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REPORT ON MICA DEPOSITS NEAR MULLALYUP, WESTERN AUSTRALIA

by

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DEPARTMENT OF SUPPLY & SHIPPING.

Mineral Resources Survey.

REPORT ON MICA DEPOSITS NEAR MULLALYUP, WESTERN AUSTRALIA.

Report No. 1943/4. Plan No. 795.

Mullalyup is a small village about 140 miles south from Perth and 33 miles by rail south-east from Bunbury. The main highway between Perth and Bridgetown passes through the village.

The surrounding country is hilly and thickly timbered with jarrah, but farming has resulted in the clearing of most of the low-lying areas.

The region is occupied by Basement rocks which appear to consist mainly of schist and gneiss. The regional strike is about north-west. The hill slopes and lower levels carry a heavy cover of soil and the hilltops are mostly covered with laterite and, in places, high-level gravels. These gravels are widely distributed in this region.

The mica occurs, as usual, in pegmatite dykes, and five such deposits are shown on the attached plan. Some difficulty was experienced in locating these deposits owing to the thick undergrowth and hilly terrain and it is probable that other pegmatites exist in the locality. Search was confined mainly to the slopes as it was considered that soil in the valleys and laterite on the hill tops would obscure outcrops of any pegmatite dykes, except at intermediate levels.

Description of Pegmatite dykes and workings. (see Plate 1.)

No. 1. Two miles north-north-west from Mullalyup.

This consists of a dyke of irregular width but averaging not more than two feet. The dyke strikes north-east and the dip is vertical. It outcrops on the side of a steep hill and either pinches out or plunges into the hill at the north-east end. The body has been opened by a shaft, now choked with bushes, apparently 20 or more feet deep, and a number of pits for a distance of 50 feet along the strike. In the north-eastermost pit the dyke is about only 4 inches wide. An edit driven from the hillside towards the shaft is now partly collapsed.

Mica on the dump and in situ consisted of clear muscovite too badly warped and ruled to yield marketable sheet mica except a very small proportion of No. 6 grade (minimum size 1 sq. in.). Examination of specimens of this mica show it to be rather hard, difficult to split to films of uniform thickness, and clear with small areas lightly spotted.

Owing to the narrowness of the body and the defects in the mica, it is not considered that this body warrants further attention at present.

No. 2. About 12 chains south from No. 1.

At this point a dyke striking north and dipping east at 65° has been developed by sinking a pit 8 feet deep and 20 feet long on the footwall side. The pit exposes a thickness of dyke material of 10 feet and it appears that the body is probably 20 or more feet wide.

The body outcrops on the western side of a gully and an edit has been driven from the east to intersect the dyke on its hanging wall. This edit has now collapsed and is inaccessible.

Much tourmaline was showing in the dyke and in the footwall and the dyke contained the typical central quartz core.

/Very

Very little mica was found in situ, and mica picked up on the dump was small and lightly spotted. Only No. 6 mica of poor quality could be recovered from the present workings but better results might be obtained by opening the dyke on the hanging wall.

No. 3. $\frac{1}{2}$ mile west-north-west from Mullalyup. Claim No. 38 PP.

This deposit consists of a dyke more than 10 feet wide containing heavily spotted mica.

The dyke strikes about N. 70° E and is exposed over a width of 10 feet in a pit 20 feet long and 7 feet deep on the hanging wall. In the north-east end of the pit the dip is very steep to the north-west but at the opposite end of the excavation has flattened to 50° .

The mica is sound material with good splitting qualities but is heavily spotted with black and red spots up to 3 m.m. diameter. The largest books seen would yield No. 5 grade sheet mica (6 sq. ins. and less) on trimming. All the mica was somewhat weather stained owing to exposure and the shallowness of the excavation.

No. 4. About 40 chains south-south-west of Mullalyup Railway Station. Oliver's mine.

There is much quartz outcropping at this site and the large amount of quartz talus scattered about makes it difficult to determine the attitude of the pegmatite body. Two pits about 50 feet apart have been sunk in the dyke and neither discloses the walls. These pits lie on a line trending north-west, but it is not clear whether they are along the strike or diagonally placed across a wide body striking approximately north. They do, however, disclose massive quartz surrounded by pegmatitic material, thoroughly decomposed and containing very small crystals of apparently clear muscovite.

Careful examination failed to reveal any books of mica from which trimmed sheets larger than one sq. inch in area, could be obtained.

Under the microscope this mica is seen to contain innumerable spots which, under high magnification, are resolved into nearly opaque arborescent inclusions varying in diameter from less than 4 to about 80 microns.

