND VALUE OF IRONSTONE REPORTED TO THE MINES DEPARTMENT DURING 1910, AND TOTALS TO DATE.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1910.		TOTALS TO DATE.	
			Quantity.	Value.	Quantity.	Value.
			tons.	£	tons.	£
WEST PILBARA GOLDFIELD.						
Whim Creek ...	...	Voided leases	...	...	100·00	300
		Totals	...	...	**100·00**	**300**
EAST COOLGARDIE GOLDFIELD.						
EAST COOLGARDIE DISTRICT.						
Boulder	...	Voided leases	...	...	450·00	247
		Totals	...	...	**450·00**	**247**
STATE GENERALLY.						
Avon			...	...	22,223 00	16,241
Clackline			...	...	18,253·50	8,789
Coates' Paddock			...	...	4,712·00	3,277
Greenbushes			...	...	7,418·00	4,629
Kooland Island—Yampi Souud			10·50	12	10·50	12
Werribee			...	..	4,600·00	3,200
		Totals	**10·50**	**12**	**57,280·00**	**36,148**

TABLE XIV.

QUANTITY AND VALUE OF LEAD ORE REPORTED TO THE MINES DEPARTMENT DURING 1910, AND TOTALS TO DATE.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1910.			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
Narra Tarra ...	...	Sundry claims ...	...	...	...	225·00	27·00	185
Northampton ...	1472	Baddera Mine	185·10	136·67	1,777	185·10	136·67	1,777
Do. ...	80	Ethel Maude	...	...	...	10·00	6·50	128
Do. ...	...	Voided leases ...	...	...	...	106·75	66·08	1,048
Victoria	...	Voided leases ...	...	...	...	19·00	12·54	212
		Totals	**185·10**	**136·67**	**1,777**	**602·85**	**290·40**	**3,811**

TABLE XV.

QUANTITY AND VALUE OF SILVER-LEAD ORE REPORTED TO THE MINES DEPARTMENT DURING 1910 AND TOTALS TO DATE.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1910.		TOTALS TO DATE.	
			Quantity.	Value.	Quantity.	Value.
			tons.	£	tons	£
ASHBURTON GOLDFIELD.						
Ashburton ...	...	Voided leases	...	...	56·90	429
Uaroo	43, 49	Uaroo Silver-Lead Mines	...	...	1,167·25	10,434
		Totals	...	...	**1,224·15**	**10,863**

TABLE XVI.

QUANTITY AND VALUE OF COAL REPORTED TO THE MINES DEPARTMENT DURING 1910, AND TOTALS TO DATE.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1910.		TOTALS TO DATE.	
			Quantity.	Value.	Quantity.	Value.
			tons.	£	tons.	£
COLLIE RIVER MINERAL FIELD.						
Collie ...	197, etc.	Cardiff Coal Mining Co., Ltd.	40,100·79	16,723	243,907·32	105,154
Do. ...	151, etc.	(Collie-Boulder Coal Co., Ltd.)	...	...	71,512·70	26,319
Do. ...	244, etc.	Collie Co-operative Collieries, Ltd.	76,374·28	36,397	232,715·68	104,861
Do.	88 (pt. of)	Collie Proprietary Coalfields of W.A., Ltd. (No. 1 Pit) ...	10,460·00	5,192	438,013·55	223,026
Do. ...	85–100	Collie Proprietary Coalfields of W.A., Ltd. (No. 2 Pit) ...	60,219·75	28,661	549,303·15	253,727
Do. ...	151, etc.	Scottish Collieries Company	67,127·50	23,495	208,117·25	72,833
Do. ...	250–254, 256	Westralian Coal Mining Co., Ltd.	7,883·74	3,231	9,018·79	3,754
Do. ...	...	Voided leases	...	...	25,569·85	12,930
		Totals	**262,166·06**	**113,699**	**1,778,158·29**	**822,424**

TABLE XVII.

QUANTITY AND VALUE OF LIMESTONE REPORTED TO THE MINES DEPARTMENT DURING 1910, AND TOTALS TO DATE.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1910.		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 ASBESTOS REPORTED TO THE MINES DEPARTMENT DURING 1910. AND TOTALS TO DATE.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1910.		TOTALS TO DATE.	
			Quantity.	Value.	QUANTITY.	VALUE.
			tons.	£	tons.	£
PILBARA GOLDFIELD.						
MARBLE BAR DISTRICT.						
Soansville ...	155, etc.	Pilbara Asbestos Co., Ltd.	...	...	42·83	1,754
		Totals	...	...	**42·83**	**1,754**

TABLE XIX.

QUANTITY AND VALUE OF WOLFRAM REPORTED TO THE MINES DEPARTMENT DURING 1910, AND TOTALS TO DATE.

LOCALITY.	NUMBER OF LEASE, CLAIM OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1910.			TOTALS TO DATE.		
			Ore.	Metallic contents.	Value.	Ore.	Metallic contents.	Value.
			tons.	tons.	£	tons.	tons.	£
STATE GENERALLY.								
Derby ...	146H	Taylor's Wolfram Reward	22·00	1·00	30	27·00	2·00	120
		Totals	**22·00**	**1·00**	**30**	**27·00**	**2·00**	**120**
MURCHISON GOLDFIELD.								
CUE DISTRICT.								
Cuddingwarra	P.A.953	(Edward Genge)	20·00	·85	85	20·00	·85	85
		Totals	**20·00**	**·85**	**85**	**20·00**	**·85**	**85**

TABLE XX.

QUANTITY AND VALUE OF DIAMONDS REPORTED TO THE MINES DEPARTMENT DURING 1910, AND TOTALS TO DATE.

LOCALITY.	NUMBER OF LEASE, CLAIM, OR AREA.	REGISTERED NAME OF COMPANY OR LEASE.	1910.		TOTALS TO DATE.	
			Quantity.	Value.	Quantity.	Value.
			carats.	£	carats.	£
PILBARA GOLDFIELD.						
NULLAGINE DISTRICT.						
Nullagine ...	M.R.C.6L	(Morgans, A. E.)	...	...	...	24
		Totals	...	...	...	**24**

TABLE

RETURN OF ORE AND MINERALS OTHER THAN GOLD

EAR.	COPPER.												
	COPPER ORE.										COPPER INGOT, MATTE, ETC.		Total Value of Copper Exported.
	West Pilbara Gf.		Northampton Mf.		Phillips River Gf.		State generally.		Total.		State generally.		
	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	Quantity.	Value.	
	tons.	£	tons.	£	tons.	£	tons.	£	tons.	£	tons.	£	£
1850	...	...	...	...	...	...	...	...	...	...	...	...	...
1	...	...	...	...	...	...	...	...	...	...	...	...	...
2	...	...	...	...	...	...	...	...	...	...	...	...	..
3	...	...	[2]†	7	...	...	...	...	...	7	...	...	7
4	...	...	...	...	...	...	...	...	...	...	...	...	...
5	...	...	2	26	...	...	...	...	2	26	...	...	26
6	...	...	57	1,018	...	...	...	...	57	1,018	...	...	1,018
7	...	...	80	1,920	...	...	...	...	80	1,920	...	...	1,920
8	...	...	433	9,531	...	...	...	...	433	9,531	...	...	9,531
9	...	...	941	14,122	...	...	...	...	941	14,122	...	...	14,122
1860	...	...	517	8,021	...	...	...	...	517	8,021	...	...	8,021
1	...	...	409	6,339	...	...	...	...	409	6,339	...	...	6,339
2	...	...	783	12,536	...	...	...	...	783	12,536	...	...	12,536
3	...	...	763	12,208	...	...	...	...	763	12,208	...	...	12,208
4	...	...	1,076	17,216	...	...	...	...	1,076	17,216	...	...	17,216
5	...	...	886	13,290	...	...	...	...	886	13,290	...	...	13,290
6	...	...	557	8,362	...	...	...	...	557	8,362	...	...	8,362
7	...	...	337	5,055	...	...	...	...	337	5,055	...	...	5,055
8	...	...	83	1,245	...	...	...	...	83	1,245	...	...	1,245
9	...	...	155	2,325	...	...	...	...	155	2,325	...	...	2,325
1870	...	...	6	90	...	...	...	...	6	90	..	...	90
1	...	...	...	...	...	...	...	...	...	...	...	...	...
2	...	...	...	...	...	...	...	...	...	...	...	...	...
3	...	...	56	848	...	...	...	...	56	848	...	...	848
4	...	...	67	998	...	...	...	...	67	998	...	...	998
5	...	...	205	3,071	...	...	...	...	205	3,071	...	...	3,071
6	...	...	279	4,185	...	...	...	...	279	4,185	...	...	4,185
7	...	...	54	803	...	...	...	...	54	803	...	...	803
8	...	...	9	135	...	...	...	...	9	135	...	...	135
9	...	...	...	...	...	...	...	...	...	...	...	...	...
1880	...	...	8	120	...	...	...	...	8	120	...	...	120
1	...	...	...	...	...	...	...	...	...	...	...	...	...
2	...	...	2	23	...	...	...	...	2	23	...	...	23
3	...	...	5	75	...	...	...	...	5	75	...	...	75
4	...	...	118	1,770	...	...	...	...	118	1,770	...	...	1,770
5	...	...	120	1,793	...	...	...	...	120	1,793	...	...	1,793
6	...	...	249	3,735	...	...	...	...	249	3,735	...	...	3,735
7	...	...	23	345	...	...	...	...	23	345	...	...	345
8	...	...	88	1,488	...	...	...	...	88	1,488	...	...	1,488
9	...	...	112	1,904	...	...	...	...	112	1,904	...	...	1,904
1890	...	...	8	136	...	...	...	...	8	136	...	...	136
1	263	4,462	...	...	...	...	...	...	263	4,462	...	...	4,462
2	[1]† 412	6,319	155	2,377	...	...	...	...	567	8,696	...	...	8,696
3	50	606	...	...	...	...	...	...	50	606	...	...	606
4	...	...	...	...	...	...	...	...	...	...	...	...	...
5	802	12,832	24	120	...	...	...	...	826	12,952	...	...	12,952
6	6	100	...	...	...	...	...	...	6	100	...	...	100
7	65	731	21	302	...	...	...	...	86	1,033	...	...	1,033
8	281	3,334	75	932	...	...	...	...	356	4,266	...	...	4,266
9	1,404	31,979	587	9,473	...	...	...	...	1,991	41,452	...	...	41,452
1900	544	10,696	...	...	105	2,411	197	3,355	846	16,462	249	17,475	33,937
1	1,058	26,464	1	10	1,205	22,107	397	6,322	2,661	54,903	880	55,866	110,769
2	68	1,698	20	330	162	2,469	33	489	283	4,986	175	7,918	12,904
3	4	180	25	460	302	3,538	15	349	346	4,527	1,075	33,288	37,815
4	50	500	...	...	11	154	310	3,378	371	4,032	102	3,827	7,859
5	...	...	...	...	80	2,808	713	8,576	793	11,384	794	53,867	65,251
6	112	3,232	...	...	...	...	224	2,930	336	6,162	343	30,367	36,529
7	...	...	...	...	...	...	3,727	61,493	3,727	61,493	1,602	141,883	203,376
8	...	...	...	...	...	...	2,503	29,272	2,503	29,272	479	27,819	57,091
9	...	...	..	...	...	...	6,959	59,541	6,959	59,541	833	45,100	104,641
1910	...	...	...	...	...	...	6,309	27,271	6,309	27,271	1,281	68,657	95,928
Total	...	...	...	..	...	..	...	...	37,767	488,340	7,813	486,067	974,407

