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THE PROGRESS OF
THE MINERAL INDUSTRY
OF
TASMANIA

FOR THE QUARTER ENDING 31ST DECEMBER, 1909

COMPILED BY

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BY ORDER OF

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MINISTER FOR MINES



Tasmania

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PROGRESS OF THE

MINERAL INDUSTRY OF TASMANIA.

FOR THE QUARTER ENDING 31ST DECEMBER, 1909.

Hobart, 15th February, 1910.

THE following table shows, as far as can be ascertained, the quantities and values of Metals and Minerals raised during the quarter ending 31st December, 1909, as compared with the previous quarter ending 30th September, 1909:—

	During the Quarter ending 31st Dec., 1909.		During the Quarter ending 30th Sept, 1909.	
	Quantity.	Value.	Quantity.	Value.
* Gold won oz.	11,274·972	£ 47,893	10,013·358	£ 42,533
Silver-lead Ore produced tons	14,272·99	58,103	26,810·59	76,032
† Blister Copper produced ..	1981	135,263	2338	157,639
Copper Ore and Copper produced..... ..	345·75	6027	110·5	2327
Tin Ore produced..... ..	1302·74	127,401	1213·44	111,579
Coal raised..... ..	19,915	16,928	16,596	14,106
Wolfram Ore produced... ..	10·75	969	5·05	453
Bismuth..... ..	·35	70	·3	60
...		392,654	...	404,729

* Fine gold, including gold contained in blister copper and silver-lead bullion.

† Value of gold contents deducted.

GOLD.

During the past quarter, 5432 oz. of gold were obtained from quartz, 188·59 oz. from alluvial, 1164·5 oz. by means of the cyanide and chlorination processes, 3932 oz. from blister copper from the Mt. Lyell Mining and Railway Company, Limited, and 585 oz. from the silver-lead bullion from the Tasmanian Smelting Company's works, Zeehan, valued at £47,893.

The following table shows the quantities obtained from the various sources on the different fields during the period under review, together with the totals for the corresponding period of 1908, and the previous quarter ending 30th September, 1909:—

	Gold obtained during the Quarter ending 31st Dec., 1909.					TOTAL.	Totals corresponding Quarter, 1908.	Totals for Quarter ending 30th Sept., 1909.
	From Quartz.	Alluvial.	Cyanide & chlorination.	From Blister Copper.	From Silver-lead Bullion.			
	oz.	oz.	oz.	oz.	oz.	oz.	oz.	
Beaconsfield	4392	...	797·5	...	...	5189·5	5501·5	3477
Mathinna ...	941	...	195	...	...	1136	404	700
Mt. Victoria	} 99	59·84	...	...	...	158·84	99·83	131·5
Warrentinna								
Mt. Cameron	} ...	25	172	...	...	197	216·5	324
Lefroy								
Lisle	} ...	78	...	...	...	78	90	86·5
Lilydale.....								
Golconda ...	} ...	25·75	...	3932	585	4542·75	5382·5	5471
West Coast.								
TOTALS	5432	188·59	1164·5	3932	585	11,302·09	...	...
Totals corresponding Quarter, 1908.....	4355	192·33	1775	3866	1506	...	11,694·33	...
Totals for Quarter ending 30th Sept., 1909.....	3788	229·5	702·5	3862	1608	...	...	10,190

Value, £47,893; equal to 11,274·972 oz. fine gold.

BEACONSFIELD.—The quarter's statistics for the district are as follow:—

	Gold produced.	Men employed.
	oz.	
Tasmania Mine.....	4930	559
Moonlight-cum-Wonder	9	3
Bonanza .....	...	...
Tasmanian Tailings Syndicate...	250·5	10
Total.....	5189·5	572

Tasmania Mine.—Sixteen thousand seven hundred and ninety-four tons of quartz crushed, and 3459 oz. of gold obtained (by amalgamation and cyanide process), which makes a total of 813,928 tons quartz crushed, and 744,130 oz. gold obtained since the mine was first started.

LEFROY.—The quarter's statistics are as follow:—

	Gold produced.	Men employed.
	oz.	
New Pinafore .....	...	3
Creek Cyanide	172	17
Gift .....	...	14
Others	25	10
Totals.....	197	44

LISLE, GOLCONDA, &C.—Seventy-eight oz. of gold have been won from these fields. Fifteen men have been employed.

RINGAROOMA.—The New River and other Alberton claims obtained 99 oz., and employed six men.

Alluvial Gold and Dredging Companies.—Gold has been obtained by the following companies in streaming tin:—

	Standard Gold.
	oz.
Ringarooma Dredge	18·75
Dorset Dredge	8·60
S. Mt. Cameron T.M. Co.	13·65
Briseis Co.	14·23
New Brothers' Home No. 1 Co.	4·61
Total	59·84

Wyniford Company.—Mr. J. M. Clark, manager, reports:—Since starting operations in March last on the new leases, known as Krushka's Alluvial Gold Mine, New River, the following work has been done by the company:—Race cut 2 miles 58 chains from the New River, through private property, for which compensation was paid; 4000 feet of pipes made on the mine, and a pipe column laid 50 chains; Henickey elevator installed for working the ground, in August last; sluicing commenced, and was continued for three weeks only, there not being sufficient water to work both elevator and face; work had to therefore cease.

