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COMMONWEALTH OF AUSTRALIA

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BUREAU OF MINERAL RESOURCES  
GEOLOGY AND GEOPHYSICS

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NOTES ON MICA DEPOSITS NEAR AJANA, WESTERN AUSTRALIA

by

H.B. Owen

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DEPARTMENT OF SUPPLY & SHIPPING.

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NOTES ON MICA DEPOSITS NEAR AJANA, WESTERN AUSTRALIA.

Report No. 1943/6. Plan No. 754.

Ajana is 66 miles north from Geraldton by rail and is the terminus of the branch railway which passes through Northampton mining district.

The basic dykes, pegmatite dykes and quartz reefs noted in the vicinity of Northampton are also much in evidence near Ajana and Galena and the intervening country.

Four miles east of Ajana and just south of No. 3 Rabbit Proof Fence two mining tenements have been pegged to enclose outcrops of mica-bearing pegmatite. The first, No. 46PP, is about half a mile south of the fence and the second, numbered 45PP, lies about a further half mile south.

P.A. 46PP. The outcrop on P.A. 46PP is not promising. Small books of muscovite are set in a felspathic matrix of which the grain size is rather too small for the development of mica crystals in useful sizes.

The width of the outcrop is 18 feet, which, at the low dip exhibited at the southern end of the outcrop, is equivalent to a thickness of about 10 feet.

With the exception of the sinking of a pit about 2 feet deep at the point shown on the sketch plan, no work has been done on this deposit, and further prospecting is not recommended.

P.A. 45PP. This area has received more attention from prospectors and it is understood that some sheet mica from this claim has been sold.

A pit about 17 feet long by 6 feet wide and 7 feet deep has been sunk near the southern extremity of a pegmatite dyke which exceeds 600 feet in length.

The pit, which shows much mica on its eastern side, has been excavated in the centre of the dyke at a point where it attains its maximum width of 50 feet.

North of the pit the dyke gradually tapers until it is 20 feet wide at 300 feet from the workings. From this point it quickly narrows to a width of a foot or so and finally pinches out about 550 feet from the pit.

Towards the south end the dyke is considerably enriched in quartz, and it appears to narrow rapidly just south of the pit, but it is hidden under a mantle of soil and quartz talus.

No tourmaline was seen in the dyke or wall rock. The country rock is garnetiferous gneiss.

Owing to the shallowness of the excavation all the mica available, both in the dumps or in situ, is much clay stained and a true appreciation of its quality could not be reached in the field. The largest books seen in the dyke rock measured about 5" x 4" but these were 'fishboned'.

It is not easy to arrive at a quantitative determination of the recoverable mica content of the dyke material principally because the workings are not sufficiently extensive to expose

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representative areas of the dyke, and also because the pit is placed too centrally in the dyke to intersect the most favourable zone for mica segregations. It would have been better if the prospectors had chosen a site about 20 feet further east in order to explore the dyke near one of its contacts. The western wall of the pit is in practically barren quartz which is typical of the quartz core found in most mica-bearing pegmatites. The eastern wall is very rich in mica which may extend to within a few feet of the contact with country rock. If this be so a wide zone containing 15 to 20 per cent of muscovite exists adjacent to the eastern (hanging ?) wall of the dyke.

Scrap mica in dumps at the camp and at the side of the pit amounted to about 3 tons. Neglecting any amount which was sold, and which in any case would be very small, this figure represents about 6 per cent of the rock broken from an ill-chosen site.

Detailed examination of specimens of the mica brought back to Canberra shows it to be clear, brownish in colour, with some air bubbles between the laminae and a few very small yellow spots. The mica splits well and the films are moderately flexible; some films are slightly wavy.

Fishbone and fractures cause much wastage in preparing the mica for market and a sample consisting of several books, all of sufficiently good appearance to warrant trimming, yielded between 20 and 25 per cent of good sheet mica. For this test, clay-stains were ignored and only those areas containing defects likely to be inherent in mica from this deposit were removed.

It is difficult to link the above figure to the estimate of the total mica content of the dyke rock or any part of the dyke, but the following appears a reasonable estimate if only the mica-rich zone could be mined:-

Total mica content	15	to	20	per cent of rock broken
Mica rejected, 90%	13.5	"	12	" " " "
Mica retained for trimming	1.5	"	2	" " " "
Marketable sheet	0.3	"	0.5	" " " "

It must be borne in mind that these estimates are based on incomplete data gained from observation of very limited working faces which cannot be regarded as representative sections of the body as a whole. It is well known that enrichments of mica do not occur as a continuous tabular zone parallel to one or both walls of a pegmatite dyke but rather as a series of 'pockets' irregularly distributed within such a zone. The dimensions and spatial relationships of the mica pockets cannot be forecast and this fact introduces a most important unknown factor into attempts to calculate potential mica production from any deposit.

