COMMONWEALTH OF AUSTRALIA

DEPARTMENT OF NATIONAL DEVELOPMENT

BUREAU OF MINERAL RESOURCES GEOLOGY AND GEOPHYSICS

RECORDS:

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OCCURENCE OF LATERITIC SOIL AT SOGERI, PAPUA.

by

H.J. WARD.

NOTES ON THE OCCURRENCE OF LATERITIC SOIL AT SOGERI, PAPUA.

by

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CONTENTS

Plates

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INTRODUCTION

GENERAL.

As a result of representations made to the Bureau of Mineral Resources by the Australian Aluminium Production Commission during 1948 a brief examination was made in January, 1949, of the area known as Sogeri Plateau which is situated some 24 miles east-north-east of Port Moresby. The object of the inspection was to determine whether any bauxite/laterite was present on the plateau and if so to obtain samples for chemical determination of alumina soluble in caustic soda solution, that is, alumina extractable by the Bayer process.

Three car traverses of the area were made - one along the Sogeri-Uberi road, one along the Sogeri-Subitana road and one along the Sogeri-Eilogo Road.

Two grab samples (see accompanying map) were collected and sent for analysis.

During the examination the Uberi Sheet, Military Map of New Guinea, 1 mile to 1 inch Series was used.

SITUATION AND ACCESS

Sogeri (lat. 9°25'3" long. 147° 24'50") is situated about 24 miles east-north-east of Port Moresby and is reached by the main Port Moresby-Rouna Road which is in good condition.

Sogeri Plateau extends eastwards from Sogeri for some 12 miles and ranges in width from two miles to twelve miles. The plateau is bounded by the deeply incised valleys of the Hiwick and Laloki rivers on north and south respectively and at a greater distance is surrounded by the steep ridges of the Astrolake, Tarivoro and Imita Ranges. The elevation of the plateau surface ranges from 1,600 feet to 2,000 feet.

In the vicinity of Sogeri the main road splits into three roads suitable only for jeep transport. These roads are the Sogeri-Uberi road, the Sogeri-Koitaki road, the Sogeri-Eilogo road. Numerous bush tracks suitable for horse transport traverse the Sogeri Plateau.

GENERAL GEOLOGY.

The rocks of the area consist solely of the Astrolake volcanics which are practically horizontal beds of agglomerates and tuffs reported to be about 1,400 feet thick (Carne 1913) at Hombrom Bluff some six miles west-north-west of Sogeri. The volcanics unconformably overlie "grey and brownish silts and sandstones with some sandstones, all rather poorly consolidated, ... dipping at 35°-40° north-eastwards ....." (Montgomery 1929).

DEPOSIT OF LATERITIC SOIL.

The volcanic agglomerates and tuffs of Sogeri Plateau are overlain by a mantle of derived laterite soil which ranges in thickness from 3 feet to 15 feet - the average is about 7 feet. The areal limit of the soil mantle is roughly defined by the 1,600 feet and 2,000 feet contours.

The gradation of the soil which has an almost uniform texture, into the underlying parent basic rocks was seen in a number of places.