The company intends cutting another race in, which will give it a good supply of water for working. This race having to pass through private property has been considerably delayed owing to the difficulty of settling the amounts of compensation with the landholders. Arrangements are now being completed, and the work of cutting the new race will commence early in the new year. When this work is completed sluicing will be resumed at once.

THE MINERAL INDUSTRY

MATHINNA.—The quarter's statistics are as follow:—

	Quartz crushed. tons.	Sand treated. tons	Gold produced. oz.	Men.
New Golden Gate	1921	1870	1095	50
Others	34	...	41	27
Totals	1955	1870	1136	77

WEST COAST.—Mr. Inspector Curtain reports:—The Davie P.A., Lynchford, continues prospecting its quartz reef, from which favourable prospects are obtained, with two men.

Alluvial.—Mr. F. O. Henry reports the purchase of 11 oz. 15 dwt., and the National Bank of Tasmania reports the purchase of 14 oz. Six men are engaged in prospecting operations.

TIN.

The statistics for this metal for the past quarter are as follow:—

	Ore won. tons.	Value. £	Men employed.	
			Europeans.	Chinese.
Northern and Southern Division	24·25	1823	42	...
North-Eastern Division.....	689·05	71,337	634	65
Eastern Division.....	137·40	13,249	252	41
North-Western Division.....	331·50	30,811	419	...
Western Division.....	120·54	10,181	170	...
Totals.....	1302·74	127,401	1517	106

NORTH-WESTERN DIVISION.

The output has been as under:—

	Ore won. tons.	Men employed.
Mt. Bischoff	270	320
Mt. Bischoff Extended	49·5	75
Waratah Alluvial.....	4	5
Bischoff Taylor .....	...	3
Weir's Bischoff Surprise.....	5	6
Mt. Balfour	3	10
Totals.....	331·5	419

NORTH-EASTERN DIVISION.

PIONEER AND GLADSTONE DISTRICTS:—

	Tin ore won. tons.	Men employed.	
		Europeans.	Chinese.
Pioneer Tin Mine	143	103	...
Aberroe	8	6	...
Argus Tin Mine.....	13·70	16	...
South Mt. Cameron	22·55	40	...
Ringarooma Dredge	4·15	16	...
Dorset	5·55	16	...
Purdue Tin Mine	21·80	23	...
Garibaldi.....	6·20	20	7
Other Claims	33·80	67	35
Totals.	258·75	307	42

RINGAROOMA DISTRICT:—

	Tin ore won. tons.	Men employed.	
		Europeans.	Chinese.
Various Claims.....	4·95	24	...

DERBY DISTRICT:—

	Tin ore won. tons.	Men employed.	
		Europeans.	Chinese.
Briseis Tin Mines	246	146	...
New Brothers' Home, No. 1....	28·60	14	...
Briseis Extended	17·15	30	...
Other Derby Claims	8·65	16	18
Total	300·40	206	18

BRANXHOLM DISTRICT:—

	Tin ore won. tons.	Men employed.	
		Europeans.	Chinese.
Arba Tin Mine	70·45	35	...
New Ruby Flat	23	20	...
Other Claims	7·05	15	4
Total	100·50	70	4

MOORINA DISTRICT.—

	Tin ore won. tons.	Men employed.	
		Europeans.	Chinese.
Weld Tin Mine	6·10	10	...
Native Youth	5·10	6	...
Abbotsford	2·90	8	...
Banca	1·50	3	...
Waverley	3·25	6	...
Other Moorina Claims	5·60	18	1
Total	24·45	51	1
<i>Total for North-Eastern Division</i>	<u>689·05</u>	<u>658</u>	<u>65</u>

EASTERN DIVISION.

	Tin ore won. tons.	Men employed.	
		Europeans.	Chinese.
<i>Weldborough Mines.</i>			
Fancy Creek Co.	8·35	10	...
Weldborough Mine.....	4·15	5	...
Walker	2·55	4	...
Tallywang	2·20	4	...
Other Claims	39·15	53	41
Total	56·40	76	41
<i>Lottah and Blue Tier Mines.</i>			
Anchor Mine	47·5	108	...
Total	47·5	108	...
<i>St. Helens Mines.</i>			
C. Miller	1·20	4	...
A. Williams	1·65	6	...
J. C. Macmichael.....	3·30	6	...
M. Hartnett	4·20	4	...
Deep Lead.....	1·80	2	...
Others	7·15	18	...
Total	19·30	40	...
<i>Avoca Mines.</i>			
Storey's Creek Claims	6·10	8	...
Roy's Hill	1·35	6	...
Storey's Freehold	3·80	2	...
Other Claims	2·95	12	...
Total	14·20	28	...
Total for Eastern Division	<u>137·40</u>	<u>252</u>	<u>41</u>

Fancy Creek Tin Sluicing Syndicate.—Mr. F. H. Walker, manager, reports:—Have been working four faces, which comprise the following:—

Waverley Face.—Average depth from 60 feet to 150 feet, and is composed of a body of tin-bearing leaders. Seven men were employed in this face, working three shifts.