[1] † *See* Woodward's Mining Handbook, Perth: By Authority, 1895; page 123.

[2] † Weight not stated.

XXI.

ENTERED FOR EXPORT FROM 1850 TO 1910, 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
...	...	...	...	[3]† 698	62,989	698	62,989	...	...	62,989	9
...	...	...	...	[3]† 500	45,129	500	45,129	...	...	45,129	1910
...	...	..	...	...	...	11,013	808,143	867	117,214	925,357	Total

† Probably the produce of Pilbara Goldfield and Greenbushes Mineral Field.

TABLE XXI.—*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	...	...
9 ...	176,843	18,778	...	...	211	1,199	...	...
1910 ...	176,139	18,777	...	...	248	1,433	...	...
Total ...	**2,092,805**	**249,162**	**33,644**	**364,756**	**1,188**	**9,504**	**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 1910, 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
...	...	26 *1,447	28 1,138	...	...	[9]† 173	4,977	402,906	7
[2]†	1,242	13 *9,612	11 7,747	[2]†	10	[10]†53	3,248	176,827	8
...	...	353 *85,647	183 93,781	...	...	[11]†283	1,079	282,650	9
...	...	3 *48,876	2 38,400	...	...	[12]†14	437	200,106	1910
...	1,253	148,429	143,680	...	304	...	17,079	2,698,808	Total.

* Bunker Coal. [7]† Antimony ore. [8]† Includes Tantalite, 18 tons, valued at £5,729. [9]† Includes Antimony ore, 25 tons ... ... = £630
Scheelite, 4 tons ... ... = 140
Spelter, 73 tons ... ... = 3,390
N.E.I., 71 tons ... ... = 817
Total ... £4,977

[10]† Includes Spelter, 11 tons ... ... = £98
Tantalite ... ... = £400
N.E.I., 42 tons ... ... = £2,750
Total ... £3,248

[11]†Includes Wolfram, 1 ton ... = £100
Zinc Ingots, 6 tons ... = £113
Zinc Concentrates, 13 tons ... = £131
Other Concentrates, 29 tons ... = £108
N.E.I., 234 tons ... = £627
Total ... £1,079

[12]† Includes Zinc Ingots, 3 tons ... ... = £62
Zinc Concentrates, 9 tons ... = £85
Wolfram, 2 tons ... ... = £190
N.E.I., ½ton ... ... = £100
Total ... £437

PART III.—ALL MINES.

TABLE XXII.

MILLING AND CYANIDING PLANTS ERECTED IN THE RESPECTIVE GOLDFIELDS, DISTRICTS, AND MINERAL FIELDS ON THE 31ST DECEMBER, 1910, AND THE TOTAL VALUE OF MINING MACHINERY.

Mining Centre and Lease or Area.	Name of Mine, Company, or Works.	Milling.										Cyaniding.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.												
		Number of Heads of Stampers.	Prospecting Mills.	Ball Mills.	Krupp Mills.	Griffin Mills.	Huntington Mills.	Tremain Mills.	Flint Mills.	Other Crushers.	Puddlers.	Leaching Vats.	Agitating Vats.	Filter Presses.	
	KIMBERLEY GOLDFIELD.														
The Brockman. 141 A.C., M.A. 8	Mt. Bradley Tunnelling Claim ..	25	..	..	..	..	1	..	..	..	..	..	..	..	..
Ruby Creek. (61) M.A. 9	Ruby Queen	20	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**45**	..	..	..	..	**1**	..	..	..	..	..	..	..	**£5,000**
	PILBARA GOLDFIELD.														
	MARBLE BAR DISTRICT.														
Bamboo Creek. 695	Bulletin	10	..	..	..	..	..	..	..	..	..	3	..	..	..
Lallarookh. R.C. 112	British Exploration of Australasia, Ltd.	..	..	..	..	..	..	..	..	..	..	10	..	..	..
Marble Bar. 615	British Exploration of Australasia, Ltd.	5	..	..	..	..	..	..	..	..	..	..	..	..	..
∧	State Battery, Marble Bar	5	..	..	..	..	..	..	..	..	..	..	..	..	..
Warrawoona. 483	British Exploration of Australasia, Ltd.	10	..	..	..	..	..	..	..	..	..	..	..	..	..
M.A. 18	Klondyke Battery	5	..	..	..	..	..	..	..	..	..	..	..	..	..
M.A. 18	Osborne Cyanide Works	..	..	..	..	..	..	..	..	..	..	3	..	..	..
M.A. 27	Salgash Public Crushing Works ..	15	..	..	..	..	..	..	..	..	..	..	..	..	..
Yandicoogina. 505	Bow Bells Battery	10	..	..	..	..	..	..	..	..	..	..	..	..	..
M.A. 26	Lady Adelaide Battery	10	..	..	..	..	..	..	..	..	..	4	..	..	..
M.A. 26	Sanderson's Works	..	..	..	..	..	..	..	..	..	..	3	..	..	..
	Total	**70**	..	..	..	..	..	..	..	..	..	**23**	..	..	**£17,227**
	NULLAGINE DISTRICT.														
Eastern Creek. M.A. 11L	Doherty and Garland's Works ..	10	..	..	..	..	..	..	..	..	..	4	..	..	..
Middle Creek. 106L	Barton	10	..	..	..	..	..	..	..	..	..	3	2	..	..
Mosquito Creek M.A. 6L	Royer's Public Crushing Works ..	10	..	..	..	..	..	..	..	..	..	..	..	..	..
20-Mile Sandy. ∧9718	State Battery, 20-Mile Sandy ..	10	..	..	..	..	..	..	..	..	..	3	..	..	..
	Total	**40**	..	..	..	..	..	..	..	..	..	**10**	**2**	..	**£7,298**
	WEST PILBARA GOLDFIELD.														
Station Peak. 149	Prince Regent	10	..	..	..	..	..	..	..	..	..	5	..	..	..
Weerianna. 151, etc.	Porteminna Battery	10	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**20**	..	..	..	..	..	..	..	..	..	**5**	..	..	**£2,400**

