the crops grown for the vegetable-market and the seed trade shows that in New Zealand the disease is widespread. From these samples and from the crops examined it is known that the disease is present in the districts of Dunedin, north and south Canterbury, Marlborough, Nelson, and the Hutt Valley. This wide distribution means a considerable variation of soil and climatic conditions, but under no circumstances has the trouble been totally absent, although certain factors, which will be discussed in a subsequent paper, tend to lessen or increase the virulence of the disease. Similar diseased crops have occurred in other countries, particularly "stem-blight of peas" in the United States (1), but the literature available does not indicate clearly either the distribution or the importance of the disease.

SURVEY OF PEA-CROP AREAS.

In the early part of the season—October and November last—a survey of some of the pea-crop areas was undertaken, particular attention being paid to the crops of Marlborough, one of the important pea-growing districts in New Zealand. In this area and Canterbury the bulk of the crops are for seed purposes, whereas the crops of Dunedin, Nelson, and the Hutt Valley are mainly grown for the vegetable-market; but in all cases the early symptoms of the disease are similar, notwithstanding differences in soil, climate, and methods of sowing. The first signs of any variation from the normal growth is a yellowing of the culm, a condition which is considered by the growers as being due to excessive soil-moisture. This diseased appearance may occur at any time during the life of the plant, but it is most noticeable and more prevalent in the early spring, when the plant has attained to a height of 3 in. to 8 in. Although heavy and continuous rain or drought may give rise to this sickly nature of the crop, the condition, if disease is present, always persists after a return to normal soil-moisture content has been attained. Death of the plant does not necessarily occur, but the growth is seriously retarded, so much so in some cases that the total seasonal growth does not exceed 6 in. In some crops all the plants may be badly affected, while in others the seriously diseased plants may be confined to large or small areas throughout the fields; but in all the crops examined, comprising many examples of apparently healthy and diseased crops of the previously mentioned districts, the disease has been present. The extent of the disease may vary in effect from almost total destruction of the crop, as far as ultimate seed-yield is concerned, to an amount which is only noticeable by a detailed examination.

Inspection of the spring growth of the yellowed pea-plants showed that the roots and basal portion of the stems were decayed, a feature which has given cause for the local name collar-rot. Such plants are readily withdrawn from the soil, owing to the absence of healthy secondary roots. This decay, generally of a brown colour, may only affect the epidermal tissue of the root, but where conditions favour the growth of invading organisms the vascular system may be destroyed. In the first case the growth of the plant may not be appreciably retarded, but in the second, where the connection between the root and shoot may be completely rotted off, wilting of the plants results. Where the disease has not materially affected the conduction-vessels (the central core) the plant is often able to put forth a fresh