COMMONWEALTH OF AUSTRALIA.

DEPARTMENT OF SUPPLY AND SHIPPING.

BUREAU OF MINERAL RESOURCES GEOLOGY AND GEOPHYSICS.

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RADIO-ACTIVE MINERALS IN THE MARBLE BAR AREA. SUMMARY OF RESULTS OF 1948 RECONNAISSANCE SURVEY.

by

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CANBERRA.

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DEPARTMENT OF SUPPLY & DEVELOPMENT.

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I. Areas Visited.

Wodgina, Mount Francisco, Pilgangoora, Ailsa Downs(West of Abydos), Trig Hill and Cooglegong.

2. Radio-Active Minerals.

A. Monazite.

Cooglegong. Apart from inspecting a reported occurrence on the Little Two Mile Creek near Cooglegong no further monazite occurrences were seen. The area inspected proved to contain very little monazite and was of even less interest than those seen by the 1947 Reconnaissance Survey Party.

B. Yttrotantalite and Allied Minerals.

Trig Hill. The source of these minerals at Trig Hill appears to be a massive pegmatite which is crossed by a small creek. Both lode and alluvial material has been reported from this locality, but investigation indicates that, although small holes have been blasted in the pegmatite, no real lode material has been found. It is suggested that the eluvial concentrates obtained from the slope on and near the hanging wall of the pegmatite have been reported as lode material. The small creek, which contains tin from small pegmatites further upstream, carries yttrotantalite etc. for a distance of about 100 ft. in the vicinity of the pegmatite. The alluvial material is very shallow and averages about 3 ft. in width. According to local report the area has so far yielded about 600 lb. of yttrotantalite and it seems doubtful whether more than 200 lb. could now be obtained.

Cooglegong. A small irregular occurrence of a mineral similar to yttrotantalite was inspected in Reward Gully, north-east of Cooglegong. The occurrence was too small to be of commercial value, but a sample was supplied to the Government Chemical Laboratories, Western Australia, for their information.

C. Pilbarite and Allied Minerals.

No new occurrences of such minerals as Pilbarite were seen and those already known appear to be of no commercial value.

The Pilbarite lode at Wodgina is terminated at its southern end by a normal fault whose downthrow is to the south. Mr. Kennedy, of Tantalite Ltd., intends to continue the "Collins" shaft immediately south of this fault so it is possible that he may discover a continuation of the Pilbarite lode at depth.

D. Radio-Active Columbite.

A sample of columbite from Mt. Francisco showed appreciable radio-activity. Mr. Kennedy, of Tantalite Ltd., kindly permitted his collection of local columbites and tantalites to be checked with the Geiger Counter and four of the columbites proved to be appreciably radio-active. Samples of each of these were supplied to the Government Chemical

/2. ..Laboratories..

Laboratories, Western Australia, for assay for Uranium and Thorium content and every effort was made to locate and inspect their sources.

Mount Francisco. Sample BMR/AM1/WCS is lode columbite which occurs as crystals up to 3" x 1" embedded in massive albite at the north eastern end of the pegmatite which contains the "Congo Tin Lode". The occurrence is of no commercial value as it has yielded only 20 lb. to date and very little remains in sight.

ML119 (Tantalite Ltd.). Sample BMR/AM2/WCS was handpicked from dumps of old alluvial workings at the south end of the lease and sample BMR/AM3/WCS from eluvial workings at the north end. This lease was worked using sieve, yandie and blower to yield about 3000 lb. of columbite. If reworked by more efficient means, it is doubtful if more than 1000 lb. of columbite would be obtained.

Ailsa Downs. Sample BMR/AM4/WCS is portion of a sample supplied to Mr. Kennedy by Mr. Watkins of Port Hedland. He claimed that it came from the same area as the beryl which was worked by Messrs. Taplin and Lamont near the old Ailsa Downs Homestead. An inspection of this area revealed no such occurrence but a reliable prospector, Mr. G. Parker, of Port Hedland, claims to have obtained two bags of the same material on the old Ailsa Downs property. From information supplied by him when the party was departing for Perth and from a study of the air-photos, the location appears to be 7 miles almost due east of Abydos Homestead, just inside the old Ailsa Downs boundary fence. Mr. Parker stated that he worked a few small holes in what appeared to be a fairly extensive area of eluvial ground but abandoned the area when he found there was no reasonable market for the columbite.

3. Conclusions and Recommendations.

All the occurrences of radio-active minerals inspected by the 1947 and 1948 Reconnaissance Survey Parties are very small and irregular and would be suitable for working only by prospectors and aboriginals. Owing to the nature of the occurrences it is not possible to give an accurate estimate of available quantities without actually working the areas. If a sufficiently attractive price were offered for the minerals, or preferably for mixed concentrates containing tin, some of the known occurrences would be worked and further prospecting would be carried out. By this means, the quantity of monazite obtainable may be in the order of 10 tons, but that of such minerals as yttrotantalite would be much less. As very little work has been done on radio-active columbite, it is not possible to give any estimate of available quantities.

Owing to the nature and depth of the larger streambeds in the Moolyella and Cooglegong areas they have never yet been effectively sampled. In Cooglegong Creek, local prospectors have sampled some of the "pug" by means of an auger, but have been unable to sample the looser sands. The greater depth of such rivers as the Shaw, Talga and Yule would make sampling by means of an auger too slow and difficult. At present, there is no evidence of workable quantities of heavy minerals such as tin and monazite in these larger streambeds, although the small but rich tin leads of the Moolyella area which lead into the Talga River may suggest such a possibility. To make a reliable evaluation of the area it would be necessary to undertake a well planned drilling programme, supervised by a geologist and preferably carried out by experienced contract drillers. Only those streams which drain known tin and monazite fields need be sampled and a few lines of closely placed bores at chosen sites should be sufficient to indicate the existence of any workable alluvial deposits. The following sites are suggested as those most likely to yield tin and monazite.

1. Shaw River below the Shaw Patch
   (a) near Hillside Station,
   (b) At its junction with Cooglegong Creek,
   (c) at the entrance to the Shaw Gorge,
   (d) below the mouth of the Shaw Gorge.

2. Cooglegong Creek
   (a) near where it cuts through the Black Range,
   (b) at its junction with the Shaw River.

3. Brockman Creek below Moolyella
   (a) at its junction with Moolyella Creek,
   (b) at its junction with the Talga River.

4. Talga River
   (a) at its junction with Brockman Creek,
   (b) at its junction with the Coongan River.

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