TABLE XXII.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area.	NAME OF MINE, COMPANY, OR WORKS.	MILLING.										CYANIDING.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.												
		Number of Heads of Stampers.	Prospecting Mills.	Ball Mills.	Krupp Mills.	G iffin Mills.	Huntington Mills.	Tremain Mills.	Flint Mills.	Other Crushers.	Puddlers.	Leaching Vats.	Agitating Vats.	Filter Presses.	
	PEAK HILL GOLDFIELD.														
1P, etc.	Peak Hill Goldfield, Ltd.	40	1	..	..	..	..	..	..	2	2	8	3	9	..
⩚10258	State Battery, Ravelstone	10	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**50**	**1**	..	..	..	..	..	..	**2**	**2**	**8**	**3**	**9**	**£73,870**
	EAST MURCHISON GOLDFIELD.														
	LAWLERS DISTRICT.														
Bronzewing.															
1017	Bronzewing	3	..	..	..	..	..	..	..	..	..	2	..	..	..
Kathleen Valley.															
113	Nil Desperandum	10	..	..	..	..	..	..	..	..	..	..	..	..	..
382	Yellow Aster G.M. Co., N.L. ..	10	..	..	..	..	..	..	..	..	..	4	..	..	..
Lake Darlot.															
⩚11723	State Battery, Lake Darlot	10	..	..	..	..	..	..	..	..	..	4	..	..	..
Lawlers.															
M.A. 24	Cinderella Battery	5	..	..	..	..	..	..	..	..	..	7	..	..	..
M.A. 11	Lawlers Public Battery	10	..	..	..	..	..	..	..	1	..	..	..	..	..
37, etc.	Northern Mines, Ltd.	40	..	..	..	..	..	..	..	..	2	6	5	V.3	..
408, etc.	Vivien G.M. Co., Ltd.	20	..	..	..	..	..	..	..	2	..	9	5	1 V.2	..
Sir Samuel.															
21, etc.	Bellevue, Ltd.	40	..	..	..	..	..	..	..	..	..	..	..	..	..
⩚	State Battery, Sir Samuel	5	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**153**	..	..	..	..	..	..	..	**3**	**2**	**32**	**10**	**6**	**£120,423**
	WILUNA DISTRICT.														
New England.															
69J	Empire	5	..	..	..	..	..	..	..	..	..	..	..	..	..
Wiluna.															
2J, etc.	Golden Age: Wiluna G.Ms., Ltd. ..	20	1	..	..	..	..	..	..	..	..	5	..	..	..
6J, etc.	Gwalia Consolidated, Ltd.	30	..	..	..	..	..	..	..	..	..	15	..	V.3	..
23J, etc.	Wiluna G.Ms., Ltd.	5	..	..	..	..	..	..	..	..	..	4	..	..	..
⩚9909	State Battery, Wiluna	10	..	..	..	..	..	..	..	..	..	4	..	..	..
	Total	**70**	**1**	..	..	..	..	..	..	..	..	**28**	..	**3**	**£84,694**
	BLACK RANGE DISTRICT.														
Birrigrin.															
128B, etc.	Pelerin leases	5	..	..	..	..	..	..	..	..	..	4	..	..	..
M.A. 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.															
135B	Montagu Boulder	10	..	..	..	..	..	..	..	..	..	4	..	..	..
Sandstone.															
22B, etc.	Black Range Kohinoor Mining Co., N.L.	10	..	..	..	..	..	..	..	..	..	..	..	..	..
4B, etc.	Black Range Mining Co., N.L. ..	30	..	..	..	..	..	..	..	..	..	11	..	..	..
6B, etc.	Oroya Black Range, Ltd.	20	..	..	..	..	..	..	..	2	..	8	8	1	..
196B, etc.	Sandstone Development G.M. Co., N.L.	10	..	..	..	..	..	..	..	..	..	8	..	..	..
⩚5254	State Battery, Black Range	10	..	..	..	..	..	..	..	..	..	12	..	..	..
Youanme.															
⩚12187	State Battery, Youanme	5	..	..	..	..	..	..	..	..	..	2	..	..	..
	Total	**125**	..	..	..	..	..	..	..	**2**	..	**64**	**8**	**1**	**£101,198**

TABLE XXII.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area.	Name of Mine, Company, or Works.	Milling.										Cyaniding.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.												
		Number of Heads of Stampers.	Prospecting Mills.	Ball Mills.	Krupp Mills.	Griffin Mills.	Huntington Mills.	Tremain Mills.	Flint Mills.	Other Crushers.	Puddlers.	Leaching Vats.	Agitating Vats.	Filter Presses.	
	MURCHISON GOLDFIELD.														
	Cue District.														
Barrambie.															
1458, etc.	Barrambie Ranges G.M. Co., N.L. ..	10	..	..	..	..	..	..	..	..	..	2	..	..	..
Cuddingwarra.															
1741	Emily	3	..	..	..	..	..	..	..	..	..	..	..	..	..
T.A. 19	(Heydon's Cyanide Works) ..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
595	Victory United G.M. Co., N.L. ..	20	..	..	..	..	..	..	..	..	..	5	..	..	..
Cue.															
203, etc.	Cue No. 1	20	..	..	..	..	..	..	..	..	..	8	..	..	..
1174	Cue Victory	..	..	..	..	..	..	..	..	..	..	4	..	..	..
1020	Gem of Cue Extended	15	..	..	..	..	..	..	..	..	..	5	..	..	..
1374	Salisbury	10	..	..	..	..	..	..	..	..	..	6	..	..	..
Eelya															
1696	Jasper Queen	5	..	..	..	..	..	..	..	..	..	4	..	..	..
Erroll's.															
1743	Great Saddle	10	..	..	..	..	..	..	..	..	..	8	2	..	..
Mindoolah.															
1619	Mindoolah Main Reef	10	..	..	..	..	..	..	..	..	..	3	..	..	..
Tuckanarra.															
1771	Risk	5	..	..	..	..	..	..	..	..	..	..	..	..	..
⩚10256	State Battery, Tuckanarra	10	..	..	..	..	..	..	..	..	..	4	..	..	..
	Total	**118**	..	..	..	..	..	..	..	..	..	**50**	**2**	..	**£41,994**
	Nannine District.														
Abbott's.															
(171N)	Mt. Vranizan	10	..	..	..	..	..	..	..	..	..	3	..	..	..
(172N, etc.)	(New Murchison King G.Ms., Ltd.)	10	..	..	..	..	..	..	..	..	..	4	..	..	..
	Abbott's Cyanide Works (Purcell's)	..	..	..	..	..	..	..	..	..	..	5	..	..	..
Burnakura.															
238N	Alliance	..	..	..	..	..	..	..	..	..	..	3	..	..	..
509N, etc.	Federal City leases	10	..	..	..	..	..	..	..	..	..	5	..	..	..
408N, etc.	New Alliance leases	25	..	..	..	..	..	..	..	..	..	6	..	..	..
Chesterfield.															
361N	Margueritta	10	..	..	..	..	..	..	..	..	..	4	1	..	..
Gabanintha.															
379N, etc.	Mountain View leases	5	..	..	..	..	..	..	..	..	..	2	1	..	..
1016N	Tumbulgum	10	..	..	..	..	..	..	..	..	..	3	..	..	..
Gum Creek.															
953N	Connecticut	5	..	..	..	..	..	..	..	..	..	..	..	..	..
Meekatharra.															
477N, etc.	Fenian leases	10	..	..	..	..	..	..	..	..	..	6	..	..	..
475N, etc.	Ingliston Consols Extended leases	10	..	..	..	..	..	..	..	..	..	5	..	..	..
398N, etc.	Ingliston Extended G.Ms., Ltd. ..	10	..	..	..	..	..	..	..	..	..	5	3	1	..
533N	Marmont	10	..	..	..	..	..	..	..	..	..	6	..	..	..
⩚9142	State Battery, Meekatharra	10	..	..	..	..	..	..	..	..	..	6	..	..	..
Nannine.															
16N, etc.	Mount Hall leases	10	..	..	..	..	..	..	..	..	..	4	..	..	..
⩚10910	State Battery, Nannine	5	..	..	..	..	..	..	..	..	..	3	..	..	..
984N	Welcome Stranger	10	..	..	..	..	..	..	..	..	..	3	..	..	..
Quinn's.															
622N	Phœnix	5	..	..	..	..	..	..	..	..	..	2	..	..	..
843N	Princess Dagmar	5	..	..	..	..	..	..	..	..	..	..	..	..	..
⩚	State Battery, Quinn's	10	..	..	..	..	..	..	..	..	..	..	..	..	..
Stakewell.															
593N	Kohinoor South G.M. Co., Ltd. ..	10	..	..	..	..	..	..	..	..	..	8	..	..	..
Yaloginda.															
708N	Gibralter	10	..	..	..	..	..	..	..	..	..	..	..	..	..
666N	Karangahaki	10	..	..	..	..	..	..	..	..	..	4	..	..	..
937N	North Pole	10	..	..	..	..	..	..	..	..	..	..	..	..	..
709N	Rocklee	10	..	..	..	..	..	..	..	..	..	..	..	..	..
174N	Star of the East, Ltd.	20	..	..	..	..	..	..	..	..	..	6	..	..	..
	Total	**250**	..	..	..	..	..	..	..	..	..	**93**	**5**	**1**	**£91,528**

