Boomerang Area. (2 copies)
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REPORT ON EXAMINATION OF
THE BOOMERANG AREA.

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Report on Examination
of
The Boomerang Area

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18th April, 1958.

To. Mr. C.F. Hudspeth.

REPORT ON EXAMINATION OF THE BOOMERANG AREA

Dates of Examination: 13th to 20th January, 1958.

Geologist: R. Elms.

Bushman: R. Martin.

Man days in the Field: 16

Location of Camp: 1 mile E of The Boomerang.

Means of Transport & Supply: Helicopter.

General Topography

To the south of the camp, the Lewis River has cut a deep valley along the eastern edge of the North Broken Hill area, west through the high ground linking the southern extension of Crown Hill and North Broken Hill, then south between the western flank of North Broken Hill and the northern extension of the "Y".

East and west of the camp the variation in relief is not marked, but the country is quite rugged to traverse since there are numerous small steep sided hills and valleys.

Much of the Pre-Cambrian area is covered only with button grass or low scrub, but once the contact with the granite is crossed, heavy timber is encountered.

Geological Investigation and Findings

Pre-Cambrian: From a point one mile east of the Boomerang Camp, on the southern extension of Crown Hill, to a point about one mile west of the camp, at the Boomerang itself, a traverse

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produced the following succession of some 8000 feet of west dipping Pre-Cambrian sediments, which is set out in the order oldest to youngest:

Light grey to brown quartz sandstone;

Quartz chlorite mica garnet schist (LE 1054);

Light grey micaceous quartz sandstone;

Quartz chlorite mica schist;

Quartz sandstone, ehich is manganese stained in places. In other places this rock is quite fine grained;

Light grey to brown micaceous quartz sandstone, which may be strongly silicified in places;

Iron stained fine grained sediment (LE 1055), very decomposed;

Light grey to brown quartz sandstone;

Very decomposed fine grained siliceous sediment;

White quartzite conglomerate (maximum pebbles $2\frac{1}{2}$");

Light grey quartz sandstone;

Quartz chlorite mica schist (LE 1061);

Light grey quartz sandstone;

Quartz mica graphite schist (LE 1062).

It is probable that the last four rock types named are expressions of the one slightly variable siliceous sediment which has been effected by the shearing.

Granite: This is Post-Cambrian is age for reasons mentioned in the report on the Lewis River area. Granite was first encountered some half mile west of the proposed east boundary of the granite owing the complete lack of outcrops in this distance.

Specimens LE 1059 and LE 1058, although similar in most respects to granite specimens to the south, lack the typical large pink felspar phenocrysts.

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LE 1059 has a weathered felspathic matrix, and exhibits large ($\frac{1}{4}$") rounded to subangular quartz phenocrysts.

LE 1058 is composed of somewhat weathered felspar with rounded quartz phenocrysts and some dark green to black biotite. Slight shearing is apparent.

LE 1056 is a fine grained granite, composed of quartz, felspar and a little white mica. This was found one mile west of the Pre-Cambrian-granite contact.

Some hundred yards east of the proposed with the Pre-Cambrian was found LE 1057, an undoubted granite exhibiting large quartz and pink felspar phenocrysrs in a felspathic matrix also containing mica.

Half a mile to the south, almost in line on the strike of the surrounding sediments, occurs rock of the type of which LE 1060 is typical. This is interpreted as being a siliceous sediment in which the process of assimilation is well advanced, quartz and pink felspar phenocrysts ($\frac{1}{4}$") being present.

Since, at a short distance to the west of the localities in whixh LE 1057 and LE 1060 were found, reliable outcrops of Pre-Cambrian sediments occur, and to the east lies a large Pre-Cambrian sequence, these occurrences of granite are interpreted as being cupolas.

Nature of The Boomerang

The Boomerang is the curved linear northern extension of the north-south faulting which produced The Y.

In the area investigated there is no apparent surface expression of the faulting, which is apparent more from photo-interpretation work than from any direct geological evidence.

Conclusions

The granite in the area is continuous with that investigated further to the south, and as before has apparently been emplaced along the strong north-south shear which transgresses the area and which constitutes The Boomerang structure.

R. S. Elms.