

sulphate of potash, and superphosphate. These manures are generally spoken of as simple manures, inasmuch as each one only contains an essential plant-food. Four plots were set aside for experiments with these manures, and the crops experimented with were (1) potatoes, (2) maize or sorghum, and (3) swedes or mangels. The class-room instruction bearing on this work was confined to simple experiments with these manures, having for their aim the discovery of such properties as would give an idea as to the correct and incorrect seasons for applying the fertilizers. It was found that if a little nitrate of soda was placed in a test-tube, water added, and the contents then shaken, the nitrate would all dissolve. In a lesser degree the same thing happened when superphosphate and sulphate of potash were treated in the same manner. If the liquid containing these substances in solution was now evaporated, a powder remained behind in the test-tube. It was also shown that super and sulphate of potash would dissolve more readily if a little acid was added to the water in the test-tubes. From simple experiments such as these the pupils were able to understand that the manures became dissolved in the soil-moisture, on the weak acids present in the ground, and were then taken up by the roots of the plants. Applying soluble manures in wet weather was only wasteful, as there was every danger of their dissolving and passing through the soil and being lost to the plant. In this way it was brought home to the pupils that the manures had to be applied at a particular time in order to obtain satisfactory results. Manures that became available readily had to be applied with the crop or shortly after it appeared above ground. Slow-acting manures were applied before the crops were sown, so as to allow of the gradual conversion from the unavailable to the available state. Dealing with the manures used in this experiment (manures containing plant-food immediately available), it was deemed advisable to wait until the crops had appeared above the ground, and then apply as a top-dressing and work into the soil with a Dutch hoe. To allow of a more even distribution of the manure over the various sections, the quantities used were mixed with three or four times the amount of air-dried sand or soil. The crops experimented with were planted the first week in September, and the manures were added immediately on their appearance above ground. At certain schools heavy rains occurred directly after the manures were applied, and, as could be expected, the results of the experiment did not prove satisfactory. Summarizing, it is to be regretted that the experiments throughout the district were not as successful as one could wish. Certainly the amount of labour expended by pupils and teachers was worthy of better results. The chief causes contributing to such unsatisfactory results were: (a) Lateness of growing season. It may be of interest to note that for the last week in August, 1911, the soil-temperature throughout the district was from 5° to 12° Fahr. lower than for the same period of August, 1910. As all seeds have a minimum, an optimum, and a maximum temperature of germination, and the nearer the temperature approaches the optimum the quicker the seeds grow, it is easily understood that germination would not be as rapid in 1911 as in 1910. (b) Manures applied too near the young seedlings; (c) wet weather during planting season in many cases rotted the seeds and made a second sowing necessary; (d) the dry and windy spell in October and November. The practical failure of the experiment, however, cannot detract from the good work done by the majority of the schools. Certain schools, by the quality of their work and the scientific methods adopted, demand special mention. They are—Otane, Matamau, Tepapakuku, Makauri, Clive, and Mahora. The work of these schools, both indoor (theoretical) and outdoor (practical), is excellent. Other schools doing very good work are Te Karaka, Kaiti, Puha, Petane, Taradale, Pakowhai, Meanee, Pukahu, and Woodville. Last year 75 schools had classes recognized by the Education Department in agriculture and dairying. A large number of the smaller country schools did garden-work, but the time devoted to the work was insufficient to earn capitation.

At the beginning of 1911 the Education Board made provision for the continuation of the agricultural work of the primary schools by introducing into the district high schools a rural science course. This course contains the following sciences: Agriculture and dairying, chemistry, and physical measurements. The pupils at present attending the district high schools are either those who live near at hand or those who have been successful in obtaining a scholarship. In the back-country schools many children are debarred from obtaining secondary education in any form. The district high schools are too far away, and the parents are unable to board the children near the school. There is also a growing tendency for pupils to leave school immediately after obtaining the proficiency certificate, whilst some leave before this stage. It is from fourteen years onward to seventeen, say—the formative years—that are the most valuable for educational purposes. The boy or girl who leaves school at thirteen or fourteen has by the time three years have passed forgotten the best of anything he learned at school. With the object of assisting the pupils who remain at school until the Sixth Standard is reached, the Board has under consideration the advisability of granting a number of scholarships, tenable at the district high school. These scholarships will be awarded on the Sixth Standard examination, plus a paper in elementary agriculture. If granted, these scholarships must give considerable impetus to the agricultural work throughout the district. In concluding this portion of the report we must again place on record our appreciation of the earnest and conscientious manner in which the majority of the teachers throughout the district have carried out this branch of the school-work.

With the introduction of the rural science course into the district high schools it became necessary to reorganize the work in connection with woodwork and domestic science. Mr. C. Dandy, of the Wanganui Education Board, was appointed to the position of instructor in woodwork for both primary and secondary classes in the Middle and Southern Wards of the district. The Napier classes were conducted by the Napier Technical Association, and Mr. W. Menzies, of Christchurch, was appointed to take charge of the Gisborne centre. The work throughout the whole district is gradually being raised to a higher standard, and the grounding given to the pupils last year must give rise to the production of a better class of work than heretofore.

The domestic science classes were in charge of Mrs. F. Cross (Hastings and Southern Ward), Mrs. W. Fossey (Napier), and Miss M. Higgins (Gisborne). The inclusion of a course of domestic science in