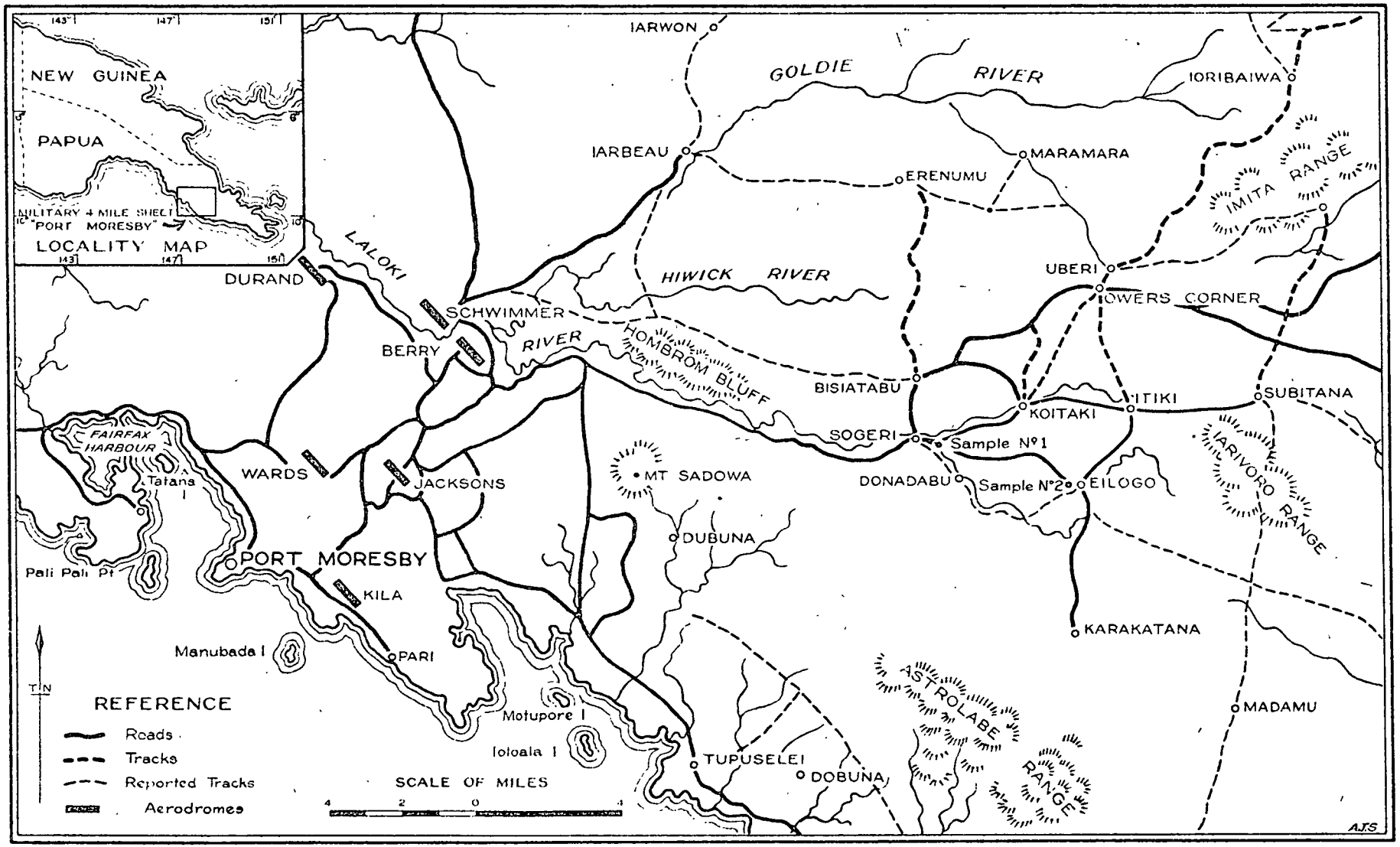
Two grab samples of dark red clayey soil (Field Nos. 1 and 2) were collected and have been analysed in the Developmental Laboratory of the Australian Aluminium Production Commission. The results of analysis are contained in Table I below.

Table I.

Field No.	Lab.Reg. No.	Silica %	Total Alumina %	Ignition Loss %	Ferric Oxide %	Titanium Oxide %	Available Alumina %	Na_2O Loss per ton Alumina
1. On Eilogo Road 1½ miles east of Sogeri	6480	33.2	25.3	14.3	24.3	1.9	1	-
2. On Eilogo Road 5 miles E. Southeast of Sogeri	6481	36.7	30.0	14.5	16.0	1.7	1	-

CONCLUSIONS

The chemical analyses of the two samples of lateritic soil show that there is only a negligible amount of available alumina and that the soil consists essentially of a ferruginous clay in which the iron occurs as a hydrated oxide and in which virtually all of the alumina is present as a clay mineral.



SOGERI PLATEAU

TERRITORY OF PAPUA

LOCALITIES OF GRAB SAMPLES OF LATERITE SOIL

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