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BRITISH GUIANA

REPORT ON THE GEOLOGICAL  
SURVEY DEPARTMENT FOR  
THE YEAR 1958

Geological Survey Department  
P.O. Box 280  
Georgetown, British Guiana

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**BRITISH GUIANA**

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**REPORT ON THE GEOLOGICAL  
SURVEY DEPARTMENT FOR  
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Geological Survey Department  
P.O. Box 789  
Georgetown, British Guiana,

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CONTENTS.

I. INTRODUCTION.	..	..	..	..	5
Acknowledgement ..	..	..	..	..	5
II. REVIEW OF THE YEAR.					
Staff ..	..	..	..	..	6
Scholarships ..	..	..	..	..	8
Centralization ..	..	..	..	..	8
Staff Conferences ..	..	..	..	..	9
United Kingdom Atomic Energy Authority ..	..	..	..	..	9
Visitors ..	..	..	..	..	10
Mineral Production ..	..	..	..	..	11
III. GEOLOGICAL SURVEY.					
Summary of Field Work ..	..	..	..	..	12
Geophysical Surveys ..	..	..	..	..	13
Pollen Analysis ..	..	..	..	..	13
Tours of Inspection ..	..	..	..	..	14
IV. MINERAL DEVELOPMENT.					
Summary ..	..	..	..	..	16
Bauxite ..	..	..	..	..	16
Chromium ..	..	..	..	..	17
Clay Materials ..	..	..	..	..	17
Columbite ..	..	..	..	..	17
Diamonds ..	..	..	..	..	18
Gold ..	..	..	..	..	18
Lime ..	..	..	..	..	19
Manganese ..	..	..	..	..	19
Oil ..	..	..	..	..	19
Radioactive Minerals ..	..	..	..	..	20
V. WATER SUPPLY.					
The Coastal Artesian Basin ..	..	..	..	..	21
Field Work ..	..	..	..	..	22

CONTENTS (Cont'd.).

VI. HEADQUARTERS.

Administrative Office	..	..	..	..	24
Library and Records	..	..	..	..	24
Drawing Office	..	..	..	..	25
Laboratory	..	..	..	..	26

VII. PUBLICATIONS AND REPORTS

APPENDIX I.

Preliminary Geological Reports.

APPENDIX II.

List of Senior Staff of the Geological Survey of British Guiana at  
31st December, 1958.

ILLUSTRATION.

Map of British Guiana showing mapping progress.

## IV. MINERAL DEVELOPMENTS.

### SUMMARY

The first practical attempt to test the oil possibilities of British Guiana's continental shelf was made in 1958. The California Oil Company (British Guiana) Limited arranged for a marine seismograph survey of their offshore lease to be carried out on contract.

In spite of the decreased demand for bauxite the mining companies were able to maintain a high level of exploration activity throughout the year.

Preparations on behalf of the Northwest Guiana Mining Company, Limited, for mining and shipping manganese ore from the Matthews' Ridge deposit continued at full pressure throughout the year.

The gold mining industry received a setback through the closing down of British Guiana Consolidated Goldfields, Limited, in the last quarter of the year.

The United Kingdom Atomic Energy Authority established a branch office in the Colony to stimulate search for radioactive minerals and other minerals ancillary to the nuclear power industry.

### BAUXITE

#### General

In spite of the world wide recession which severely affected the bauxite industry exploration by the mining companies continued actively.

#### Demerara Bauxite Company, Limited.

Production was lower than in 1957 owing to a reduction in the demand for aluminium and calcined bauxite in the world markets, and construction of the \$60,000,000 W.I. alumina plant at Mackenzie was also slowed down; it is now planned to start producing alumina at the full capacity of 220,000 long tons per annum in 1961. Manpower and equipment thus released were made available for exploration under a team which consisted of two qualified geologists under the experienced leadership of the Chief Geologist. Exploration was carried out over six Exclusive Permissions, a total area of 1,645,502 acres was given up on completion of prospecting, and a new area of 130,000 acres applied for on the left bank, Demerara River, south of Great Fall. A diamond drilling programme in the Yurowa area was completed, and prospecting by surface methods, Empire drilling and pitting was carried out on both banks of the middle course of the Demerara River, in the Deriri area, south of Iron Mountain between the Demerara and Berbice rivers and towards the Corentyne River.