TABLE XXII.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area.	NAME OF MINE, COMPANY, OR WORKS.	MILLING. Batteries. Number of Heads of Stampers.	MILLING. Other Mills. Prospecting Mills.	Ball Mills.	Krupp Mills.	Griffin Mills.	Huntington Mills.	Tremain Mills.	Flint Mills.	Other Crushers.	Puddlers.	CYANIDING. Leaching Vats.	Agitating Vats.	Filter Presses.	Total Value of all Mining Machinery.
	MURCHISON GOLDFIELD— *continued.*														
	DAY DAWN DISTRICT.														
Day Dawn.															
389D, etc.	Creme D'Or leases	5	..	..	..	..	..	..	..	..	..	5	..	..	..
1D, etc.	Great Fingall Consolidated, Ltd.	40	..	..	..	..	..	..	..	..	..	18	11	3 V.2	..
(320D)	Mount Fingall	5	..	..	..	..	..	..	..	..	..	..	..	..	..
138D	Murchison Associated G.Ms., Ltd.	10	..	..	..	..	..	..	..	..	..	4	..	..	..
Webb's Patch.															
472D	Hill End	5	..	..	..	..	..	..	..	..	..	4	..	..	..
	Total	**65**	..	..	..	..	..	..	..	..	..	**31**	**11**	**5**	**£208,585**
	MOUNT MAGNET DISTRICT.														
Lennonville.															
964M	Empress	5	..	..	..	..	..	..	..	..	..	..	..	..	..
(30M)	(Long Reef)	15	..	..	..	..	..	..	..	1	..	5	..	..	..
(693M)	(Piedmont)	10	..	..	..	..	..	..	..	..	..	..	..	..	..
A7499	State Battery, Lennonville	10	..	2	..	..	..	..	..	..	..	3	..	..	..
(57M)	(Welcome)	..	..	..	..	..	..	1	..	..	..	..	..	..	..
972M	Wheel of Fortune	3	..	..	..	..	..	..	..	..	..	..	..	..	..
Mt. Magnet.															
314M, etc.	Black Hill Development Co., Ltd.	10	..	..	..	..	..	..	..	..	..	7	..	..	..
953M	Brittannia	..	..	..	..	..	..	1	..	..	..	..	..	..	..
752M, etc.	Great Boulder No. 1, Ltd.	10	..	..	..	..	..	..	..	..	1	..	5	1	..
(784M)	(New Chum)	10	..	..	..	..	..	..	..	..	..	..	..	..	..
(M.A. 2M)	(New Chum Cyanide Works)	..	..	..	..	..	..	..	..	..	..	12	..	..	..
(856M)	(Paris)	..	..	..	..	..	1	..	..	..	..	..	..	..	..
A9769	State Battery, Mt. Magnet	10	..	..	..	..	..	..	..	..	..	9	..	..	..
Moyagee.															
(766M)	(Ophir)	5	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**88**	..	**2**	..	..	**1**	**2**	..	..	**1**	**36**	**5**	**1**	**£35,290**
	YALGOO GOLDFIELD.														
Field's Find.															
414, etc.	Reward G.Ms., Ltd.	20	..	..	..	..	..	..	..	..	..	..	..	..	..
Gullewa.															
170, etc.	Victory United G.M. Co., N.L.	20	..	..	..	..	..	..	..	..	..	10	..	..	..
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	..	..	..	..	..	..	..	..	..	..	..	..	..
Yalgoo.															
495, etc.	Ivanhoe G.M. Co., N.L., Yalgoo	5	..	..	..	..	..	..	..	..	..	..	..	..	..
549	Royal Mint	5	..	..	..	..	..	..	..	..	..	3	..	..	..
Yuin.															
409, etc.	Royal Standard leases	15	3	..	..	..	..	2	..	..	..	..	..	..	..
(556)	Standard Grade	5	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**100**	**4**	..	..	..	..	**2**	..	..	..	**18**	..	..	**£25,745**
	MT. MARGARET GOLDFIELD.														
	MT. MORGANS DISTRICT.														
Australia United.															
P.A. 318F	(Jenkins and party)	..	..	..	..	..	..	..	..	..	..	7	..	..	..
Korong.															
254F	Alicia	10	..	..	..	..	..	..	..	..	..	..	..	..	..
Morgans.															
285F	David III. Cyanide Works	..	..	..	..	..	..	..	..	..	..	3	..	..	..
7F	(Guest's lease)	20	..	..	..	..	..	..	..	..	..	..	..	..	..
8F	Millionaire, Ltd.	5	..	..	..	..	..	..	..	..	..	4	..	..	..
29F, 30F	Transvaal leases	10	..	..	..	..	..	..	..	..	..	4	2	..	..
5F, etc.	Westralia Mt. Morgans G.Ms. Co., Ltd.	60	..	..	..	..	..	..	..	2	..	36	4	3 V.1	..

TABLE XXII.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area.	NAME OF MINE, COMPANY, OR WORKS.	MILLING.										CYANIDING.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.												
		Number of Heads of Stampers.	Prospecting Mills.	Ball Mills.	Krupp Mills.	Griffin Mills.	Huntington Mills.	Tremain Mills.	Flint Mills.	Other Crushers.	Puddlers.	Leaching Vats.	Agitating Vats.	Filter Presses.	
	MT. MARGARET GOLDFIELD —*continued.*														
	MT. MORGANS DISTRICT—*continued.*														
Mt. Margaret.															
(174F)	Mt. Margaret Lake View ..	2	..	..	..	..	..	..	..	..	..	..	..	..	..
66F	Mt. Morven	5	..	..	..	..	..	..	..	..	..	3	..	..	..
Murrin Murrin															
208F	Alix Junior	5	..	..	..	..	..	..	..	..	..	6	..	..	..
193F, etc.	Hill's Proprietary G.Ms., Ltd. ..	20	..	..	..	..	..	..	..	2	..	11	5	1	..
200F	Princess Alix	5	..	..	..	..	..	..	..	..	..	7	..	..	..
	Total	**142**	..	..	..	..	..	..	..	**4**	..	**81**	**11**	**5**	**£191,629**
	MT. MALCOLM DISTRICT.														
Diorite King.															
1179C	King of the Hills	5	..	..	..	..	..	..	..	..	..	6	..	..	..
1172C	Leeta Gold Mining Co., Ltd. ..	5	..	..	..	..	..	..	..	..	..	6	..	..	..
Leonora.															
218C, etc.	Gwalia Proprietary, Ltd.	40	..	..	..	..	..	..	..	..	..	14	..	..	..
1083C	Katie	..	..	..	..	..	..	..	..	..	..	4	..	..	..
195C, etc.	Leonora Gold Blocks	10	..	..	..	..	..	..	..	..	..	5	..	..	..
210C, etc.	Leonora Main Reefs, Ltd.	10	..	..	..	..	..	..	..	..	..	5	..	..	..
1217C	Ping Pong	10	..	..	..	..	..	..	..	..	..	..	..	..	..
190C, etc.	Sons of Gwalia, Ltd.	50	..	..	..	..	..	..	..	..	..	16	14	V.2	..
198C, etc.	Sons of Gwalia South G.Ms., Ltd. ..	10	..	..	..	..	..	..	..	2	..	..	3	1 V.1	..
⩚7121	State Battery, Leonora	10	..	..	..	..	..	..	..	..	..	8	3	V.1	..
Malcolm.															
W.R. 84C	Hill and party	..	..	..	..	..	..	1	..	..	..	..	..	..	..
..	Mulcahy's Cyanide Works ..	..	..	..	..	..	..	..	..	..	..	4	..	..	..
1175C	Malcolm Prospecting Co., N.L. ..	10	..	..	..	..	..	..	..	..	..	4	..	..	..
991C	Richmond Gem	10	..	..	..	..	..	..	..	..	..	4	..	..	..
Mertondale.															
638C, etc.	Merton's Reward G.M. Co., Ltd. ..	15	..	..	..	..	..	..	..	1	..	8	2	1	..
Mt. Clifford.															
1261C	Bannockburn G.M. Co., Ltd. ..	5	..	..	..	..	..	..	..	..	..	5	..	..	..
M.A. 9C	Mt. Clifford Battery	10	..	..	..	..	..	..	..	..	..	2	..	..	..
Pig Well.															
⩚9681	State Battery, Pig Well	10	..	..	..	..	..	..	..	..	..	5	..	..	..
Randwick.															
987C	Anglo-Saxon	5	..	..	..	..	..	..	..	..	..	..	..	..	..
978C	Randwick Battery	10	..	..	..	..	..	..	..	..	..	2	..	..	..
Webster's Find.															
(1224C)	Webster's	5	..	..	..	..	..	..	..	..	..	..	..	..	..
Wilson's Patch.															
1120C	Great Western	10	..	..	..	..	..	..	..	..	..	6	..	..	..
	Total	**240**	..	..	..	..	..	**1**	..	**3**	..	**104**	**22**	**6**	**£164,145**
	MT. MARGARET DISTRICT.														
Burtville.															
1644T, etc.	Great Hill G.Ms., Ltd.	5	..	..	..	..	..	..	..	..	..	..	..	..	..
943T, etc.	Mikado	5	..	..	..	..	..	..	..	..	..	2	..	..	..
781T, etc.	Sailor Prince	5	..	..	..	..	..	..	..	..	..	..	..	..	..
1726T	Sunrise	8	..	..	..	..	..	..	..	..	..	..	..	..	..
⩚8914	State Battery, Burtville	10	..	..	..	..	..	..	..	..	..	3	..	..	..
Erlistoun.															
(1838T)	Golden Spinnifex	5	..	..	..	..	..	..	..	..	..	..	..	..	..
(771T)	Little Doris	5	..	..	..	..	..	..	..	..	..	4	..	..	..
P.A. 496T	Mulga Queen	10	..	..	..	..	..	..	..	..	..	4	..	..	..
(1665T)	Westralia Tasmania	15	..	..	..	..	..	..	..	..	..	4	..	..	..
Euro.															
1771T	Childe Harold	..	..	..	..	..	..	..	..	..	..	5	..	..	..
Laverton.															
371T	Augusta G.M. Co., N.L.	10	..	..	..	..	..	..	..	..	..	6	..	..	..
1797T	Craiggiemore	10	..	..	..	..	..	..	..	..	1	6	4	..	..
829T, etc.	Ida H. G.M. Co., Ltd.	10	..	..	..	..	..	..	..	..	..	7	..	..	..
1783T	Just in Time	5	..	..	..	..	..	..	..	..	..	..	..	..	..
1840T	Mary Mac G.M. Co., N.L.	10	..	..	..	..	..	..	..	..	..	3	..	..	..
715T, etc.	Lancefield G.M. Co., Ltd.	50	5	..	..	..	..	..	..	..	..	..	6	6	..
⩚8386	State Battery, Laverton	10	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**173**	**5**	..	..	..	..	..	..	..	**1**	**44**	**10**	**6**	**£141,881**

