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COMMONWEALTH OF AUSTRALIA.

DEPARTMENT OF SUPPLY AND SHIPPING.

BUREAU OF MINERAL RESOURCES GEOLOGY AND GEOPHYSICS.

REPORT No. 1949/42.

(Geol.Ser.No.25)

A REPORTED OCCURRENCE OF PETROLEUM ON JINDARE STATION, SOUTH WEST OF PINE CREEK, N.T.

by

W.B. Dallwitz.

CANBERRA.

3rd August, 1949.

BUREAU OF MINERAL RESOURCES

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Illustrations.

Illustrations have not been made available in the hardcopy of record 1949/42.

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SUMMARY.

A sample of supposed mineral oil from Jindare Station was received by the Bureau in March of this year. The place from which this oil was said to have been collected was recently examined, but no sign of oil could be seen there at the time of inspection.

Decaying vegetation was found to be the source of an oily film and dark scum floating on stagnant pools in Stray Creek, near the station homestead.

At Umbawirra Gorge, about 5 miles north-east of Jindare homestead, where further "oil" was said to occur, there was even less evidence of oil than in the stagnant pools, because a fair stream of water was flowing there. The rocks in the Gorge are sandstone and micaceous siltstone which may be of Cambrian or late Pre-Cambrian age. They contain fossilized tracks of animals which are not diagnostic as to the age of the rocks.

INTRODUCTION.

Jindare Station is reached by turning right on to a bush track from the Darwin-Alice Spring road at a point 15.3 miles south of Pine Creek and continuing for 33 miles along this track. The homestead is situated within a few hundred yards of Stray Creek.

In March of this year Mr. A.E. Hawker, of Jindare, forwarded to Canberra a small bottle containing water and a yellowish, oily substance which had formed a coating on the inside of the bottle. Microscopic examination of part of the coating proved the presence of globules of oil and also revealed Desmid algae. It seemed probable that the oil had been derived from the decomposition of algae or other recently dead plants. However, as the locality from which the sample was taken lies within a belt of Cambrian limestone (Noakes, 1948), it was possible that the oil had its origin in this rock, especially as the writer had found traces of oil in East Flinders Range (S.A.) Cambrian limestone containing remains of the brachiopod Obolella wirrealpensis, the trilobite Redlichia and alga Girvanella (Mawson, 1939). Girvanella also occurs in the Cambrian limestone of the Northern Territory (Noakes, 1948).

While recently engaged in field work in the Northern Territory, Mr. C.J. Sullivan and the writer examined the

localities where oil was said to occur. The examination was made on the 29th June of this year.

FIELD OBSERVATIONS AND GEOLOGICAL NOTES.

We were first taken to a small gully between the homestead and Stray Creek. It was from here that the sample sent to Canberra was said to have been collected. No sign of oil could be seen, but Mr. Hawker said that water and oil were seeping out of the ground there during the wet season.

Mr. Hawker then stated that there was evidence of oil in many places along Stray Creek, and so a stagnant pool in the creek nearby was examined. This carried an oily film and dark grey scum which were said to be similar to the material previously sent for examination but were, in fact, much darker. There was little doubt that the film and scum were derived from decaying vegetation, particularly leaves shed from pandanus palms growing near the edge of the pool. Palm leaves from the bottom of the pool were coated with dark grey scum also.

We were then taken to a place on Stray Creek known as Umbawirra Gorge, which is about 5 miles north-east of the homestead ; to reach this point we drove 3.8 miles along

the direct track from Jindare to Pine Creek and then walked about 1¼ miles east-north-east. Oil was said to be floating on the water in the Gorge and was thought to have an underground source. The water was found to be flowing, as the pools were fed by local springs, so there was even less evidence of oil than in the stagnant pool, for an oily film was noticeable only in isolated places on the stagnant edges of the pools; it, too, was undoubtedly attributable to decaying vegetable matter.

No boulders of limestone were noted in Umbawirra Gorge. The local rocks are brownish red sandstone and a 6 inch band of red, micaceous siltstone. These beds dip south-west at an angle of about 10 degrees (see Fig.1) and probably underlie the Cambrian limestone, whose presence in the neighbourhood is attested by reports of sinkholes on Jindare Station. Both the sandstone and the siltstone contain clay galls. The sandstone is ripple-marked in places, and at least one layer of the siltstone shows well-preserved mudcracks (see Fig.2). Some undescribed fossil tracks occur in the siltstone layer, but they do not indicate any particular age for the beds, which are thought to be either late Pre-Cambrian or Cambrian formations.

From the ostensibly exclusive presence of sandstone boulders in Stray Creek at Umbawirra Gorge and from a report by Mr. Hawker that no limestone is to be found in the hills

in the neighbourhood. It appears that sandstone etc. here covers an appreciable area. About ¾ to 2/3 of a mile south-west of the Gorge siltstone outcrops in several places.

CONCLUSIONS.

No evidence of mineral oil was found on Jindare Station. Oily substances seen on pools are attributable to decomposing vegetable matter.

Mr. Hawker has been asked to collect, during the next wet season, as large a sample as possible of oil from the seepage where the original sample was obtained. This material was much lighter in colour than either normal petroleum or the oily scum found on stagnant pools in Stray Creek, but if a sample sufficiently large for analysis were to be collected its nature and mode of origin could be established beyond doubt.