Later in the year precision altimeter levelling was introduced which should provide additional valuable topographic information in the areas surveyed.

#### Geological Survey Department

A senior geologist is now making a special study of the geological setting of the bauxites and bauxitic laterites of British Guiana with a view to developing principles which may help in prospecting for further commercial deposits. Micro-

scopic, differential thermal analysis and X-ray methods are being used to study the petrology of the deposits and an attempt is also being made to date them by means of pollen analysis.

In collaboration with Dr. Thomas van der Hammen (page 14) close sampling of the sections exposed in the mines at Mackenzie and Kwakwani was carried out and a number of lignites were sampled for C14 age determination. The Forestry Department co-operated in this work by supplying a large number of recent pollen samples extracted from plants in their herbarium to enable the present vegetative pattern to be established.

#### **Reynolds Metals Company**

Owing to the depressed state of the market this company was obliged to restrict its exploration activities somewhat, but the number of geologists employed on their British Guiana project was maintained at two for most the year.

In the Corentyne section an extensive road building programme was carried out to maintain exploration drilling with Solite and Mayhew drills in the Canje area where a semi-permanent base camp was set up. A discouraging factor here is the great thickness of overburden, reaching 160 feet or more.

In the Kwakwani area a considerable amount of drilling was carried out around the known deposits of 27 Mombaca, 24 Green Creek and Ridge 1 and 3 in the Wong lease. A canal was excavated from the Berbice River to a point nearer the mine plant to allow direct loading of the barges.

#### **Harvey Aluminum Inc.**

This company retained a total of 1,078,900 acres of Exclusive Permissions throughout the year, and continued compilation of its field records.

### **CHROMIUM.**

#### **Anglo-American Min-A-Metals, Limited**

No work took place on the Exclusive Permission for chromium granted this company in the Merume River basin and it was therefore declared abandoned.

### **CLAY MATERIALS**

A Swedish company made enquiries about clays suitable for a pottery industry and samples of the types occurring in quantity in the Colony were collected and despatched.

Experiments were continued under the direction of the Minor Industries Officer, in the pilot plant set up by the Government, on the blending and firing of local clays and examples of the products have been placed on exhibition.

### **COLUMBITE**

#### **Columbium Corporation**

A 22½ mile road was completed into the Pilgrim Creek area and transportation of equipment for use here commenced.

Exploration and prospecting continued higher in Pilgrim Creek and in Tiger Creek. A workable deposit is said to have been located in E.P. 515 and a portable recovery unit is about to be moved in. Dredging operations were curtailed owing to major breakdowns and time lost in floating the dredge over a granite bar.

## DIAMONDS

### General

Towards the end of the year a promising find was made in the Kurupung River above Kumerau Falls and the returns from this area were responsible for an increase in total production of some 4,000 carats over 1957.

### B.G. Diamond Mining Corporation, Limited

A Swiss-made jet pilot dredge was purchased and put into operation in the Meamu River early in the year, but the results were disappointing mainly owing to high level of the river and fast currents. The dredge was subsequently moved to Apaiqua and later in the year water conditions became more favourable. It was found, however, that the machine was unable to cope with the deposits here which are at considerable depth and a machine of higher capacity is now on order.

## GOLD

### B.G. Consolidated Goldfields, Limited

A considerable amount of prospecting was carried out under the direction of Colonial Development Corporation geologists in the Mahdia valley, the Potaro River above and below Tumatumari, and at Konawaruk. Gold possibilities in the 'proto-Mahdia' — a former channel of the Mahdia River were considered to be promising.