TABLE XXII.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area.	NAME OF MINE, COMPANY, OR WORKS.	MILLING.										CYANIDING.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.												
		Number of Heads of Stampers.	Prospecting Mills.	Ball Mills.	Krupp Mills.	Griffin Mills.	Huntington Mills.	Tremain Mills.	Flint Mills.	Other Crushers.	Puddlers.	Leaching Vats.	Agitating Vats.	Filter Presses.	
	NORTH COOLGARDIE GOLDFIELD.														
	MENZIES DISTRICT.														
Comet Vale.															
5217z	Gladsome	10	..	..	..	..	..	..	..	2	..	6	..	..	..
5211z, etc.	Sand Queen Gold Mines, Ltd. ..	10	..	..	..	..	..	..	..	..	..	6	..	..	..
Menzies.															
2821z, etc.	Florence leases	10	..	..	..	..	..	..	..	..	..	3	..	..	..
5302z	Lady Harriett	5	..	..	..	..	..	..	..	..	..	3	..	..	..
2835z	Lady Sherry	5	..	..	..	..	..	..	..	..	..	..	..	..	..
4855z, etc.	Lusitania leases	5	..	..	..	..	..	..	..	..	..	..	..	..	..
4895z, etc.	Maranoa leases	10	..	..	..	..	..	..	..	..	..	4	..	..	..
4931z, etc.	Menzies Consolidated G.Ms., Ltd. ..	20	..	..	..	..	..	..	..	..	..	29	..	1	..
2820z	Menzies Gold Mine	10	..	..	..	..	..	..	..	..	..	4	..	..	..
T.A., 47z	Menzies Milling Co., Ltd.	20	..	..	..	..	..	..	..	2	..	4	3	V. 1	..
3100z	Menzies Mining and Exploration Corporation, Ltd.	10	..	..	..	..	..	..	..	..	..	14	3	V. 1	..
⋀10153	State Battery, Menzies	10	..	..	..	..	..	..	..	..	..	3	3	V. 1	..
Mt. Ida.															
5354z	Balkis G.M. Syndicate, Ltd.	5	..	..	..	..	..	..	..	..	..	2	..	..	..
5307z	Mt. Ida Cyanide Works	..	..	..	..	..	..	..	..	..	..	6	..	..	..
5243z, etc.	Mt. Ida Meteor	5	..	..	..	..	..	..	..	..	..	6	..	..	..
⋀10173	State Battery, Mt. Ida	10	..	..	..	..	..	..	..	..	..	6	..	..	..
	Total	**145**	..	..	..	..	..	..	..	**4**	..	**96**	**9**	**4**	**£73,538**
	ULARRING DISTRICT.														
Davyhurst.															
458U, etc.	Callion G.M. Co. (W.A.), N.L.	10	..	..	..	..	..	..	..	..	..	4	..	..	..
459U, etc.	Golden Pole G.Ms., Ltd.	20	..	..	..	..	..	..	..	..	..	11	3	1	..
613U, etc.	Great Ophir Gold Corporation, Ltd. ..	..	..	..	..	..	..	..	..	..	..	44	..	..	..
438U, etc.	Westralia Waihi G.Ms., N.L.	10	..	..	..	..	..	..	..	..	..	6	..	..	..
Mulline.															
123U, etc.	Riverina leases	10	..	..	..	..	..	..	..	..	..	6	..	..	..
324U, etc.	Riverina South leases	5	..	..	..	..	..	..	..	..	..	4	..	..	..
⋀7250	State Battery, Mulline	20	..	..	..	..	..	..	..	..	..	5	2	1	..
⋀7250	State Battery Reserve (Edmonds & Gidney)	..	..	..	..	..	..	..	..	..	..	2	..	..	..
Mulwarrie.															
⋀8045	State Battery, Mulwarrie	10	..	..	..	..	..	..	..	..	..	4	..	..	..
	Total	**85**	..	..	..	..	..	..	..	..	..	**86**	**5**	**2**	**£34,722**
	NIAGARA DISTRICT.														
Desdemona.															
673G, etc.	Desdemona leases	5	..	..	..	..	..	..	..	..	..	5	..	..	..
685G	Othello	5	..	..	..	..	..	..	..	..	..	..	..	..	..
⋀	State Battery, Desdemona	2	..	..	..	..	..	..	..	..	..	..	..	..	..
Kookynie.															
320G, etc.	Champion leases	10	..	..	..	..	..	..	..	..	..	..	..	..	..
26G etc.	Cosmopolitan Proprietary, Ltd. ..	50	..	..	..	..	..	..	..	..	..	14	4	2 V. 1	..
518G, etc.	Heather leases	10	..	..	..	..	..	..	..	..	..	4	..	..	..
419G, etc.	Orion Mines, Ltd.	10	..	..	..	..	..	..	..	..	..	6	..	..	..
⋀4797	State Battery, Kookynie	10	..	..	..	..	..	..	..	..	..	6	..	..	
505, etc.	W. E. G. leases	10	..	..	..	..	..	..	..	..	..	..	..	..	..
Tampa.															
349G, etc.	Grafter leases	5	..	..	..	..	..	..	..	..	..	3	..	..	..
	Total	**117**	..	..	..	..	..	..	..	..	..	**38**	**4**	**3**	**£74,904**

TABLE XXII.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area.	Name of Mine, Company, or Works.	Milling.										Cyaniding.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.												
		Number of Heads of Stampers.	Prospecting Mills.	Ball Mills.	Krupp Mills.	Griffin Mills.	Huntington Mills.	Tremain Mills.	Flint Mills.	Other Crushers.	Puddlers.	Leaching Vats.	Agitating Vats.	Filter Presses.	
	NORTH COOLGARDIE GOLDFIELD—*continued.*														
	YERILLA DISTRICT.														
Edjudina.															
401R, etc.	Edjudina Goldfields, Ltd.	10	..	..	..	..	..	..	..	..	..	..	..	..	..
M.A. 3R	Pauley & McCoy's Works	..	..	..	..	..	..	..	..	..	..	4	..	..	..
539R, etc.	Senate leases	5	..	..	..	..	..	..	..	..	..	5	..	..	..
Linden.															
903R, etc.	Devon leases	5	..	..	..	..	..	..	..	..	..	7	2	..	..
928R	Great Carbine	..	1	..	..	..	..	..	..	..	..	..	..	..	..
⩚	State Battery, Linden	2	..	..	..	..	..	..	..	..	..	3	..	..	..
Pinjin.															
⩚10190	State Battery, Pinjin	5	..	..	..	..	..	..	..	..	..	3	..	..	..
Yarri.															
⩚10255	State Battery, Yarri	10	..	..	..	..	..	..	..	..	..	4	..	..	..
Yerilla.															
W.R., 28R	State Battery, Yerilla	5	..	..	..	..	..	..	..	..	..	3	..	..	..
Yunda-mindera.															
493R	Golden Treasure Mining Co., N.L.	10	..	..	..	..	..	..	..	..	..	4	..	..	..
450R, etc.	Potosi leases	10	..	..	..	..	..	..	..	..	..	12	..	..	..
	Total	**62**	**1**	..	..	..	..	..	..	..	..	**45**	**2**	..	**£24,411**
	BROAD ARROW GOLDFIELD.														
Bardoc.															
T.A., 28W	Vettesburg Cyanide Works	..	..	..	..	..	..	..	..	..	..	7	..	..	..
M.A., 21W	Zoroastrian Works	10	..	..	..	..	..	..	..	..	..	8	..	..	..
Black Flag.															
1384W	Lady Bountiful	13	..	..	..	..	..	..	..	..	..	..	..	..	..
Broad Arrow.															
(75W)	(Broad Arrow Consols G.M. Co., Ltd.)	10	..	..	..	..	..	..	..	..	..	5	..	..	..
3W, etc.	Claremont Gold Mine, Ltd.	20	..	..	..	..	..	..	..	..	..	4	..	..	..
Carnage.															
M.A., 22W	Regan's Carnage Battery	10	..	..	..	..	..	..	..	..	..	4	..	..	..
Paddington.															
61W	Gwalia Proprietary, Ltd.	10	..	..	..	..	..	..	..	..	..	12	..	..	..
45W	Mount Corlic	10	..	..	..	..	..	..	..	..	..	..	..	..	..
W.R., 68W	Northey's Venture Mill	10	..	..	..	..	..	..	..	1	..	6	..	..	..
Siberia.															
1286W	Golden	..	1	..	..	..	..	..	..	..	..	..	..	..	..
M.A., 23W	Ora Banda Battery	15	..	..	..	..	..	..	..	..	..	6	..	..	..
M.A., 29W	Pole Battery	10	..	..	..	..	..	..	..	1	..	5	..	..	..
⩚4290	State Battery, Siberia	5	..	..	..	..	..	..	..	..	..	3	..	..	..
	Total	**123**	**1**	..	..	..	..	..	..	**2**	..	**60**	..	..	**£35,156**
	NORTH-EAST COOLGARDIE GOLDFIELD.														
	KANOWNA DISTRICT.														
Gindalbie.															
1047X	Eclipse	5	..	..	..	..	..	..	..	..	..	6	..	..	..
1123X	Gindalbie	10	..	..	..	..	..	..	..	..	..	..	..	..	..
392X, etc.	Gippsland, Ltd.	10	..	..	..	..	..	..	..	..	..	12	..	..	..
⩚	State Battery, Kalpini	10	..	..	..	..	..	..	..	..	..	5	..	..	..
1174X	United	5	..	..	..	..	..	..	..	..	..	..	..	..	..
Gordon.															
1223X, etc.	Sirdar G.M. Co., Ltd.	10	..	..	..	..	..	..	..	..	..	4	..	..	..
Kanowna.															
(918X)	Government Well	..	..	..	..	..	..	..	..	..	1	..	..	..	..
(187X)	Last Chance Cyanide Plant	..	..	..	..	..	..	..	..	..	..	8	..	..	..
1263X, etc.	North White Feather G.Ms., Ltd.	20	..	..	..	..	..	..	..	..	..	8	..	..	..
1263X, etc.	North White Feather Filter Press Plant	..	..	..	..	..	..	..	..	..	..	3	2	2	..
(1214X)	Rollo's Reward	3	..	..	..	..	..	..	..	..	..	..	..	..	..
9X, etc.	White Feather Main Reefs (1906), Ltd.	40	..	..	..	..	..	..	..	..	..	18	..	..	..
M.A., 45X	Donovan's Works	..	1	..	..	..	..	..	..	..	..	..	..	..	..
M.A., 43X	Monmouth Works	..	..	..	..	..	..	..	..	..	..	4	..	..	..
M.A., 39X	Mudlark Works	..	..	..	..	..	..	..	..	..	1	..	..	..	..
M.A., 19X	Old Cement Works	15	..	..	..	..	..	..	..	..	..	8	..	..	..
L.C., 57X	Riedle & Norton's Works	10	..	..	..	..	..	..	..	..	..	6	..	..	..
M.A., 54X	W. A. Slimes Co., Ltd.	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Mulgarrie.															
1228X	Lady Pratt	10	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**148**	**1**	..	..	..	..	..	..	..	**2**	**82**	**2**	**3**	**£46,392**