The pegmatite dyke on P.A. 457P. apparently contains as high a proportion of muscovite as any similar deposits in Central Australia but the mica is small and physical defects would bring about lower recoveries of marketable sheet mica.

Further prospecting of this deposit should be done by sinking a shaft east of the present workings and crosscutting west at depths of about 25 feet and 50 feet, but this work should not take precedence over development of the Yinnietharra deposits which contain mica of better quality and offer superior chances of large scale production.

(H. B. OWEN)

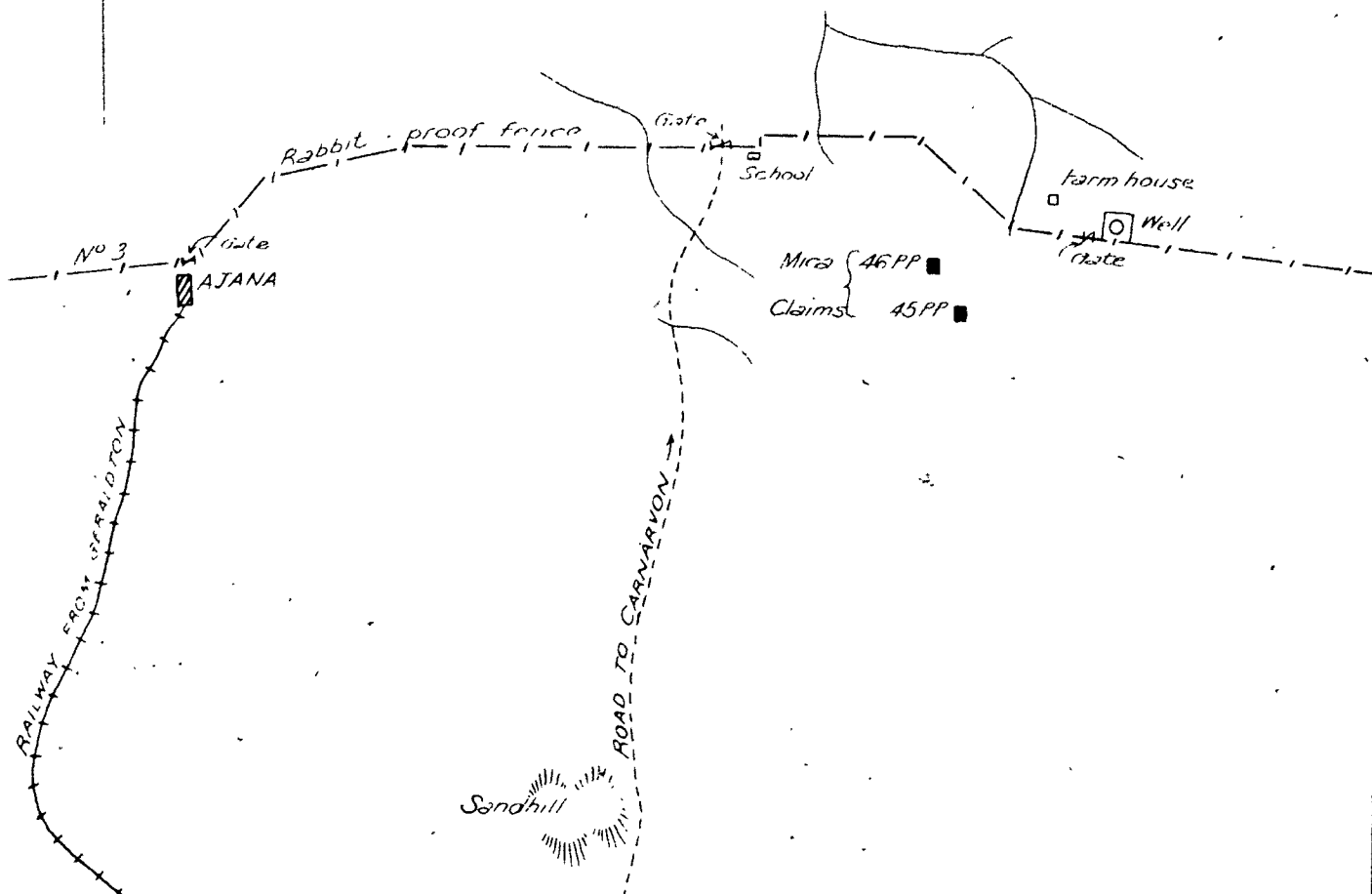
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CANBERRA, A.C.T.  
22nd January, 1943.

