

(No. 81.)



1889.

---

PARLIAMENT OF TASMANIA.

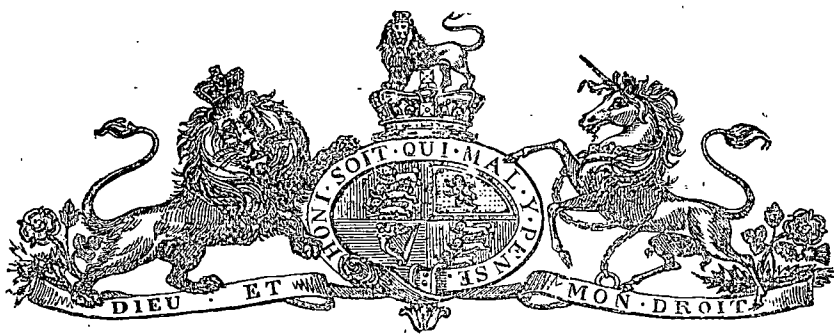
---

REPORT OF THE SECRETARY OF MINES  
FOR 1888-89 :

(INCLUDING INSPECTOR OF MINES' REPORT.)

---

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



## REPORT OF THE SECRETARY OF MINES.

*Office of Mines, Hobart, 24th July, 1889.*

SIR,

I HAVE the honor to submit my Report upon the Mines Branch of the Lands and Works Department for the year ending 30th June, 1889.

Appended will be found comparative Tables of the yields of Minerals and Metals, the number of Leases issued, the area of land held for Mining purposes, the Revenue derived, the number of persons engaged in Mining, together with the Report of the Inspector of Mines, and Returns of the operations of the Diamond Drills, with detailed Reports made by the various Commissioners upon the progress and present condition of the Mining industry in their several Divisions. Appendices.

The subjoined details will, I venture to think, afford sufficient evidence to justify a statement that the important industry of Mining is in a sound, healthy, and progressive condition. The year just closed has been a period of development rather than discovery. Few discoveries of any great present importance have been made; but, taking into consideration the smallness of the population, the limited amount of capital available, the difficulties of access, and the fact that the industry is but yet in its infancy, it may fairly be said that the development has been satisfactory. During the year machinery has been conveyed to and erected in the wild regions of the West Coast—at Mount Lyell, the Princess River, and Mount Zeehan, and is now at work; again—in the North-Eastern District—at the Ringarooma Valley, at Cream Creek, and at South Mount Cameron; and in the Eastern District, at Mathinna; whilst extensive water-races have been constructed, and other works of practical utility, which it may be hoped will bear fruit hereafter, have been undertaken in various parts of the Colony. The yields of metals and minerals have been well maintained. General Remarks.

Mining speculation, which is a matter altogether apart from legitimate mining, has somewhat subsided during the past year; and it is feared that, as might have been expected, many of the too confiding investors of the past are now suffering loss and disappointment.

Much has been said and written concerning the non-fulfilment by lessees of the labour covenants of their leases, and some writers in the public Press advocate a wholesale forfeiture of leases for non-compliance; but, whilst strongly deprecating what is known as the “dummyism” or “shepherding” of claims, it must be borne in mind that there are great difficulties to be overcome in developing a mine, more especially in the unsettled portions of the Colony, and reasonable allowance must be made for these difficulties. Upon the whole, the labour covenants are fairly complied with throughout the Colony.

Company management has lately been the subject of much comment in the public Press, and irregularities of the gravest nature are reported to have taken place in some instances. Legislation is pointed to as a remedy; but if shareholders will continue to commit their important interests to the hands of directors and managers without first satisfying themselves as far as may be as to the integrity and business capacity of those officers, it is difficult to see in what way legislation can help them.

The yield of gold for the year has been 42,003 ounces. Discoveries of some importance have been made at the Whyte River and at Long Plains, whilst a considerable revival has taken place at Mathinna (formerly known as the Black Boy), one mine at this place having, with a small 10-head battery, yielded 1448 ounces of gold within the last three months. Gold.

Discoveries of this metal have been made at the Whyte River and at the Heazlewood, but, beyond a considerable amount of prospecting and the discovery of ores yielding exceptionally good assays, the difficulty of access has so far precluded any further progress. At Mount Zeehan fair Silver.

work has been done to prove the value of some of the claims, with satisfactory results. Bulk tests have been made of 163 tons of Comstock ore, yielding an average of 66 ounces of silver and 50 per cent. of lead per ton ; and of 4½ tons of Silver Queen ore, yielding 55 ounces of silver and 57 per cent. of lead per ton ; besides smaller tests from other claims. Machinery for pumping and lifting has been erected upon two of the claims. The greatest depth of sinking at present attained is 112 feet, on the Silver Queen. A small township is springing up, with hotel, post and telegraph offices, and police station already erected. The railway line, some 30 miles to the port of Strahan, has been surveyed, and plans, &c. are in course of preparation, and it is anticipated that the line will be constructed at an early date. Mr. Provis, Manager of the Dry Creek Smelting Works, who bears a high reputation for skill in such matters, has recently visited the field on behalf of the Government for the purpose of testing the various ores, gaining information as to fluxes, fuel, &c., with a view to the establishment of smelting works. That gentleman's Report is annexed.

**Copper.** A very extensive deposit of Copper has been discovered at Mount Lyell. It is being energetically opened up, and, under great difficulties, some 30 tons have been packed to a port of shipment and forwarded to New South Wales for treatment. The result is not yet known.

**Tin.** No new discoveries of any great importance have been reported during the year.

**Nickel.** A large deposit of this metal has lately been discovered in the vicinity of Heazlewood. Very little work has yet been done upon it.

**Chromate.** Minerals suitable for the manufacture of paints have been discovered in large deposits at Ilfracombe, near Beaconsfield, and also in the vicinity of Launceston. At the former place work has already commenced. The material is reported to be abundant, and capable of producing paints of many colours, for which there is a constant and remunerative market.

**Kaolin.** Large deposits of good quality have been discovered near Branhholm and on the Mussel Roe River.

No new discoveries have been made during the year, but a new mine at Dulverton, on the Mersey railway line, is being opened up, with very satisfactory results. The output of native coal is steadily increasing, having risen from 22,789 tons for the year ending 30th June, 1888, to 42,297 tons for the year ending 30th June, 1889 ; whilst it is satisfactory to note that the imports of foreign coal have correspondingly decreased from 38,236 tons in 1886 to 34,825 tons during the past year. The value of this industry cannot be over-estimated, for, apart from the saving effected by the use of native coal by railways and by all other steam users, the householders of the Colony have the advantage of good fuel at a greatly reduced cost, and a large amount of labour is employed in winning and carrying the coal.

An extensive deposit of coal, long known to exist, and some years since a little worked, at Seymour, on the East Coast, has during the past year been further tested by means of a diamond-drill. The coal is reported to be of a quality superior to any yet discovered in the Colony. A company has been formed to work it, and having by an Act of the last Session of Parliament obtained large concessions of land and railway and harbour privileges from the Government, have despatched an agent to England, where they hope to obtain the necessary capital to develop the mines and to construct a breakwater at their port of shipment, which is situate within a mile of the coal deposit.

**Gems.** During the past year a company has been formed to search for gem-stones in the tin drifts in the North-Eastern Division of the Colony. It is without doubt that the Topaz, Amethyst, Cornelian, Emerald, Catseye, and also the Sapphire are to be found there. The Chinese, whilst working for tin, have been for years in the practice of collecting and sending gems to their native country and selling them for small sums, they, like the European miner, being ignorant of their true value. I am informed by a very intelligent and reliable miner who has studied the subject, that he has known of gems of very considerable value being found.

**Technical Education.** Notwithstanding my constant efforts, nothing has yet been done in the direction of educating the practical miner and prospector. There is promise, however, that ere the year closes a commencement will be made for the delivery of lectures, formation of classes for practical instruction in the use of the blow-pipe, identification of ores, &c., in some of the mining centres of the Colony. It is anticipated that the Geological Surveyor recently appointed, but not yet arrived, will undertake this work, which he has of late been very successfully performing in New Zealand.

**Departmental Staff.** The staff in the offices in Hobart and Launceston is unaltered. The officer lately filling the position of Commissioner for the North-Western Division has been removed to another branch of the service. It has not yet been found necessary to supply his place. As a temporary measure, the work of the Division has been allotted to the Commissioners of the Western and Northern and Southern Divisions.

For departmental convenience the Colony is divided into Districts, as follows:—The Northern and Southern, comprising the country on the right and left banks of the River Tamar as far west as the River Forth, and on the east to the Scottsdale District, with such mineral country as there is in the southern portion of the Colony, and includes the gold-fields of Beaconsfield, Lefroy, and Lisle. The North-Eastern District comprises the whole of the north-eastern country, including several important tin-fields, with the gold-fields of Mount Victoria and Waterhouse. The Eastern District comprises the eastern portion of the Colony, and includes the tin-mining centres at Ben Lomond, Weldborough, and Gould's Country, with the extensive coal-bearing country around Fingal and Seymour, and the gold-fields at Mangana and Mathinna. The Western District embraces the wide area of country extending from the River Forth northwards, southwards, and westwards to the sea; it includes the celebrated tin mines at Mount Bischoff, an extensive area of tin-bearing country at Heemskirk, the silver-fields at Mount Zeehan and Heazlewood, the gold-field at the Linda, and other more or less important mining centres.

Division of  
the Colony.

A Commissioner has charge of each of the four divisions above described. Details as to their several divisions will be dealt with later on in this Report.

Commis-  
sioners.

The Report of this officer for the year 1888 is annexed. I regret that the number of mining accidents during the year shows a slight increase.

The Inspector  
of Mines.

This officer, who, in addition to his duties as Inspector of Mines up to the 30th ultimo, also performed those of Mining Geologist, has retired from the service. During the period with which this Report deals he visited and reported upon various localities. His public Reports upon Mount Zeehan and Heazlewood Silver-fields and Middlesex Plains Gold-field have already been published.

Mining  
Geologist.

The gentleman who has been appointed to succeed him will bear the more appropriate title of Geological Surveyor. He will also be Inspector of Mines, but it is contemplated to relieve him of the inspection of mining machinery, which work will be performed by an Inspector of Machinery.

