

PRELIMINARY REPORT ON BARITE IN TASMANIA

INTRODUCTION

The following report has been prepared in order to present in a comprehensive form the available information on barite to date.

Other occurrences have yet to be examined and when this has been accomplished it is proposed to issue in printed form a publication entitled Barite in Tasmania.

Barite, sometimes known as "Barytes" or "heavy spar", when pure is barium sulphate (BaSO_4) containing 65.7% of barium oxide (BaO) and 34.3% of sulphur trioxide (SO_3). Pure barite is white or colourless, but impurities, of which iron oxides and sulphides are the commonest, may impart a yellow, brown, pink or grey colour. Barite, which is very stable in relation to acids, alkalies or corrosive gases, is a heavy opaque or translucent mineral having a specific gravity of 4.5 and may be easily scratched with a knife. It sometimes occurs as orthorhombic crystals but is often tabular, granular, or massive in appearance.

DISTRIBUTION

All the known deposits of barite in Tasmania have been found in the north-west and western portions of the State.

The former are, in almost all cases, within short distances of motor roads which connect with rail and shipping, The latter, however, are somewhat inaccessible, situated, as they are, away from the railway, which is the only means of inland transport in that part of the Island.

MODE OF OCCURRENCE

Tasmanian barite occurs mainly in the form of lodes, veins and irregular pockety masses in the country rock. The source of the barium is to be sought in ascending solutions of igneous origin derived from deep seated magmas. It is probable that certain of the lodes have formed at different periods, for there is evidence of deposition of barite both during Devonian and Cambro-Ordovician ages.

MINES AND DEPOSITS

1. Madam Howard Plains

These deposits are situated 2 miles north west of Queenstown in the western part of Tasmania and are accessible by means of the Mt. Lyell Co. Tramway to Lake Margaret from that town. At a point about $1\frac{1}{2}$ miles from the top of the haulage which leads from Queen River valley to Madam Howard Plains an old wooden tramway some 25 chains in length connects with the main southern portion of the workings. Near the 2 mile peg on the

Lake Margaret tramway a well formed track, which was constructed to carry a tramline, deviates westerly and an old track formerly a tramway from the northern workings junctions with this.

The country in the vicinity of the deposits is in the form of undulating plains and is drained by means of Pearl Creek running in a general southerly direction and by small watercourses proceeding easterly to join it.

The country rock in which the barite is contained is a light coloured quartzite, which at surface has weathered to sandstone. Although no fossils were observed at this point to identify the age of the rock, a quartzite identical in all other particulars was seen exposed half a mile away in a deep cutting 5 chains south west of the one mile peg on Lake Margaret tramline. This latter carries fossils of undoubted Silurian age and it is assumed that the quartzite connected with the barite is of similar origin.

In places in the district slates are seen interbedded with the above mentioned quartzites.

At a point on Lake Margaret tramway 3 chains north of the 1 mile peg an ultrabasic igneous rock in the nature of a peridotite is exposed crossing the line. At other points between the first and second mile pegs altered igneous rocks approximating syenites occur, and appear to intrude the slates and quartzites. These, together with the peridotite, are here placed tentatively with the Devonian period, as they are apparently later than the Silurian slates and quartzites. The barite, which is on unleased Crown land, occurs in two lode groups appearing on the summits of two small ridges at approximately right angles.

The southern occurrence is contained in old lease 4016/M 80 acres which was originally granted to A.S. Wesley and T. Cook in 1910 as reward claim for 5 years. In February 1919 the section was held by Colonial Barium Co. Pty. Ltd. and in September 1919 by W.J.W. Strong. The lode also extends into 4873/M, 5 acres east and adjoining the above and which was taken up by W.H. Wesley in 1910.

The barite was worked from 1916 to 1918 by the Colonial Barium Co. who marketed 275 tons of ore valued at £1,235. Between 1919 and 1920 the Tasmanian Barium Co. sent away 638 tons of barite realising £1,966.

The barite on this property is in the form of a lode formation and is first seen some five chains west of Lake Margaret tram and one chain north of the old wooden tram which connects with the workings, where a tunnel has been driven a little north of west into the hill side. The tunnel is now falling in and is partly inaccessible, but a barite vein 6" in width may be seen in the roof. Although no old marks or corner pegs were found, it is thought that the eastern line of the 80 acre section ran north and south a little west of the tunnel mount; and that the north-east corner of the lot would be about 5 chains northerly. Twenty feet south of the tunnel a small trench has been excavated exposing barite over a width of 2 feet, this

apparently being on the main lode. From here in a general bearing of 250° the lode may be traced at surface for 31 chains.

