

THE YAMPIRE GORGE GEOLOGICAL SURVEY
HAMERSLEY RANGE, NORTHWEST DIVISION

Yampire Gorge in the Hamersley Range carries a north flowing tributary of the Fortescue River and lies about 20 miles due south of Mulga Downs Station.

The Hamersley Range is made up of flat dipping sediments belonging to the upper parts of the Nullagine series, presumably of late Pre-Cambrian age. The rocks exposed in Yampire Gorge consist predominantly of quartzites interbedded with siliceous or cherty ironstone. The deposits of crocidolite asbestos are everywhere associated with a banded ironstone which is highly siliceous and of a dark brown color.

Bands of crocidolite occur at two horizons in the sedimentary beds. The lower horizon is close to the base of the cliffs of the Gorge, and contains a vein of crocidolite averaging about 2-1/2 inches in thickness and lying parallel to the bedding planes of the ferruginous ironstone in which it occurs. The crocidolite immediately overlies a thin bed of green massive rock, which by microscopic examination appears to have a composition identical to that of the fibrous crocidolite. This massive rock, which weathers to a dark brown color, is thought to be identical with potential crocidolite, which is commonly associated with the fibrous variety in the deposits of the Cape Province of Africa.

The second crocidolite-bearing horizon lies at an elevation of about 200 feet above the base of the cliffs, and the crocidolite here occurs in a number of narrow parallel veins lying in the bedding planes of a ferruginous quartzite in an exactly similar manner to the asbestos in the lower horizon. In this upper horizon some half dozen veins of crocidolite varying in width from one inch to 1/4 or 1/8 of an inch are distributed through a ferruginous quartzite band over a width of about five feet, the aggregate thickness of crocidolite being about 4-1/2 inches.

My examination did not include all the prospecting areas being worked, but from information supplied to me in conversation with a number of prospectors I was able to form the opinion that all the crocidolite occurred in a manner similar to that described above.

A considerable amount of fibre is available in the cliff faces and can be won without much difficulty at the outcrop. It is doubtful, however, whether the narrow width of the veins will permit of these deposits being worked economically by underground methods, owing to the large amount of worthless rock material which would necessarily have to be removed in recovering the valuable fibre.

These deposits are interesting in that they appear to be similar in their mode of occurrence to the deposits of blue asbestos or crocidolite, in Africa. The asbestos in the Cape Province of Africa is commonly referred to as "Cape Blue", and is found in seams interbedded with the banded ironstone of the lower Griqua Town series of the Transvaal system, which is probably the equivalent in age to the upper part of the Nullagine series in Western Australia. These deposits are fully described in Memoir No. 12 of the Geological Survey of the Union of South Africa. The conclusion is there

arrived at that the crocidolite is of sedimentary origin and has been formed by the metamorphism of ferruginous quartzites, which are postulated to have had an original composition peculiarly suited to the formation of crocidolite.

Although no determination of the chemical composition of the Hamersley Range ferruginous quartzites has yet been made, the striking megascopic resemblance and mode of occurrence of the rocks to the above mentioned published description, suggest that they are similar in all respects.

Reference: Annual Progress Report of the Geological Survey of the State of Western Australia for the year 1937.

**THE YAMPIRE GORGE CROCIDOLITE DEPOSITS
HAMERSLEY RANGE, NORTHWEST DIVISION**

Yampire Gorge in the Hamersley Range carries a north flowing tributary of the Fortescue River and lies about 20 miles due south of Mulga Downs Station.

The Hamersley Range is made up of flat dipping sediments belonging to the upper parts of the Nullagine series, presumably of late Pre-Cambrian age. The rocks exposed in Yampire Gorge consist predominantly of quartzites interbedded with siliceous or cherty ironstones. The deposits of crocidolite asbestos are everywhere associated with a banded ironstone which is highly siliceous and of a dark brown color.

Bands of crocidolite occur at two horizons in the sedimentary beds. The lower horizon is close to the base of the cliffs of the Gorge, and contains a vein of crocidolite averaging about 2-1/2 inches in thickness and lying parallel to the bedding planes of the ferruginous ironstone in which it occurs. The crocidolite immediately overlies a thin bed of dark green massive rock, which by microscopic examination appears to have a composition identical to that of the fibrous crocidolite. This massive rock, which weathers to a dark brown color, is thought to be identical with potential crocidolite, which is commonly associated with the fibrous variety in the deposits of the Cape Province of Africa.

The second crocidolite-bearing horizon lies at an elevation of about 200 feet above the base of the cliffs, and the crocidolite here occurs in a number of narrow parallel veins lying in the bedding planes of a ferruginous quartzite in an exactly similar manner to the asbestos in the lower horizon. In this upper horizon some half dozen veins of crocidolite varying in width from one inch to 1/4 or 1/8 of an inch are distributed through a ferruginous quartzite band over a width of about five feet, the aggregate thickness of crocidolite being about 4-1/2 inches.

My examination did not include all the prospecting areas being worked, but from information supplied to me in conversation with a number of prospectors I was able to form the opinion that all the crocidolite occurred in a manner similar to that described above.

A considerable amount of fibre is available in the cliff faces and can be won without much difficulty at the outcrop. It is doubtful, however, whether the narrow width of the veins will permit of these deposits being worked economically by underground methods, owing to the large amount of worthless rock material which would necessarily have to be removed in recovering the valuable fibre.

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Although no determination of the chemical composition of the Emmerley Range ferruginous quartzites has yet been made, the striking megascopic resemblance and mode of occurrence of the rocks to the above mentioned published description, suggest that they are similar in all respects.

Reference: Annual Progress Report of the Geological Survey of the State of Western Australia for the year 1937

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S 2172

SIGNIFICANT

NOTES

all - B & B

Early letters - Re: Mining
Listing

Manville → Australian Mines