It has hitherto been the practice to permit private persons and companies to avail themselves of the services of the Mining Geologist, upon payment to the Government of a fee sufficient to cover the officer's travelling expenses and the time employed in the work, for the purpose of visiting and reporting upon their claims, such reports when made being the private property of such persons or companies. This practice, although convenient to the mining community, in some respects has been found to have very serious counterbalancing disadvantages, and I feel it to be my duty to strongly urge its discontinuance in the future.

Two diamond drills, the property of the Government, each in charge of a skilled foreman, have been kept constantly at work throughout the year. They have been employed in various parts of the Colony, prospecting for coal principally. Details as to the work done and cost of same are annexed.

Diamond  
Drills.

During the year 66 new Companies have been registered, as a rule under the "No Liability" system. On the whole, the various provisions of the Act have been fairly complied with. Some trouble has arisen owing to the negligence of legal managers in a few cases. This, however, is not the fault of the Acts, but is due to the incompetence of the management of the companies concerned.

The Mining  
Companies  
Acts.

The action of Parliament in making this vote has been fully justified in the case of the West New Chum mine at Lefroy. This mine participated in the vote to the extent of £1500, on the £1 for £1 principle, with the result that the mine, which had been to a large extent abandoned, is again in full work, with very satisfactory yields. Encouraged by this success, other mines on the field have resumed work, and are now paying their way, and the field generally is in a more hopeful condition than it has been for several years. It is beyond doubt but that for the timely assistance of this vote Lefroy would have been practically abandoned.

Deep-sinking  
Vote.

The only other claim which has utilized the vote during the past year is the Moonlight Company at Beaconsfield, who are now sinking below their 400-foot level in the hope of picking up the continuation of the Tasmania reef. The work is still in progress.

I regret that so far the operations of this vote have not yielded satisfactory results. One company (the Denmark) at Beaconsfield, having received assistance to the extent of £300, expended some £1000 or more in endeavouring to reach a deep alluvial gutter, but owing to the enormous quantity of water to be dealt with, and with which their machinery is not able to cope, have been obliged to suspend operations.

Aid to Mining  
Vote.

The David's Creek Prospecting Association were accorded a grant of £300, on the £1 for £1 principle, to aid them in prospecting for a sub-basaltic run of tin near Moorina, but for lack of proper appliances were obliged to abandon the work without proving their ground. A stronger and better equipped party are now at work with the balance of the vote.

The only remaining Company receiving assistance is the New Cumberland, who were granted £500 for the purpose of extending their tunnel at Heemskirk. After some little time more encouraging prospects were discovered upon another part of their claim, and the Company was permitted to expend the money in developing the new find, which work is now very satisfactorily proceeding. There are reasonable grounds for the belief that this mine, with its splendid machinery and magnificent water supply, will shortly be a paying concern; but for this vote it would have been abandoned.

Mount  
Cameron  
Water-race.

Under an Act of Parliament passed in December, 1887, the Government were authorised to purchase from the Mount Cameron Hydraulic Tin Mining Company, for the sum of £4750, a water-race of 12½ miles of main race and 9 miles of branches, and further to construct some 21 additional miles of main race, for the purpose of tapping the waters at the Mussel Roe River and conveying the same through the country on the eastern side of the Ringarooma River and on to an extensive area of stanniferous country hitherto unworked for lack of water. The work of construction is now in progress under a contract for the sum of £18,503 1s. 2d.

The whole race when complete will be under the management and control of a Board consisting of the Secretary of Mines, the Inspector of Mines, the Commissioner for the District, and two Members to be annually appointed by the Governor in Council. So far only that portion of the race already constructed is in the hands of the Board, whose first work was to have it put in thorough repair and order. This has been done at a cost of £1159 2s. 7d. The sale of water commenced on the 17th August last, and from that date up to the 30th June last 501 heads of water have been sold, yielding a revenue of £385 5s., or at the rate of £6 4s. 8d. per £100 interest upon the money expended in purchase, repair, and management. This, however, must not be taken as an index of the probable receipts when the whole race is complete and a full supply of water available, for the reason that the present supply is limited, and does not reach the part of the country where it is required for use. It is anticipated that this much-needed work will be completed by the month of January next.

I have the honor to be,  
Sir,

Your very obedient Servant,

F. BELSTEAD, *Secretary of Mines.*

#### REPORTS OF COMMISSIONERS.

Northern and  
Southern  
Division.

Mr. Commissioner Glover, in charge of this Division, reports:—

“I have at various times in former reports during the past two years taken occasion to allude to the hopeful spirit which seemed to be gaining ground in the Northern Gold-fields; and although this had hitherto led to no important event, the enterprising spirit seems at length to have culminated in more practical results.

Lefroy.

“On the Lefroy Gold-field new enterprise has been brought to bear upon two of the abandoned claims of the past, on the Golden Point line of reef, which were closed some 10 or 12 years ago. Machinery has again been erected, and mining work is being vigorously prosecuted. Crushings of quartz from one of them has yielded nearly three-fourths of an ounce to the ton, and the drive in the other is in a fair way of shortly reaching the same reef. At Back Creek an Association has been engaged in testing, by means of one of the diamond drills of the Government, the deep-made ground for an auriferous deposit, reasonably presumed from surrounding conditions to exist there. The fourth bore which has been put down attained a depth of 211 feet, and, having passed through 119 feet of basalt, bottomed on slate through a quartz gravel wash five feet in thickness; this is deemed quite satisfactory, and the next proceeding will be to sink a shaft to prove the quality of the deposit. The drill having thus satisfactorily accomplished its purpose, its use here will be discontinued. Further discovery has been made during the past year of a gold-bearing reef, whilst a party were boring for coal, about 10 miles west of Lefroy and four miles from George Town. The borings obtained from this reef having given exceedingly rich prospects, a shaft has been sunk and operations for the development of the mine have been proceeding until stopped by the influx of water, which will necessitate other measures. Should the result prove what the indications warrant, an extensive area there will doubtless be taken up in mining leases, and a large mining industry created. The various tributors on the established mines—on the Chum and New Native Youth lines of reef—are working with satisfactory yields, whilst the development of the mines is proceeding. The yield of gold from Lefroy for the past 12 months was 2456 ounces, value £9446, against 1985 ounces, value £7379, of the previous year.

Beaconsfield.

“On the Beaconsfield Gold-field the established productive mines—the Tasmania and Florence Nightingale—now amalgamated, continue their operations, though for some months past the continually recurring accidents to the pumping machinery having caused the flooding of the lower

and more productive levels has temporarily greatly reduced the yield of gold. This company is now engaged in sinking a new main shaft of sufficient dimensions to receive pumping machinery of adequate power to unwater the whole group of amalgamated mines. The revival of enterprise on this field is exemplified in several instances. On the south boundary of the Tasmania ground the holders of the adjoining sections known as the Phoenix Company have engaged the services of one of the Government diamond drills, which is now boring to strike the 'underlay' of the celebrated Tasmania reef. On the eastern side of the Tasmania an entirely new enterprise has been established under the expectation, guided by bearings and surveys, of finding the eastern continuation of the Tasmania reef within the section operated upon. Complete pumping and winding machinery has been erected, and underground work is vigorously proceeding. Another new venture is on the eve of being commenced on a section lying to the south east of the Tasmania, and I am informed that foreign capital to the extent of £60,000 has been secured to prosecute the work. Another revival of a long-abandoned mine at Blue Tier, near the town of Beaconsfield, has taken place during the past twelve months, and the work of exploration is proceeding hopefully. A few alluvial mines are obtaining satisfactory returns.

"The only drawback to this unmistakeable progress is the temporary failure of the important enterprise for proving the deep ground at the foot of Cabbage Tree Hill, which, through the dangerous and insecure nature of the country, owing to subterranean water, has suffered suspension of operations. This promising enterprise was commenced some eight or nine years ago on private land, but was abandoned. Ultimately, some three years ago, it was again undertaken by a Sydney association, who, having erected powerful pumping as well as other machinery, have expended some £5000 or £6000 in an abortive attempt to reach, by driving from a shaft in the solid country, the site of a former bore which was said to have struck gold in the deep drift. Being continually baffled by the shifting and insecure nature of the saturated formation which intervened, and the available capital having been at length exhausted, cessation of work was the necessary result. Another smaller operation on Crown land, on the same formation, known as the Denmark Claim, was one of the ventures which last year obtained a share in the Parliamentary vote in aid of mining. This undertaking, I regret to say, is almost in a state of collapse. The very unsatisfactory result of this transaction shows the great difficulty existing as to the most judicious mode for the disbursement of such grants in many cases. Want of further capital is also bringing the undertaking to an abortive end. The total yield of gold from Beaconsfield for the past twelve months was 30,832 ounces, value £117,639, against 28,000 ounces, value £103,717, for the previous year.

"At Middlesex Plains nothing worthy of record has transpired during the past 12 months, except that the continued and expensive litigation over one claim would seem to indicate that great value is attached to some of the claims there. Middlesex Plains.

"The Lisle Gold-field presents nothing special to report. This is purely a surface alluvial field, and has been comparatively unprospected for reefs. It, however, continues to afford employment to 52 diggers. Lisle.

"The copper-mining project at Saxon's Creek is at present under a suspension of work pending the recent depression in value of that metal; but a quantity of ore is ready for shipment to Australia to be smelted when it is considered advisable. Saxon's Creek.

"The Company formed for the purpose of utilising certain minerals at Ilfracombe for the manufacture of paints is progressing with its operations. One mill has been constructed, besides the various necessary appliances in tanks, buildings, &c.; but no marketable results in sufficient quantity have yet been produced, though the manufacture, as far as tested, is said to be unexceptionable. Ilfracombe.

"The diamond drills have been continually employed—No. 1 drill at Seymour for coal, and now at Beaconsfield for gold; No. 2 drill has been employed at Campana and at Richmond for coal, and it has just completed its work in boring for gold at Back Creek. The detailed statement of employment of these drills is annexed.

Mr. Commissioner O'Reilly reports of the Division under his charge:—

North-Eastern Division.

"Since my last annual report I cannot say that there has been any material improvement in the condition of gold-mining in this district.