TABLE XXII.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area.	NAME OF MINE, COMPANY, OR WORKS.	MILLING.										CYANIDING.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.												
		Number of Heads of Stampers.	Prospecting Mills.	Ball Mills.	Krupp Mills.	Griffin Mills.	Huntington Mills.	Tremain Mills.	Flint Mills.	Other Crushers.	Puddlers.	Leaching Vats.	Agitating Vats.	Filter Presses.	
	NORTH-EAST COOLGARDIE GOLDFIELD—*continued.*														
	KURNALPI DISTRICT.														
Kurnalpi.															
M.A., 2K	Billy Billy	5	..	..	..	..	..	..	..	..	..	..	..	..	..
(314K)	Lady of the Lake	..	..	..	..	..	..	..	..	..	1	..	..	..	..
Mulgabbie.															
M.A., 3K	Glover's Works	..	1	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**5**	**1**	..	..	..	..	..	..	..	**1**	..	..	..	**£180**
	EAST COOLGARDIE GOLDFIELD.														
	EAST COOLGARDIE DISTRICT.														
Boorara.															
3908E, etc.	Golden Ridge G.M. Co., Ltd.	20	..	..	..	..	..	..	..	..	..	6	3	V.1	..
Boulder.															
38E, etc.	Associated Gold Mines of W.A., Ltd.	10	..	..	12	..	..	..	..	..	2	..	5	9	..
49E, etc.	Associated Northern Blocks (W.A.), Ltd.	..	..	..	3	..	..	..	..	..	1	..	6	3	..
352E, etc.	Chaffer's G.M. Co., Ltd.	..	..	..	3	..	..	..	..	..	..	..	4	4	..
90E, etc.	Crœsus South G.Ms., Ltd.	20	..	..	..	..	..	..	..	..	..	8	..	..	..
351E, etc.	Golden Horseshoe Estates Co., Ltd.	150	..	..	..	..	..	..	15	..	1	20	22	20	..
50E, etc.	Great Boulder No. 1, Ltd.	10	..	..	..	..	..	..	..	..	1	6	..	..	..
66E, etc.	Great Boulder Perseverance G.Ms., Ltd.	..	..	8	..	..	..	..	2	2	..	..	24	13	..
16E, etc.	Great Boulder Proprietary G.Ms., Ltd.	..	1	..	4	12	..	..	..	9	4	..	22	24	..
3643E, etc.	Hainault G.Ms., Ltd.	40	..	..	..	..	..	..	..	..	1	40	..	2	..
M.A. 4E	Hannan's Central Works	20	..	..	..	..	..	..	..	..	..	12	3	2	..
M.A. 11E	Hannan's Lakeside	..	..	..	..	..	..	..	..	..	..	1	..	..	..
4317E, etc.	Idaho leases	5	..	..	..	..	..	..	..	..	..	..	..	..	..
946E	Ironsides North	10	..	..	..	..	..	..	..	3	..	7	..	..	..
31E, etc.	Ivanhoe Gold Corporation, Ltd.	110	..	..	..	..	..	..	..	..	..	36	11	9	..
22E, etc.	Kalgurli Gold Mines, Ltd	..	..	..	9	..	..	..	..	..	1	20	.	7	..
15E, etc.	Lake View and Star, Ltd.	75	..	1	2	..	..	..	6	7	..	5	24	12	..
281E, etc.	North Kalgurli Co., Ltd.	20	..	..	..	..	..	..	..	..	..	9	3	1	..
410E, etc.	Oroya Links, Ltd.	55	..	..	2	..	..	..	6	..	4	6	25	8	..
1208E, etc.	South Kalgurli G.Ms., Ltd.	..	..	..	4	..	..	..	..	..	..	..	5	7	..
M.A 50E	White Heart Battery	10	..	..	..	..	..	..	..	..	..	5	.	..	..
Feysville.															
Block 50	Hampton Properties, Ltd.	5	..	..	..	..	..	..	..	..	..	..	..	..	..
Kalgoorlie.															
796E, etc.	Bonnie Lass leases	5	..	..	..	..	..	..	..	..	..	6	..	..	..
M.A. 5E	Brown Hill Consols, Ltd.	20	..	..	..	..	..	..	..	..	..	18	3	2	..
4E, etc.	Cassidy's Hill Works: Paringa Mines (1909), Ltd.	..	..	..	..	..	1	..	..	..	..	3	..	..	..
1694E, etc.	Golden Zone leases	15	..	..	..	..	..	..	..	2	..	8	..	..	..
14E, etc.	Hannan's Consols leases	..	..	..	..	..	2	..	..	..	..	8	..	..	..
943E, etc.	Hannan's Proprietary, Ltd.	..	..	..	..	..	3	..	..	..	..	12	..	..	..
97E, etc.	Hannan's Reward, Ltd.	30	..	..	..	..	..	..	..	..	..	20	..	..	..
4001E, etc.	Hidden Secret leases	5	..	..	..	..	..	..	..	..	..	2	..	..	..
M.A. 2E	Kalgoorlie Gold Recovery Co., Ltd.	..	..	1	..	..	..	..	..	..	..	14	3	2	..
4293E	Milanese	..	..	..	..	..	1	..	..	..	..	4	..	..	..
4347E	Mystery	..	..	..	..	..	1	..	..	..	..	3	..	..	..
3880E, etc.	Westralian Machinery Corporation, Ltd.	20	..	..	..	..	..	..	..	..	..	..	..	..	..
	Total	**655**	**1**	**10**	**39**	**12**	**8**	..	**29**	**23**	**15**	**279**	**163**	**126**	**£1,576,382**
	BULONG DISTRICT.														
Bulong.															
(1043Y)	Hilda Works	..	..	..	..	..	..	..	..	..	..	6	..	..	..
Randall's.															
A9539	State Battery, Bulong	10	..	..	..	..	..	..	..	..	..	4	..	..	..
	Total	**10**	..	..	..	..	..	..	..	..	..	**10**	..	..	**£2,730**

TABLE XXII.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area.	Name of Mine, Company, or Works.	Milling.										Cyaniding.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.												
		Number of Heads of Stampers.	Prospecting Mills.	Ball Mills.	Krupp Mills.	Griffin Mills.	Huntington Mills.	Tremain Mills.	Flint Mills.	Other Crushers.	Puddlers.	Leaching Vats.	Agitating Vats.	Filter Presses.	
	COOLGARDIE GOLDFIELD.														
	COOLGARDIE DISTRICT.														
Bonnievale.															
(595)	Gem leases	15	..	..	..	..	..	..	..	..	..	2	..	..	..
1552	Vale of Coolgardie	10	..	..	..	..	..	..	..	..	..	5	..	..	..
144, etc.	Westralia and East Extension G.Ms., Ltd.	40	..	..	..	..	..	..	..	..	..	30	4	2	..
Burbanks.															
134, etc.	Burbanks Birthday G.Ms., Ltd.	60	..	..	..	..	..	..	..	..	..	6	..	..	..
2985, etc.	Burbanks Main Lode (1904), Ltd.	20	..	..	..	..	..	..	..	..	..	12	..	..	..
2160	Lady Robinson	10	..	..	..	..	..	..	..	..	..	8	..	..	..
Coolgardie.															
(3918, etc.)	Coolgardie Redemption G.M. Co., N.L.	10	..	..	..	..	..	..	..	..	..	..	..	..	..
4392	Garden Gully	10	..	..	..	..	..	..	..	..	..	..	..	..	..
73, etc.	Griffiths	10	..	..	..	..	..	..	..	..	..	16	..	..	..
4297	King Solomon	10	..	..	..	..	..	..	..	1	..	3	..	..	..
139, etc.	New Bayley's Mines, Ltd.	10	..	..	..	..	..	..	..	..	..	5	..	..	..
4152, etc.	Queen's Cross leases	11	..	..	..	..	..	..	..	..	..	..	..	..	..
A9435	State Battery, Coolgardie	10	..	..	..	..	..	..	..	..	..	3	..	..	..
33, etc.	Tindall's Coolgardie G.M. Co., N.L.	20	..	..	..	..	..	..	..	..	1	20	..	..	..
(3415)	Trude's Works	..	..	..	..	..	..	..	..	..	..	10	..	..	..
Eundynie.															
4253, etc.	Hidden Secret North leases	10	..	..	..	..	..	..	..	..	..	7	..	..	..
Gibraltar.															
4418, etc.	Reform leases	5	..	..	..	..	..	..	..	..	..	3	..	..	..
4400, etc.	Baroota Wonder leases	10	..	..	..	..	..	..	..	..	..	..	..	..	..
Londonderry.															
4310	Grosmont	10	..	..	..	..	..	..	..	..	..	..	..	..	..
4184, etc.	Sons of Erin leases	10	..	..	..	..	..	..	..	..	..	8	..	..	..
Red Hill.															
4331	Edquist	5	..	..	..	..	..	..	..	..	..	..	..	..	..
Widgiemooltha.															
M.A. 63	Highgate Works	3	..	..	..	..	..	..	..	..	..	3	..	..	..
A7497	State Battery, Widgiemooltha	10	..	..	..	..	..	..	..	..	..	3	..	..	..
	Total	**304**	..	..	..	..	..	..	..	**2**	..	**144**	**4**	**2**	**£112,916**
	KUNANALLING DISTRICT.														
Balgarrie.															
M.A. 13s	Stanley Battery	5	..	..	..	..	..	..	..	..	..	6	..	..	..
Carbine.															
33s	Carbine	10	..	..	..	..	..	..	..	..	..	..	..	..	..
Dunnsville.															
(17s)	North Coolgardie	20	..	..	..	..	..	..	..	..	..	4	..	..	..
Jourdie Hills.															
773s, etc.	Jourdie Enterprise G.M. Syndicate	5	..	..	..	..	..	..	..	1	..	6	..	..	..
369s	Jourdie United G.Ms., Ltd.	10	..	..	..	..	..	..	..	..	..	4	..	..	..
514s	Pride of Jourdie North	5	..	..	..	..	..	..	..	..	..	5	..	..	..
Kintore.															
M.A. 14s	(Berliner and Besta)	5	..	..	..	..	..	..	..	..	..	6	..	..	..
25-Mile.															
696s	Blue Bell leases	5	..	..	..	..	..	..	..	..	..	7	..	..	..
758s	Homeward G.M. Co., Ltd.	..	..	2	..	..	..	..	..	..	..	..	..	..	..
586s	Shamrock leases	5	..	..	..	..	..	..	..	..	..	6	..	..	..
603s	Sydney Mint	5	..	..	..	..	..	..	..	..	..	5	..	..	..
645s	Star of Fremantle	10	..	..	..	..	..	..	..	..	..	4	..	..	..
	Total	**85**	..	**2**	..	..	..	..	..	**1**	..	**53**	..	..	**£19,850**
	YILGARN GOLDFIELD.														
Golden Valley.															
M.A. 11	Violet Syndicate Battery	5	..	..	..	..	..	..	..	..	..	2	1	..	..
829	Pioneer	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Greenmount.															
503, etc.	Greenmount Mines, Ltd.	10	..	..	..	..	..	..	..	..	..	6	..	..	..
550	Sunbeam	5	..	..	..	..	..	..	..	..	..	6	..	..	..
536	Transvaal	20	..	..	..	..	..	..	..	..	..	..	..	..	..