Three Alluvial Faces.—Composed of surfacing, averaging a depth of 3 to 6 feet. Five men were employed in these faces working two shifts. One man employed as caretaker on 8 miles of water-race. During November had to shut down Waverley face and one alluvial face owing to scarcity of water.

NORTHERN AND SOUTHERN DIVISION.

	Tin ore won. tons.	Men employed. Europeans.
Shepherd and Murphy Mine ...	24·25	42

WESTERN DIVISION.

	Tin ore won. tons.	Men employed. Europeans.
Boulder	21·75	17
Renison Bell.....	46·05	53
Montana Tin Syn.	23·39	34
Various Claims.....	29·35	66
Total	120·54	170

Renison Bell.—Mr. W. A. J. Briggs, manager, reports:—The quantity and value of ore raised from the Renison Bell Prospecting and Mining Company, at Renison Bell, during the quarter ended December 31, 1909:—

Crude ore crushed. tons.	Contents Tin Oxide. tons.	Europeans employed.	Value of ore. £
1700	46·05	53	3720

None but Europeans were employed.

During the quarter a main water-race has been completed, thus ensuring a good supply of water for power and dressing purposes. Extensions to the milling plant were commenced and are proceeding.

Federation Tin Mine.—Mr. J. S. Munro reports:—Total quantity of tin raised from April 6, 1909, to December 30, 1909, 12 tons 15 cwt. 2 qr. 18 lb.; gross value, £985 16s. 7d. For the first three months of the year six men and a supervisor were engaged in doing developmental work on the property. On the 25th January, 1909, a tribute party were granted a tribute, and work of development on their tribute started. From beginning of April to end

of the year these four tributors working on the property sent out tin as above. Two men for the last three months have been employed by the company at developmental work under the direction of a supervisor, who has been engaged continuously for the whole year.

SILVER

WEST COAST.—The registered output of silver ore in the Western Division for the quarter ending 30th September is given below:

<i>Zeehan Mines :</i>	Ore.	Tons.	Value.	Men.
Mt. Zeehan, Tas.	galena	233	£2691	80
Zeehan-Montana	"	846·59	14,223	220
Zeehan-Western	galena and gossan	229·58	943	22
Zeehan-Queen	gossan	9	96	4
Florence	"	14	169	27
S. Nubeena	galena	10	64	3
Colonel North	"	29·8	295	18
Balstrup's	"	29	244	7
New Mt. Zeehan	"	32	147	12
Venezia Tribute	"	10	64	3
Onah	gossan	73	48	} 161
"	stannite	1027	4556	
"	sulphide.....	1511	982	
<i>Dundas Mines :</i>				
Adelaide	galena and gossan	454	2895	48
Jupiter	galena .....	...	...	9
Hercules	zinc blende	2274·27	5762	83
Comet	gossan	2165	1576	36
West Comet	"	700	350	8
Anderson's Tribute	galena	105	1580	12
<i>Rosebery Mines :</i>				
Tasmanian Copper	sulphide .....	...	...	22
Primrose	"	987·5	3307	16
<i>Mt. Farrell Mines :</i>				
Mackintosh	galena	6	60	2
Murchison	"	60·6	750	8
Mt. Farrell	"	9	132	3
North Farrell	"	720	5890	140
Others .....	.....	28	230	6
<i>North Pieman :</i>				
Chester Mine	sulphide.....	1449·9	1449	44
<i>Mt. Lyell :</i>				
Tasman & Crown Lyell	.....	...	...	20
Extended .....	.....	...	...	20
<i>Sundries :</i>				
Tasmanian Smelting Co. ....	.....	...	...	200
Others .....	.....	...	...	125
Total		13,013·24	£48,503	1339

The Mt. Zeehan (Tasmania) Silver-lead Mines, Limited.—Mr. T. Vincent, manager, reports:—About 60 men are employed tributing on the property, with fair results. Prospecting on Spray and Balstrup's has not resulted in finding anything of value. The Dundas properties recently purchased will be vigorously developed during the coming year.

Zeehan-Western.—Mr. J. Craze, manager, reports:—Mining operations are being continued on Nos. 1, 2, and 3 lodes above water-level. The principal work is confined to stoping in the vicinity of the main works. During the last three months a large amount of surface trenching has been carried out on the northern portion of the property, but so far we have found nothing of value.

Zeehan-Montana.—During the past three months the exploratory work at No. 1 shaft has been confined to exploring the ground north of the main slide at Nos. 3, 4, 5, and 6 levels. The ore-shoot north of the slide has been found at Nos. 3, 4, and 5 levels. At No. 6 level the lode has been found, but unfortunately it shows no galena ore. A rise has been put up on the lode from No. 6 level, and has reached a height of 56 feet, but no ore is yet visible. I expect an improvement shortly, seeing the lode showed good ore along the bottom of the No. 5 level; the latter level is 100 feet above No. 6 level. The main drive on the lode is being driven north, and is now 80 feet north from the north end of the main shaft. This drive will be continued to intersect the whip shaft lode, which is 200 feet further north from the end of the drive.