"At Mount Victoria the results of mining operations at the claims so far have not been very encouraging, yet several of the claims have been worked and prospected. There are but three claims at work on this field at the present time; viz.—The Mercury (on which occasionally small quantities of quartz are crushed), the Mount Victoria, and the Strahan, the operations on the latter two claims being now confined to preparatory work and prospecting. During the past year 540 tons of quartz have been crushed, yielding 288 ounces of gold; the average number of men employed being 12. Mount Victoria.

"At Waterhouse I am informed that mining operations at the present time are almost suspended. Waterhouse.

"I cannot report any marked advancement in the state of mining at the Upper Cascade River and Upper Ringarooma portions of my Mining District during the past year; but it is satisfactory to observe that a fair amount of work, principally by Chinese labour, has been steadily done on several of the claims, and on the whole I believe the returns are fairly remunerative. At Mount Upper Cascade and Upper Ringarooma.

Maurice there is but one claim being worked by five Europeans. The tin lodes known to exist at the Upper Cascade River are spoken very highly of, and I am informed that appliances will shortly be provided for their development. During the past year about 109 tons of tin ore have been raised in this locality; average number of men employed being 18 Europeans and 104 Chinese.

**Branxholm.**

"Satisfactory progress has been made in carrying on mining operations in the Branxholm locality. The yields from the Arba Association's claim are considered very satisfactory, and it is pleasing to observe the systematic and enterprising manner in which this claim is successfully worked. Appliances have been recently erected, water-power with machinery being provided, and mining operations commenced on the eastern extremity of this claim for the working of a deep lead of tin ore, the deposit of which is considered rich, and will be worked by the system of 'driving' or tunnelling; 26 European miners are employed. The several small claims worked in Branxholm Creek and Ruby Flat have done fairly well. Little has been done towards properly prospecting the lodes known to exist in this locality during the past year.

"The Ormuz Tin Mining Company having completed their water-race, which is an excellent work and provides an abundant supply of water, have let their claim on tribute to a party of Chinese, and so far as I can learn the results of the first cleaning-up have been satisfactory, and the ground appears promising.

"At the Ringarooma Valley Tin Mining Company's claim extensive works have been constructed in connection with the working of the mine, and considerable enterprise and judicious management exhibited; 10 Europeans are now employed at this mine.

"Nineteen claims have been worked in this locality during the past year, employing on an average 70 Europeans and 74 Chinese, the quantity of tin raised being 200 tons.

**Brothers' Home or Derby.**

"At Brothers' Home a considerable extent of work has been done during the past 12 months on two of the principal mines, viz., the Briseis and the Brothers' Home No. 1; on the former the work carried on being principally in connection with providing an easement and preparatory work necessary before the raising of the ore can be commenced, and at which work 35 Europeans are now employed. The Company propose to construct a water-race of considerable magnitude for 60 heads of water, and at a large cost to tap the Ringarooma River some few miles back from the Town of Ringarooma. The survey and plans of the work have already been completed, and should this important undertaking be carried out by the Company it will prove of very great advantage to their extensive claim, and also to other claimholders in the locality.

"The Brothers' Home No. 1 Company are carrying on active mining operations, and have succeeded in raising large yields from their mine. During the past three months 109 tons of ore have been produced, the working of the mine having been carried on underground by 'drives' or 'tunnels,' which necessitates a large quantity of timber being used to ensure the safety and stability of the workings.

"Mining work has not been so actively carried on at the Krushka Brothers' claim during the past as in previous years; 12 men are now employed at the mine.

"The amalgamated Companies (Triangle and North Brothers' Home) have a few months since commenced mining operations, the work being carried on by hydraulic sluicing on the ground previously held by the Triangle Company.

"The mining settlement at Derby appears to progress. New and improved buildings have been erected, and an additional number of areas have been taken up and occupied under Residence Licences.

**Cascade River.**

"There are 10 claims now being worked in a small way at Tin Pot Creek, Cascade River, two of which are mined by Europeans and Chinese on tribute, and eight by Chinese; 30 tons of tin ore having been raised during the past three months.

**Main Creek.**

"At Main Creek four claims have suspended work, and four are carrying on mining operations, and produce a small quantity of tin.

**Moorina.**

"Satisfactory progress has been made in the working of the claims at O.K. Creek, Weld, and Frome Rivers, in the vicinity of Moorina, and the yields derived therefrom are considered fairly remunerative.

**Bradshaw's Creek.**

"At Bradshaw's Creek the Pioneer mine has been worked to a small extent on tribute by six Europeans and six Chinese, the quantity of tin raised during the past quarter being nine tons. The period of the tribute of the above holders having recently expired, the claim has been again let to a different party, who will, I am informed, work the mine with more energy than has hitherto been exhibited during the past few years, a large number of men being about to be employed, and the machinery provided by the proprietors of the claim for lifting the washdirt, but for some time unused, will be brought into use, and much larger yields may now be expected. A few new claims have recently been opened in this locality, which so far promise very well.

"It is the general opinion that deep leads of tin ore exist here, trending towards David's Creek, and some attention has recently been given to them. Applications have been made for a few maximum sections of 80 acres recently. I look forward to this becoming an important mining locality.

"At the Wyniford River and vicinity considerable mining activity has prevailed during the past year, all the principal claims having been at full work when water was available, a large number of men being employed, and satisfactory yields of ore obtained.

Wyniford River.

"The Argus Company's claim still maintains the premier position for large returns of tin, 53 tons having been raised during the last three months; 28 Europeans being employed on wages, and 62 Chinese on tribute.

"The Argus Extended Company's mine has produced 24 tons during the past three months, 40 Chinese being employed on tribute. The Garibaldi Company also continues to produce large yields, 51½ tons of tin ore having been won during the past quarter, raised on tribute by 45 Chinese. Several of the small claims have been worked, and, on the whole, the returns from these are considered satisfactory.

"Fifteen claims have been worked in this locality during the past year, employing on average 54 Europeans and 207 Chinese, the quantity of ore raised being 705 tons. This is the largest producing and most important mining locality in the district.

"Several small claims in the vicinity of South Mount Cameron are being worked with a fair amount of success by Chinese.

South Mount Cameron.

"The Long Reach Dredging Company have had their machinery at work dredging the bed of the Ringarooma River for tin, but owing to some difficulty having arisen as to the working, principally with reference to the getting rid of tailings, &c., operations had to be suspended for some time. The success of this new enterprise will no doubt prove very beneficial not only to the proprietors, but also to many persons interested in mining, as it would provide an easy and economical means of raising tin ore from the bed of the river, and also in the low-lying banks or flats of the stream.

"Notwithstanding the serious drawback to the carrying on of mining operations in the localities of Mount Cameron and Gladstone through the absence of a regular water supply, a very fair amount of work has been done during the past year, thirty claims having been worked, the number of men employed being 30 Europeans and 100 Chinese, and the quantity of tin ore raised 237 tons.

Mount Cameron and Gladstone.

"The Esk Tin Mining and Hydraulic Sluicing Company are now supplying, through their pipes across the Ringarooma River, water on the south or Gladstone side of that river, at a sufficient elevation to afford ample pressure to work a claim near to the town of Gladstone by hydraulic sluicing.

"Very many of the claims on the south side of the river in the vicinity of the town of Gladstone must necessarily remain unworked during a greater part of the year until a water supply is provided, and I have no doubt that when this supply will be available that the quantity of tin raised will prove very large. I am informed that the above claims could be supplied by a branch race constructed at a moderate cost from the Government water-race, Amber Branch, and until this is done, or a water supply provided by private enterprise, the development of many of the claims, proved to be rich in tin, cannot be proceeded with.

"On one of the oldest claims in the district, that of the Mount Cameron Company, active mining operations are carried on, and good yields of ore won. An increased water supply has been secured, and the mine is worked with much judgment and good management.

"In the vicinity of Mount Horror there are three claims being worked by Chinese.

Mount Horror.

"There is but one claim, formerly the St. Leonard's, now being worked in the Scottsdale locality by Chinese.

Mount Stronach, Scottsdale.

"The total output of tin ore from the North-Eastern District for the year ending 30th June, 1889, is exhibited by the following Return:—

Tin Ore shipped.

	Tons	Cwts.	Qrs.
Year ended 30th June, 1887 .....	1883	7	0
Ditto, 1888 .....	1854	8	3
Ditto, 1889 .....	2216	14	0

"Considering the protracted drought during the last summer and autumn months, and the consequent stoppage of mining operations on many of the claims, the large increase in the yield for 1889 is very satisfactory, and shows that the state of mining in this district is steadily progressing.

"The number of applications received for the year ending the 30th June, 1889, has been 106, embracing 2643 acres, a large proportion of which is taken up by working miners.

"There have been 32 applications received for Water-rights during the past year, embracing in the aggregate 107 sluice-heads. For dam sites seven applications have been received, covering in the aggregate 17 acres. Eleven applications for Easements, Tail-races, &c., and two applications for Tailings Areas, embracing 44 acres, were also received.

Water-rights.

"During the past year 385 Europeans and 605 Chinese (aggregate number) were employed at the mines.

Number of Miners employed.

"One hundred and thirty-two claims were worked during the year ending 30th June, 1889, 42 of which were worked by Europeans, 19 by Europeans and Chinese, and 71 by Chinese only.

Number of Claims worked.