TABLE XXII.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

Mining Centre and Lease or Area.	NAME OF MINE, COMPANY, OR WORKS.	MILLING.										CYANIDING.			Total Value of all Mining Machinery.
		Batteries.	Other Mills												
		Number of Heads of Stampers.	Prospecting Mills.	Ball Mills.	Krupp Mills.	Griffin Mills.	Huntington Mills.	Tremain Mills.	Flint Mills.	Other Crushers.	Puddlers.	Leaching Vats.	Agitating Vats.	Filter Presses.	
	YILGARN GOLDFIELD—*continued.*														
Hope's Hill.															
854	Miller's Cyanide Works	..	..	..	..	..	..	..	..	..	..	7	..	..	..
Jacoletti.															
490, etc.	Jacoletti G.Ms., Ltd.	10	..	..	..	..	..	..	..	..	..	8	..	..	..
714, etc.	Marvel Loch G.M. Co., N.L. ..	10	..	..	..	..	..	..	..	..	..	6	..	..	..
Koolyanobbing															
M.A. 12	(Hewitt and party)	5	..	..	..	..	..	..	..	..	..	..	..	..	..
Parker's Range															
T.A. 22	Andre's Cyanide Works	..	..	..	..	..	..	..	..	..	..	6	..	..	..
508	Australia	5	..	..	..	..	..	..	..	..	..	..	..	..	..
520	Blue Hill	5	..	..	..	..	..	..	..	..	..	4	..	..	..
888, etc.	British and Foreign Development Syndicate, Ltd.	30	..	..	..	..	..	..	..	2	..	6	..	1	..
M.A. 9	Laythers Cyanide Works ..	..	..	..	..	..	..	..	..	..	..	6	..	..	..
665	Never Never	20	..	..	..	..	..	..	..	..	..	4	..	..	..
724	Spring Hill	5	..	..	..	..	..	..	..	..	..	5	..	..	..
	Total	**130**	..	..	..	..	..	..	..	**2**	..	**70**	**1**	**1**	**£35,130**
	DUNDAS GOLDFIELD.														
Buldania.															
(M.A. 28)	Pathway Battery	..	1	..	..	..	..	..	..	..	..	..	..	..	..
Norseman.															
M.A. 32	Break o' Day Cyanide Works ..	10	..	..	..	..	..	..	..	..	..	4	..	..	..
42, etc.	Cumberland G.M. Co., N.L.	10	..	..	..	..	..	..	..	..	..	6	..	..	..
938, etc.	Hampton Uruguay, Ltd. (Lady Miller leases)	10	..	..	..	..	..	..	..	..	..	6	..	..	..
M.A. 33	Lady Mary Battery	10	..	..	..	..	..	..	..	..	..	..	..	..	..
852, etc.	Mararoa G.M. Co., N.L.	20	..	..	..	..	..	..	..	..	2	16	4	V.1	..
914	Oversight	5	..	..	..	..	..	..	..	..	..	..	..	..	..
106, etc.	Princess Royal G.M. Co., N.L. ..	20	..	..	..	..	..	..	..	..	..	5	3	..	..
1021	Princess Royal North	10	..	..	..	..	..	..	..	..	..	3	2	..	..
M.A. 18	Rawlings, Bullen, and Rumble's Works	10	..	..	..	..	..	..	..	..	..	4	..	..	..
A10257	State Battery, Norseman	10	..	..	..	..	..	..	..	..	..	5	2	1	..
990	Viking No. 1	10	..	..	..	..	..	..	..	..	..	..	..	..	..
821, etc.	Westralia Waihi G.Ms., N.L. ..	10	..	..	..	..	..	..	..	1	..	6	..	..	..
	Total	**135**	**1**	..	..	..	..	..	..	**1**	**2**	**55**	**11**	**2**	**£73,117**
	PHILLIPS RIVER GOLDFIELD.														
Kundip.															
95	Elverdton: Phillips River Gold and Copper Co., Ltd.	..	..	..	..	..	..	..	..	1	..	..	..	..	..
136	Flag Gold and Copper Mining Co., Ltd.	5	..	..	..	..	..	..	..	..	..	..	..	..	..
65, etc.	Gem leases	5	..	..	..	..	..	..	..	..	..	4	..	..	..
52, 94	Harbour View leases	10	..	..	..	..	..	..	..	..	..	..	..	..	..
74	Two Boys	10	..	..	..	..	..	..	..	..	..	4	..	..	..
Mount Purchas															
W.R. 19	Mt. Purchas Prospecting Plant ..	..	1	..	..	..	..	..	..	..	..	..	..	..	..
Ravensthorpe.															
M.A. 3	Gilbert Gold Mines, Ltd.	10	..	..	..	..	..	..	..	..	..	..	..	..	..
153	Maori Queen	6	..	..	..	..	..	..	..	..	..	4	..	..	..
15	Mt. Cattlin: Phillips River Gold and Copper Co., Ltd.	..	..	..	..	..	..	..	..	..	1	..	..	..	..
	Total	**46**	**1**	..	..	..	..	..	..	**1**	**1**	**12**	..	..	**£51,555**
	STATE GENERALLY	..	..	..	1	..	..	..	..	1	..	..	..	..	58,000
	Total	..	..	..	**1**	..	..	..	..	**1**	..	..	..	..	**£58,000**

TABLE XXII.—*Milling and Cyaniding Plants erected in the respective Goldfields, Districts, etc.*—continued.

