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COMMONWEALTH OF AUSTRALIA.

DEPARTMENT OF NATIONAL DEVELOPMENT.
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RECORDS.

1955/21

PROSPECTING AND GEOLOGICAL RECONNAISSANCE IN THE
YARRANGOBILLY-BRINDABELLA AREA.

by

J. R. Stewart

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Two and a half weeks were spent in rapid geological reconnaissance of the Yarrangobilly-Brindabella area with a view to determining sedimentary environments and their possible relation to ore deposition.

Two geological maps of part of the area are available:

(a) The Yarrangobilly-Currango area in:

Ivanac, J.F., and Glover, J.E. : "Geological Reconnaissance of the Proposed Hydro-Electric Works in the Tumut-Upper Murrumbidgee River Area." Bur. Min. Resour. Aust., Rept. 1949/53 No. 16.

(b) An unpublished map of the Talbingo district produced by the Geological Survey of N.S.W.

Particular attention was paid to known occurrences of copper, lead and silver and these mines and prospects were all tested with the geiger counter.

The following gives a summary of the radiometric results. The instrument used was an Austronic counter type PRM 200:-

Old gold mines near Kiandra : 50-65 cpm.

Blue Creek Copper Mine - about 2 miles SSW of Yarrangobilly Caves (quartz-chalcopyrite lode): 75 cpm.

2 copper prospects - about 1 mile S.S.W of Yarrangobilly (quartz-malachite-chalcopyrite veins): 75 cpm.

Yarrangobilly silver-lead mine - about 1 mile N of Yarrangobilly (gossanous galena-silver lode in limestone): 60 cpm.

Black Mountain mine (galena lode in limestone): 75 cpm.

Prospect in limestone about 2½ miles due E of Talbingo (gossanous galena lode in limestone): 75 cpm.

"Wyora" copper prospect (qtz-malachite): 60 cpm.

Other radioactivity readings as follows:-

"Currango" porphyry : 60 cpm

Bimberi "granite" : 60-75 cpm (contact siltstones : 50-75 cpm

Jackson "granite" : 65 cpm

Granodiorite at power station T1 : 75-80 cpm

"Granite" on Brindabella - Tumut road: 65-80 cpm.

"Granite" near Blue Water Hole : 75 cpm

Diorite about 1½ miles N of Blue Waterhole: 90 cpm.

Coolaman "granite" : 65 cpm.

Bendora granite: 75-80 cpm } gneissic Ordovician granites
Gingera granite: 80-110 cpm }

Limestone belt running from Yarrangobilly to Yarrangobilly Caves: 60-75 cpm.

Siltstones, mudstones and other sediments along the road from Yarrangobilly Caves to Kiandra and Power Station T1: 80-100 cpm.

Basalt near Gooandra trig. station: 50 cpm.

GEOLOGICAL NOTES.

It has been observed in the Northern Territory that higher-than-normal radioactivity in granites is often associated with uranium occurrences in sediments in the same general area. On this score the Yarrangobilly-Brindabella area is certainly not promising.

It is obvious from the above figures that the granites of the region are notable for their lack of radioactivity, with the exception of the Ordovician granites (Bendora and Gingers granites) which are gneissic and show slightly higher radioactivity.

On the map produced by Ivanac and Glover a large fault is shown running along the Valley of the Murrumbidgee River. A search was made on the present survey to locate and prospect this fault but it could not be found. If it does exist it is not nearly as important a structural feature as the map would suggest. The area around the probable fault on the map only reads 75 cpm.

A copper prospect similar to the minor showing at "Wyora" is also said to exist near Nottingham Hill but this could not be located.

Gold has been worked in the "Wyora"-Nottingham Hill area but reports of the existence of a gold mine in this area are incorrect. Some alluvial gold has been won and several very small quartz-gold veins have also been worked but none of these minor showings could be regarded as a "mine."

The environment of deposition of the limestone at Yarrangobilly Caves appears to be of island arc type. Thus the surrounding sediments do not represent a true shelf-type deposit. (See Condon, M.A. and Walpole, B.P. : "Sedimentary Environment as a Control of Uranium Mineralisation in the Katherine-Darwin Region, Northern Territory" Unpub. Rept. Bur. Min. Resour. Aust., 1954).

The reconnaissance traverse from Talbingo to Tumut to the Hume Highway to Gundagai failed to reveal any sign of a continental shelf type of sedimentary deposit in which prospecting would be worth while.

An interesting occurrence of greywacke containing large sedimentary fragments of vein quartz was found near Adelong. The quartz fragments in this rock were almost certainly derived from the Ordovician rocks to the west which are cut by numerous quartz veins.

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