A number of shallow trenches have been cut along the lode which appears to gradually increase in width until at 17 chains from the tunnel the formation is opened out by a large trench $2\frac{3}{4}$ chains in length, over an average width of 10 feet, and a maximum depth of 15 feet. The walls are only poorly defined and in their vicinity barite is very much mixed with country rock. The greatest width of the formation at this point appears to be 12 feet, although the central and main portion of the lode proper, which dips vertically, is some five to six feet across.

It is to the western end of this large trench that the old tramway runs and it was here that the main work was carried out. A good deal of float material is scattered over the ground along the direction of the lode and many tons of barite could be bagged from surface. Two large heaps of ore have been stacked at rail head alongside main trench, and some tons have been piled at the junction with Lake Margaret tramway.

From main trench westerly the lode has not been opened up but outcrops can be followed for a further 11 chains. Numbers of small branching veins connect with the main lode and irregular bunches of barite are exposed in places.

On a bearing of 350° from eastern end of main trench and 13 chains distant a zone of barite veins, bunches and small lodes, about 1 chain wide, occurs with a general north-easterly trend. These are embraced by three old ten acre sections numbered 4773/M, 4774/M and 4775/M granted originally to A.S. Wesley and T. Cook in 1910. In 1916 they were held by A.S. Lilbourne, in 1918 by T.W. Cook, and in 1920 by the Queenstown Barium Mining Co. N.L. The latter company sent 175 tons of barite to market which realised £525. A number of trenches have been cut on the occurrence, the majority of which vary from one to two feet in width.

At the head of the old track or tramway, mentioned previously as proceeding from the northern workings, a tunnel has been driven in a south westerly direction, the entrance to which bears 220° . This is now waterlogged and inaccessible for examination.

Three chains south an open-cut bearing 275° for 50 feet has been made in the hill side and from this a short tunnel has been driven for 18 feet in a similar direction. Only a few small veins of barite were struck here, but from the tunnel mouth a drive has been put in for 22 feet on a general bearing of 190° , exposing a small lode throughout its length averaging $1'3''$ wide and dipping almost vertically. Four chains further north a third tunnel is seen cut on a bearing of 285° for 56 feet. At 10 feet from the end a cross-cut has been driven 10 feet south-westerly and 44 feet north-easterly. At 25 feet along the latter a rise has been taken out 30 feet to surface.

A small barite lode, averaging 6 inches in width is exposed in the cross cut roof, but this apparently cut out at the north-eastern end. Other small veins and bunches of ore are visible in the tunnel and drive.

The total observed length of the barite zone on which the northern workings are situated is 22 chains.

Three samples of barite were taken, two from the southern workings and one from the northern. These were treated by the Chief Government Chemist and Assayer with the following analyses results:-

Constituents	Selected sample of best material from main trench southern workings	Bulk Sample from main trench southern workings	Sample of better class material from northern workings
	per cent.	per cent.	per cent.
SiO ₂	0.40	0.70	0.80
BaSO ₄	99.40	98.80	98.60
Fe ₂ O ₃ & Al ₂ O ₃	0.04	0.06	0.08
Ignition loss	0.50	0.40	0.30

The analyses show that barite from this area has a very small iron and silica content and that the percentage of BaSO₄ is uniformly large. From its appearance the barite appears to be fairly pure, although iron stains are noticeable in places along structure and cleavage planes.

It is suggested that the material be picked into grades for marketing, in this way obtaining a large proportion of first quality ore. The barite is of the opaque white granular crystalline variety, from which metallic minerals appear to be absent.

The samples taken from these deposits, ground to pass 200 mesh, unbleached, and tested for colour against a sample of prime white, paint barite, showed a good white colour, but not quite up to the standard.

Development of this property cannot be undertaken without improved transportation facilities. Arrangements might possibly be made with the Mt. Lyell Mining and Railway Company to transport the material over the Lake Margaret tramway if a guaranteed tonnage could be assured.

2. Beulah

This deposit occurs in the southern part of Beulah district, about one mile east of Minnow township reserve boundary, in north-western Tasmania. The property concerned is a purchased lot of 200½ acres chartered in the name of T. Jessop, and now owned by W.H. Frankcombe. The mineral rights are here alienated from the Crown and cannot be held by lease or claim in the ordinary way.

