1952/1
Copy 1

COMMONWEALTH OF AUSTRALIA.

DEPARTMENT OF SUPPLY AND DEVELOPMENT.

BUREAU OF MINERAL RESOURCES GEOLOGY AND GEOPHYSICS.

REPORT No.

RECORDS No. 1952/1.

AUSTRALIAN GEOLOGICAL SURVEY IN PAKISTAN, 1951.

(Activities, Results, and Suggestions for further Aid to Pakistan).

by

J. F. Ivanac

CANBERRA, A.C.T.

CONFIDENTIAL

AUSTRALIAN GEOLOGICAL SURVEY IN PAKISTAN, 1951.

Activities, Results, and Suggestions for further Aid to Pakistan

CONTENTS.

INTRODUCTION.

In December, 1950, the Pakistan Government filed a formal application to Australia, through the Technical Assistance to South-East Asia Co-operation Scheme, for three geologists to carry out geological surveys in Pakistan. In May 1951, the geologists, J.F. Ivanac and D.M. Traves of Bureau of Mineral Resources and D. King of the South Australian Mines Department, arrived in Pakistan. Their instructions were:-

(1) To carry out a geological survey of a portion of the Gilgit Agency.

(2) To discuss with the Director of the Pakistan Geological Survey or any other Government Officer familiar with the problem, the alluvial gold deposits of Chitral River and the lignite deposits of East Bengal and Sind.

Field investigations commenced from Gilgit in June 1951, and the party spent four months in the region. Mr. A. Bakr and Mr. M.H.A. Namazie, Assistant Geologists of the Pakistan Geological Survey, accompanied the party. At the conclusion of the work, the party returned to Quetta, Headquarters of the Pakistan Geological Survey, and spent six weeks in the compilation of the report and discussions with the Director. The report was submitted to the Department in November 1951. Two copies of the report, which include maps and photographs, were given to Mr. Ishmail, Secretary to the Ministry of Industries, Pakistan. The results were also communicated verbally to Mr. Ishmail and Mr. Said Hussain of the Ministry of Industries, Mr. Homjee of Economic Affairs and Dr. Crookshank.

SUMMARY OF RESULTS.

The results of the investigations in the Gilgit Agency are :-

(1) There are no alluvial gold deposits of sufficient size to warrant testing.

(2) No metallic mineral deposits of economic size or grade were seen.

(3) Non-metallic mineral occurrences have no commercial significance, with the possible exception of quartz crystals. These latter occur at Khaibar, and it is suggested, in view of the present demand for quartz crystal, that further search for quartz-crystal bearing veins be conducted in this area.

The alluvial gold placers of Chitral State were examined and a short report has been prepared, in which it is suggested that a Mining Engineer should inspect the deposits, and carry out some preliminary testing with portable hand-boring equipment of the Tordeh-Thamunaik, Kuri-Gahirat and Drosh-Sardur deposits to determine the grade of the deposits, and whether further development is warranted.

The East Bengal lignite deposits were discussed with the Director of the Pakistan Geological Survey, who stated that the Sind lignites were not of immediate interest. The main problem was not the geological surveying of the deposits but the determination of an efficient method of sampling, and ultimately whether the lignite can be extracted at a profit.

Generally the lignites are waterlogged and tend to slurry very readily when tested with simple hand-boring apparatus.

The Pakistan Geological Survey is carrying out geological and sampling surveys of the extent and distribution of the lignites and appears to have the job well in hand.

It is recommended here, that arrangements should be made for the Pakistan Geological Survey to submit samples of the lignites to the State Electricity Commission, Victoria, for study, and investigation into the suitability of the lignites for briquettes. Likewise, reports on the deposits by officers of the Pakistan Geological Survey should be submitted to the State Electricity Commission, Victoria, so that their engineers, after studying the reports, would be able to advise whether development of the lignites appears to be feasible. In this case, the next step would be to arrange a visit to the field by one of the Commission's engineers to study the problems at first hand and to advise on methods of development.

CO-OPERATION DURING SURVEY.

Co-operation during the survey was very limited in the early part of our stay, but was generous towards the latter part.