No. 2 Shaft.—Exploratory work is being confined to No. 2 lode, No. 5 level. At the time of writing we have found no ore of a payable character at No. 5 level. A rise put up from No. 5 to No. 4 level on No. 1 lode proved the lode to be barren of ore until within 20 feet of No. 4 level. We are now putting up a rise on No. 2 lode; have reached a height of 56 feet; lode small and barren of ore. There is 50 feet yet to rise to get through to No. 4 level. We hope to find ore before reaching the level.

During the quarter the exploratory work has been constant, consisting of seven drives, three rises, and two crosscuts. This represents a total of 1200 feet of ground explored for three months.

DUNDAS.—Comet Mine.—Mr. Gerald Ahern, manager, reports:—The northern open-cut is looking very well, and still shows large reserves of iron flux. Lower level extended 120 feet; face in good ironstone. A crosscut put in here shows the lode 50 feet wide.

Operations on southern cut have been confined to removing overburden. Lode hydraulicked 15,000 yards for the quarter.

MT. READ DISTRICT.—Hercules Mine.—Mr. Claude H. Moxon, manager, reports:—The usual production of zinc-blende has been continued, 2274 dry tons being handled. The ore has been chiefly

won from the stopes in the "E" ore-body, which has been now proved for a length of over 200 feet, the width of the stopes being from 20 feet to 50 feet. The usual exploratory work has been carried on in Nos. 3, 4, and 5B levels, with varying success. In the 5B level an ore-body was intersected at 98 feet in the east crosscut. It consists of an iron-copper sulphide of fair value, and it has now been penetrated 16 feet. Additional exploratory work has now been commenced in the Main No. 5 level to test the zinc-blende ore-body met with in the 700-foot north drive. All necessary surface tramways and works have been carried out, and a timber tramway is now under construction at Williamsford, which will open up new ground.

ROSEBERY DISTRICT.—*Tasmania Copper Mine.*—Mr. G. Barker, manager, reports:—During the quarter there has not been any ore won from the mine. The main adit is now in 1348 feet, and we should cut the lode in another 72 feet of driving. The country is hard schist.

MT. FARRELL DISTRICT.—*North Mt. Farrell Mine.*—Mr. L. C. H. Woodroffe, B.C.E., manager, reports:—Operations in connection with the winning of ore have proceeded on the usual lines. The output was slightly increased to compensate for a falling-off in values. The two upper adits, viz., 0 and 2, furnished the bulk of the output, No. 3 contributing a small quota of higher grade ore. The only developmental work of note has been the sinking of two winzes on the No. 3 lode from the No. 4 level in order to block out stoping ground and to facilitate future stoping operations at the No. 5 level. The chamber at the new (No. 5) level has been completed. A crosscut has been put out therefrom in an easterly direction, and has just entered the No. 3 lode at a distance of 93 feet from the shaft. Opening out on the lode is now in progress, and the lode promises to develop satisfactorily.

MT. LYELL DISTRICT.—*Tasman and Crown Lyell Extended.*—Mr. Edward Carter, mine manager, reports:—During the past quarter the development has been as follows:—Driving, 109 feet; sinking (main shaft), 96 feet; rising, 60 feet; stoping, 10 feet; total, 275 feet. Also 23 chains of side-cutting and formation were finished for extension of tramway. An average of 20 men employed.

Tasmania Smelting Company.—Mr. H. Harris, manager, reports:—Ore bought during the quarter, 2825 tons, containing—776 tons lead, 87,529 oz. silver, 172 oz. gold. Exported, 1094 tons bullion, containing 1052 tons lead, 125,690 oz. silver, 585 oz. gold.

NORTH-WESTERN DIVISION.

	Tons.	Value.	Men.
Magnet Mine.....	1162·75	£8693	140
New Magnet .....	...	...	2
Mt. Stewart.....	...	...	22
			<hr/> 164 <hr/>

Magnet Mine.—Mr. C. A. De Latour, manager, reports:—Tramway.—One thousand five hundred and twenty-nine tons of ore have been hauled over our line, portion going to New South Wales, and the remainder to Europe.

Mill.—Seven thousand and three tons have been treated, for a return of 455·3 tons of concentrates.

Before any product is dumped as tailings, it is crushed in grinding-pans to fine sands, sized mechanically with Callow travelling belt screens (finest containing 80 holes to lineal inch), and then the sized products are treated on card tables and Luhrig vanners.

Mine.—Our lowest level is No. 8, being 500 feet below the outcrop. The ore-body at this level averages 40 feet wide for a length of 400 feet. In addition, a payable band of ore about 6 feet wide is being followed in a southerly direction.

A development which promises to be of great importance has occurred in No. 7 level, where a band of ore 5 feet wide has been driven on for 70 feet, and is still showing in the face. A make of ore similar in appearance, was worked near the surface some years ago. Should this development in No. 7 level prove to be the same as on the surface, we shall have 400 feet of backs to work upon.

