

ALLUVIAL DEPOSITS NORTH OF  
RINGAROOMA RIVER

Extensive deposits of alluvial tin ground occur between the Mussel Roe and Ringarooma Rivers. The examination of these was confined to the old Cybele workings. The Garfield and Empress and the deeper deposits north of Gladstone comprising the Lochabar, Scotia and McGregor. The cybele workings are situated near the Mt. Cameron Water Race in the vicinity of Section 5069/M.

It is many years since active work was in progress in this area. The old workings are fairly extensive covering an area of several acres on the eastern portion of a ridge forming the divide between the Great Mussel Roe and Ringarooma Rivers. The wash dirt consists of fine gravel ranging in depth from 6 to 10 feet resting on a very uneven bed-rock slate. Some very good yields of tin are reported to have been recovered from these workings but from the manner in which the faces have been worked indications point to irregularity in the distribution of tin. The drift ground in the vicinity of the worked area appears to have been extensively tested by bore holes apparently the results obtained from these were not sufficiently encouraging to warrant a continuance of work at that time.

A short distance to the south east of the Cybele old workings of limited extent show deposits of drift 8 to 10 feet deep similar to that of the Cybele. About  $\frac{1}{2}$  mile south of the Cybele workings a series of bore holes known as No. 3 line were put down by the Government a number of years ago. These bores proved a deep run of wash coursing in the direction of the Great Mussel Roe River. This line of 32 bores was 108 chains in length. The records of the values obtained from a number of these bores fully warrant further investigation of this lead and the adjacent areas. The high price ruling for tin combined with modern methods of handling alluvial drifts should be sufficient encouragement to attract attention to these neglected areas.

Garfield Mine

The Garfield mine is situated north of the Cybele. The leases of this property are in the name of W.J. Westcott, comprising sections Nos. 9670/M, 9658/M, 9659/M, and 9671/M each of 80 acres and some further leases south and adjoining the above acquired subsequent to the time of this examination.

These sections lie about a mile to the east of the Ringarooma River and cover a wide ridge running parallel to the latter, the crest being about 300 feet above the River. The Mt. Cameron Water Race passes through a portion of the most southerly section. The level of the Water Race is a little over 100 feet below the highest point on the sections.

From the appearance of the old workings of more or less limited extent and which are situated at widely separated points on the property it is many years since productive work was in progress here. Recent investigations carried out by the present lessees show that the drifts in the old workings are well payable.

The ground formerly worked is not confined to any particular run of drift the old workings generally speaking have been confined to the slight depressions in the gently sloping ground towards the Ringarooma River.

Good facilities exist for the disposal of tailings without the necessity of elevating them.

The openings in the old workings vary from one to several chains in width over considerable distances in length. The wash dirt consists of fine gravel and sand. The gravel is of well rounded quartz sandstone and slate pebbles on the average the largest sized pieces would not exceed  $\frac{3}{4}$ " diameter. The greater portion of the wash is fine sandy grit being of loose character would shift readily with comparatively low water pressure. The wash dirt being light would afford a ready separation of the tin. There is no heavy mineral present in the wash, consequently the tin can be dressed to a very high grade quality without difficulty. In some of the faces fine particles of tourmaline are scattered through the gravel. The average grain size of the tin ore is about  $\frac{1}{32}$ " of the usual amber and resin variety. The face in Harden's Ravine carries coarse black tin with particles ranging up to  $\frac{1}{4}$ " diameter.

The drifts of this property carry no over-burden the whole of the gravel from the surface downwards being tin bearing, there is however, as a rule, an enriched layer on or close to the bottom. The average depth of wash dirt in the various faces examined is 14 feet. Dish prospects of average samples taken at various points from the old faces showed invariably well payable quantities of tin. In a number of the openings very rich layers of wash occur. The ground between the various old workings has not been systematically prospected, but from the general nature of the ground and indications obtained from shafts and shallow openings it is reasonable to assume that similar quality of wash will extend over the intervening ground between the old workings.

The bed rock of the greater portion of the area consists of granite, the contact of the latter with slate occurs in the vicinity of the south west portion of Section 9668/M, the line of contact taking a gradual outward curve to the north west coursing a short distance to the north of Section 9671/M.

This property is well situated for economic mining the whole area of drifts can be operated by hydraulic sluicing, the old sludge channels formerly used can again be utilised for the disposal of tailings.