The chief means of access is by way of 2 motor roads, one from Dunorlan railway station and the other from Kimberley station. A road also connects with shipping at Devonport.

Workings are situated on a small timbered ridge separating Minnow River from Clearwater Creek, and these streams drain the area. The rock types here represented are igneous schists of a basic nature, together with slates, both types being part of the Porphyroid Series which have been ascribed to the Cambro-Ordovician period. As far as could be seen the barite lodes are enclosed in the slate strata and trend east and west in the direction of the country rock.

At a point, on the Dunorlan road, half a mile east of the junction of this road with the one to Kimberley, a sledge track deviates southerly for some ten chains to the main shaft. The shaft has now fallen in and access underground is impossible.

It is said that main shaft was sunk to a depth of 10 feet, and that barite was followed by a drive to the east for 20 feet and to the west for 94 feet, and a certain amount of stoping carried out.

The lode is said to have varied in width from 4 feet to 1 foot, but to have averaged 2'6" throughout its length.

On the south line of W.H. Frankcombe's 200½ acre lot about 10 chains from the south east corner and just north of Clearwater Creek, is a shaft now fallen in. It is said that this was 20 feet deep, and that drives were run 20 feet east and 10 feet west from the bottom in the direction of the lode. The lode was here said to have had a maximum width of 4 feet and a minimum of 2 feet. It would appear that this is a parallel lode to that found at main shaft.

Another shaft, about 18 feet deep and now unsafe for entry is situated 12 to 15 chains west of main shaft across a slight depression, and the lode at this point is said to have been about 2 feet wide. This latter is probably a continuation of the lode in main shaft. No outcrops of these occurrences are visible at surface, but trenches cut between main shaft and the one in close proximity to Clearwater Creek expose numerous small parallel lodes and veins of barite.

The following analysis of a sample taken from one of the trenches serves to indicate the composition of the ore:-

Constituents	Per cent.
SiO ₂	1.10
Ba SO ₄	98.20
Fe ₂ O ₃ & Al ₂ O ₃	0.20
Ignition loss	0.38

The sample, after analysis, ground to 200 mesh, unbleached, and tested for colour against a sample of

prime white paint barite, exhibited a faint blue-grey shade.

The barite has an inherent grey colour and is of the massive crystalline type. A little iron discolouration is visible in the joints but at depth this may discontinue. Specks and small beads of galena, sphalerite and pyrite are disseminated through the mass.

The Beulah mine as far as can be ascertained was originally worked about the year 1911 when 50 tons of ore were raised and sent to Devonport for sale. The ruling price at that time was between 30/- and 40/- per ton at Devonport and the cartage from the mine to the railway station at Kimberley per ton about 12/-.

The records of the Department show that in 1919 and 1920, 445 tons of barite valued at £2,160 was sent to the Electrolytic Zinc Company at Risdon from this source, but it is said that altogether 600 tons, or thereabouts, was supplied to that company.

Transport was facilitated by means of horse drawn vehicles to Kimberley station from whence the material was railed to Risdon. The mine is at present idle.

The following information has been supplied by the General Superintendent of the Electrolytic Zinc Company of Australasia Limited:-

"In 1919-20 we worked a barytes mine at Beulah, in the Deloraine district. Before the demand for barytes ceased here, we mined and railed to Risdon 585 tons. £2,790. Enough work was done to show that the ore occurred principally in small irregular bunches and short lenticles connected by stringers 9" to 10" in width, and too small to work. The ore was also found to be discoloured along cleavage lines by metallic oxides.

"One average assay value of samples, not necessarily representative, showed the following:-

BaSO ₄	88.8%
SiO ₂ ⁴	4.2%
Fe	0.5%

"Another assay result which, of course cannot be regarded as typical, showed lead and zinc, thus:-

BaSO ₄	86.4%
SiO ₂ ⁴	1.7%
Zn	5.45%
Pb	1.05%

"Summing up, it appears that, while there is in all probability a reasonable tonnage at Beulah, the ore is only of second grade quality owing to the inclusion of such amounts of impurities as to render it undesirable for certain purposes, and further, it is costly to mine owing to the irregular distribution of the ore".

3. Riana

A barite occurrence is to be seen $2\frac{1}{2}$ miles south-east of Riana Settlement and 1 mile from the eastern boundary of the town reserve of that name, on a lot charted as $195\frac{3}{4}$ acres in the name of James Kaine, Junior, and said to be owned by E.J. Martin.