GOLDFIELD.	DISTRICT.	MILLING.										CYANIDING.			Total Value of all Mining Machinery.
		Batteries.	Other Mills.												
		Number of Heads of Stampers.	Prospecting Mills.	Ball Mills.	Krupp Mills.	Griffin Mills.	Huntington Mills.	Tremain Mills.	Flint Mills.	Other Crushers.	Puddlers.	Leaching Vats.	Agitating Vats.	Filter Presses.	
	GOLD MINING.														
KIMBERLEY	..	45	..	..	..	..	1	..	..	..	..	..	..	..	5,000
PILBARA	Marble Bar	70	..	..	..	..	..	..	..	..	..	23	..	..	17,227
	Nullagine	40	..	..	..	..	..	..	..	..	..	10	2	..	7,298
WEST PILBARA	..	20	..	..	..	..	..	..	..	..	..	5	..	..	2,400
ASHBURTON	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
GASCOYNE	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
PEAK HILL	..	50	1	..	..	..	..	..	..	2	2	8	3	9	73,870
EAST MURCHISON	Lawlers	153	..	..	..	..	..	..	..	3	2	32	10	6	120,423
	Wiluna	70	1	..	..	..	..	..	..	..	..	28	..	3	84,694
	Black Range	125	..	..	..	..	..	..	..	2	..	64	8	1	101,198
MURCHISON	Cue	118	..	..	..	..	..	..	..	..	..	50	2	..	41,994
	Nannine	250	..	..	..	..	..	..	..	..	..	93	5	1	91,528
	Day Dawn	65	..	..	..	..	..	..	..	..	..	31	11	5	208,585
	Mt. Magnet	88	..	2	..	..	1	2	..	..	1	36	5	1	35,290
YALGOO	.. .. ..	100	4	..	..	..	..	2	..	..	..	18	..	..	25,745
	Mt. Morgans	142	..	..	..	..	..	..	..	4	..	81	11	5	191,629
MT. MARGARET	Mt. Malcolm	240	..	..	..	..	..	1	..	3	..	104	22	6	164,145
	Mt. Margaret	173	5	..	..	..	..	..	..	..	1	44	10	6	141,881
	Menzies	145	..	..	..	..	..	..	..	4	..	96	9	4	73,538
NORTH COOLGARDIE	Ularring	85	..	..	..	..	..	..	..	..	..	86	5	2	34,722
	Niagara	117	..	..	..	..	..	..	..	..	..	38	4	3	74,904
	Yerilla	62	1	..	..	..	..	..	..	..	..	45	2	..	24,411
BROAD ARROW	.. ..	123	1	..	..	..	..	..	..	2	..	60	..	..	35,156
N.E. COOLGARDIE	Kanowna	148	1	..	..	..	..	..	..	..	2	82	2	3	46,392
	Kurnalpi	5	1	..	..	..	..	..	..	..	1	..	..	..	180
EAST COOLGARDIE	East Coolgardie	655	1	10	39	12	8	..	29	23	15	279	163	126	1,576,382
	Bulong	10	..	..	..	..	..	..	..	..	..	10	..	..	2,730
COOLGARDIE	Coolgardie	304	..	..	..	..	..	..	..	2	..	144	4	2	112,916
	Kunanalling	85	..	2	..	..	..	..	..	1	..	53	..	..	19,850
YILGARN	.. .. ..	130	..	..	..	..	..	..	..	2	..	70	1	1	35,130
DUNDAS	.. .. ..	135	1	..	..	..	..	..	..	1	2	55	11	2	73,117
PHILLIPS RIVER	.. .. ..	46	1	..	..	..	..	..	..	1	1	12	..	..	51,555
STATE GENERALLY	.. .. ..	..	..	..	1	..	..	..	..	1	..	..	..	..	58,000
	Total Gold Mining Machinery ..	**3,799**	**18**	**14**	**40**	**12**	**10**	**5**	**29**	**51**	**27**	**1,657**	**290**	**186**	**£3,531,890**
	TIN MINING.														
PILBARA	Marble Bar	..	..	..	..	..	1	..	..	..	..	..	..	..	25,000
GREENBUSHES TINFIELD	.. ..	10	..	..	..	..	2	..	..	1	2	..	..	..	10,200
	Total Tin Mining Machinery ..	**10**	..	..	..	..	**3**	..	..	**1**	**2**	..	..	..	**£35,200**
	COPPER MINING.														
WEST PILBARA	.. ..	..	..	..	..	..	..	..	..	1	..	..	..	..	24,600
PHILLIPS RIVER	.. ..	..	..	..	..	..	..	..	..	6	..	..	..	..	71,189
	Total Copper Mining Machinery ..	..	..	..	..	..	..	..	..	**7**	..	..	..	..	**£95,789**
	COAL MINING.														
COLLIE RIVER COALFIELD	.. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	59,186
	Total Coal Mining Machinery ..	..	..	..	..	..	..	..	..	..	..	..	..	..	**£59,186**
Total Machinery other than for Gold Mining ..		**10**	..	..	..	..	**3**	..	..	**8**	**2**	..	..	..	**£190,175**
Total all Mining Machinery		**3,809**	**18**	**14**	**40**	**12**	**13**	**5**	**29**	**59**	**29**	**1,657**	**290**	**186**	**£3,722,065**

APPENDIX.

ROYAL MINT, PERTH BRANCH.

Subject to the Regulations, any person may deposit gold at the Mint in his own name Those who cannot attend personally for the purpose may send the gold by an agent or under Police escort.

A circular can be obtained from the Deputy Master of the Mint giving all necesssary information for intending depositors, conditions of the Escort Service, Coining Regulations, etc., etc.

An Escort Service is provided by the Police Department for parcels of all sizes. The consignor pays for the carriage by coach or train, but the escort charges may be collected by the Mint.

Forms for use in connection with gold sent to the Mint by post or under Police escort can be obtained at the Mint.

Charges for Assaying, Refining, and Coinage.

Gross Weight of Deposit in ounces.	Mint Charge.	Gross Weight of Deposit in ounces.	Mint Charge.	Gross Weight of Deposit in ounces.	Mint Charge.
Up to and including—	£ s. d.	Up to and including—	£ s. d.	Up to and including—	£ s. d.
24	0 5 0	400	4 3 4	1,300	10 4 2
30	0 6 3	410	4 5 5	1,400	10 16 8
40	0 8 4	420	4 7 6	1,500	11 9 2
50	0 10 5	430	4 9 7	1,600	12 1 8
60	0 12 6	440	4 11 8	1,700	12 14 2
70	0 14 7	450	4 13 9	1,800	13 6 8
80	0 16 8	460	4 15 10	1,900	13 19 2
90	0 18 9	470	4 17 11	2,000	14 11 8
100	1 0 10	480	5 0 0	2,100	15 4 2
110	1 2 11	490	5 2 1	2,200	15 16 8
120	1 5 0	500	5 4 2	2,300	16 9 2
130	1 7 1	520	5 6 8	2,400	17 1 8
140	1 9 2	540	5 9 2	2,500	17 14 2
150	1 11 3	560	5 11 8	2,600	18 6 8
160	1 13 4	580	5 14 2	2,700	18 19 2
170	1 15 5	600	5 16 8	2,800	19 11 8
180	1 17 6	620	5 19 2	2,900	20 4 2
190	1 19 7	640	6 1 8	3,000	20 16 8
200	2 1 8	660	6 4 2	3,100	21 9 2
210	2 3 9	680	6 6 8	3,200	22 1 8
220	2 5 10	700	6 9 2	3,300	22 14 2
230	2 7 11	720	6 11 8	3,400	23 6 8
240	2 10 0	740	6 14 2	3,500	23 19 2
250	2 12 1	760	6 16 8	3,600	24 11 8
260	2 14 2	780	6 19 2	3,700	25 4 2
270	2 16 3	800	7 1 8	3,800	25 16 8
280	2 18 4	820	7 4 2	3,900	26 9 2
290	3 0 5	840	7 6 8	4,000	27 1 8
300	3 2 6	860	7 9 2	4,100	27 14 2
310	3 4 7	880	7 11 8	4,200	28 6 8
320	3 6 8	900	7 14 2	4,300	28 19 2
330	3 8 9	920	7 16 8	4,400	29 11 8
340	3 10 10	940	7 19 2	4,500	30 4 2
350	3 12 11	960	8 1 8	4,600	30 16 8
360	3 15 0	980	8 4 2	4,700	31 9 2
370	3 17 1	1,000	8 6 8	4,800	32 1 8
380	3 19 2	1,100	8 19 2	4,900	32 14 2
390	4 1 3	1,200	9 11 8	5,000	33 6 8

For every additional 100ozs. the charge is increased by 12s. 6d.

NOTE.—Additional charges (*see* Regulation No. 6) are collected when base metals in a deposit exceed 2 per cent. of its weight.

The following table illustrates the operation of these charges in case of gold of the value of £3 17s. 10½d. an ounce:—

Weight of Deposit.	Rate of Charge per ounce.	Amount of Charge.	Net Value of Deposit.
ozs.	d.	£ s. d.	£ s. d.
50	2·5	0 10 5	194 3 4
100	2·5	1 0 10	388 6 8
600	2·3	5 16 8	2,330 8 4
1,000	2·0	8 6 8	3,885 8 4
5,000	1·6	33 6 8	19,435 8 4
10,000	1·55	64 11 8	38,872 18 4

NOTE.—A proportion of silver in deposits of gold is paid for by the Mint as follows:—

In deposits under 1,000ozs. gross: all silver in excess of 8 per cent. of the weight of the deposit after melting.
„ from 1,000 „ to 5,000 „ „ 6 „ „ „ „
„ „ 5,000 „ „ 10,000 „ „ 5 „ „ „ „
„ „ 10,000 „ upwards „ „ 4 „ „ „ „

The rate at which payment for silver is made is liable to fluctuation.

GOLD ESCORT SERVICE.

TABLE OF ESCORT RATES.

Fixed by the Commissioner of Police.

From	To	Period.	Rate per Ounce.	Remarks.
			d.	
Burtville	Malcolm	Monthly ...	$0\frac{7}{8}$	
Do.	Laverton	Every two months	...	Actual cost: 19s. 3d.
Field's Find	Yalgoo	Monthly ...	2	
Lawlers	Leonora	Do. ...	$0\frac{1}{2}$	For a minimum of 5,500ozs.
Laverton	Malcolm	Do. ...	$0\frac{5}{4}$	Not less than 2,900ozs.
Meekatharra	Nannine	Do. ...	...	If special escort, actual cost. By regular Peak Hill to Nannine escort, regulation charge per hour.
Mt. Sir Samuel	Lawlers	Do. ...	$0\frac{1}{2}$	Not less than 1,600ozs.
Morgans	Malcolm	Do. ...	$0\frac{1}{2}$	Not less than 4,300ozs.
Norseman	Coolgardie	Do. ...	2	
Peak Hill	Nannine	Do. ...	$2\frac{1}{2}$	2,000ozs. to 2,500ozs.
Do.	Do.	Do. ...	2	2,500ozs. to 3,000ozs.
Do.	Do.	Do. ...	$1\frac{3}{4}$	Over 3,000ozs.
Ravensthorpe	Hopetoun	Do. ...	$1\frac{1}{4}$	Not less than 500ozs.
Do.	Do.	Do. ...	$0\frac{5}{8}$	Not less than 1,000ozs.
Do.	Do.	Do. ...	...	Under 500ozs.: Actual cost.
Sandstone	Magnet	Do. ...	...	Actual cost.
Wiluna	Nannine	Do. ...	...	Actual cost.

Police Gold Escort Services not provided for in the Table may be arranged on application to the District Police Officer or the Commissioner of Police.

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. $10\frac{1}{2}$d. 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. $10\frac{1}{2}$d. =
·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.

20th June, 1911.

By Authority: FRED. WM. SIMPSON, Government Printer, Perth.