- Tin lodes. "Tin lodes are known to exist at the Upper Cascades River locality, as also at Branhholm. I may here observe that lodes are known to exist in the Mount Cameron district, but up to the present time but little has been done towards prospecting them.
- Deep Leads. "Prospecting is now about being commenced for deep leads of tin ore supposed to exist in the vicinity of David's Creek, near Moorina, a maximum area having been granted for that purpose to Mr. Wm. Nobes, who is about to provide the most modern appliances for that purpose.
- "Too much importance cannot be attached to the successful development of this class of mining, which necessitates a large outlay of capital.
- Ordinary Prospecting. "But little has been done during the past summer and autumn months in the way of prospecting Crown lands as compared with former years, and this I attribute to the attractions of the West Coast mineral country having drawn there several of the most experienced and active prospectors from this district.
- General operations. "Although depression has been complained of and felt in the mining interest in this district during the past twelve months, such might be expected to a certain extent in consequence of the fall in the price of tin, and in the disappointment experienced by those who may have, without due precaution, hastily entered into mining speculations based upon unwarrantable grounds as to the known mineral-bearing qualities of the lands held by those with whom they invested. I need not remark that every sympathy and encouragement should be extended to those who invest their capital with an honest intention of developing the mineral deposits on their claim, and take reasonable precaution that their funds are not squandered away in visionary enterprise, such legitimate expenditure having the effect of promoting the advancement and welfare of this important industry; but the action of those who, provided with unreliable reports furnished by unqualified would-be mining experts, delude mining investors into purchasing shares in claims that have never been properly prospected, and so often prove worthless after a considerable expenditure has been incurred, cannot be too strongly deprecated, and it is to the results of such unworthy action that I attribute in a great measure the cause of the complaints I have referred to in connection with the alleged depression in the state of mining. I have, too, known several fairly good claims held and mined profitably by working miners to have been purchased with the view of floating mining companies to work them, and after a lapse of considerable time to remain unworked. In such instances these claims would give good returns to experienced working miners, but would not bear the heavy cost of mining company's management.
- "The actual results of the year's mining operations, referred to before in the large quantity of ore raised, shows that the productive power of this district is not in any way diminished, but is more vigorous than it has been for several years past, and I do not see any grounds to lead me to believe that the industry will in any way languish; on the contrary, with the increased facilities for the supply of water which will be provided by the Mount Cameron Water-race, and also by the enterprise of a few of the large claim-holders, the number of persons employed in mining will be largely increased, and the quantity of ore raised largely added to. From several of the claims that have in the past yielded handsome returns, and are still capable of doing so, reduced outputs may, after a time, be looked forward to; but I do not anticipate any material reduction through exhaustion of the resources of such claims for many years to come. I may observe also (although much remains to be done) that the improved facilities given for transit to and from the mines by the construction of roads by the Government must necessarily facilitate mining operations, and should the Launceston and Scottsdale Railway be extended through the mining district to Moorina, the latter place being the centre of a large extent of mining country, the advantages thus conferred would tend much to promote the advancement of mining."
- Eastern Mining Division. Mathinna. Mr. Commissioner Dawson reports favourably of the progress of the industry in his Division.
- "There has been a considerable amount of prospecting on this field during the year, with the usual varying success. The limited supply of water available is a great bar to development here. Very satisfactory progress has been made at the New Golden Gate Mine, which apparently has a prosperous future before it. A ten-head battery has been erected, and the mine well opened out. Crushing commenced in March last, since which time the yield has been 1448 ounces of gold, of the value of £5792.
- Mangana. "A little work has been done in this neighbourhood during the year, but, so far, no great results obtained.
- Seymour. "The diamond drill was employed here during the greater part of the year, proving the coal seams known to exist upon the ground reserved to the East Coast Coal and Harbour Company.
- Mount Nicholas. "The Cornwall and Mount Nicholas Coal Mines upon this range are both steadily increasing their output, which, but for an unfortunate strike at the latter mine, would have been largely in excess of that for last year.
- Ben Lomond and Avoca. "The yield of tin in this vicinity is on the increase. The Great Republic and the St. Paul's Companies have a large quantity of tin-stone at grass, but as yet have not had a crushing.
- Cream Creek. "Valuable and extensive machinery has been erected here, with a view to treating economically large quantities of tin gravel. Sufficient time has not yet elapsed to enable an opinion to be formed as to the prospect of success.

O. J. Roper L



OFFICE OF MINES, HOBART  
AUGUST 1889





SKETCH MAP  
WEST COAST OF TASMANIA

KING RIVER AND MT LYELL GOLD FIELDS  
MT ZEEHAN SILVER AND HEEMSKIRK TIN FIELDS

Scale 5 Miles to One inch.

Drawn by G.F. Lovett

Note. Revised and issued with the sanction of the Honorable the  
Minister of Lands and Works as a sketch Plan only for the guidance  
of Prospectors, the features of the country not being from actual  
Survey its accuracy is not guaranteed.

F. Belstead  
Secretary of Mines  
Hobart, Tasmania

REFERENCE

Gold discoveries thus...  
Silver ore...  
Tin...

MINES OFFICE  
30 JUNE 1899  
HOBART

"In and around this centre a large number of miners are employed, including many Chinese. The yields of ore are in no case very large, but there is a steady and remunerative output from the field. Some claims are being worked here for gems, and it is without doubt that in working the tin gravels many very valuable stones have been passed over by the miners in ignorance as to their true value. Weldborough.

"A fair amount of tin is raised in these localities. Lode tin-mining operations have proceeded slowly. One company (the Full Moon) are getting their crushing plant erected, and will commence operations shortly. Blue Tier and Gould's Country.

"Many sections are held here, but so far no great progress has been made towards developing the deep run of tin said to exist in this locality. George's River.

"The silver mine here has suspended operations for the present, and the prospecting, so vigorously prosecuted in the neighbourhood some time back, has practically ceased." Scamander.

The Commissioner concludes his Report by stating that, on the whole, the industry in his district is in a healthy and progressive condition.

Mr. Registrar Paice reports:—

"Tin mining is confined to the neighbourhood of Waratah. All the mines there are in full work, and doing well. North-Western Division. Tin.

"At the Whyte River the claims known as Godkin's are being prospected. At the Heazlewood a large quantity of work was done in the early part of the year, and the mines there are, with fewer hands, still being opened out, but until a road is formed it is quite impossible to get ore to market or machinery to the ground; little progress, therefore, need be looked for until the road now being constructed is finished. Silver.

"At the Specimen Reef a few hands are employed, the battery being kept going at only half-time. A recent crushing yielded, I am informed, fair results. Gold.

"At Long Plains there are many sections taken up. At the leading claim (Weetman and Crockford's) the puddling machine has been erected, and will start in a few days.

"At Brown's Plains, the Castray River, and various other places several alluvial miners are at work, and, I believe, with fair results, but, from the customary reticence of gold diggers, it is difficult to form an estimate of their actual success."

Mr. Commissioner Fowell, in charge of this Division, thus writes:—

"In the month of July, 1888, I visited Zeehan for the first time. Beyond prospecting (with the exception of the Silver Queen) nothing had been done to prove the value of the discovery. On one of the Silver Queen sections a shaft had been sunk 56 feet, but on most of the sections prospecting was only commencing. During the past twelve months machinery has been set up at the Silver Queen and Mount Zeehan Companies' claims, and both are actively at work proving their claims at a depth. During the summer months a large amount of ore has been raised and forwarded to the smelting works, the Comstock Company alone having sent away about 200 tons. Other companies, notably the Silver King, Silver Queen, Mount Zeehan, Silver Queen Extended, and the Western, have forwarded large parcels of ore, all giving most satisfactory returns, proving beyond a doubt the value of the discovery, if the means of transit can be made reasonable. This can only be done by railway communication from Zeehan to the nearest shipping-port, which is Strahan. Western Division. Mount Zeehan.

"The future of the district depends upon the railway, not alone for the silver-field at Zeehan, but for the development of the whole district. Supplies and machinery could be conveyed at a cheap rate into the very heart of it, and prospectors would be enabled to carry out their work, where at present they cannot even earn wages.

"With regard to the progress made in tin mining during the year—

"The Eureka Company have at great expense brought water on to the claim, and are now working it by hydraulic sluicing. Heemskirk.

"The Mount Granville, now Reminé Company, will, I hope, soon be able to develop their mine.

"A considerable amount of alluvial tin has been raised during the year, principally in the neighbourhood of the Tasman River.

"Lodes have been discovered on the Cumberland sections, and there is every reason to believe that a rich deposit will be found at Heemskirk, but it will take time and capital to do it.

"In gold mining, machinery has been set up at the Princess, Macquarie, and Mount Lyell Gold-mining.

"The Princess has been steadily working for some months, and the result has run from 11 dwts. to 17 dwts. to the ton.

"The Macquarie Company's claim has only, I regret to say, had a trial crushing, which was not satisfactory. However, the Company have determined to further try it, and have appointed an experienced mining manager, who will, I trust, have more success.



"The King River Company have, I regret to say, not met with the return they richly deserve. They are now taking steps to prove some stone on one of their sections at Howard's Plains.

"The Mount Lyell Company have erected and started their machinery. The mining manager reports that it works well, but the peculiar nature of the stuff in which the gold is deposited is such that it is very slow work passing it through the battery. However, experience will doubtless suggest improvements, and, as a proof, the last cleaning-up gave better prospects than the trial one.

"The application of Mr. H. E. Wright for about 37 acres for alluvial mining at the Linda, Mount Lyell, will, I trust, be the means of thoroughly proving the deposit there, and may lead to the development of a deep lead. At the present time but very little is known of it, but there is every prospect of a rich deposit, which can only be brought to light by a company, the undertaking being too great for any under the ordinary miner's right.

"There has been a steady improvement in the amount of gold obtained under miners' rights. One great drawback is the difficulty of getting provisions.

"The bridge over the King has been carried away; consequently, if the river is at all flooded, all communication is cut off with Mount Sorell, Flanigan's Flat, and Mount Jukes.

"As I have written in previous reports, so I repeat now, until the King River is properly bridged over and a good road made, that very important part will remain as it is. The branch road to Howard's Plains has now been completed to within two miles of Orr & Watson's discovery.

"There is every prospect of machinery being immediately required here. Messrs. Orr & Watson have with a hand battery crushed about 20 tons of stone, giving the highly satisfactory result of 3 oz. 7 dwts. to the ton. Until the road is continued to the claim they cannot obtain their machinery, and besides this one there are several others which look very promising. Messrs. Orr & Watson have tried their discovery to the depth of 36 feet. The stone shows gold all through, and is said to improve with depth.

"During the year there has also been a large deposit of copper opened up at Mount Lyell. Over fifty tons have been raised, and about twelve sent away for treatment."

### *REPORT of the INSPECTOR OF MINES for the Year 1888.*

I HAVE the honor to submit my Report for the year 1888.

The usual lists of mining accidents, visits to the various mining districts, and other matters of importance to the mining industry, will be found below.