This land was purchased since the year 1893 and the mineral rights are held by the Crown. Access is gained by a motor road from Penguin, on the north coast, to within $\frac{1}{2}$ a mile of the deposit.

In the vicinity of the lode the rock types are represented by breccias, and slates of the Porphyroid Series, the former consisting almost wholly of igneous material.

These are considered as being part of the Cambro-Ordovician system.

Four chains south and exposed on the banks of the same stream as the barite, conglomerate, consisting of rounded quartz and quartzite pebbles varying in size from 2" down to grit, with narrow interbedded bands of sandstone, is seen dipping to the west at a steep angle. These appear to be unconformable with the slates and breccias and probably belong to the West Coast Range conglomerate series at the base of the Silurian system which caps Dial Range to the north of the area.

Traversing slates and breccias a narrow dyke of basalt, which will probably prove to be of the olivine variety, may be observed. From the small field evidence available it is thought that the basalt is of Tertiary age in compliance with other basalt of similar age in the district.

At a point about 8 chains south of the northern boundary of the lot, and on the east bank of a small tributary of Pine Creek running southerly, a barite lode trending 350° is exposed in a shallow cutting over a length of 15 feet. The lode where exposed is dipping at an angle of 65° towards the east, and averages 1'6" in width, but narrows suddenly to the south and appears to be pinched out by a thin dyke of basalt bearing in the same direction.

At a point 10 feet east of the lode is an old shaft in breccia now partly filled in. It is said that the depth of the shaft was 15 feet and that no barite was struck when sinking.

Practically no work has been done on the barite lode and only specimens have been removed.

Samples of the barite analysed at the Geological Survey Laboratory gave the following results:

Constituents	Better class material	Iron stained material
	per cent	per cent.
SiO ₂	1.30	0.90
BaSO ₄	93.50	95.9
Fe ₂ O ₃ & Al ₂ O ₃	1.90	1.06
CaO	1.50	trace
MgO	0.39	0.25
Ignition loss	0.98	0.50

A sample of the better class material, ground to pass 200 mesh, unbleached, and tested for colour against a sample of prime white paint barite showed clear white, and was equal to the standard. A sample of the iron stained ore treated in a like manner showed a distinct putty colour. The bulk of the ore is of good quality, fine grained, opaque material, while interspersed through the whole are tabular crystals of translucent barite.

A fair percentage of the ore is of good white colour, but in places limonite may be observed along cleavage planes.

Specks and threads of chalcopyrite and pyrite are observable at different points through the mass.

This occurrence is deserving of more attention and the lode should be prospected and opened out in a northerly direction to prove its extent and width generally.

4. Alma

The Alma barite occurrence is situated $1\frac{1}{2}$ miles south of the southern boundary of Alma town reserve and is contained on an area of 1,800 acres reserved for the Devonport water supply.

Access is gained by means of a road from Hamilton on Forth as far as the bridge over Wilmot River. From here a much overgrown foot track follows Wilmot River on the south side to a point near its junction with Forth River. It then turns south and proceeds alongside the west bank of the latter until Copper Creek is reached.

The area generally is one of steep timbered slopes rising from Forth River and dissected by its numerous small tributary streams of which Copper Creek is the largest. In its upper reaches the latter stream runs in a south eastern direction, but about $\frac{3}{4}$ mile from its confluence with Forth River it bends sharply and takes a more northerly course.

Dark coloured slates and hard massive quartzites cover the area under review. W.H. Twelvetrees in Geological Survey Bulletin No. 5 places these in the Porphyroid Series owing to their association with porphyroid and breccia in the district, and they are therefore of Cambro-Ordovician age.

In the west bank of Copper Creek about $\frac{1}{2}$ mile upstream from its junction with Forth River, and just below a waterfall, a tunnel which is evidently the old main adit of Barrington Copper Mine, is seen driven into the steep hillside at creek level. This is now water-logged and inaccessible. As far as could be ascertained the tunnel is an old section 2597/93M, 80 acres, now Crown Land.

Reporting on this mine in 1909 (Bulletin No.5) W.H. Twelvetrees states:-

"Lately the adit (main) has been extended further west with the view of reaching the lode supposed to be represented by the gossen in the shaft. At the 327 feet point in the adit its direction was deflected towards

south-west, so as to intersect the gossen line below the shaft on its underlay at that depth in the shortest possible distance. According to the plan there is still a distance of 20 feet to drive to reach the lode. At 13 feet behind the present end a lode of barytes 10½ feet wide has been passed through, carrying a little iron and copper pyrites. The adit intersects it obliquely, so that its true width would be about 8 feet. Beyond it the country rock changes from slate to hard conglomerate or breccia, which continues to the end, the lode occurring at the contact".

