

S C I E N T I F I C S E R V I C E SI. GEOLOGICAL SURVEY DEPARTMENTMapping and Prospecting:

Basic geology mapping and prospecting have been completed in the following areas -

- (a) Richmond Quadrangle
- (b) Buff Bay Quadrangle
- (c) Green Island Quadrangle

The heavy emphasis on hydrogeology and economic geology will curtail progress on basic mapping and prospecting. However, maps and reports for which field work has been completed will be published.

The Geochemical survey of the whole Yallahs Valley catchment areas was completed. Anomalous copper values were detected at several places, the most promising being in the Barbecue River Valley, north of Bloxburgh. A systematic soil sampling programme followed by trenching was therefore carried out in this limited area and results have been promising enough to warrant the start of a core drilling programme which will be intensified this year.

A Canadian Petrologist made available under the Canadian Internal Aid Scheme is continuing the study of the petrology and geochemistry and associated mineralisation of the Newcastle Property in the Port Royal Mountains. He has located areas where more detailed work on the mineralisation is indicated. This work will be extended to a stream sediment and soil sampling survey in the valleys of the Cane, Hope, Plantain and Ginger Rivers.

A geochemical survey of the Blue Mountain of Portland and St. Thomas is to be a central feature of the next few years. The first phase is likely to start this year.

The Department published the report of Dr. Hugo Greiner, Petroleum Adviser, on "Oil and Gas Potential of Jamaica" which stimulated much interest and several applications for concessions have since been submitted. One concession has been granted covering the Pedro Banks and South Central Jamaica.

Water Resources:

The United Nations Special Fund Groundwater Project entered its second year of operations and is scheduled to complete its work and submit a report by March 1968. The original concept of the project as a groundwater study only, has been expanded to include a feasibility study for agricultural development in the Pedro Plains of St. Elizabeth and preliminary studies in the Clarendon Plains. Hydrologic and groundwater studies based on measuring networks and other special studies are well advanced. Test drilling for groundwater was started in the Pedro Plains and 12 holes have been drilled with a total footage of 7,000 ft. A number of successful wells were drilled and negotiations were undertaken for their acquisition by Government.

The Groundwater Project assumed responsibility for the island-wide network of river gauges and thus strengthening the hydrologic work in the island. Considerable progress has also been made in the training of local personnel.

/Hydrologic

Hydrologic stations established in connection with the pre-feasibility study of possible dam sites on the Rio Minho will continue operations for the duration of the Project.

Other achievements are -

- (a) Preliminary Geology reconnaissance has been completed in the Pedro Plains, the Queen of Spain Valley and the Moneague Basin;
- (b) Specialised studies in conjunction with the University of the West Indies personnel on river and off-shore work with the use of sonar equipment are being undertaken;
- (c) Two persons who were awarded fellowships in Geology and Hydrogeology have completed their course and returned;
- (d) One person has left to take up a fellowship in Hydrology.

## II. SCIENTIFIC RESEARCH COUNCIL

### General:

The main functions of the Scientific Research Council are to undertake, foster and co-ordinate scientific research in the island and to encourage the application of the results of such research to the exploitation and development of the resources of the island. The Council also acts in an advisory capacity to the various Ministries, Departments of Government and statutory organisation under the Ministries.

A number of persons in the various scientific disciplines visited the Council since the beginning of the year and discussions in many fields have taken place. Liaison is increasing with international bodies and with the Commonwealth Scientific Committee.

Recruitment of qualified scientific staff continued to be difficult due to the comparative low salary scales. Consequently it was impossible to fill a number of vacant posts. The situation was aggravated by the resignation of the Technical Director in July, 1966, but a new Director was appointed on the 1st April, 1967.

### Library:

The Council's scientific library is used by members of the public generally and industrial organisations. Limitation of funds has not permitted expansion and many gaps exist in the basic reference books on general technology. Scientific books and magazines are added to the collection as funds permit. Compilation of the Journal List of scientific and technical books and periodicals in libraries in Jamaica is continuing.

### Technical Information Service:

The Technical Information Service continued to expand both in the distribution of current publications to a wider readership and in the production of papers and technical reports. The demand for copies of Monthly Abstracts and the Council's quarterly bulletin "Information" and requests for information on various subjects continue to increase.

The following are some of the projects on which the Council is engaged -

### Food and Nutrition:

Work continued on the correlation of data from the survey of /pre-school

pre-school children recently carried out by the Human Nutrition research Unit.

