

COAL-DEPOSITS.

Last year attention was drawn to the importance of making a systematic examination of all our New Zealand coalfields. Owing to the lenticular and generally uncertain nature of the coal-seams it is desirable, and in fact usually necessary, that systematic boring should accompany or immediately follow the geological surveys. Large areas of coal-bearing or possibly coal-bearing land have, however, been alienated by the Crown, and therefore it follows that the owners will unfairly benefit, reaping where they have not sown, from the geological survey, and still more from any boring undertaken by the Government. It is impossible to make a geological survey of a district without examining privately owned lands, and it is equally impossible to prospect systematically by boring without entering on the private lands. There will be no difficulty in inducing owners to permit their land to be bored at the public expense, but it will be far otherwise when the costs have to be allocated and the ownership of the increased value given to coal-bearing land has to be determined. The situation can be adequately met only by special legislation.

The Crown, however, still holds the fee-simple of large coal-bearing areas, and in many cases where the surface has been alienated mineral rights have been retained. It may be suggested that the time has arrived when the coal of a great part of these domains ought to be reserved to the Crown, and the present system of granting leases to almost every applicant drastically modified, if not entirely abolished.

PALÆONTOLOGICAL WORK.

During the year under review Mr. H. Suter, Consulting Palæontologist, of Christchurch, has continued his work on the Tertiary Mollusca contained in the Geological Survey collections. Large numbers of fossils have been carefully identified, including considerable collections recently made in the south-west part of Auckland and in north Taranaki. Lists of identifications made during past years are being prepared for publication. I deeply regret having to announce that Mr. Suter died on the 31st July last.

Dr. J. Allan Thomson, Director of the Dominion Museum, has done further work on New Zealand Brachiopoda, but has been too busy with his ordinary duties to complete the preparation of an exhaustive report which was begun some years ago. Mr. Frederick Chapman, A.L.S., F.R.M.S., of the National Museum, Melbourne, has written a report on the fossil fish-remains that were sent to him in 1914. This has been received, and will shortly be published. The grateful thanks of this Survey and of all who realize the importance of careful scientific research will readily be given to Mr. Chapman, who has performed the work without remuneration of any kind. Thanks are also due to the authorities controlling the Melbourne Museum, who gave permission to Mr. Chapman to undertake the work and facilitated it in every way. Mr. Chapman has also taken in hand the description of the Upper Cretaceous and Tertiary Foraminifera and Ostracoda, specimens of which have been sent to him from time to time during the past few years. He has made considerable progress in this work, which he is doing in his own time, and expects to have a report ready in a few months.

Some additional Cretaceous fossils were sent to Mr. Henry Woods, M.A., of Cambridge University, in July, 1916. These have been examined and identified by him, but owing to war conditions the fossils in question and other material are being retained in England for the present.

Dr. C. T. Trechmann, of Castle Eden, County Durham, England, has finished the examination of the Mesozoic fossils sent to him in 1915 and 1916. The material is being stored in England until the end of the war.

All the palæontological work mentioned above, with the exception of Dr. Trechmann's, has a direct bearing on the most important geological work in sight—namely, the detailed survey and exploration of our coalfields. The workable coal of New Zealand is entirely in Cretaceous and Tertiary strata, though there are some thin, unworkable seams, as it happens, in the Mesozoic rocks.

ALEXANDER MCKAY.

Mr. Alexander McKay, who for many years was Assistant Geologist under Sir James Hector, and later Mining Geologist to the Mines Department, died at Kelburn on the 8th July last at the age of seventy-six years. He was first employed in geological work in New Zealand about 1870, when he acted as field collector and assistant to Dr. (later Sir Julius) von Haast. At the end of 1872 he was engaged as a collector for the Geological Survey, and later became attached to the permanent staff. He finally retired from the Government service in 1908. Mr. McKay was possessed of remarkable natural abilities, and in the opinion of those who are best acquainted with his work surpassed all his contemporaries both in geological insight and in the value of the results he obtained.

PUBLICATIONS.

The publications issued during the year under review were the following:—

- Eleventh Annual Report of the Geological Survey (Parliamentary Paper C.—2B, 1917).
- Palæontological Bulletin No. 4, "The Cretaceous Faunas of the North-eastern Part of the South Island of New Zealand," by Henry Woods, M.A., Cambridge. 1917.
- Palæontological Bulletin No. 5, "Descriptions of New Tertiary Mollusca occurring in New Zealand, accompanied by a Few Notes on necessary Changes in Nomenclature, Part I," by Henry Suter. 1917.
- Palæontological Bulletin No. 6, "The Earlier Mesozoic Floras of New Zealand," by E. A. Newell Arber, M.A., Sc.D., &c., Cambridge. 1917.
- Bulletin No. 19, "The Geology of the Tuapeka District, Central Otago Division," by P. Marshall, M.A., D.Sc., F.G.S. 1918.
- Bulletin No. 20, "The Geology of the Oamaru District, North Otago (Eastern Otago Division)," by James Park, F.G.S. 1918.
- "Alphabetical List of New Zealand Tertiary Mollusca," by Henry Suter.

Various departmental and other reports, written by officers of the Survey, have been published in the *New Zealand Journal of Science and Technology* and in the *Journal of Agriculture*.

P. G. MORGAN,
Director, Geological Survey.

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