A few chains further up the creek in a south westerly direction another old adit, now inaccessible, has been driven into the same bank as main adit. Apparently this agrees with the Devonport tunnel of Twelvetreets's report, and of this he says:-

"The Devonport tunnel is a short adit about 4 chains south of the main adit driven into the hill from the creek for about 50 or 60 feet in a north-westerly direction. It has been driven across black slate towards the contact of the latter with breccia. The lode-matter, consisting of black slate with barite and disseminated iron and copper pyrites in a puggy channel, has been left on the north side of the entrance."

Five chains further upstream north-westerly in a steep belt of slate over the creek bed, an abundance of barite exists in the form of large irregular bunches and small veins, extending for ½ chain over a width of 12 feet. These follow generally the line of strike of the slates, which at this point varies from 295° to due north and dips to the south-east and east at high angles.

The barite here is of good colour, and is the tabular crystalline and translucent variety with a pearly lustre. In places it has been stained superficially along joints by iron bearing solutions, also minute specks of sulphides are visible in the mass.

From here in a south-easterly direction, for about 4 chains and 100 feet up the hill above Copper Creek, in old section 7422/M, 80 acres, (Barite Reward), a hole 10' x 5' has been sunk to a depth of 10 feet exposing bunches of barite transversing slates. The zone here is only narrow being in the vicinity of 2 feet wide. Barite can only be seen in the excavation and its extension cannot be traced at surface. The ore at this point is somewhat more opaque and massive, but is discoloured by oxides along joints and cleavage planes.

It is said that a large very white lode of barite is exposed by an L shaped trench in the vicinity, but this could not be located.

The undermentioned samples of barite were submitted to the Chief Government Chemist and Assayer for analyses, with results as shown:-

Constituents	No. 1	No. 2
	From slate band in Copper Creek	From hole above Copper Creek
	per cent.	per cent.
SiO ₂	0.70	0.90
BaSO ₄	70.50	96.40
Fe ₂ O ₃	0.72	1.10
Al ₂ O ₃	1.64	
FeO	4.64	
CaO	8.00	Trace
MgO	3.44	0.22
CO ₂ and ignition loss	9.50	0.90

It will be seen from the above that No. 1 sample has a low barium sulphate content and that impurities such as calcium, ferrous oxide and magnesium are high. The above sample, ground to 200 mesh, unbleached, and tested for colour against a sample of prime white, paint barite, showed a dirty grey colour. No. 2 sample treated in a like manner showed a pinkish-buff shade.

5. Paradise Range

A barite prospect is situated on the western fall near the summit of Paradise Range 23 chains east of Blackwood Creek and about 250 feet above it. The land on which it occurs was selected from the Crown by W.J. Luttrell (41 acres) and T.W. Whiley (51½ acres now owned by C. and H. Morse), and mineral rights were then alienated from the Crown.

The road from Sheffield, through Paradise, to Beulah proceeds southerly 40 chains east of the occurrence and a formed road junctioning with the above leads due west to within 17 chains of the outcrop.

Paradise Range consists of rocks of the Porphyroid Series, represented by igneous schists and fine grained impure sandstones, which are considered to belong to the Cambro-Ordovician period.

Half a chain south of the North west corner of 41 acre W.J. Luttrell, Purchaser, in a small water-course a trench bearing 74° has been cut for 10 feet to a maximum depth of 7 feet on a formation of barite. Two parallel vertical veins each 6 inches wide and trending North-north-west are here exposed with a two foot band of impure sandstone between. Towards the south the barite appears to cut out but a probable extension northerly has been opened out in a hole 1½ chains away on a bearing of 358°. The lode at this point could not be viewed owing to water in the excavation, but appears to a lode formation about 5 feet wide in which a number of bands of barite occur. Barite is also said to occur as a small undeveloped outcrop some 60 chains to the south west.

A sample of barite taken from the trench described above was analysed with the following result:

Constituents	Per Cent
SiO ₂	5.30
BaSO ₄	92.00 72
Fe ₂ O ₃	1.57
Al ₂ O ₃	0.31
Ignition loss	1.30

From the above it will be seen that impurities in the form of silica and iron oxide are high.

The barite is the crystalline type with an inherent light brown colour.

Limonite, by means of percolating waters, has penetrated the joint and cleavage planes of the mineral imparting a yellowish brown colour. A little galena was observed in the barite at one point.