The work on diet development is making good progress and it is now proposed to carry out pilot processing of ingredients for certain diet formulae which are to be tested in the context of existing dietary patterns of children as shown by the survey.

An extensive programme in nutrition education is being carried out and officers of the Human Nutrition Research Unit have visited a number of centres throughout the island and delivered lectures and demonstrations.

A brochure entitled "Food Guide for Jamaica" was prepared by the Unit and printed in colour in the printing section. The demand for this manual has necessitated its reprinting.

#### Bio-resources:

Investigational work on the project "High Grade Food from Agricultural Residues" is continuing. Following a small scale experiment in the feeding of silage from cane tops to sheep, a larger pilot project was started at Amity Hall, St. Catherine. Six silos have been erected and filled with cane top silage to be fed to cattle.

Research on the banana pseudostem is being carried out with the assistance of the Tropical Products Institute in the United Kingdom to determine its suitability as a building material. Preliminary tests indicate it might be suitable for making partition boards.

Efforts to find a profitable way to utilize banana stalks which are available in large quantities continue. The stalks have been used elsewhere for manure and animal feed but its high fibre content indicates that it might be suitable for making partition or soft boards also.

A programme of work on various fibres and bamboo is being carried out to determine their suitability for use in the craft industry.

#### Mineral Resources and Analyses:

As a result of the survey of clay deposits in Jamaica carried out on behalf of the Council recently by the Geological Survey Department, a number of samples have been analysed and tested. These tests are very encouraging and have indicated that some of the clays should be suitable for making bricks, light weight aggregate, pottery, industrial earthenware, and possibly other articles. No clays suitable for making whiteware were observed. Samples have been sent to the Building Research Station, United Kingdom, for testing and arrangements have been made for a Clay expert to advise the Council on its future programme of work.

A survey of limestone deposits in the island is being carried out and samples analysed. A report on this survey is being prepared.

#### Building Research:

The services of the United Nations Building Research Adviser have been extended for a further year from November 1966. His report on Building Research in Jamaica has been accepted by the Council and submitted to Government for consideration.

Encouraging results have been obtained in the use of coir dust (a waste product of the coconut) for partition panels and non load bearing blocks. Some of the material was recently sent to the Tropical Products Institute for testing. The results have demonstrated its suitability for use and work on this project is continuing.

/The study

The study of the available clays and shales will be intensified to find a suitable inorganic raw material for light weight aggregates. The economic feasibility of banana pseudostem fibres in board manufacture will be determined prior to further developmental work.

2. GEOLOGICAL SURVEY DEPARTMENT

Methods and Instruments:

Geological mapping and prospecting have been completed in the following areas:

EDWARD SEAGA

Minister of Development and Welfare,  
May, 1967

MDW(D) M.F. No. MD426/242/03 <sup>III</sup>

The geological survey of the whole Tullahoma Valley watershed area was completed. Numerous copper veins were discovered at various places, the most promising being at the Eastgate River, north of Blountburg. A systematic soil sampling programme followed by trenching was therefore carried out in this limited area and results have been promising enough to warrant the start of a more drilling programme which will be inaugurated this year.

A Canadian Petrologist made available under the Canadian Technical Aid Scheme is continuing the study of the petrology and geochemistry and mineralization of the Newmarket property in the Blue Ridge Mountains. He has located areas where more detailed work on the mineralization is indicated. This work will be extended to the adjacent and well mapping survey in the valleys of the Blue, Ross, Mountain and Sugar Rivers.

A geological survey of the Blue Ridge area of western North Carolina is in progress. The first phase is likely to start this year.

The Department published the report of Mr. Hugo Graf, Petrologist, on "Oil and Gas Potential of Jamaica" which includes much interesting general information for economic development from available. Our cooperation has been granted through the World Bank and South Central America.

Water Resources:

The United Nations Special Fund Groundwater Project which is a study of operations and is scheduled to complete its final report by March 1968. The original scope of the project as a groundwater study only, has been expanded to include a hydrological study for agricultural development in the Pedro Plains of St. Kitts and preliminary studies in the St. Kitts Plains. Hydrologic and groundwater studies based on measuring networks and other special studies are well advanced. Test drilling for groundwater was started in the Pedro Plains and 12 holes have been drilled with a total volume of 3,000 cu. ft. A number of groundwater wells were drilled and negotiations were undertaken for their construction by Government.

The Groundwater Project assumed responsibility for the island-wide network of river gauges and thus strengthening the hydrologic work in the island. Considerable progress has also been made in the training of local personnel.