The number of mining accidents which have been reported to me during the year shows a slight increase, from 19 in 1887 to 23 in 1888. Only one fatal accident was recorded, that of a Chinaman, but it is now well known that the Mongolians only report when such has come to the notice of Europeans in their vicinity. Of the non-fatal accidents to Europeans there are some of a trivial nature, and one fatal (No. 1) could scarcely be called a mining accident, as the drinking of a poisonous ingredient does not come within that description; and it is much to be regretted that old and experienced miners, who should know better, have been by their own recklessness made to suffer severely. Nos. 14 and 14 in the list furnished are specially noticeable in that respect, and they would have been proceeded against under the provisions of the Mines Regulation and Inspection Act, 1881, if it had not been borne in mind that their almost unendurable sufferings, and the at first very probable prospect of losing their eyesight for ever, constituted a sufficient punishment, and thereafter deter them and others from incurring the penalties of their own incautiousness.

Informations were laid under Acts 1881 and 1884, Sections 5 and 2 respectively, against the Mount Bischoff, West Bischoff, and Stanhope Tin Mining Companies, for having failed to furnish underground plans and sections in January, 1888, as provided for. The various cases were heard before the Police Magistrate and a Justice of the Peace, and I proved that said plans, &c. had only been delivered in the beginning of March. The cases were postponed on technical grounds in the first instance. When the adjourned cases were reheard the Bench decided in my favour, and substantial fines were inflicted, but an appeal was lodged by Mr. W. Ritchie to have a case stated, and on its being presented before the Supreme Court the defendants were granted a reverse of the decision of the Court below.

In consequence of some complaints having been made as to the dangerous conditions and method of working carried on by the Norwich Coal Mining Company, Longford, a careful examination was made, and it was found that that Company had adopted a system not only expensive to themselves, but likewise fraught with danger to the *employés*. The coal occurs at a little below 20 feet from the surface, and as the ground is traversed by a creek much percolation of water is taking place, thus rendering the ground very heavy. In opening the workings, it was found that they were not more than 3 feet 9 inches in height, and that owing to the intricacies of the main levels the *employés*

were almost unable to escape on a fall of the roof taking place. Very inferior and weak timber also was used, necessitating a proper notice to be served on the proprietors under the provisions of the Regulations of Mines Act, 45 Vict. No. 8, 1888, Section 9, to carry out the needful repairs and works within six weeks from date.

The Inspector of Mines has examined during the year most of the mines in the principal Mining Districts, in some instances (as necessary) several times; viz.:—

<i>District.</i>	<i>Proprietaries.</i>	<i>Description of Mining.</i>
Lefroy.....	West New Chum.....	Gold lode.
Ditto .....	Unity.....	Ditto.
Ditto .....	New Native Youth.....	Ditto.
Beaconsfield (Blue Tier.)	Victoria.....	Ditto.
Ditto .....	Tasmania .....	Ditto.
Ditto .....	Moonlight.....	Ditto.
Ditto .....	Ophir.....	Gold, pliocene.
Ditto .....	Denmark .....	Ditto.
Long Plains.....	Weetman and Crockford's ....	Gold lode.
Mount Heemskirk.....	New Cumberland.....	Tin lode.
Ben Lomond.....	Great Republic.....	Ditto.
Ditto .....	Day Dawn.....	Ditto and alluvial.
Ditto .....	North Republic.....	Tin lode.
Ditto .....	Ben Lomond.....	Ditto.
Ditto .....	Gipps' Creek.....	Ditto.
Ditto .....	Victory.....	Ditto.
Avoca.....	St. Paul's River.....	Ditto.
Ringarooma.....	Cascade .....	Ditto.
Ditto .....	Nugget.....	Ditto.
Mount Bischoff.....	Stanhope.....	Ditto.
Mount Heemskirk.....	Granville (Reminé).....	Pliocene.
George's Bay.....	Thureau's Deep Lead.....	Ditto.
Saxon's Creek.....	Pandora.....	Copper.
Mount Zeehan.....	Silver Queen.....	Silver-lead.
Ditto.....	Western .....	Ditto.
Ditto.....	Mount Zeehan (Arthur and Long Plains)	Ditto.
Ditto.....	Silver King.....	Ditto.
Ditto.....	Silver Bell.....	Ditto.
Ditto.....	Silver Queen Extended.....	Ditto.
Ditto.....	Ritchie and Taylor.....	Ditto.
Ditto.....	Silver Crown.....	Ditto.
Ditto.....	Silver Spray.....	Ditto.
Heazlewood.....	Heazlewood Extended.....	Ditto.
Ditto.....	Heazlewood .....	Ditto.
Mount Claude.....	Mount Claude.....	Ditto.
Ditto.....	And several prospecting areas	Ditto.
Mount Zeehan.....	Manganese Hill (Balstrup's)...	Silver and Manganese.
Ditto.....	Peade's (and Silver-Lead).....	Ditto.

This list comprises those mines only which were actually examined. As regards the various Mining Districts in which they are situated, they are specially referred to in the Reports of the Mining Geologist.

In compliance with Section 2 of "The Regulation of Mines Amendment Act, 1884," and of Section 5 of Act, 1881, the following proprietaries have sent in their completed underground plans and sections. Some companies in the Waratah District caused serious delay, and, as already described, were proceeded against, when eventually the necessary plans and sections were delivered in March, 1889. In these cases, however, it appeared to be not so much the fault of the proprietaries, but their having erroneously depended upon the local authorised surveyor when any other official duly authorised could have been thus employed:—

- |  |   |   |
|--|---|---|
| 1. The Tasmania G.M. Company, Registered                           | } | The Tasmania G.M. Company,<br>Registered, Beaconsfield. |
| 2. Dally's United G.M. Company, Registered                         |   |   |
| 3. Florence Nightingale G.M. Company, Registered                   |   |   |
| 4. Lefroy G.M. Company, Registered                                 |   |   |
| 5. Amalgamated West Tasmania, No Liability, Company, Beaconsfield. |   |   |
| 6. Little Wonder G.M. Company, Registered, ditto.                  |   |   |
| 7. Mount Bischoff T.M. Company, Registered, Waratah.               |   |   |
| 8. West Bischoff T.M. Company, Registered, ditto.                  |   |   |
| 9. Stanhope T.M. Company, Limited, ditto.                          |   |   |

10. New Native Youth G.M. Company, Registered, Lefroy.
11. Unity G.M. Company, No Liability, ditto.
12. West New Chum G.M. Company, Registered, ditto.
13. Cornwall Coal Mining Company, Fingal.
14. Lottah T.M. Company, No Liability, Blue Tier.

This shows an increase of four upon last year, and others will shortly have to conform to the Section of the Act. As stated before, the manner in which these very important plans and sections are executed leaves much to be desired, and this is doubtless due to the want of experience how they are made in other colonies and countries.

#### ACCIDENTS.

During the year 1888 the total number of miners deprived of their life and injured whilst employed in the mines is as follows; viz.—

#### *Fatal Accidents from January to December, 1888, inclusive.*

Date of Accident.	Consecutive Numbers.	Description of Mining.	Locality.	Married.	Single.	Date of Death.	Age.	Names.
January 13th	1	Gold	Panama	..	..	..	..	Wm. Airey.
August 7th	11	Gold	Mangana	1	..	August 7th	28	Thos. Nuttall (3 children).
September 29th	18	Tin	Moorina	1	..	September 29th	49	Lee Sing or Keen Tong (two children).
November 15th	19	Tin	Blue Tier Junction	..	1	November 15th	27	Thos. Ryan.

#### *Non-Fatal Accidents during the same period.*

Date of Accident.	Consecutive Numbers.	Description of Mining.	Locality.	Married.	Single.	Age.	Names.
January 27th	2	Gold	Beaconsfield	1	..	45	Joseph Farger.
February 11th	3	Gold	Waterhouse.	..	..	..	Charles Stagg.
April 10th	4	Gold	Mount Maurice.	..	..	..	— Hennington.
April 10th	5	Tin	Wyniford	..	..	..	Jas. Harper.
April 10th	6	Gold	Mangana	..	1	21	John Cheshire.
May 23rd	7	Tin	Waratah	..	1	21	Alfred Sincok.
May 24th	8	Gold	Beaconsfield	1	..	49	John Finch.
July 9th	9	Gold	Beaconsfield	1	..	26	John Lyons.
July 9th	10	Gold	Mathinna	..	..	..	Robert Remington.
August 22nd	12	Tin	Waratah	..	1	33	Henry Grills.
September 4th	13	Gold	Beaconsfield	..	1	20	Denis O'Keefe.
September 7th	14	Gold	Mangana	..	..	..	— Ball.
September 7th	15	Gold	Ditto	..	..	..	— Allen.
September 14th	16	Gold	Mathinna	..	1	..	J. Armstrong.
September 29th	17	Tin	Waratah	..	1	..	Thomas Grose.
November 15th	20	Coal	Fingal	..	1	23	John M'Cromie.
December 1st	21	Gold	Beaconsfield	1	..	32	Alex. M'Skimmings.
December 10th	22	Tin	Waratah	1	..	50	Patrick Fagan.
December 12th	23	Gold	Beaconsfield	..	1	23	Wm. Williams.

MEMO.—Total fatal accidents during the year, 4; total non-fatal accidents, 19; grand total of all mining accidents, 23.

I have the honor to report that mining managers and miners continue to report all manner of accidents, however trivial they may be, and several of the latter have been therefore omitted. This, however, does not apply to the Chinese, for reasons referred to above.

#### *Particulars as to Fatal Accidents.*

I leave out No. 1 as scarcely admissible under the category of "mining" accidents. Thomas Nuttall was sinking a winze, and having fired a blast, he went to work in the bottom without first examining the sides, when a large piece of rock loosened by the explosion became detached and fell upon him, causing immediate death.—Lee Ling or Keen Tong was killed by a fall of earth.—Thos. Ryan was likewise deprived of his life by a fall of earth.