The sample of barite after analysis, ground to pass 200 mesh, unbleached and tested for colour against a sample of prime paint barite proved to be a distinct buff colour.

6. Penguin

Two and a quarter miles south-east of Penguin on a 24 acre 3 roods 7 perches lot in the name of T.E. Revell a small quantity of barite has been found in detrital material covering the eastern fall of a steep hillside.

This is accessible by means of a road extending 55 chains southerly from South Road, between Ulverstone and Penguin, to the north east corner of the lot.

Slates, quartzites and breccia of Cambro-Ordovician age are exposed in the immediate vicinity of the occurrence.

Several small trenches have been excavated but no barite lode found.

The best material of loose barite, seen on the surface and in the subsoil, is of the tabular crystalline type with a pearly lustre and an inherent grey colour, but the biggest percentage is of poor quality.

A sample of the best material submitted to the Chief Government Chemist and Assayer for analysis, resulted as follows:-

Constituents	Per Cent
SiO ₂	0.46
BaSO ₄	96.40
Al ₂ O ₃ and Fe ₂ O ₃	0.50

Cont.

Constituents	Per Cent
CaO	0.50
MgO	0.14
Ignition loss	0.60

The sample, ground to pass 200 mesh, unbleached, and tested for colour against a sample of prime white, paint barite, exhibited a faint grey cast.

7. Other deposits

Further deposits of barite not examined by the writer are here referred to :-

- (a) Jukes Darwin District - This deposit is situated on the Inter-colonial Spur between Mounts Jukes and Darwin. (See Geological Survey Bulletin No. 16, pp. 73-121-123)
- (b) Harford - Barite has also been found at this locality but as far as known, the quantity is small 7286/M 80 ac. B. Sykes & J.A. Crisp, West side Flag Creek.
- (c) Mt. Block - Extensive deposits of barite are reported at this locality, but the material is said to be low grade.
- (d) Pinnacles Hills - This occurrence is situated $2\frac{1}{2}$ miles north-west of Chester Siding on Emu Bay Railway. At Lynch Creek, $2\frac{1}{2}$ miles further west another barite outcrop is reported. (See Geological Survey Bulletin No. 28 pp. 89-90).
- (e) Murchison River - This barite lode is situated 4 miles south-east of Tullah between Section 2865/1 and Murchison River. (See Geological Survey Bulletin No. 3, pp. 110-111)

UTILISATION

Uses of barite may be split up broadly into three groups:-

1. Ground barite

Ground barite is mainly used as a white pigment and as an inert extender in paints, also as an inert filler in rubber, paper, cloth, linoleum, oilcloth, etc. Other uses are for surfacing enamelled paper, playing cards, oilcloth, etc. and as a base upon which coal tar and other chemically prepared colours may be precipitated.

2. Lithopone

Lithopone is a white pigment consisting of an intimate mixture of precipitated zinc sulphide (30 per cent.) and barium sulphate (70 per cent.).

This is used in the manufacture of paints,

both as a white pigment alone and mixed with other pigments. It is also used as a filler in a similar manner to ground barite.

3. Barium Chemicals

Barium sulphate, or blanc fixe, in composition is identical with pure ground barite but its physical properties are different. It is prepared by precipitating natural barite, and is used where a pure white pigment or filler is desired.

Barium carbonate is a white, insoluble barium salt prepared by precipitation from a solution of barium sulphide with soda ash. It is used in the manufacture of optical glass, and enamels for iron and steel. A recent use for barium carbonate is in the manufacture of flat wall paints which produce a velvety finish.

Other barium chemicals are barium nitrate, barium chloride, barium monoxide, barium hydroxide, barium peroxide (used chiefly in making hydrogen peroxide), barium sulphide, barium chromate, and barium chlorate, etc.

Barite has recently come into use in the manufacture of titanox, and intimate mixture of barium and titanium compounds, which has similar uses to those of lithopone.

CONCLUSION

Of the deposits examined only two, those at Madam Howard Plains, and at Beulah, have been worked for barite, and these would appear to be the largest occurrences.

A large amount of fair quality ore is still in sight at the former place, but owing to workings at the latter having fallen in it was impossible to glean any information as to the persistency of barite at that mine.

The other deposits are in the form of prospects only and need a good deal more work to prove their value and extent, those at Riana and Alma being the more promising.

F. Blake

ASSISTANT GOVERNMENT GEOLOGIST

Mines Department,
Hobart.
27th September, 1928