

once filled the entire area now partly covered by ocean and partly by rich fertile plains. But the distribution of volcanic rocks and the evidence as to the age of the volcano under notice must be left for another paper. So also must an account of the flora to be met with on and around the mountains.

EXPLANATION OF PLATES XLIII.—XLIX.

- XLIII.—Map of country round Tongariro.
 XLIV.—Map of summit of Ruapehu.
 XLV.—Crater of Ngauruhoe in March, 1890, from the west.
 XLVI.—Crater-lake on Ruapehu from the north-east.
 XLVII.—Sketch-map of Tokaanu, showing location of hot springs.
 XLVIII.—Ngauruhoe from Tongariro.
 XLIX.—Tongariro from summit of Ngauruhoe.

ART. LX.—*On the Establishment of an Expert Agricultural Department in New Zealand. (Abstract.)*

By W. M. MASKELL, F.R.M.S.

[*Read before the Wellington Philosophical Society, 29th July, 1891.*]

MR. MASKELL said that, because there was a gentleman in the Cabinet with the title of Minister of Agriculture, and under him a Department of Lands and a Department of Stock, most people in the colony were under the impression that there is in New Zealand a Department of Agriculture properly established. This, however, was not the case, the titles mentioned being practically (except perhaps for stock) misnomers. In point of fact, there is not at present in the country any official and responsible machinery for investigating the various enemies to cultivation, and for informing and advising cultivators thereon. Agriculture, he might say in passing, was not necessarily farming: there are large numbers of persons engaged in, or interested in, gardening, tree-growing, fruit-growing, floriculture, cultivation of all sorts, who are not farmers, and this should be borne in mind, as will be mentioned presently. Now, on the appearance of a new enemy to the cultivator, of a new pest amongst crops or trees or gardens, or even of a new friend or a new method of procedure, what has to be done by the existing machinery? There is nobody in

the colony placed in an official and responsible position, and the so-called Minister of Agriculture has to go outside his department and obtain amateur advice. Take for instance the "Tauranga sheep-disease," as it is called: professors of different colleges are sent for, to investigate it; and that is not a college professor's duty. Take the Hessian fly: an official in the Post Office, who happens to be an excellent entomologist, is sent up to attend to it. Take the so-called "blights:" recourse is had to an officer of the University; and, when a friendly beetle comes to help men to fight these "blights," again the University officer is appealed to. In such cases as the appearance of the horse bot-fly in Canterbury and Auckland, or the fear of some fungus-pest injurious to apple-growers, there is no official responsible person to whom the colonists can go for advice or help. It is not a question of ability or of desire to be useful. All the persons just named have no doubt always been glad to assist, and would always be ready to give the Government and the country their very best services, and undoubtedly the advice tendered by them has been thoroughly honest and well considered, but it is essentially and necessarily amateur and irresponsible, and what is wanted is the stamp of an expert official who can command rather than deserve public confidence. It is no disparagement of the gentlemen who have been hitherto called in as advisers to say that an expert department would be far more satisfactory, and produce better results.

In other countries people have realised this fact, and have established expert Agricultural Departments. In the United States there is the central office at Washington, and, besides that, nearly every State of the Union has its own. In England there is the Board of Agriculture, with a professional staff. In Australia the three colonies of New South Wales, Victoria, and South Australia have expert departments: so has India. The author exhibited to the meeting specimens of the periodical publications of some of these—the "Insect Life" of the Washington office; the *Agricultural Gazette* of the Sydney Board; the "Indian Museum Notes" of Calcutta; the Reports of the State Boards of New York, California, Nebraska, Iowa, and others. One thing was especially noticeable about all these (which were issued at short intervals, some monthly), and that was that they were specially adapted to the circumstances of the country they appeared in. Now, in New Zealand we have nothing, or almost nothing, of the kind. The Government issued lately a little pamphlet about the Phylloxera and other vine-diseases: it is good enough as far as it goes, but it is nothing more than a compilation from facts known in other countries, and does not specially apply to New Zealand.

Two things ought to be very earnestly borne in mind in considering this question. One (noticed above) is that the department required must deal not only with farmers, but with all sorts of persons interested in all sorts of cultivation: it results from this that a mere "practical farmer" would be entirely insufficient to direct it. Independently of the general disinclination of the "practical farmer" to look an inch beyond his nose, a much wider and deeper knowledge is necessary than he is at all likely to possess. Secondly, the department must deal with every kind of friend or foe to cultivation. Animal foes, such as insects, are not always more destructive than vegetable foes, such as the various fungi or noxious weeds. Consequently, the department, if not the officer in charge of it, must be two-sided. In New South Wales and in Victoria and in the United States the various Boards include separate staffs of entomologists and botanists. It is, of course, difficult for any Minister in New Zealand to pluck up courage enough to tell Parliament that two salaried officers are wanted. But he might, at least, start with one; and the author, in a letter sent lately to the Minister of Lands, strongly urged that in England an officer could be obtained competent to at least make a good start with a department, and sufficiently expert in economic entomology and in economic botany. The suggestion made in the letter was that, say, the Royal Agricultural College at Cirencester should be applied to, or Professor Wallace, of the Edinburgh University, to recommend such an officer.

Complaints are sometimes made that the subjects treated of at meetings of the Society are not sufficiently practical. Well, here, at least, is a practical question demanding a practical solution. Whether the solution would be given by the Government and the Parliament might or might not be likely: at all events, it was good to put on record the opinions just expressed; and the speaker trusted that the Society would indorse them by passing the resolution which he proposed, if his views were considered to be correct, to move—namely, "That, in the opinion of this Society, the establishment of a fully-equipped expert Agricultural Department is urgently required in New Zealand."