Selected samples from this new make are of the highest grade. A band of jamesonite about an inch wide assayed 259 oz. of silver to the ton.

New Magnet.—Mr. H. D. Osborne, manager, reports:—Have extended main adit a distance of 30 feet through dolomite and quartzite country.

Mt. Stewart.—Mr. W. D. Lyon, mine manager, reports:—Sinking main shaft, 10 feet by 4 feet, in the clear; now down 110 feet; intend opening out at 200 feet; country getting hard; water making about 1000 gallons per hour; shaft been delayed through the erection of machinery, viz., boiler, winch, pump, and poppet-legs. Mine closed down for a week for Christmas holidays.

NORTHERN AND SOUTHERN DIVISION.

	Tons.	Value.	Men.
Round Hill Mine	97	£907	20

COPPER.

Mt. Lyell Mine.—Mr. Robert Sticht, general manager, reports:—The ores and metal-bearing fluxes treated during the quarter ending 31st December, 1909, were as follow:—

Ores and metal-bearing fluxes treated at Reduction Works:—

	tons.	Dry weight.		
		cwt.	qr.	lb.
Mt. Lyell Mine ore	60,178	14	2	10
North Lyell Mine ore	32,355	12	2	18
Purchased ore.....	50	4	1	26
	<u>92,584</u>	<u>11</u>	<u>2</u>	<u>26</u>

Metal-bearing fluxes:—

Lyell Tharsis Mine .....	...	...	...	...
Total.....	<u>92,584</u>	<u>11</u>	<u>2</u>	<u>26</u>

Quantity and value of metal produced:—

Blister Copper, 1981 tons, containing—		£	s.	d.
Copper, 1957 tons, valued at	119,220	8	10	
Silver, fine, 163,492 ozs., valued at.....	16,042	13	1	
Gold, fine, 3932 ozs., valued at	16,711	0	0	
Total.....	<u>£151,974</u>	<u>1</u>	<u>11</u>	

Number of men employed:—

At the Company's Mt. Lyell Mine	412
" " North Lyell Mine.....	403
" " Lyell Tharsis Mine.....	4
" " Crotty.....	13
" " Reduction Works.....	— 832
" " ".....	... 904
Railway Department—Mt. Lyell Railway	147
" " North Lyell Railway...	16
	<u>163</u>
Total.....	<u>1899</u>

Mr. Inspector Curtain reports:—

Mount Lyell Mining and Railway Company's Group.

Mt. Lyell Mine.—Pyritic extractions continue from the four lower benches of the open-cut workings, in addition to which increasing quantities of ore are now won from the Nos. 6, 7, and 8 levels underground, where stopes are being opened and connections made with the surface for hoisting, filling, and ventilating purposes. The four top benches are permanently "battered," and work has ceased in this direction. At the compressing plant two

high-pressure boilers have been seated, and are on the eve of being put into use.

North Lyell Mine.—The various levels are practically all producing profitable ore. At the 850-feet, Nos. 19, 20, and 22 stopes are still extending their ground floors, which also applies to 24, 26, 31, and 34, at the next level (1000-feet), so that after allowing for extensive extractions the quantity and quality of the mine's reserves are steadily increasing.

Reduction Works.—Beyond renovations to housing and plant there is nothing of importance to add to the usual routine, which keeps pace with the mine's requirements. The water-supply in all seasons is now assured by the completion of the dam in the westerly branch of the Queen River. The various lines of railway have received attention, and to a large extent been relaid with limestone ballast, new sleepers, and rails; and their bridges overhauled and strengthened where necessary, a no mean factor in pointing to the growing requirements and general stability of the company's future.

Mt. Lyell Consols Copper Mine.—Mr. John W. Carroll, mine manager, reports:—The main crosscut at the No. 2 level has been extended 67 feet, and entered clay, but some further distance has to be driven before the more profitable ore is met with. At No. 1 level development is still continued, and a limited quantity of cupriferous clay raised and treated at the concentrators. The total "footage" for the quarter is—rising, 424 feet; driving, 456 feet; crosscutting, 120 feet; totalling 1000 feet; that produced 4363 tons of clay, that yielded 65.6 tons of concentrates, valued at £2285. The average number of men employed was 78.

Mt. Lyell Blocks Copper Mine.—Mr. Robert Ferguson, mine manager, reports:—The work being done is cleaning out and repairing old (Office and Consols) tunnels, sinking and rising for ventilation, and erecting a compressing plant that will be used for sinking the main shaft. The work being preliminary for the latter object, there was no ore raised. Fifteen men employed.

Mt. Lyell Comstock Copper Company, Limited.—Mr. Charles E. Coote, mine manager, reports:—The low-level tunnel, "E," south drive extended 100 feet, and a shaft on the "yellow" ore sunk 31 feet. Fourteen men employed.

Darwin Syndicate Prospecting Association.—Mr. James Souter reports:—The work of exploring the large body of copper-bearing schist has been continued without intermission during the past quarter, and copper contents of same continue to improve as the contact country is approached, and about another 40 or 50 feet of driving should reach our objective. Three men employed.

