CAPE OF GOOD HOPE.

DEPARTMENT OF AGRICULTURE.

FIRST ANNUAL REPORT

OF THE

GEOLOGICAL COMMISSION,

1896.

Presented to both Houses of Parliament by command of His Excellency the Governor.
1897.

CAPE TOWN :
W. A. RICHARDS & SONS, GOVERNMENT PRINTERS, CASTLE ST.

1897.

[G81—'97.] A838.

First Annual Report of the Geological Commission, 1896.

CONTENTS.

MAPS.

former one was begun and in July, 1887, a depth of 1,080 feet had been attained (1).

Further operations were carried on at the Camdeboo outcrop, where a total depth of 2,030 feet was reached without any more coal being struck. (2)

We have since then the result of the deep mining in the Diamond Fields at Kimberley, where the shales have been gone through to the underlying quartzites without any seams of coal having been discovered. Coal has been passed through, but only in lenticular patches of no great bulk or extent.

Deep boring has, therefore, when one considers the very frail basis which warranted it, been very fairly tested, and I hope that this short *resumé* will suffice to prevent any demand for further work in that direction until the Commission has at the disposal of the community a more complete knowledge of the country than at present obtains. Such demand seems to have the less justification when one remembers that the Molteno-Indwe coal is by no means fully worked, but awaits a development which one can hardly expect from the "Karoo coal."

We have found here and there among the beds of the Lower Karoo thin partings of coal—those I saw are very thin—which has shared in the general twisting and folding which the surrounding sandstones underwent during the great upheaval which produced the Zwartebergen. In the Prince Albert District these thin "leaders" have induced several people to follow the coal by means of shafts, in the hope that by-and-bye it would become a bed sufficiently thick to be of value, but in all cases the hope has been vain. Shafts have also been dug in the blackest of black shales, and still no coal. When, as at Leeuw River's Poort, a fair quantity of coal is found, then the conditions are such as to non-pluss the geologist and exasperate the coal-seeker.

In mapping the country mile by mile, we are taking the surest means to unravel all such puzzles, and while the main work of the Commission will entail many years' labour, still there is no reason why in the near future, when the bulk of the Western Karoo beds are mapped in, we should not be in a position to speak quite definitely of the existence or non-existence of Karoo coal.

(*b*) *Water.*

At the end of the year the question of a probable water supply from deep boring was brought before the Commission. While

---

[1] Coal Boring in the Karroo. Memorandum by Charles Currey, Acting Assistant Commissioner, Department of Crown Lands and Public Works, with Annexures, 1887 (G. 55-87.)

A letter on record in the Department of Agriculture, dated 8th August, 1887, from W. J. Knight, Chairman Colonial Coal Syndicate, states that a depth of 1,190 feet had been then reached. The correspondence shows that the drill was soon thereafter recalled.—G.S.C.

[2] Report of the Geological and Irrigation Surveyor for 1888, p. 6 (G. 45—'88), (read '89 for '88.)

this again meant a departure from the assigned work of the Commission, it was thought of sufficient importance to warrant special investigation; but at the same time it was pointed out that it was somewhat premature to expect the Commission to be able to give much information on a subject so intimately wrapped up with the geological character and structure of the Colony. It was thought that the Oudtshoorn District might, owing to the existence there of a mass of Dolomite, be a likely place for a successful borehole, and with a view to making a preliminary survey, I went there at the end of last month, at the same time instructing Mr. Rogers, who had been working in the south-west, to join me from that quarter. The result of our work is contained in the report given on pages 39-41. As will be there seen, our attention was confined to a very small portion of the country indeed, and the general question of artesian water cannot be considered to be much affected. There is at present a demand here for deep boring, due largely to the success which has attended the work of the Hydraulic Engineers and Geologists in Queensland and the United States, but attention must be directed to the difference in geological character existing between these countries and South Africa. It is true that the experience of Queensland especially has shown that the ideal basin-shaped section is not necessarily present where enormous supplies of artesian water are tapped, but in the existence of rocks of a soft incoherent nature, interbedded with hard compact beds, one has in Queensland a necessary condition for artesian water not known to exist here except in the case of the Cape Flats sandstones. Much good work has been done by the Inspector of Water Drills in securing fair supplies of water by shallow holes, and until there is some definite ground for trying a deep borehole, the question may stand over. We know so little about the structure of the country and the rocks composing it, that a little patience must be asked from those crying out for deep boring for artesian water, unless, of course, a large sum of money can be laid aside to be spent purely experimentally.

In connection with our Oudtshoorn survey I found it possible to devote some time to an examination of the Cango Cave, and Mr. H. M. Luttman-Johnson, one of the South African College students, who was assisting me, made a sketch plan of the cave, which, with a short description, accompanies this report (pp. 42-45).

3. Specimens.

In course of the field work, rock and fossil specimens to the number of 600 have been collected. Of the rocks one hundred and seventy sections have been made, but nothing more than the mere determination of some of the more peculiar specimens has been attained. It will be seen that we have already a large quantity of material to work up, and the question arises as to how