UR1930/121-125

REPORT ON THE OSMIRIDIUM "LODE" AT THE HEAD OF MAIN CREEK, ADAMSFIELD

A considerable portion of the osmiridium that has been mined on Adamsfield has been obtained from alluvial deposits along the valley of Main Creek. When examining the deposits and the workings in this creek, it is obvious to the observer that the osmiridium in these deposits must have been derived from some source near the head of Main Creek. This conclusion was a natural one even in the early history of the workings in this creek, and became strengthened as working progressed because it was found that osmiridium could be obtained from the alluvial detrital deposits up to certain points only. All these points lay on an approximately straight line, parallel to, but a few chains west of the eastern boundary of the serpentine dyke.

This was the position in 1926 and 1927 and led the writer to make the following statement in Geological Survey Bulletin No. 39:-

"The above descriptions show that there are some unusual occurrences near the eastern boundary of the serpentine in the immediate vicinity of the area from which part of the osmiridium shed into Main Creek must have been derived. Although none of them can be proved to be definitely associated with the source of some of the osmiridium, their presence is somewhat significant, and during the further progress of mining in that locality there may yet be revealed some occurrence which forms the source of this osmiridium".

The unusual occurrences referred to in the above extract were:-

1. A formation of white talcose material representing altered serpentine traversing the serpentine in a general north and south direction, a few chains west of the eastern boundary thereof. Osmiridium could not be detected in the talc. (Locally this formation is referred to as "the bar").
2. The occurrence of secondary millerite and nickel-bearing pyrite in the wash downhill from the talc formation.
3. The occurrence of nickel-bearing impure siderite in the talcose formation in the form of an occasional patch or vugh.
4. The occurrence of a zone of reddish talcose material at or about the eastern boundary of the serpentine. This material did not yield osmiridium on being tested.

In association with the above occurrences there was the fact that osmiridium could be obtained up to and apparently a short distance beyond the "bar", but that little, if any sluiding had been performed east of the "bar".

At the end of the last year (1929), it was discovered by Mr. S. McAteer that the serpentine adjacent to and on the eastern side of the talcose formation ("bar") was carrying osmiridium. Subsequently, the same conditions were found to occur on the miner's right claims of Ivory, and Messrs. Hill, Sweeny and Gladstone to the north. The discoverer applied for and was granted a reward lease (10550/M) of 10 acres. This lease embraces most of the land on M.R. claim No. 48, upon which the discovery was made.

McAteer's Workings - This Claim (No. 48) was originally pegged by D.J. Fullerton in 1925, but has lately been worked by S. McAteer. The alluvial workings were carried into the claim until at a point about 30 feet east of the western boundary the values ceased at the site of the lode. Considerable prospecting has been carried out on the lode on this claim, but unfortunately a small landslip had covered up the most important portion prior to the writer's visit. The bar was stated to be 15 feet wide in the workings and the lode to consist of two veins, each one foot wide and one foot apart. In one 12 foot length, the osmiridium was fine, there being no nuggets to a depth of 12 feet. In the next length, a few grains of fine metal were obtained and then nothing but small nuggets. These main workings exposed the lode over a length of 60 feet. Half a chain to the south a similar formation was exposed with osmiridium in it, and its position indicates a bending to the west.

The bar and lode have not been discovered south of this claim, although prospecting work has been carried out, especially above the pack track. Little, if any, alluvial osmiridium ground exists south of this claim and thus it is obvious that the osmiridium-bearing part of the lode does not continue southwards.

North of M.R. claim No.48, but still on the reward lease, another trench was put along the lode for a length of 30 feet. The osmiridium was fine and it is stated that prospects of 2-3 grains to the dish were obtained.

Half a chain further north, a trench exposed a one foot seam of osmiridium-bearing serpentine between the talc bar and a good wall of serpentine.

From here northwards until the lode passes out of the western boundary of the reward lease (about one chain from its N.W.corner) the osmiridium content of the lode is apparently low and the grade of the alluvial and detrital material was also low.

Ivory's Workings. - The lode passes out of the reward lease into the M.R. claim of W. Ivory.

The main working consists of a deep trench or open cut with a general bearing of 335° for 100 feet. The lode material was originally mined, but sluicing is now being resorted to Solid serpentine from the lode has to be crushed to release the osmiridium. The western side of the cut exposes the talc bar, while five feet to the east a good wall of serpentine occurs. The lode material is generally against the talc bar, and serpentine of various characters (sometimes massive with kernels, sometines foliated, etc.) occurs between the lode and the wall to the east. Veins and irregular patches of quartz occur in the bar and to a less extent in the serpentine to the east.

The serpentine which is osmiridium-bearing is either foliated or well jointed giving small rectangular pieces. The band of osmiridium-bearing material is generally adjacent to the bar, but, when its width increases up to two feet, it is difficult to determine where the osmiridium occurs if, indeed it is in an unvarying position.

To the south, a vein of osmiridium-bearing serpentine traverses the talc bar being as far as 9 feet west of the eastern side of the bar.

Ivory's workings have yielded more coarse osmiridium than fine, the nuggets ranging up to 11 dwts. An occasional lump of chromite shaped like a kernel four inches in length is also obtained.

Working between W. Ivory's Claim and M.R. No. 44 -

Between these claims the lode appears to be of low grade. The talc bar is traceable, but at places it is stated that the lode has not been located. This is probably because it is not osmiridium-bearing, as irregular veins of dark serpentine occur adjacent to the bar.

