

WOODSTOCK COPPER PROSPECT, NATONEINTRODUCTION:

In order to determine the potentialities of the copper prospects at Natone, where L.J. Clark is undertaking prospecting operations, it was deemed necessary to re-examine the general geology of the Rutherford - Copper King line of mineralisation. However, a general reconnaissance of the area soon revealed that, owing to the inaccessibility of most of the old prospects, and the general masking of the ore-bearing rocks with the thin superficial covering of basalt, no new evidence could be adduced which would give pertinent information relative to the nature of the copper deposits.

The whole of the area is situated on private property. L.J. Clark holds, under application for mineral lease on private property, approximately 100 acres, consisting of 328P/M of 41 acres charted in the name of A. Joyce embracing two lots of 25 acres 2 roods 29 perches, and 15 acres 0 roods 18 perches. The main workings of the Rutherford copper mine are located on the latter. The other two leases, namely 329P/M and 330P/M of 32 acres and 24 acres respectively are situated on portion of a 120 acres lot charted in the name of F.C. Groom, the former being that portion west of the main Burnie-Natone road.

Permits to enter and search on the 90 acre purchase lot charted in the name of F.F. Groom and on the 50 acre portion, east of the main Burnie-Natone road, of C. Quinn's 114-acre lot, are also held by Mr. Clark.

So far, however, prospecting operations have been confined entirely to the south western corner of 329P/M of 32 acres.

LOCATION AND ACCESS:

The Woodstock area is situated in the flourishing agricultural district of Natone and Stowport, and is connected with the deep-water port of Burnie by means of a good motor road approximately ten miles in length.

The area is one, generally of very low relief consisting as it does of a wide basaltic plateau, approximately 600 feet above sea level, which has been deeply dissected by the main drainage system exposing the underlying sedimentary rocks which enclose the ore deposits.

The creek flowing north through the Woodstock area forms part of the headwaters of Upper Chasm Creek.

GEOLOGY:

Generally, the geological structure consists of a highly folded and faulted series of sedimentary rocks, which have been intruded by a granitic mass, to the south and covered, for the most part, with a superficial covering of Tertiary basalt.

The masking effect of the thin covering of basalt makes it extremely difficult to get a complete section of the geological structure. However, where exposed by denudation, the older sedimentary rocks are seen to consist of slates, sandstones and quartzites of probable Cambro-Ordovician

age. Black graphitic slates predominate west of the zone of mineralisation, while to the east massive quartzites are prominent.

The dominant structure consists essentially of close isoclinal folding with a well developed south-west pitching syncline in the Woodstock area.

The granite, with which these copper deposits are genetically related, occur in close proximity to the south of the area, for big boulders of a coarsely crystalline pinkish granite are scattered over T.S. Rutherford's 15-acre low approximately one mile south of the Woodstock prospect.

The Woodstock copper prospects consist of a number of sub-parallel lines of mineralisation which occupy a zone approximately 200 feet wide, striking in a general north 40° east direction. Another zone occurs about 150 feet farther west, but the workings have been allowed to collapse and consequently no detailed observations could be made. Regarding the ore bodies, these occur in direct association with fissures traversing the slates and quartzites; the rocks on both sides of the fissures have suffered considerable alteration and partial replacement by metallic minerals. However, there are not sufficient exposures to determine the physical character and chemical composition in relation to ore deposition.

Limonitic, cellular and massive gossan occurs in pieces on the surface and although locally regarded as lode gossan, it is almost certain that this is not the origin of all such material. Assay of gossanous material taken from gossans directly derived from definite lines of mineralisation show quite an appreciable silver content, a trace of gold and some copper, whereas in gossans not known to be directly derived from copper lodes there is a complete absence of the precious metals and the copper.

Therefore, the greater part of the limonitic material is most probably cemented sub-basaltic drift, which is so frequent all over a district in which the superficial basaltic covering predominates. So, before undertaking prospecting operations, such as the deep shaft in the north eastern corner of 329P/M, based on a showing of gossanous material, steps should be taken to determine whether it is a lode gossan or merely iron cemented sub-basaltic drift.

WOODSTOCK COPPER PROSPECT - 329P/M - 32 acres:

Prospecting operations have been carried on intermittently in this area for many years and only recently L.J. Clark again has resumed active prospecting of the lines of mineralisation, confining his attention, on this occasion, to the eastern side of the creek running through the section in a general northerly direction.

Two workings are situated on 329P/M approximately six chains north of the old Rutherford copper mine main adit: they consist of a number of long and deep trenches which, on becoming too deep, were continued as adits, brought in from creek level. One adit connects with a shaft approximately 10 feet deep. With the exception of the grab samples taken of the gossans, channel samples were cut across the mineralised area.