West of the Garfields are the old Tamar and Empress workings. The Tamar workings are about  $\frac{1}{2}$  mile of the Garfield and the Empress similar distance further on. The drift ground at the north west portion of the Garfield takes a south westerly course into Harden's Ravine 50 feet deep, coursing 360 degrees. The Empress workings consist of a deep gutter through a granite ridge at right angles. The southern of the lead extending into Harden's Ravine and the northern extension into Tamar Creek valley where the drift runs into shallow ground on a bed rock of slate and gives out altogether going further north beyond Tamar Creek.

#### Lochaber Workings

These workings are situated about a mile north west of the Empress and about  $1\frac{1}{2}$  miles due north of the township of Gladstone, comprising leases 4234/M, and 412/M in the name of E.R. Groves and others. A branch of the Mt. Cameron Water Race passes through the ground. A large area of ground has been worked here, the average depth being about 20 feet. From the appearance of the faces it is many years since productive work was in progress .

The bed rock is slate and is very irregular. In parts of the floor of the workings, owing to depression in the bed rock below the general level of the drift has given rise to the belief of the existence of a deep lead of alluvial ground extending northerly from these workings. There is no direct evidence from an examination of these workings to support this theory.

These deposits are of fine quartz water worn gravel, sand and clay. In the lower portions driftwood is fairly plentiful this has been carbonised to a substance greatly resembling charcoal.

Dish prospects taken from various parts of old faces gave very satisfactory results. Good facilities exist for the economic workings of this ground. There is plenty of scope for the continuation of the ground in similar grade to that worked.

#### Scotia Mine

This property is embraced in leases 9379/M, 9380/M, 9381/M in the name of E.M. Shields and 9675/M in the name of J.T. Shields and is situated a short distance to the south west of the Lochaber.

A large area of ground has been worked on the southerly portion of the property in the earlier days of the field when payable returns are said to have been obtained.

The present large face extends from the valley of the Ringarooma on the south in a north easterly direction. In the main portion of the workings the drift is 60 feet deep and consists of fine quartz and sandstone pebbles with sand and clay. In the most northerly portion of the workings the face has decreased in depth to about 20 feet, but as the slate bottom is not visible as in the portions lower down it is difficult to say if the drift has become shallower in this direction or the bottom has been allowed to rise in order to provide fall for the disposal of tailings.

A few chains to the north east of the workings a series of bore holes have been put down proving the existence of a large area of alluvial ground averaging about 60 feet in depth. The results of these bores show erratic values in tin ranging from a trace up to about 2 lbs. to the cubic yard. Further boring could with advantage be undertaken to prove the extent of payable portions of the drift located by the bores.

Large areas of ground have recently been acquired under lease on the extensive lightly timbered plain extending north westerly from the Scotia and Lochaber leases. It is understood that a strong mainland syndicate is about to undertake the work of thoroughly testing the ground by boring. This work when completed should prove definitely if the theory that a deep lead runs through this ground is correct. North east of the Lochaber a good deal of boring has been done in the past but the results obtained are reported as not being very encouraging. More intensive boring on any concentration of tin located in the drifts should be under-taken than has been the practice in the past.

The McGregor and Aberfoyle workings lie about 3 miles north west of the Scotia, a fair area of ground has been sluiced in past years and since abandoned. The

alluvial deposits here consist of fine gravel and sand lying on what appear to be marine sand dunes impregnated with oxide of iron.

The Government Reservoir at the extreme northerly end of the Mt. Cameron Water race lies at a short distance to the east of these workings. With a constant water supply the alluvial areas in this locality are well worthy of attention.

### Conclusion

Although the Gladstone district has been a constant producer of tin for a great many years the alluvial deposits are far from being exhausted. There are very large areas of potential tin bearing drifts particularly on the north side of the Ringarooma River and to a lesser extent on the south side yet to be explored.

A good deal of attention is now being directed to the work of testing these areas by boring, there is every probability if systematically carried out further payable concentrations of tin ore will be located. A great hindrance in progress in the past has been the want of a constant water supply. To a great extent in the localities served by the Mt. Cameron Water Race this want has been supplied, but as the demand for water from the race has recently increased to beyond its carrying capacity it follows that unless some more economic use of the water can be devised that has been the practice in the past productive work will be greatly retarded.

A careful check on the distribution of water to users should be made and the minimum quantity only which in the opinion of the Manager of the water race is sufficient to carry on operations should be allowed to any individual, party or company, not necessarily the quantity that any application stipulates.

The writer is indebted to Mr. D. Shields, Manager of the Mt. Cameron Water Race also to Messrs. J. Ogilvie, M. Curtain, B. Bowen and others for information and assistance.

J. B. Scott

Department of Mines,  
1st September, 1926.