In the workings of C. and R. Ivory, very little osmiridium was obtained. Yellow and green massive serpentine is visible to the east.

The bar and lode is apparently continuous between W. Ivory's and M.R. claim No.44, but the strike exhibits at least one irregularity.

Workings of Hill, Sweeney and Gladstone - This party hold a group of three M.R. claims (Nos. 43, 44 and one other). The lode passes through No. 44 in a general northerly direction. The workings on this claim consist now of the sluicing of a narrow open cut along the course of the lode. Generally it was stated that the lode consisted of a formation of soft dark green serpentine ranging in width from two to 12 inches. In the northern end of the cut, the face showed two irregular veins of dark serpentine in a light coloured serpentine, one of which did not extend to the surface. The veins and formation are vertical or dipping very high to the west.

A shaft was sunk to a depth of 25 feet about the centre of claim No.44, where the lode was of high grade. Prospects of 12 dwts. per dish are stated to have been obtained. More osmiridium was obtained as nuggets than as fine grains.

The lode was still osmiridium-bearing at the bottom, 35 dwts. being obtained in the last three days' work, of which only a few grains were obtained on the last day.

The workings are 30 feet in length and have a general northerly bearing.

About 30 feet ahead of the face it was stated that indications of the lode had been obtained. It would here have a bearing of 35° but bends westerly again. The lode was 6" - 10" wide and' of poor grade.

It passes out of No.44 across the N.W. boundary about 30 feet from the N. corner.

One chain further north, shallow surface sluicing exposes the talc bar, with dark serpentine showing to the east. The bearing between the last two exposures is 335°.

McAuliffe's Workings. - These workings are situated 1½ chains N.N.W. of those last described. Surface trenching has been carried along the course of the bar and lode for a length of 1 chain and a shaft sunk to a depth of 20 feet. The dump of the shaft shows soft dark green serpentine, pieces of fine-grained enstatite rock and pieces of chromite. It is stated that prospects from a few colours to half a dwt. were obtained.

Sim's Workings - These are situated 2½ chains to the west of the above and some of them were performed by McAuliffe. They are situated in a saddle, and where-as all the previous workings were in the valley of Main Creek, the fall to the north of the saddle is into a tributary of Deak Creek, which is itself a tributary of Main Creek.

The talcose bar is visible in the workings and apparently lode material is also present judging by the dumps and reports that a small amount of osmiridium was won.

As far as is known this represents the northern extremity of the lode, though the bar extends a short distance further north.

Best's Workings - These are situated at the head of a small north-flowing creek which is a tributary of Doak Creek. They are treating alluvial and detrital material in the bed of the creek. One small outcrop of talcose material occurs on this claim. Generally, however, the serpentine is hard and stony and no sign of the lode appears. The eastern boundary of the serpentine has trended from S.E. to N.W. and greatly reduced the width of the dyke, because its junction with soft shales is visible in the bottom of the workings. These shales are soft, bluish grey rocks with a strike of 325° and a high dip to the west. They contain a number of small fossil imprints which have not yet been identified.

The same conditions continue through Roberts' claim to the north.

Conclusions - The descriptions of the above workings and occurrence show that there exists a primary deposit or lode of osmiridium-bearing material at the head of Main Creek. The lode has been found to be osmiridium-bearing at numerous points along a length of 15 chains confined mainly to the basin-shaped valley at the head of Main Creek.

The lode has a general north and south direction, but is really crescent shaped, the ends of the curve being more westerly than the centre of the curve. This course parallels generally the eastern boundary of the serpentine at the head of Main Creek and there is undoubtedly some casual relationship between the two. The dyke of serpentine traversing Adamsfield has a width of one mile in the vicinity of Main Creek, which rapidly decreases to half a mile a short distance south of Main Creek and then gradually to a quarter of a mile which it maintains for several miles to the south. It is in, and near the eastern boundary of, this bulge of the dyke that the lode occurs.

The osmiridium is contained in a narrow formation of serpentine immediately on the east side of a talcose formation. The latter represents altered serpentine, but does not itself contain osmiridium. The osmiridium-bearing material consists of one or two veins of serpentine which is generally soft, black and foliated. The veins have a maximum width of one foot, although sometimes the lode material is two feet of harder serpentine. In one case, a vein of osmiridium bearing serpentine traverses the talc bar at a distance of 9 feet from its eastern boundary.

Numerous alluvial "leads" have been worked up to the lode. These indicate at once where the richest parts of the out-cropping lode are situated. In between these places the alluvial and lode material are poorer in grade. It is anticipated that such conditions will continue both in length and depth, viz. that high and low grade zones will occur along the lode and also at different depths in it. There is at present no indication as to any general rule or regularity in the occurrence of the richer shoots. There is thus no basis on which systematic search for these portions can be made, and mining work in the near future will have to be performed blindly and in the hope of encountering other enrichments.

It would appear from the workings already carried out, that sluicing along the lode at the surface is a profitable enterprise. There are, of course, limits in depth to which

such work could be carried out and it is obvious that ordinary mining (open cutting or underground) methods will eventually have to be resorted to. The success of such will depend mainly on the average osmiridium content of the ore. The richer shoots may be found profitable to mine by themselves, but the expense of searching for them may render the total operations unprofitable. The most satisfactory method of determining the grade would be by treatment of a considerable quantity of the lode material.

It is obvious that the grade of the ore would need to be at least 2 dwts. to the ton at the present price of osmiridium to render underground operations profitable. As to whether such a grade exists remains a matter for determination.

signed
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15th April, 1930