NORTH-WESTERN DIVISION.

	Tons.	£	Men employed.
Murray's Reward	279·60	3722	18
Others (Estimated) .....	...	...	50
F.G.D. Copper Mines.— ..	·55	20	9
	<u>280·15</u>	<u>3742</u>	<u>77</u>

Mr. Jas. Harrison, Inspector of Mines, who visited the Mt. Balfour Mining Field in November, reports:—The field proper is about 14 miles inland from Whale's Head, but copper-bearing country extends down on to the sea-beach.

The country is open button-grass plains, with numerous small hills, and is about 600 feet above sea-level. It extends south to the Norfolk Ranges, and takes in Mts. Balfour, Frankland, and Hazelton. On the banks of the rivers and creeks there are some belts of timber suitable for mining purposes, and on the east side of the Franklin River there is heavy forest land. The country rocks are slate and grey sandy schists, with conglomerate patches showing on the surface in a few places.

The Murray Brothers' Copper Reward Mine is situated about the centre of the field. The capping of the lode consists of white hungry-looking quartz, without either iron or copper pyrites showing (indeed, that is the characteristic of pretty well all the lodes on the field).

The lode-formation is nearly a chain wide, and consists of quartz, slates, and schist, through which run the ore-bodies. The course of the lode is about 35 degrees west of north, with a westerly underlay. The average width of lode worked is 5 feet, and consists of yellow pyrites, black oxide, and copper glance. One thousand one hundred and seventy-two tons of ore have been sent away, of a gross value of £15,000. There are about 3000 tons stacked on the surface, stated to assay 10 per cent.

From the bottom adit a winze was put down to a depth of over 30 feet, which proved the lode to be maintaining its values, but the water proved to be too heavy to deal with by hand. Another adit level has now been started, which will give 30 or 40 feet more backs, and a site for main shaft has been selected.

North and adjoining the Murrays' is the Central Balfour. It has been prospected on similar lines to the former, and with very good results. A winze has been put down 30 feet below adit-level, and the ore-bodies cut, showing a marked improvement both in the size and value of the ore at that depth. The mining manager (Mr. A. Kelly) is busy preparing for the sinking of a main shaft and the erection of machinery, a portion of which has arrived at Whale's Head.

Going north there are several promising shows, but they mean shafts and machinery. On the Balfour Consolidated there is a splendid lode, which has been proved by windlass to a depth of

30 feet, where the water became too heavy. Section 3566-M, W. Knox, has also exposed some good ore by trenching.

Further north, on Murray Bros.' Section 3955-M, a strong quartz lode running right through the property has been discovered and trenched in several places, showing copper pyrites; but there has been very little work done on it.

Further north, Chester's Reward, now known as the Balfour Copper Mine, has had a considerable amount of work done on it, in the shape of trenching and adits. There is a large formation, consisting of quartz schists and slates, through which run some good branches of ore, showing heavy copper pyrites and black oxide. A quantity of water is making from the bottom of adit-level. The manager (Mr. Langford) is about starting a deeper level, which, he states, will give another 100 feet of backs. I would expect to see a considerable improvement in the lode at that depth. North and adjoining is the North Balfour, on which an adit has been started to cut the lode opened up by trenching. There are several sections further north, with the usual surface indications.

Going south from Murray's Reward there are numerous surface shows right on to the Balfour South Copper property. On this mine good ore was found within 3 feet of the surface. The mine is being vigorously prospected by means of a shaft and a couple of adits. A bulk sample taken from the ore broken and at grass gave a return of 17 per cent. Machinery will be required to work the mine.

About 1 mile direct east from the above mine a very good surface show has been opened up by Hollow and party, with the result that a large quantity of ground has been applied for in that direction.

In this very much condensed report I have endeavoured to show the large area of country on which good payable ore has been discovered without covering too much paper.

Cost of getting ore to market at present:—Balfour to Whale's Head, £2 10s. per ton; thence to Stanley, £1; from there to New South Wales, 10s.; total, £4 per ton. Goods:—Whale's Head to Balfour, £3 per ton; sawn timber, 25s. per 100 feet delivered; bricks, £1 per 100.

A tramway is now being surveyed from Whale's Head to Balfour, distance about 11 miles. If this were constructed it would prove of incalculable advantage, and, I believe, meet with the requirements of the field for the next couple of years.

A wharf and better mooring accommodation is required at the harbour.

A cage crossing is badly required for the Franklin River.

I consider it is my duty to say a few words about the indiscriminate pegging that is going on in the field. If a little less attention was given to obtaining fresh leases and a little more to the prospecting and opening up those already secured, it would be better for the public generally.

COAL.

The output this quarter was 19,915 tons, against 16,596 tons the previous quarter. The output of the respective collieries was as follows:—

Colliery.	Tons raised.	Men employed.
Cornwall Colliery	7675	72
Mt. Nicholas ,,	9102	80
Spreyton ,,	330	6
York Plains ,,	168	2
Mt. Cygnet ,,	420	6
Wallsend ,,	2170	74
Ida Bay ,,	50	4
Total	19,915	244

BISMUTH.