In the lower Potaro intensive Banka drilling disclosed good gold values associated with several old channels of the river. The drilling also showed possibilities for the recovery of diamonds from the base of the White Sand Formation and an experienced consulting engineer was brought in to recommend modifications to the dredges to enable this to be done.

However, towards the end of the year Colonial Development Corporation decided to exercise its power under the existing debenture agreements and appoint a Receiver and Manager. Active operations were then suspended and the dredges and buildings placed on a 'care and maintenance' basis.

### Barima Minerals, Limited

Owing to low water the company was unable to move its dredge from the Barima River to Arakaka Creek where there are stated to be continuous values, and work continues in an attempt to locate gold values beneath a sand reef.

### Geological Survey Department

Geological Survey parties were working in the Konawaruk, Mahdia, Potaro River, Kuribrong, Apanachi, Kaburi and Issano areas during the year on a special attempt to locate promising gold areas within reach of the hydroelectric power

station recently completed by the Colonial Development Corporation at Tumatumari. Work on some of the indications found was continued by the geologists of B.G. Consolidated Goldfields, Limited, and the 'proto-Mahdia' channel area, for instance, was reported as promising.

A brief study of the terraces and the distribution of gold in the Konawaruk valley was made by two geologists of the department. Several levels of terrace were defined which were correlated between Long Falls and Willis' Landing and the need confirmed for more comprehensive and detailed prospection of them by means of a Banka drilling campaign.

### LIME

A local company has been formed to exploit the shell from several beaches along the Northwest coast. The main beach, known as Shell Beach, has been reserved by the Government, but this company hopes to work numerous other smaller beaches when an Exclusive Permission has been granted.

### MANGANESE

#### Northwest Guiana Mining Company, Limited

Work progressed during the year on steel framed buildings for offices, staff quarters and plant as well as on roads in and around the Matthews' Ridge deposit.

It is planned to rail the ore <sup>31</sup> miles from the mine to a turning basin on the Kaituma River where it will be loaded into self-propelled barges shuttling to Trinidad. Earthworks for the railway have now been completed from the Kaituma River to the Barima and the track is at present used by vehicles for access to the mine. Piling for the Barima Bridge has been finished and earthworks commenced on the opposite bank of the river. Production is now expected to begin early in 1960.

Prospecting at Tassawini Ridge continued until February when the work was terminated, as drilling, pitting and trenching had shown the deposit to be of low grade. On completion of this work the Company's geologist went on leave and eventually resigned, so that no further surveys were carried out until a new geologist arrived in October and prospecting over the company's holdings of 2,358,497 acres was resumed. Work was carried out west and southwest of Matthews' Ridge and will be pursued as far as the Venezuelan border.

### OIL

#### California Oil Company (British Guiana) Limited

An exploration lease over the coastal and offshore areas of British Guiana was granted to this company early in the year and from July to September a marine seismograph survey was completed over the continental shelf as far as the 25-fathom line. The work was done under contract by the Western Geophysical Company and approximately 3,000 reflection seismograph stations were recorded and six refraction seismograph profiles taken at strategic locations. Continuous positioning information was provided by Offshore Raydist Incorporated who established seven coastal stations. The records are now being



studied by the geophysicists of the company and a report on the first results is expected in 1959.

In November a geologist of this Company spent five days on a reconnaissance of the coastal area of the North West District investigating reports of oil seepages and pitch deposits.

#### **RADIOACTIVE MINERALS**

The United Kingdom Atomic Energy Authority took the welcome decision in 1958 to establish an office in Georgetown. A geologist arrived in June and by November a small office building with a laboratory and store was ready for occupation in the Geological Survey Compound. The geologist visited many of the Geological Survey field parties working in promising areas in the Colony before the year was out and obtained much useful information. An occurrence of radioactive material discovered on the line of the railway under construction between Kaituma Landing and the Matthews Ridge property of Northwest Guiana Mining Company, Limited, was examined in some detail by ground and airborne surveys but proved to be euxenite — a refractory mineral. The search is being extended to beryl, lithium minerals and so forth, required in the nuclear power industry, as well as to radioactive minerals.