No.1 WORKINGS

Commencing from a point approximately 200 feet north 56° east of the north eastern corner of A. Joyce's 25-acre purchased lot, a shallow cross-cut trench was cut for approximately 21 feet, on a bearing of south 70° east. From the end of this a small drive has been driven in a northerly direction for 20 feet and an irregular cross-cut opened out approximately 13 feet in an east west direction.

No well defined fissure could be observed here but the nature of the slates suggests the intense hydrothermal alteration which accompanies mineralisation here. The slates strike north and dip west at 60° and constitute the eastern limb of the syncline.

A channel sample taken over a five foot section along the north wall of the crosscut indicated the grade of the leached mineralisation.

Gold	..	Trace
Silver	..	o oz. 3 dwt. 9 grs.
Copper	..	0.9%

NO.2 Prospect:

This is located about 50 feet north west of the No. 1 Prospect and consists of a long combination trench adit which connects with a shaft approximately 10 feet deep. The trench is approximately 60 feet in length in a general easterly direction; from this point the trench was continued as an adit and the direction changed to connect with the shaft.

The "lode" consists of a narrow fissure which strikes north 70° east with a high south eastern dip of 87°. Some silicification of the wall rock has taken place, this "hard ore" consisting essentially of pyrite with a little chalcopyrite and pyrrhotite in a siliceous gangue only extends for a little over a foot on each side of the fissure. The rest of the "lode" material is represented by extremely altered slates.

The rocks exposed in these workings are light coloured, thinly bedded slates, which strike north and dip 60° west, and form the eastern limb of the syncline.

Channel samples cut on each side of the fissure indicate the grade of the partly oxidised ore in this prospect.

Reg. No.	Sample No.	Section width	Location	Assay result
785	2	4'6"	North west side of fissure	Gold 6oz. 0dwt. 6gr. Silver 0oz. 12dwt. 6 gr. Copper 1.5 per cent
786	3	3'6"	South east side of fissure	Gold 0oz. 0dwt. 4 gr. Silver 3oz. 0dwt. 6 gr. Copper 2.3 per cent.

This represents 1.85 per cent copper over an eight-foot section.

Approximately 185 feet north east of the No. 2 prospect a grab sample of loose gossanous material on the surface gave the following assay return:-

Gold	..	Trace
Silver	..	1 oz. 5 dwt. 14 grs.
Copper	..	0.2 per cent.

It appears , however that the workings of the Rutherford copper mine are too far east to have prospected the southern extension of this line of mineralisation, if it continues without interruption.

NO. 3 Prospect:

These workings consist of a short trench cut, apparently on a showing of gossan, and a combination trench-adit driven to test it at the deepest level possible by means of an adit. The upper trench could/be examined owing to it being filled with water. not

The deep trench brought in from creek level for approximately 60 feet is entirely in black graphitic slates, which, however, give place to light coloured, much altered slates when approaching the mineralised zones. These slates strike north 45° east and dip south east at 40° and constitute the western limb of the syncline. The nature of the prospect appears to have changed materially in the short distance between the surface cut and the adit, for it was reported that quite a good showing was to be seen in the surface cut, whereas in the adit there is only a crack-like fissure filled with limbnitic material, and the altered slate. The adit has not penetrated the zone of the altered slate.

It would appear that the amount of gossanous material had given rise to a false conception of the size of this occurrence.

A channel sample cut over a four-foot section on the northern wall of the adit indicates the grade of leached ore at this level.

Gold	..	0 oz. 0 dwt. 9 grs.
Silver	..	4 oz. 14 dwt. 17 grs.
Copper	..	0.2 per cent.

A grab sample of the surface gossanous material associated with this occurrence gave the following result upon assay:-

Gold	..	0 oz. 1 dwt. 1 gr.
Silver	..	10 oz. 11 dwt. 3 grs.
Copper	..	0.2 per cent.

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A shallow trench 60 feet west of No. 2 prospect exposes a dense, grey quartzite mass, which is apparently associated with the line of mineralisation indicated by the No. 3 Prospect, but this could not be sampled owing to water and being partly filled with mullock. The hard band strikes north  $35^{\circ}$  east and dips in a south easterly direction at  $77$  degrees.

CONCLUSIONS AND RECOMMENDATIONS:

Only superficial exploratory work has been undertaken up to the present time and although it has been demonstrated that the deposits possess a certain prospective value the work, so far has been ineffective.

The variable assays are suggestive of much leaching having taken place and deeper work is necessary before the character and mineral content of the primary ore can be assessed.

The most favourable position to commence prospecting at depth is in the vicinity of the shaft at No. 2 Prospect.

Q. J. Henderson,  
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