The Shepherd and Murphy Company obtained 35 ton of bismuth from its tin ore, valued at £70.

WOLFRAM.

The output of wolfram during the quarter was as follows:—

	Tons.	£	Men.
Avoca Mines.....	10.60	954	4
Shepherd and Murphy Mine .....	.15	15	...
	10 75	969	4

The following return shows the average number of men employed in or about the mines during the quarter ending 31st December, 1909:—

District.	European.	Chinese.	Total.
Northern and Southern	785	...	785
North-Eastern	664	65	729
Eastern	485	41	526
North-Western	660	...	660
Western	3526	...	3526
Total	6120	106	6226

Value of mineral output per man:—£63 ls. 4·059d.

Dividends paid by Mining Companies during the quarter ending 31st December, 1909:—

	£	s.	d.	£	s.	d.
From Copper Mines:—						
Mt. Lyell Mining and Railway Co., Ltd.	105,000	0	0	105,000	0	0
From Tin Mines:—						
Bischoff T.M. Co., Registered	9000	0	0			
Pioneer T.M. Co., Ltd.....	12,093	0	0			
Montana Tin Prospecting Co.,	480	0	0			
New Brothers Home No. 1. T.M. Co., N.L.	1500	0	0			
Arba Tin Mining Co.	3000	0	0			
Purdue Tin Mine	375	0	0			
New Ruby Flat T.M. Co., N.L.	609	0	0			
				27,057	0	0
From Coal Mines:—						
Cornwall Coal Co.	906	0	0	906	0	0
From Silver Mines	Nil					
Total .....	...			£132,963	0	0

APPENDIX.

RECENT DEVELOPMENTS AT THE SOUTH END OF THE
MT. FARRELL MINING FIELD.

I.—INTRODUCTION.

Instructions having been received to make a geological inspection of some portion of the country lying between Mt. Farrell and Rosebery, the writer paid a brief visit in the month of November, 1909. The following notes are the result of that visit:—

At the time when a geological survey was made of the Mt. Farrell Mining Field no work was being done as far to the southward as at the present time. These notes, which deal chiefly with the southerly extension of the field, are therefore supplementary to Bulletin No. 3 of the Geological Survey of Tasmania. It will therefore be unnecessary to discuss in detail the geology of the whole district.

II.—LOCALITY.

The most important work now being carried on on the southern side of the Murchison River is that upon Section 4013-m, which is charted in the name of C. R. Lynch. This section is situated about $2\frac{1}{2}$ miles from the Murchison River, on the eastern bank of the Stirling River.

Two other sections have been taken up, one to the northward and the other to the southward of Section 4013-m.

The only other work in progress on the southern side of the Murchison River is that which is being done on Thomas' Blocks.

A bridge has been built to connect these southern sections with the main part of the Mt. Farrell field. A rough track over half a mile of soft button-grass leads from the Murchison mill to this bridge. The descent from the level of the button-grass to the bridge 100 feet below is precipitous.

The grade of the Stirling Valley is not severe, and the rise from the bridge over the Murchison River to Mr. C. R. Lynch's workings is approximately 500 feet. The eastern bank of the Stirling River rises gently in the direction of Mt. Murchison for a distance of a few chains from the river, and then rises rather abruptly. The lower slopes are dissected by the small contributory streams from Mt. Murchison, but no serious inequalities of the surface have been thus produced.

In the upper portion of the valley there is the usual dense vegetation of the West Coast region, but the lower part is fairly open and covered only with button-grass.

III.—GENERAL GEOLOGY.

The slates which belong to the Dundas slate series extend southwards along the valley of the Stirling River, and form the country-

rock in which the newly-discovered lode on Mr. Lynch's section exists.

The schistose porphyries which are being designated "porphyroids" by the Geological Survey of Tasmania occur only 3 chains to the eastward of the lode.

Outcrops of the country-rock are very few, and the relation of the porphyroid to the slate could not be clearly ascertained. Narrow dykes or shallow surface flows of the igneous rock are present in the upturned slates to the eastward of the lode outcrop. The mine crosscut, however, disclosed no other rock than slate.

IV.—C. R. LYNCH'S MINE.

(1) *The Workings.*—The galena was first found at the surface in a small creek traversing the northern portion of the section, and a deep trench was cut in an east-and-west direction a few feet further south. The trench was carried down to a depth of 12 feet and revealed the presence of a number of small seams of galena up to 4 inches in width. The lode-channel is a broad zone of crushed and broken slate, within the limits of which the different blocks of shattered slate dip in different directions. The veins within the formation vary slightly in strike, but appear to conform in a general way to the strike of the whole formation.

The total width over which galena was found in this trench was a little over 25 feet.

A short drive was put in some 50 feet to the southward from the eastern end of the trench, and 6 or 7 feet below the surface. Ore was met with throughout, and 40 bags of clean ore were obtained during driving. These are stacked at the surface pending better facilities for transport.