#### *Particulars as to Non-Fatal Accidents.*

A miner working in an underlay shaft was seriously injured through the ground giving way before same could be timbered.—A miner tried to leave a cage before it was level with the surface, causing his foot to be fractured.—A boulder became detached, and injured a miner working below.—

Another miner was injured by a fall of earth.—A young miner entered an adit without any light, though it was forbidden to do so; he fell down a winze, causing severe shaking and injury.—Over-exertion whilst turning a truck on a flat sheet caused internal injury to another young man.—Slipping of a pick stuck in a spar of timber caused injury.—A finger was taken off clean through carelessness in working the lever of a cage.—A severe flesh wound was caused by the fall of slate.—A stone fell and broke a toe.—Closing the door of a truck cut off a finger.—Two miners were injured by drilling out with a steel drill an unexploded charge in a hole 3 feet 6 inches deep.—A man at a windlass, raising another miner from below, lifted the barrel out of its stands, and then it fell upon the men below.—Caught in machinery by carelessness got a finger severely crushed.—Undermining a block of coal and removing the props; this miner went underneath the mass thus suspended, when it fell, breaking his arm in two places and injuring his back.—A toe was fractured by a pump-bearer falling upon it.—Missing his footing when working at a face over 25 feet high, a miner was much bruised and broke two ribs.—Incautiously getting near the stamper shaft, was caught, and the bottom of his foot smashed.

I have, &c.

G. THUREAU, *F.G.S., Inspector of Mines.*

F. BELSTEAD, *Esquire, Secretary for Mines, Hobart.*

## APPENDIX A.

*Pressland House, Hobart, 4th August, 1889.*

SIR,

HEREWITH I have the honor to hand you my Report on the general aspects of the Mount Zeehan Silver Mines, and the results of my examinations as to the best methods of treating the ores from those mines.

I have purposely considered the prospects of the district from a general point of view, without particularizing any one property.

In the selection of a smelting centre, I have carefully considered the advantages possessed by each locality before arriving at any conclusion.

I trust that the remarks expressed in the latter part of my Report will lead to greater activity in the development of the mines, and that before long the Mount Zeehan District will prove an important contributor to the industry and wealth of your Colony.

I have the honor to be,

Sir,

Your obedient Servant,

JOHN PROVIS.

*The Honorable the Minister of Lands and Works, Hobart.*

## REPORT.

The silver mining district of Mount Zeehan is situated on the West Coast of Tasmania, and is known to extend over an area of 38.5 square miles on the north side of the mount of the same name.

The physical aspect of the country is mountainous, but is less rugged and broken in the immediate vicinity of the mines.

The hills are densely covered in timber, with a heavy and almost impenetrable undergrowth, but in places are open patches covered with the button-grass everywhere prevalent on the West Coast.

In the creeks and gullies between the hills are perennial streams of fresh water, and throughout the whole district wood and water exist in great abundance for all mining and smelting necessities.

*Geology.*—The rocks traversed by the silver-bearing veins are of the Silurian age, and composed mainly of slates and schists, in which are occasional dykes of quartzite and boulders or masses of a siliceous ironstone, often passing into a brown ferruginous quartz. Resting on these slates is a deposit of white granular quartzite in the form of coarse gravel and fragments.

The slates are in the vicinity of the mineral-bearing veins, frequently soft and friable, and lose their slaty texture. They are also coloured from brownish yellow to deep brown from the masses of ironstone they enclose.

The general course of the mineral-bearing veins or lodes is N. 23° W. There are also several cross-veins, and a few of considerable size, which run about N. 30° E.

The cross-veins are more commonly found in the flats between the hills, and several of the smaller veins occurring in different parts of the district in various directions will probably prove on further development to be branches and feeders of the larger veins.

The width of these veins vary very considerably, the smaller ones only averaging a few inches, while the larger lodes open out in places to 8 feet or 10 feet in width.

Nearly all these veins carry galena ore right from the surface, which is of good quality. I saw several places where the galena ore crops out at the surface, and could be traced for some distance along the surface.



The larger veins can be traced for a long distance at surface ; one or two being traced continuously for upwards of a mile in length.

I noticed that those veins which run west of north appear much more prominent and masterly than those whose bearing is east of north.

The vein formation is principally clayey and siliceous ironstone, with gozzan and galena. I have also found the following minerals occurring in these veins ; viz., Zinc Blende, Iron Pyrites, Cerusite, Anglesite, Native Silver (in one instance), Calcite, Barite, and Quartz. With some of the galena is also mixed small quantities of antimony.

The width of the galena ore exposed varies from 4 inches to 4 feet. I carefully measured a large number of the workings, and found that the average width of galena was 10 inches. Two measurements averaged 18 inches in width, while in another place (under water at the time of my visit) the manager states that the galena ore was 4 feet in thickness. This was afterwards corroborated by an independent statement from another source.

I very much regret that so many of the deeper workings were under water during my stay in the district and could not be examined, as I should like to have made an estimate of the total quantity of ore already exposed in the district, but with the meagre details at my disposal this is impossible.

The whole of this galena ore carries silver in payable quantities.

I made a very large number of assays, and find that the smaller veins in the centre of the field are richer than the larger ones. The following are the actual assay results obtained from eighteen samples of fairly clean ore obtained from different veins. Fractions of ounces have been purposely omitted, as the samples are only intended to convey a general idea of the silver contents of the galena :—

No.	1	yielded	43	ozs. silver per ton.
"	2	"	88	"
"	3	"	100	"
"	4	"	84	"
"	5	"	32	"
"	6	"	102	"
"	7	"	120	"
"	8	"	152	"
"	9	"	44	"
"	10	"	57	"
"	11	"	96	"
"	12	"	64	"
"	13	"	132	"
"	14	"	156	"
"	15	"	64	"
"	16	"	52	"
"	17	"	27	"
"	18	"	26	"

Average result of eighteen samples being 79·9 ounces silver, and 65 per cent. lead. Six samples of poor and dirty ore yielded the following results :—

No.	1	yielded	16	ozs. per ton.
"	2	"	12	"
"	3	"	12	"
"	4	"	14	"
"	5	"	31	"
"	6	"	23	"

This class of ore will require further treatment before smelting. The gangue, however, is light, and may be easily removed by jigging.

Taking into consideration the whole of the Mount Zeehan ores smelted at Dry Creek, as well as the assays made on the field by myself, I estimate the average value of the clean or first-class galena ore to be 60 per cent. lead and 65 ozs. silver per ton. This, according to the Dry Creek Company's tariff, is worth £11 9s. per ton at Dry Creek after deducting smelting charges and losses, but without including the freight charges to Adelaide, which, in consequence of the dangerous shipping at Trial Bay, are exceptionally heavy.

There are now about 400 tons of ore broken and lying around the different claims in the district.

*Treatment of the Ores.*—Upon the economic treatment of these ores will depend the whole future of the field.

As far as present developments show, the only class of silver ores found is argentiferous galena ; but it is quite probable that in the outlying portions of the district, and near the higher spurs and ridges, other classes of ores will eventually be discovered.

In silver-mining, even where large deposits of ore occur, it has generally been found more advantageous to smelt all the ores at one common centre than for each mine to have its own smelting establishment. This is particularly applicable to the Mount Zeehan District, as none of the veins are very large. Moreover, successful smelting requires scientific supervision and skilled labour only attainable by years of special study and training.

Another important advantage in smelting at one common centre is that ores of different character and chemical composition can be suitably mixed in such proportions as would be conducive to economy in costs of smelting and losses by volatilization and rich slags.

The establishment of such works would be of immense help to the district, as the mining companies could then concentrate their whole attention and capital to the development of their properties, and obtain the full value of their ore in cash every week.

The selection of a suitable locality will depend upon the following conditions; viz.:—

- i. Easy accessibility and cheap freights from the mines.
- ii. Cheap and constant supply of fuel.
- iii. Suitable and cheap fluxes and water supply.
- iv. Cheap delivery of smelted bullion to the market.

I have assumed that the labour conditions are nearly equal between those centres likely to be suitable for smelting the Zeehan ores.

The difficulties attending cheap smelting at the mines would be the scarcity of suitable fluxes, and the extra expense of conveying the silver-lead bullion to the coast, as the conveyance of fluxes to Mount Zeehan and bringing the bullion down to the coast would form a greater bulk than the conveyance of the raw ore to the coast, while the cost of fuel (if charcoal was used) would be about equal in both places. The cost of coke would be very considerably dearer at Mount Zeehan than at the coast.

If the line of railway now under consideration between Strahan and Mount Zeehan be constructed, I consider that Strahan, being the natural outlet for the district, will, from its accessibility, and from the fact that supplies of fluxes are obtainable within easy distance, prove the most advantageous site as a smelting centre for the Mount Zeehan field. In arriving at this opinion, I have very carefully considered the claims of Hobart and Launceston as well as Mount Zeehan, and given due weight to the advantages possessed by each place.

On the banks of the Gordon River there is a very good limestone, which could be delivered at Strahan at a moderate cost. Ironstone may also be procured from Macquarie Harbour; while on the banks of the Gordon and King Rivers, and on the shores of Macquarie Harbour, the forests of peppermint, myrtles, and other varieties of gums, will, with the manuka (ti-tree) and another tree locally known as cheesewood, supply charcoal of a fair quality. Water transit being available, all necessary supplies for smelting operations should be laid down at Strahan at a moderate cost.

Before arriving at this conclusion, I made several assays of the various ironstone outcrops at Mount Zeehan in order to ascertain whether they carried sufficient silver to pay for smelting. I found that the general average was from 2 ozs. to 3 ozs., although a few samples ranged from 4 ozs. to 8 ozs. silver per ton. The ironstone is also too poor in iron, and contains too much silica to be useful as a flux, although small quantities may be procured by careful sorting which is of good quality. The sorting would, of course, add considerably to the expense.

Hobart, as a smelting centre, has many advantages. In the neighbourhood of Sorell deposits of iron ore of fairly good quality exist. An analysis of three samples kindly made by Mr. Ward, the Government Analyst, showed—

	I.	II.	III.
Peroxide of iron.....	61.4	70.0	74.3
Insoluble residue, chiefly silica.....	26.4	15.3	9.0

Sample No. III. would prove the most suitable as a flux.

This iron ore could be laid down at Hobart very cheaply.

The limestone in the district is not nearly so good for smelting purposes as that on the Gordon River, but will serve fairly well for galena ores, although it will be found expensive to use when the silver ores contain a considerable amount of silica and alumina.

