

P R E F A C E.

During the first few years of its tentative existence the Mineral Survey of Kashmir printed none of its reports but was indebted to my old department of the Geological Survey of India for publishing in their *Records* accounts of certain mineral occurrences. Since then five subsequent reports have been printed by order of the Kashmir Government. The present report on the Coalfields of Jammu Province is therefore the sixth of this latter series (see list at end of Preface). Like its predecessors it appears under my name, and the responsibility for its contents and form, and for a great part of the field and other work on which it is based rests with me.

Nevertheless much intrinsic help in map work, pit sinking and drilling, and in determinative (and a certain amount of analytical) work was supplied by my colleagues, Mr. Joti Parshad, B. A., F. G. S., late Senior Assistant Superintendent, and Messrs. Labhu Ram Badyal, M. Sc., and Sohani Ram, B. Sc., Junior Assistant Superintendents. Latterly Mr. L. Zutshi, B. Sc., A. R. S. M., F. G. S., assisted as Mining Engineer in proving the Ber-Goa area. The Industrial Chemist, Srinagar, has contributed nearly all the recent coal analyses, with the exception of a few done by the Geological Survey of India.

The present published account will be followed by others on the metallic and non-metallic minerals, and on the precious and semi-precious gemstones, ornamental stones etc. These, it is hoped, will appear as soon as the material can be put up and passed through the press; so that, before long, the economic minerals of Jammu and Kashmir will be permanently recorded, so far as at present known, for general information.

Subjoined is a list of all the printed reports on Kashmir minerals that have so far appeared since the Mineral Survey started work in 1917 :—

- (1) Note on the Aquamarine mines of Daso on the Braldu R., Shigar Valley, Baltistan, by C. S. Middlemiss and Joti Parshad (published in *Records Geological Survey of India*, Vol. XLIX, pt. 3, 1918 with plates 6 to 10).
- (2) Possible occurrence of Petroleum in Jammu Province :
Preliminary note on the Nar-Budhan dome of Kotli

tehsil in the Punch Valley, by C. S. Middlemiss
(published in *Records Geological Survey of India*,
XLIX, pt. 4, 1919, with plates 13 to 16).

- (3) Lignitic Coalfields in the Karewa formation of the Kashmir Valley, by C. S. Middlemiss (published in *Records Geological Survey of India*, Vol. LV, pt. 3, 1923, with plates 28 to 30).
- (4) Abrasives : Note on the Polishing material of Risin Spur Khunamuh near Srinagar, by C. S. Middlemiss (printed by order of the Kashmir Government, with plates 1 and 2).
- (5) The Graphite deposit of Braripura, Uri tehsil, Kashmir, by C. S. Middlemiss (printed by order of the Kashmir Government, with plates 1 to 5).
- (6) Ochre deposits of Nur Khwah, Rata Sar and Jhuggi in the Jhelum Valley, Uri tehsil, Kashmir, by C. S. Middlemiss (printed by order of the Kashmir Government, with plates 1 to 6).
- (7) The Gypsum deposit of the Lachhipura, Bagna, Islamabad, Limbar and Katha nalas, Uri tehsil, Kashmir, by C. S. Middlemiss (printed by order of the Kashmir Government).
- (8) ~~Bauxite~~ Bauxite deposits of Jammu Province, by C. S. Middlemiss (printed by order of the Kashmir Government, with plates 1 to 17).

C. S. MIDDLEMISS.

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MINERAL SURVEY OF KASHMIR.

Plate 1



GORGE IN GREAT LIMESTONE, KALAKOT.



UPPER COAL MEASURES OVERLYING BRECCIA, SAIR.

MINERAL SURVEY OF KASHMIR.

Plate 3



UPPER COAL MEASURES, SAIR.

MINERAL SURVEY OF KASHMIR.

Plate 4



PIT 17 a, AND COVER-ROCK, BER-GOA.

MINERAL SURVEY OF KASHMIR.

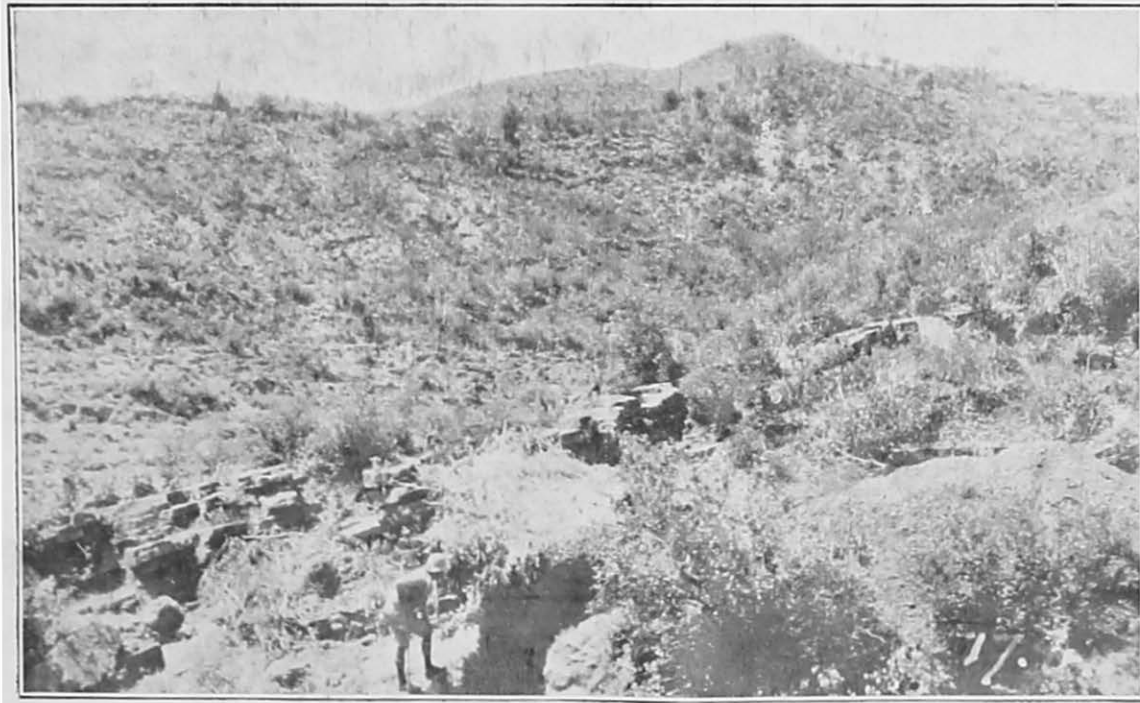
Plate 5



COAL FACE PIT 17 b, BER-GOA.

MINERAL SURVEY OF KASHMIR.

Plate 6



COVER-ROCK AND PIT 17 b, BER-GOA.