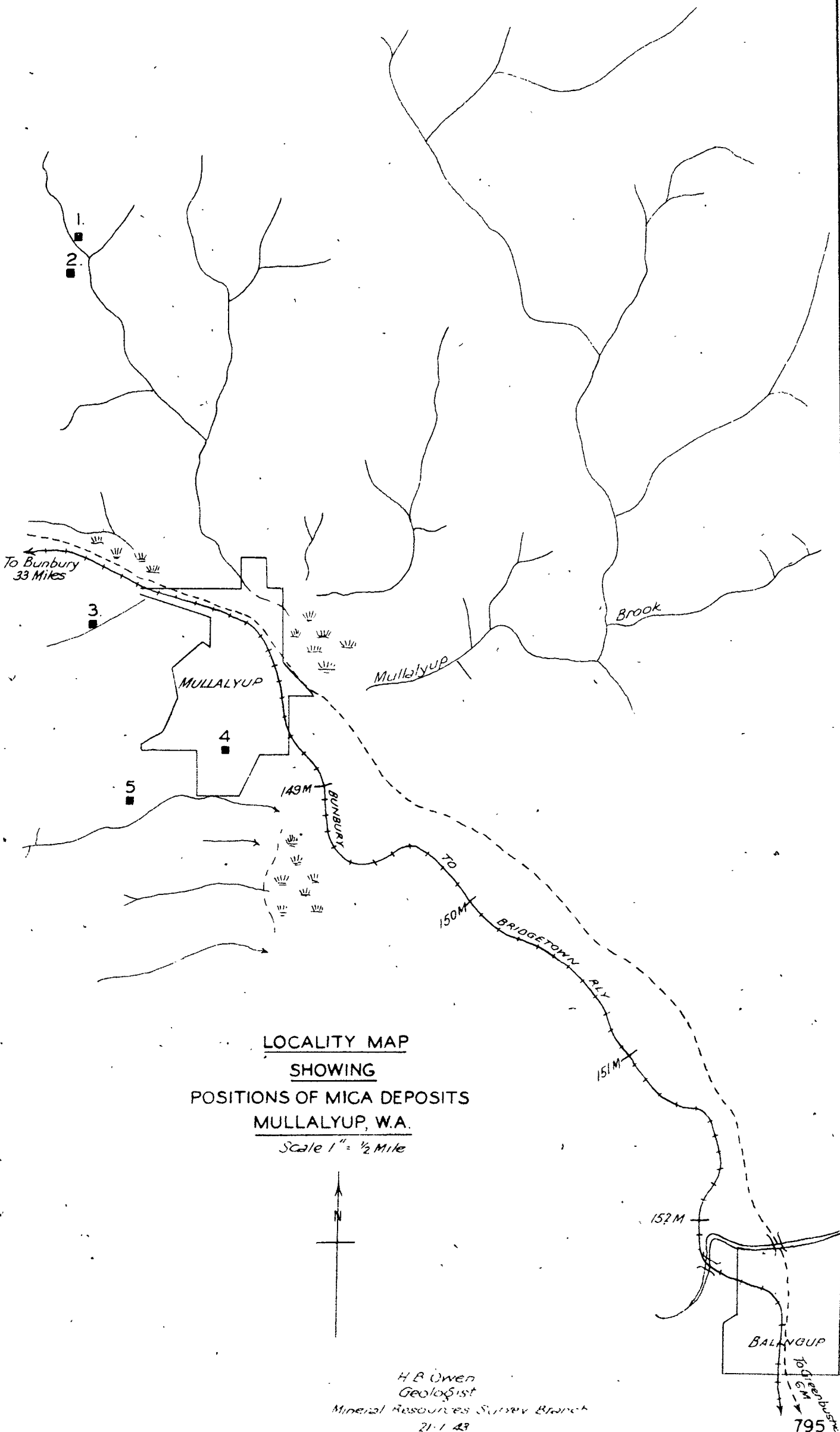
No. 5. About one mile south-west from Mullalyup Railway Station.

The Lands Department's 40 chains to the inch litho. of this area shows a "Mica Shaft" on Location 873 adjoining Mullalyup town reserve. After much search this was found towards the crest of a steep slope and proved to be a very shallow hole overgrown with bracken. No outcrop was visible, but the dump material contained small flakes of spotted muscovite averaging about $\frac{1}{2}$ sq. in. in area.

Conclusion.

The Mullalyup area does not offer any reasonable possibility of producing sheet mica of suitable quality for defence purposes except in very small quantities of the smallest size that can be used. Deeper working would yield better quality mica than any that can be seen at present but the important defects, viz. spots, rulings, and warping must be expected to persist to depth.

At some future time the Mullalyup deposits might be worked for production of felspar and scrap mica for grinding. Such scrap should command a higher price than is usual owing to the proportion of washer mica which could be separated from it by screening and hand-picking.



LOCALITY MAP
SHOWING
POSITIONS OF MICA DEPOSITS
MULLALYUP, W.A.

Scale 1" = 1/2 Mile



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BALNGUP
To Geobushes
10.6 Miles