Southport, Queensland.
3rd August, 1949.

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W.B. Dallwitz.
Petrologist.

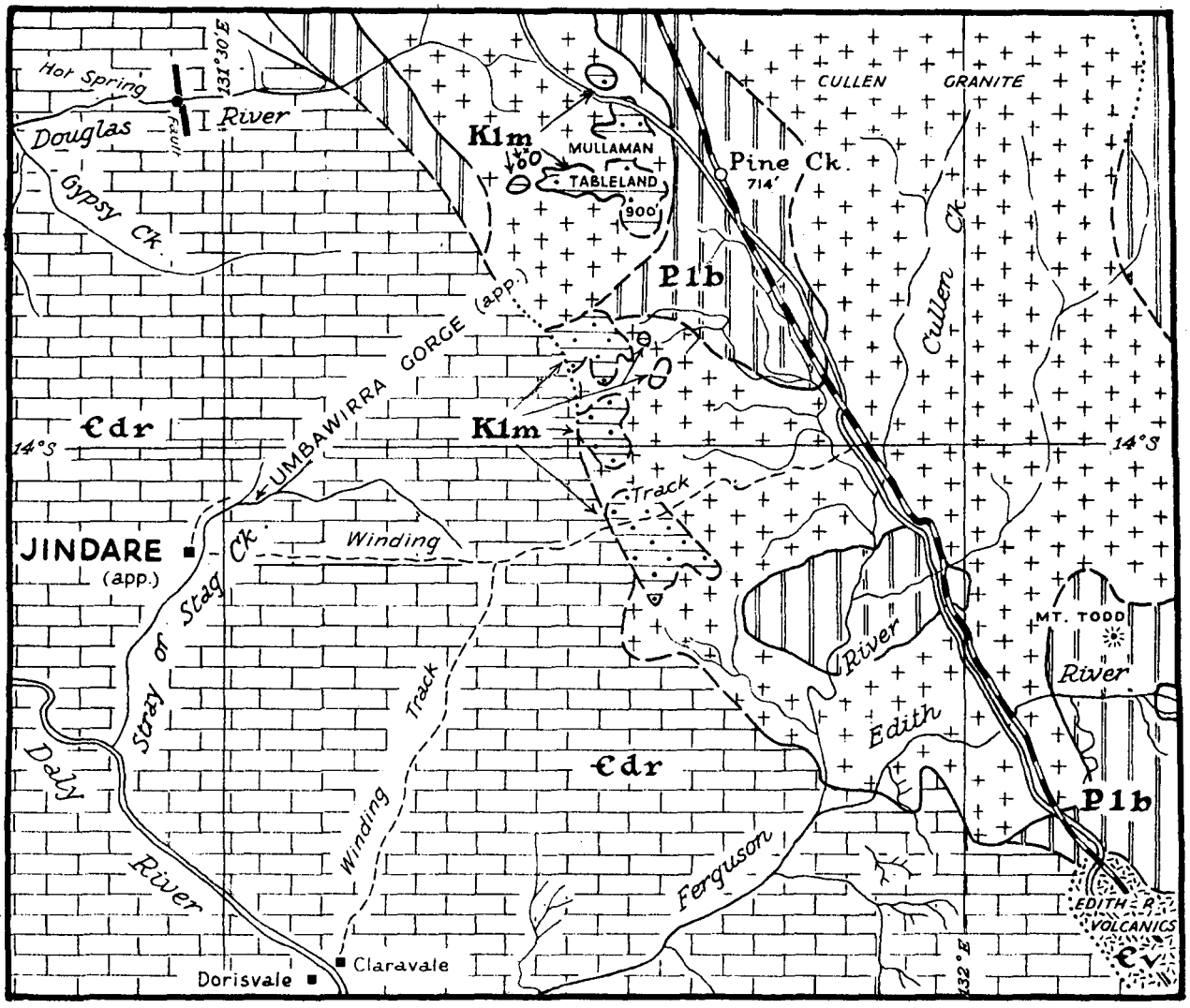
References.

Noakes, L.C., 1949 : Geological Reconnaissance of the Katherine Darwin Region, Northern Territory, with Notes on Mineral Deposits. Bur. Min. Res. Geol. and Geophys. Bull.16 (in press)

Hawson, D., 1939 : The Cambrian sequence in the Wirreabilpa Basin. Trans. Roy. Soc. 5th Aust., 63 (2), p.344.

JINDARE OIL PROSPECT

NORTHERN TERRITORY



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Magnetic Decl^n 4°15'E. (app) 1949.

TERTIARY Laterites		Edith R. Volcanics	Basaltic Rocks, Agglomerates, etc. Cv
LOWER CRETACEOUS Mullaman Group	Shale, Sandstone, some Conglomerate. Klm	LOWER PROTEROZOIC Cullen Granite	
LOWER CAMBRIAN Daly R. Group	Limestone with some Sandstone. Cdr	Brocks Ck. Group	Sandstone, Quartzite, Phyllite, Schist, with Amphibolite Sills. P1b

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GEOLOGY & GEOPHYSICS.

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