New South Wales coke and English coke could also be delivered at nearly the same price as is paid in Adelaide. I have no knowledge of any foundry coke being made from Tasmanian coals. Being a port of call for ocean steamers, satisfactory arrangements could probably be made for shipping the silver-lead bullion to Adelaide or Europe to be refined. These advantages are, however, considerably reduced when the difference between the freight on raw ores and silver-lead bullion is taken into account, as the current rates of freight between Strahan and Hobart are comparatively high; consequently it will be more advantageous to smelt at Strahan and ship the bullion to Hobart than to ship the very much larger quantity of raw ore from Strahan. Launceston is less favourably situated than Hobart, as bullion going to Adelaide or Europe would have to be transhipped at Melbourne. It is more distant from Strahan than Hobart, and at present there is only a fortnightly service between the two ports.

The actual cost of smelting at Strahan would largely depend on the quantity produced by the mines. Charcoal should be procurable at 42s. 6d. to 47s. 6d. per ton; New South Wales coke would probably cost about 60s., and best English foundry coke 72s. 6d. per ton.

Until the mines are opened up and a regular output maintained, it will probably cost 60s. per ton, but when the supply is sufficient to keep a works in constant operation it could be done cheaper. It will not be possible at present to smelt as cheaply as at Dry Creek, because English coke can be laid down cheaper there, and the refined lead and silver sent to the various European, Indian, and China markets on better terms.

*Present Aspects and future Prospects of the Mines.*—Owing to the very small amount of work done, and the very superficial character of the workings, I regret that I am unable to arrive at any estimate as to the total quantity and value of ore now exposed in the district. In four of the claims the lodes are being systematically proved and the properties developed in a miner-like manner; but at the time of my visit there were only sixty or seventy miners on the whole field, and most of the claims were idle and the workings flooded with water.

Of course, the difficulties always attendant on the development of a new district will, in a large measure, account for the very slow progress made and the languid state of affairs now existing. The high rates of freight and the uncertain communication by steamer have also been contributing causes which have retarded the progress of the field, and this matter is not likely to improve much while the miserable apology for a harbour at Reminé serves as the outlet for the district.

The surface prospects are undoubtedly good, and many of them amply justify the expenditure of the capital necessary to prove them.

The veins hitherto discovered are small, yet the ore is of good quality, and, as far as the work has been done, the prospects of several of the claims are decidedly encouraging for the future.

With railway communication established to Strahan, it is quite certain that the surface ores can be worked profitably; and should the veins hold good in depth several of the properties ought to pay well. I am also of opinion that further discoveries will yet be made.

I cannot too strongly urge upon your Government the great importance of stimulating the mining companies into greater activity as soon as it is decided to construct the railway, if this be done. In many instances the difficulties have been unduly magnified, and there is not the amount of work done for the money expended that I expected to find.

If mining companies will begin in earnest and work their properties, and the Government construct the railway, the establishment of a smelting works at Strahan may be safely relied on.

JOHN PROVIS, *F.C.S.*

4th August, 1889.

## APPENDIX B.

### DIAMOND DRILLS.

*Statement of Work done.*

<i>Year.</i>	<i>Locality.</i>	<i>Direction of Bore.</i>	<i>No. of Bores.</i>	<i>Total Distance bored.</i>	<i>Average Cost per foot, exclusive of Labour and Fuel.</i>
<b>No. 1 DRILL.</b>					
1882-3	Back Creek—For Gold.....	Vertical	7	feet. 1330	<i>s. d.</i> 10 9
1883...	Lefroy—For Gold.....	Ditto	4	1011	5 3
1884...	Tarleton—For Coal.....	Ditto	1	401	5 6
1886...	Longford—For Coal.....	Ditto	2	1585	4 0½
1886-7	Harefield Estate—For Coal.....	Ditto	1	725	6 5
1887...	Cardiff Claim, Mount Malcolm—For Coal	Ditto	1	562	17 11¾
1888...	Killymoon Estate—For Coal.....	Ditto	1	504	4 7¾
1888-9	Seymour—For Coal.....	Ditto	5	2266	7 8½
TOTAL.....			22	8384	
<b>No. 2 DRILL.</b>					
1882...	Beaconsfield—For Gold.....	Horizontal, underground	1	68	No record.
1883...	Mangana—For Gold.....	Ditto	1	546	15 1
1884...	Guy Fawkes Gully, near Hobart—For Coal	Vertical	1	612	5 6
1885...	Malahide Estate, Fingal—For Gold.....	Ditto	5	1397	5 6
1886...	Carr Villa, near Launceston—For Coal.....	Ditto	1	571	5 4
1886-7	Waratah—Mt. Bischoff Alluvial T.M. Co.— For Tin.....	Ditto	7	1548	6 1½
	Waratah—Mt. Bischoff T.M. Co.—For Tin	Ditto	7	841	11 8
1887...	Ditto—Ditto.....	Horizontal, underground	1	53	7 8
1888...	Old Beach—For Coal .....	Vertical	1	593	10 9 about
	Campania—For Coal .....	Ditto	1	600	7 7½
	Richmond—For Coal .....	Ditto	1	500	5 1¾
1889...	Back Creek—For Gold .....	Ditto	4	787	8 5½
TOTAL.....			31	8116	

Aggregate number of bores..... 52  
Total distance bored..... 16,500 ft.

W. H. GLOVER, *Commissioner of Gold Fields.*

Launceston, 30th June, 1889.

## DIAMOND DRILL, No. 1.

*REPORT of Strata passed through in boring for Coal at SEYMOUR.*

Commenced, 22nd June, 1888 ; completed, 24th July, 1888.

NO. 3 BORE HOLE.	STRATA.	FT. IN.
	Surface Shaft .....	12 0
	Sandstone, showing a few coal stains .....	53 3
	Shale and Sandstone .....	12 11
	Coal, with numerous bands and partings. ....	5 5 $\frac{3}{4}$
	Firelays, Shales, and Sandstone, with a few small seams of Coal...	113 9 $\frac{1}{2}$
	Coal.. ....	2 6 $\frac{1}{2}$
	Shale and small seams of Coal .....	32 2
	Hard grey Rock or Sandstone .. ....	8 4
	Greenstone or Trap Rock .....	6 1
	TOTAL .....	246 6 $\frac{3}{4}$

## DIAMOND DRILL, No. 1.

*REPORT of Strata passed through in boring for Coal at SEYMOUR.*

Commenced, 6th August, 1888; completed, 6th December, 1888.

NO. 4 BORE HOLE.	STRATA.	FT. IN.
	Surface Shaft .....	5 0
	Yellow and Grey Sandstones, showing a few Coal stains. ....	41 9
	Shale and Conglomerate .....	9 7
	Sandstone and Conglomerate .....	58 8
	Blue and Black Shales, bastard Fireclay and Sandstone.....	26 3
	Coal, with several bands . ....	0 10
	Sandstone and Shale, with a few small seams of Coal and Coal stains	126 2½
	Coal .....	1 5
	Shale, Conglomerate, and Sandstone, with two small seams of Coal	14 9
	Coal, with bands .....	2 10½
	Shale, bastard Fireclay, Sandstone, and Conglomerate, some of the Sandstone showing a few Coal stains.....	102 10½
	Mud Shale, showing minute fossils and pebbles .....	100 4½
	Hard fossilised Limestone.....	259 8
	Fine-grained Sandstone, showing Coal stains from 750ft. to 760ft..	42 8½
	Sandstone, Shale, and Conglomerate .....	18 11½
	Sandstone and Conglomerate; Sandstone showing a few Coal markings, 812ft. to 820ft .....	30 4½
	Conglomerate .....	54 11½
	TOTAL .....	897 3

## DIAMOND DRILL, No. 1.

*REPORT of Strata passed through in boring for Coal at SEYMOUR.*

Commenced, 16th January, 1889; completed, 3rd April, 1889.

NO. 5 BORE HOLE.	STRATA.	FT. IN.
	Surface Shaft, Sandstone Boulders and Clay .....	44 0
	Sandstone, Clay, Black Clod, and Shale .....	52 9
	Coal, inferior quality .....	0 5
	Light Shale and Sandstone .....	41 5
	Sandstone showing Coal stains .....	33 1
	Shale and Sandstone, showing thin veins of Coal and Coal stains...	292 1½
	Sandstone ..	90 1
	Coal—only 8 inches clean Coal .....	1 6
	Sandstone and sandy Shale .....	57 8
	Coal with bands and parting.....	4 3
	Sandy Shale, showing fern impressions .....	27 10
	TOTAL ..	645 1½

## DIAMOND DRILL, No. 2.

*REPORT of Strata passed through in boring for Coal at CAMPANIA.*

Commenced, 25th June, 1888 ; completed, 8th September, 1888.

BORE HOLE.	STRATA.	FT. IN.
	Surface Shaft .....	6 6
	Brown Sandstone .....	18 4
	Hard Grey Quartz .....	7 2
	White, Brown, and Grey Sandstones .....	79 9
	Conglomerate .....	2 0
	Grey Sandstone, showing grey clod Pebbles .....	16 6
	White Sandstone .....	23 11
	Grey and Black Clod and Sedimentary Sandstone .....	141 5
	Sedimentary Sandstone.....	66 7
	Sedimentary Sandstone showing a few Coal stains .....	56 11
	Black and Grey Clod .....	47 4
	Grey Gritstone .....	55 5
	Grey Gritstone showing thin Coal streaks .....	10 6
	Grey Gritstone and Conglomerate .....	24 11
	Grey Sandstone.....	32 7
	Hard Grey Rock .....	10 4
	TOTAL .....	600 2

## DIAMOND DRILL, No. 2.

*REPORT of Strata passed through in boring for Coal at RICHMOND.*

Commenced, 20th September, 1888 ; completed, 19th November, 1888.

BORE HOLE.	STRATA.	FT. IN.
	Surface Shaft.....	23 0
	Grey Clod and Shale.....	4 5
	Coal and Shale.....	1 4
	Grey Clod and Sandstone.....	34 3
	Grey Sandstone, showing Black and Grey Clod, decayed wood, and Coal streaks .....	190 4
	Coal and Shale .....	1 8½
	Black Clod, showing coal streaks ..	7 2
	Grey Sandstone, showing decayed wood and coal streaks.....	121 1½
	Grey Sandstone, showing Black and Grey Clod and streaks of Black Shale .....	52 10
	Coal .....	1 6
	Grey Clod .....	0 3½
	Coal .....	0 5½
	Black and Grey Clod and Sandstone .....	33 5
	Grey Sandstone .....	28 2
	TOTAL.....	500 0



## DIAMOND DRILL, No. 2.

*REPORT of Strata passed through in boring for Gold at BACK CREEK.*

Commenced, 2nd February, 1889; completed, 2nd March, 1889.

