

Division brought under my notice when absent in England and America. At the Director's request a paper on honey was prepared for the Beekeepers' Conference and subsequently published in the *Journal*. A supply of crude-cresote distillate has been obtained for testing its effect as an insecticide. Analysis of water for watering plants, to determine whether there was anything present inimical to plant-growth, has been made.

WORK FOR THE DEPARTMENT'S JOURNAL.

Sixteen articles written by myself have been published in the *Journal* during the year. In these may be found fuller information on some of the subjects mentioned in this report.

WORK FOR OTHER DEPARTMENTS.

Public Works Department.

At the District Engineer's request an examination of the deposit which was found to be blocking the mains supplying the Parliamentary Buildings was found to be some low form of life. On submitting a specimen to Professor H. B. Kirk (Victoria College) he pronounced it to be a polyzoa (*Palludicella Efrenerbergi* of Van Beneden). It was recorded by the late Mr. A. Hamilton (Trans. N.Z. Inst., Vol. 35, 1902, p. 262) from the Ross Creek reservoir, the source of the Dunedin water-supply. The writer says, "No doubt the larger water-mains (Dunedin) contain masses of these polyzoa. . . . Both *Palludicella* and *Plumatilla* were found choking the water-pipes of the city of Hamburg, and were considered as having an unfavourable influence on the water-supply, as providing a nidus for undesirable germs." Allman found that this species was "eminently a lover of obscurity," being only found under arches or places where direct sunlight does not penetrate, like so much else "made in Germany."

The Director of the Geological Survey has been supplied with various information as to the chemical composition of substances or of the occurrence and composition of minerals and rocks.

Advice has been given to the Chief Electrical Engineer in matters relating to the manufacture of fertilizers, but I regret I was unable to visit Canterbury as desired. I understand that this officer is now prepared to advise firms desiring to install plants for grinding phosphates on the best way to proceed.

Lands and Survey Department.

For the Superintendent of Scenic Reserves analyses of samples of sand and sand-dunes at Rangitikei and Waikato Heads showed that every mineral constituent necessary for plant-growth was present in fair amount, the amount of lime soluble in hydrochloric acid being high for a New Zealand soil. The analyses show that every element is present to make the establishment of vegetation on the dunes a success if correct methods are employed.

The Nurseryman in Charge, North Island, has been given information regarding fertilizers and suitable treatment of seed-beds, and has favourably reported on the results.

Defence Department.

The examination of the water-supply of the transports and hospital ships has been continued, 291 samples being tested. The soils of the Trentham Camp were in August personally sampled to different depths, and subjected to a thorough mechanical analysis for the information of the Trentham Camp Commission, in order to aid the Commissioners in their conclusions as to the suitability of the site selected for a camp.

STAFF.

I have to express my appreciation of the manner in which the members of the staff have carried out their arduous duties under difficulties due to war conditions during the past year.