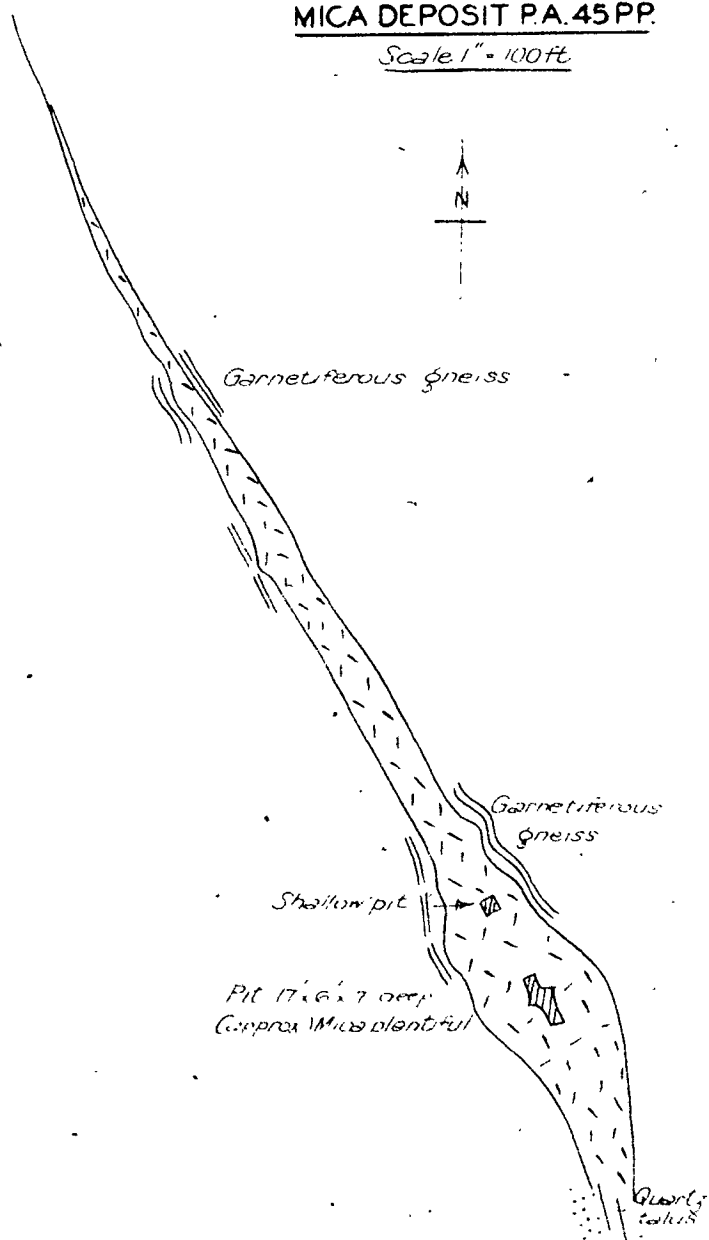
LOCALITY MAP  
SHOWING  
POSITION OF MICA DEPOSITS  
NEAR AJANA, W.A.

Scale 1" = 1 Mile



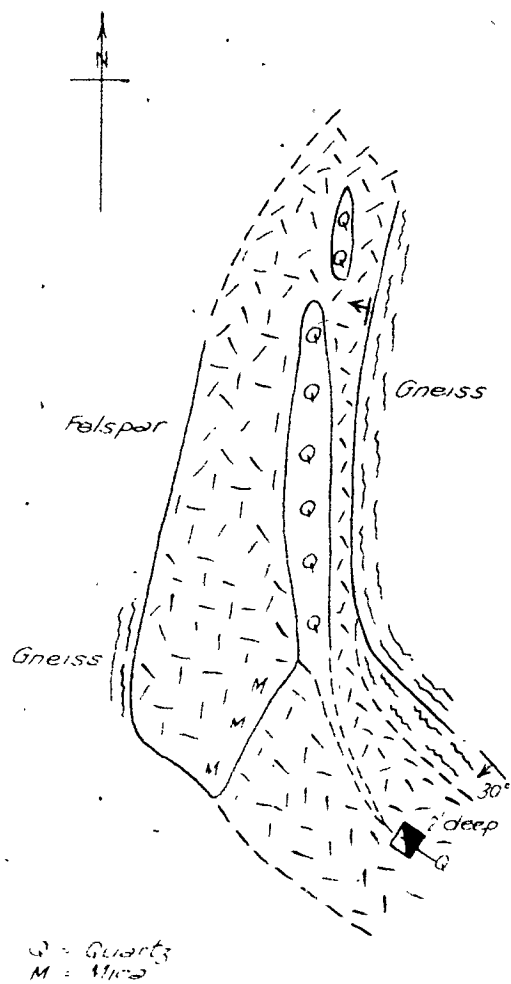
- PLAN OF -  
MICA DEPOSIT P.A. 45PP

Scale 1" = 100ft



- PLAN OF -  
MICA DEPOSIT P.A. 46PP

Scale 1" = 20ft



A. B. Green  
Geologist  
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