Finance difficulties held up the progress of the work for several weeks. The financial arrangements for salaries, transport, messing and other expenses were as follows: The Department of External Affairs, Canberra, paid salaries, allowances and transport of the party to and from Australia, and the Ministry of Industries, Karachi paid for messing, transport and other expenses in Pakistan, including hiring of casual labour for field work. Originally, the Pakistan Government offered the party 2,000 rupees per month, i.e. 1000 rupees per month per geologist on the erroneous understanding that there were only two geologists in the party. Had this small allowance been made available immediately on arrival some work could have been done, but the money was not received until some time in June. Towards the end of July the original suggestion of the Director of the Pakistan Survey that the Government allot 3,000 rupees per month per geologist, was adopted. At the conclusion of the Haramosh and Hunga traverses the lead r of the party returned to Karachi and conferred with Mr. Nasrullah, Secretary to the Minister of Industries. Such irregularities as lack of finance, non co-operation of Government Officials in Gilgit, the reason for withholding of Dr. J. Clark's reports on the minerals of the Gilgit Agency and why letters of introduction were not sent to us when requested, were discussed and resolved satisfactorily. After these discussions our reception by Government Officials in the Gilgit Agency was excellent, and the latter part of the investigations was made without any financial worry.

Army officers of the Northern, Gilgit and Chitral Scouts were extremely co-operative and on two occasions provided armed escorts. Rajahs, Governors and villagers were generally very helpful and supplied us with food and horses whenever they were required.

GIFT PRESENTATION.

At the conclusion of a lecture on the results of the parties' geological investigations, the following list of gear was presented to the Pakistan Geological Survey by arrangement with Department of External Affairs:-

1. Mineralight (U.V. Lamp, Model SL2537).

1 Portable Geiger Counter and Ratemeter (type P.R.M.200).

2 Cameras, 35 mm. (Eta-Reta)

1 Exposure Meter, Weston Type

1 Stereoscope, Pocket-type.

3 Magnifying Glasses.

2 Magnets, horseshoe

1 Binoculars, (8 x 32), Sylux Coated.

2 Levels, Abney, Watts

3 Barometers, Pocket

3 Tapes Linen Rabone (100 ft.)

2 Dishes, panning, small.

2 Compasses, Prismatic

1 Pick, geological.

The equipment was well received, particularly the Mineralight and Geiger-Muller Counter. The use of these instruments was demonstrated to the members of the Geological Survey.

SUGGESTION FOR FURTHER AID TO PAKISTAN.

The results of the geological investigations suggest that the Chitral gold deposits should be inspected by a qualified Mining Engineer, and that preliminary testing of the Tordeh-Thamunaik, Kuri-Gahirat and Drosh-Sardur placer deposits be carried out. The Pakistan Government will supply the Mining Engineer, with an assistant, who will act as pay clerk for employees and as purchasing officer for supplies.

Our experience has shown that the Engineer should not leave Karachi, which is the centre of Government Administration, without sufficient finance to cover most of his expenses.

Samples of lignites from East Bengal should be submitted to State Electricity Commission, Victoria for study and investigation into the suitability of the lignites for briquettes. Reports on the deposits, should also be submitted to the Commission, whose engineer would study the reports and advise whether development is feasible.

The Geological Survey of Pakistan, is very much in need of well-trained staff. Geologists in the Survey are University-trained, and since the members of the present staff have little or no field experience, they do not have the ability to reproduce the results of the field work in the form of reliable geological maps. There is room for improvement in field methods, which Universities do not generally teach. Further, there is little or no supervision of field work and neither are the results of the officers checked nor advice offered by senior men for improvement of techniques. It is suggested, therefore, that young geologists be sent from Pakistan to join Australian or other Geological Survey parties, and participate in field work. In this way, it is hoped that the Pakistan Survey Officers will learn new and much needed techniques, and the uses of modern field equipment.

The Geological Survey, with whom the candidates will work, should have some say in their selection, and should inspect credentials and background notes of the individuals available for participation in field work. This suggestion is made because the experience of the writer has shown that the influential and not necessarily the genuinely able candidate is chosen.

Further presentation of equipment is not needed as the Survey seems to have sufficient financial resources.

It is suggested that future geological work in Pakistan, by official Australian geologists, should be restricted to those examinations in which a particular problem might have to be investigated by a geologist, who would need to be a specialist in that type of geological work.