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DEPARTMENT OF NATIONAL DEVELOPMENT

BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS



RECORD No. 1963/92

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JUNEE AND HOLBROOK RADIOMETRIC
INVESTIGATIONS, NSW 1949



by

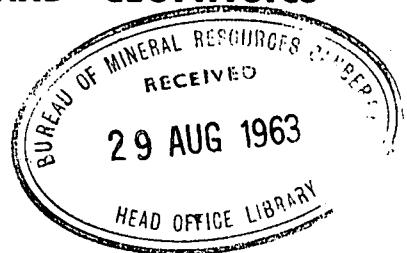
J. DALY

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SUMMARY

On the basis of reports of the presence of radioactive minerals, areas near Holbrook and Junee were investigated. No evidence was found of the presence of commercial amounts of such minerals.

1. INTRODUCTION

During 1948, two indications of the occurrence of radioactive minerals were brought to the notice of the Bureau of Mineral Resources, Geology and Geophysics.

- (1) a report was received from Mrs M.E. Powell, of Eastwood, NSW, that a sample collected by her father near Holbrook had been tested by chemical assay, and found to contain uranium. The Under Secretary of Mines, Sydney, advised that his department had no record of any such assay. It was then suggested that the assay had been made by a private chemist,
- (2) a sample of decomposed granite, submitted by Messrs Elphick and Ellis of Junee, was tested in the Bureau's Geophysical Laboratory and found to show radioactivity consistent with an uranium content of 0.01 percent U_3O_8 approximately. It appeared that any radioactive mineral in the material submitted could be readily concentrated by gravity methods.

At that date, little was known of the possible modes of occurrence of radioactive minerals, and it was decided that these indications were sufficiently definite to warrant some investigation. The areas were inspected during February 1949 by J.K. Newman of the Bureau, accompanied by Mr H.F. Whitworth of the Department of Mines, Sydney. The areas were investigated using portable Geiger counters.

2. RESULTS

Holbrook

The party was guided in the Holbrook area by Mr Hicks of Wodonga, who was stated to have been present when the sample was collected. Mr. Hicks disclaimed any knowledge of the determination of uranium in the sample. He indicated two localities as possible sources of the sample, one about $3\frac{1}{2}$ miles east, and the other about 3 miles east-south-east of Holbrook. At both places, the country rock was granite without any obvious signs of mineralization, although shallow pits had been sunk. Tests around each area showed that radioactivity was only very slightly above normal, indicating that any radioactive mineral in the granite was present in extremely small concentration.

A visit was also paid to some old, but fairly extensive, tin workings on a granite hill about $2\frac{1}{2}$ miles east-north-east of Holbrook. Here also, the granite generally showed evidence of extremely slight radioactivity. It was noted that the radioactivity of the granite was slightly greater at the northern end of the workings, where small flecks of molybdenite were observed.

Samples from all areas were taken, and tested in the Geophysical Laboratory. The radioactivity was barely detectable, but was slightly greater on samples showing molybdenite.

Junee

The site from which the radioactive sample had been taken was indicated as a shaft about 11 feet deep, sunk in alluvium on Mr A.J. Sheather's property, about two miles west of Junee. The position of the shaft had been chosen by divining. The shaft bottomed in decomposed granite. Isolated outcrops of granite were visible in the paddock, and granite of similar appearance forms hills to the north and west.

Radioactivity observed was only slightly greater than normal. As material containing the equivalent of 0.01 percent U_3O_8 gives a large anomaly on a Geiger counter if present in any quantity, it appears that the sample submitted was not representative of the granite generally.

Several samples taken from the area showed barely detectable radioactivity.

3. CONCLUSIONSHolbrook

The results do not substantiate Mrs Powell's report. However, the presence of molybdenite showing slight radioactivity indicates that a sample containing torbenite could have been obtained. Such samples have been obtained in several areas geologically similar.

Junee

It appears that the radioactive sample originally submitted was not representative of the rocks in the neighbourhood.

In neither area was any evidence obtained of the presence of radioactive minerals in amounts of commercial significance. No further investigation is warranted.