This drive was carried along the hanging-wall side of the formation, and necessarily has not been able to prove any width of the lode. The face in the end shows rather more quartz than is elsewhere visible in the formation.

Having thus proved some continuity of the lode at the surface it was decided to drive an adit from a convenient point lower down the hill to cut the lode 40 feet below its outcrop.

This tunnel, which was driven eastwards, first met with galena at a point 81 feet from the mouth. The vein is a narrow one—up to an inch in width. Then a seam of pug 2 inches in width occurs, dipping to the east at an angle of 70° . This seam of pug is apparently the footwall of the whole formation.

The next 12 feet to the pug in the crosscut showed small amounts of galena scattered through the formation and forming thin facings on the cleavage surfaces.

From this point to the hanging-wall of the formation, 26 feet to the eastward, there is a much larger proportion of galena present. Some of the galena is concentrated in large bunches, and the intervening portions of the formation also carry disseminated metal.

At a point 102 feet from the entrance one very clean seam of galena 8 inches wide was met with, from which a picked specimen gave, I am informed, a return of 103 oz. of silver and 85 per cent. of lead per ton.

From this point to the face of the crosscut bunches of galena and pyrite were met with in the formation, together with siderite and quartz.

A drive was started southwards from a point 102 feet from the entrance of the adit. The drive south was started on a good seam of ore, dipping to the east. This seam is on the western side of the drive, while on the eastern side there is a large amount of pyrite through which galena is disseminated.

After driving 8 feet a splendid seam of galena 16 inches wide was found to replace the pyrites on the eastern side of the drive. For the first few feet this vein dips steeply to the west, but turns over and dips eastwards a few feet further on.

At 18 feet from the crosscut the principal seam on the western side of the drive was left, since it strikes at a slightly different angle from the direction of the drive, and the width of drive to embrace both the eastern and western veins proved too great. However, a parallel seam, from 6 to 8 inches in width, made, and continues as far as the face.

At 22 feet from the crosscut the massive seam on the eastern side of the drive turns eastwards, towards the hanging-wall, and from that point southwards there is only second-class pyritic ore on this side of the drive.

The face was, at the time of my visit, 43 feet distant from the crosscut.

Very little work has been done at the surface to expose the outcrop of the lode. Pyritiferous slate has been exposed in a few shallow trenches, but these have not been carried down to a sufficient depth to afford any definite information with respect to the lode.

(2) *The Economic Geology of the Lode.*—The vein-type represented is the pyritic-galena type of normal habit. There is abundant pyrite, and next in importance of the minerals other than galena is zinc-blende. Arsenopyrite and chalcopyrite are present, but are insignificant in amount.

The non-metallic material forming the gangue is for the most part unreplaced slate, with a small proportion of quartz. Very little siderite is visible. In the band of slate which carries the metallic minerals there is a certain proportion of graphite present, which colours the lode slate strongly.

The galena is distributed in the form of clean veins, which traverse the poorer ore, and is also disseminated in coarse grains through a considerable part of the whole formation. The metallic contents of this second-class ore are present in a coarse-grained admixture favourable for concentration.

The silver content of the galena is high. Picked samples of clean galena have been assayed for silver, and have given returns of

94·7, 91·5, and 111·7 oz. of silver per ton. Other assays of less clean galena have shown lower silver contents, viz., 64·0, 39·2, 55·5, 35·2, 52·2, and 98·0 oz. per ton. From these figures it would appear that the silver content lies chiefly in the galena, while the other portion of the lode is practically barren.

Traces of gold have been detected.

The structure of the lode, as far as it is at present disclosed, is very similar to that of the main lode of the North Mt. Farrell Mine. In my opinion there should not be placed too much reliance upon the permanence of any single vein or bunch of first-class ore. These will probably pinch out and cease, but will be replaced by others. The formation as a whole must be judged, and as far as work has proceeded it affords every promise of proving a valuable one.

Too little has yet been done upon it to satisfactorily determine the strike of the whole formation. The dip is apparently to the eastward at an angle of about 70°.

The future prospecting of the lode at the present level must include a series of crosscuts at regular intervals, in order that the width of the formation may be ascertained at different points. The present drive, if continued southwards, will gain a larger amount of backs as it progresses.

V.—THE SOUTHWARD EXTENSION OF THE MT. FARRELL MINING FIELD.

The discovery of the shoot of ore here described on Mr. C. R. Lynch's section should stimulate the work of prospecting in the vicinity. A number of shallow trenches have been cut in the lower portion of the Stirling Valley, but it is as yet impossible to say whether they are on the northerly continuation of the same lode as that now being opened up by Mr. C. R. Lynch.

There is a party of tributors at work on the Thomas' Blocks main lode stoping a short shoot of ore above the adit level, but nothing else is being done in this district.

There is every reason to believe that careful prospecting will reveal the presence of other lodes or shoots in the area lying between Mt. Farrell and Rosebery.

The principal zone of mineralization of this portion of the West Coast certainly includes within its limits the valley of the Stirling River.

All geological considerations lead me to support the application which has been made for better means of communication than at present exist.

L. KEITH WARD, Assistant Government Geologist.