NO. 1 BORE HOLE.	STRATA.	FT. IN.
	Surface Shaft .....	6 6
	Basaltic Clay .....	22 6
	Blue and Black Clays, showing decayed wood and cemented pebbles	44 6
	Hard Basaltic Rock .....	90 9
	Basaltic Clay .....	7 8
	Quartz Drift and Stones .....	2 0
	Blue Clay .....	1 11
	Quartz Wash .....	1 0
	Soft Slate Bottom .....	15 5
	TOTAL .....	192 3

## DIAMOND DRILL, No. 2.

*REPORT of Strata passed through in boring for Gold at BACK CREEK.*

Commenced, 9th March, 1889; completed, 13th April, 1889.

NO. 2 BORE HOLE.	STRATA.	FT. IN.
	Surface Shaft .....	6 6
	Yellow Clay .....	3 9
	Quartz Gravel .....	2 6
	Basaltic Clay .....	37 4
	Black Clay and decayed Wood .....	10 2
	Basaltic Clay .....	9 4
	Hard Basaltic Rock .....	99 1
	Basaltic Clay .....	5 8
	Quartz Wash .....	8 4
	Slate and Quartz Gravel .....	8 4
	Black Slate bottom .....	4 0
	TOTAL .....	195 0

## DIAMOND DRILL, No. 2.

*REPORT of Strata passed through in boring for Gold at BACK CREEK.*

Commenced, 20th April, 1889; completed, 18th May, 1889.

NO. 3 BORE HOLE.	STRATA.	FT. IN.
	Surface Shaft.....	11 6
	Basaltic Clay .....	14 0
	Soft Basaltic Rock.....	21 7
	White sandy Clay and decayed Wood .....	8 8
	Black Clay and decayed Wood .....	17 6
	Blue Clay ... ..	3 0
	Hard Basaltic Rock.....	91 10
	Basaltic Clay .....	7 9
	Cemented Wash.....	0 6
	Brown and Blue Slate.....	8 2
	Quartz leader .....	0 6
	Blue Slate bottom .....	3 4
	TOTAL.....	188 4

## DIAMOND DRILL, No. 2.

*REPORT of Strata passed through in boring for Gold at BACK CREEK.*

Commenced, 24th May, 1889; completed, 5th July, 1889.

NO. 4 BORE HOLE.	STRATA.	FT. IN.
	Surface Shaft.....	11 0
	Rotten Basalt.....	24 0
	White, Brown, and Black Clays, and decayed Wood .....	27 0
	Soft Basaltic Rock.....	3 0
	Hard Basaltic Rock.....	116 5
	Basaltic Clay .....	12 4
	Clay and decayed Wood .....	5 1
	Quartz Wash .....	5 11
	Black Slate bottom .....	6 5
	TOTAL.....	211 2

## No. 1.

*COMPARATIVE Statement of Gold won during the Years 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, and the first Half-year of 1889.*

YEAR.	QUANTITY.		VALUE.
	ozs.	dwts.	£
1880.....	52,595	0	201,297
1881.....	56,693	0	216,901
1882.....	49,122	6	187,337
1883.....	46,577	10	176,442
1884.....	42,339	19	160,404
1885.....	41,240	19	155,309
1886.....	31,014	10	117,250
1887.....	42,609	3	158,533
1888.....	39,610	19	147,154
For first half-year of 1889 .....	19,221	0	69,711

## No. 2.

*RETURN showing the Quantity of Gold obtained from Quartz during the Years 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, and the first Half-year of 1889.*

YEAR.	QUANTITY.	VALUE.
		£
1880.....	34,345 ounces	130,622
1881.....	45,776 „	174,956
1882.....	36,215 „	137,183
1883.....	36,672 „	138,060
1884.....	30,540 „	114,630
1885.....	33,266 „	124,234
1886.....	25,004 „	87,516
1887.....	33,427 „	123,453
1888.....	34,156 „	126,139
For first half-year of 1889 .....	17,973 „	66,265

## No. 3.

*COMPARATIVE Statement of Tin exported from Tasmania during the Years 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, and for the first Half-year of 1889: compiled from Customs Returns only.*

YEAR.	TONS.	VALUE.
		£
1880.....	3954	341,736
1881.....	4124	375,775
1882.....	3670	361,046
1883.....	4122	376,446
1884.....	3707	301,423
1885.....	4242	357,587
1886.....	3776	363,364
1887.....	3607 $\frac{1}{2}$	409,853
1888.....	3775 $\frac{1}{2}$	426,321
For first half-year of 1889 .....	404 $\frac{3}{4}$	37,106

## No. 4.

*QUANTITY and Value of Coal raised during the Years 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, and the first Half-year of 1889.*

YEAR.	QUANTITY.	VALUE.
	TONS.	£
1880 .....	12,219	10,998
1881 .....	11,163	10,047
1882 .....	8803	7923
1883 .....	8872	7985
1884 .....	7194	6475
1885 .....	6654	5989
1886 .....	10,391	9352
1887 .....	27,633	24,870
1888 .....	41,577	37,420
For first half-year of 1889 .....	17,519	15,768

## No. 5.

*RETURN showing the Number of Persons engaged in Mining during the Years 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, and first Half-year of 1889.*

YEAR.	NUMBER.
1880 .....	1653
1881 .....	3156
1882 .....	4098
1883 .....	3818
1884 .....	2972
1885 .....	2783
1886 .....	2681
1887 .....	3361
1888 .....	2987
For first half-year of 1889 .....	3163

## No. 6.

*RETURN showing the Number and Area of Leases held under "The Mineral Lands Act" and "The Gold Fields Regulation Act," in force on 30th June of each Year since 1885.*

Nature of Lease.	In force on 30th June, 1885.		In force on 30th June, 1886.		In force on 30th June, 1887.		In force on 30th June, 1888.		In force on 30th June, 1889.	
	NO.	AREA.	NO.	AREA.	NO.	AREA.	NO.	AREA.	NO.	AREA.
		Acres.		Acres.		Acres.		Acres.		Acres.
Under "The Mineral Lands Act," for tin, &c., at a rental of 5s. an acre .....	1011	43,511	627	24,077	656	22,892	957	32,231	1497	53,251
For coal and slate, at 2s. 6d. an acre rent .....	29	3999	38	5487	62	10,665	41	6045	38	4499
Under "The Gold Fields Regulation Act," at a rental of 20s. an acre .....	207	1976	110	1077	149	1474	285	2812	270	2687
Water Rights and Mining Easements.....	—	—	93	759 sluice-heads	107	773 sluice-heads.	140	852 sluice-heads	204	1005 sluice-heads

## No. 7.

*RETURN of the Number and Area of Leases under "The Mineral Lands Act" and "The Gold Fields Regulation Act," in force on the 1st July, 1888, issued during the Year ending 30th June, 1889, cancelled during the Year ending 30th June, 1889, and remaining in force on 30th June, 1889.*

Nature of Lease.	In force on 1st July, 1888.		Issued during Year ending 30th June, 1889.		Cancelled during Year ending 30th June, 1889.		In force on 30th June, 1889.	
	NO.	AREA.	NO.	AREA.	NO.	AREA.	NO.	AREA.
		A. R. P.		A. R. P.		A. R. P.		A. R. P.
Under "The Mineral Lands Act," for tin, &c., at a rental of 5s. an acre.....	957	32,231 0 0	668	24,600 0 0	128	3580 0 0	1497	53,251 0 0
For coal and slate, at 2s. 6d. an acre rent.....	41	6045 0 0	8	780 0 0	11	2326 0 0	38	4499 0 0
Under "The Gold Fields Regulation Act," at a rental of 20s. an acre.....	285	2812 0 0	133	1237 3 1	148	1362 2 29	270	2687 0 12
Water Rights and Mining Easements .....	140	852 sluice-heads	67	176 sluice-heads	3	23 sluice-heads	204	1005 sluice-heads

## No. 8.

*COMPARATIVE Statement of Net Revenue from Mines, being Rents, Fees, &c. paid to the Treasury.*

YEAR.	AMOUNT.
	£ s. d.
1880.....	8944 5 11
1881.....	20,936 5 5
1882.....	23,077 1 9
1883.....	15,439 14 5
1884.....	6981 11 10
1885.....	11,070 5 7
1886.....	12,523 10 4
1887.....	14,611 11 5
1888.....	23,502 8 4

The above Statement does not include Stamp Duties upon Transfers of Leases and Registration of Companies, or the Tax payable upon Dividends, from which sources large sums are derived.

## No. 9.

*RETURN of Dividend Tax paid by Gold Mining Companies.*

YEAR.	NO. OF COMPANIES.	AMOUNT OF DIVIDEND.	AMOUNT OF TAX.
		£ s. d.	£ s. d.
1880.....	5	65,852 17 2	2467 16 0
1881.....	4	99,250 0 0	3721 17 6
1882.....	5	55,825 0 0	2093 8 9
1883.....	5	63,168 10 0	2368 16 4
1884.....	4	39,400 0 0	1477 10 0
1885.....	2	61,250 0 0	2296 17 6
1886.....	3	41,125 0 0	1542 3 9
1887.....	2	66,750 0 0	2503 2 6
1888.....	2	65,375 0 0	2451 11 3
1889 to 30th June	2	23,700 0 0	888 15 0

*RETURN of Dividend Tax paid by Tin Mining Companies.*

YEAR.	NO. OF COMPANIES.	AMOUNT OF DIVIDEND.	AMOUNT OF TAX.
		£ s. d.	£ s. d.
1880.....	11	64,755 0 0	2428 6 3
1881.....	13	102,418 0 0	3840 13 6
1882.....	12	108,935 0 0	4085 1 3
1883.....	9	98,837 2 6	3706 7 9
1884.....	4	60,169 0 0	2256 6 9
1885.....	4	92,644 0 0	3474 3 0
1886.....	5	108,849 10 0	4081 17 1
1887.....	6	128,753 0 0	4828 4 8
1888.....	10	148,638 17 2	5573 19 10
1889 to 30th June	6	53,950 0 0	2023 2 6