difference in the transpiration of a thickpeeled or a thinpeeled fruit.

A statistical investigation of the fruits of 200 trees, 5 were taken from each tree, has shown that, although the thickness of the peel can easily be modified by irrigation and light (temperature ?), the basis of this phenomenon is hereditary. There is quite a distinct difference between trees bearing thickpeeled fruit and those bearing thinpeeled fruit.

As consumers do not like thickpeeled fruit and even regard a peel of 7 mm. as thick, the growers are advised to take their budwood from trees, which grow under comparable—and not extreme—conditions bearing fruit which have a peel not much thicker than 6 mm. on the average.

Observation and Investigation of Seed Bed Diseases of Citrus Trees in Palestine.

by **Dr. I. Reichert and Dr. J. Perlberger.**

Damping—off Disease.

We have found that the damping-off disease which is widely spread throughout the seed beds of Palestine appears in two forms:

1) Root Rot. The rootlets rot and their bark peels. The leaves become lightly yellow, and the seedlings die. This form of the disease was found on rather old seedlings.

2) Crown rot. In contrast to the preceding form, the leaves do not become yellow. Shortly before the death of the seedlings the leaves commence to droop, after which the seedlings fall and die. Dead seedlings are encircled at the crown by a brownish girdle. This form of the disease occurs especially among young seedlings.

Three fungi, Rhizoctonia sp., Fusarium sp. and Alternaria sp. have been isolated from both forms of the damping off disease (s. Fig. 1, 2, 3, p. 419-20). They have been found throughout the country wherever oranges are grown (see Tables 1 and 2, p. 421). In the course of observations lasting for three years, Rhizoctonia sp. was found 9 times in 5 different localities, Fusarium sp. 37 times in 17 different localities and

Alternaria sp. 16 times in 11 different localities. Fusarium sp. and Alternaria sp. were found on sweet lemon and sour orange seedlings, and Rhizoctonia sp. on sweet lemon only.

In order to determine the pathogenecity of these 3 fungi two inoculation experiments were made, the first in March 1927 and the second in April 1928 (see Tables 3 and 4 p. 423-24). We found that Rhizoctonia sp. attacked sweet lemon seeds destructively. Not a single seed attained germination. The fungus was re-isolated from the rotten seeds. Sour orange seeds were not at all affected by Rhizoctonia sp. (see Fig. 4).

To what extent Fusarium sp. and Alternaria sp., which were isolated from so many diseased seedlings, are pathogenic can not be concluded from the experiments carried on thus far.

In the discussion of the ecology of the Rhizoctonia fungus, it is stated that the high humidity and organic materials present in the soil are favourable for the development of the fungus, but not for that of the citrus seedling. It is therefore advised not to use organic manure at all, and to restrict the irrigation as much as possible.

It is also recommended to disinfect the soil used for seed beds.

Other economic Plants attacked by Rhizoctonia.

The Rhizoctonia fungus attacks many other plants of great economic importance in this country. It isolated from 37 diseased plants in 27 localities throughout: Judea, Samaria, and Jordan Valley. The affected plants are:

Pinus sp., Pisum sativum, Citrullus vulgaris, Eucalyptus sp., Ailanthus sp., Asparagus sp., Daucus carota, Gravilea sp., Myrtus communis, Solanum melongena, Chamaerops sp., Lactuca sativa, Polianthes tuberosa, Brassica oleracea. Citrus limetta, Lippia sp., Cucumis sativus, Mespilus, Beta vulgaris, Beta vulgaris var. hortensis, Solanum lycopersicum, Pistacia sp., Carica papaya, Dianthus sp., Cercis sp., Cucurbita Pepo, Casuarina, Coleus sp., Kochia, Robinia pseudacacia, Phaseolus vulgaris, Solanum tuberosum, Fragaria vesca, Pirus malus, Lupinus sp., Spinacia oleracea.

One is warned not to use soil in which Rhizoctonia diseased plants have grown as seed beds, and from throwing the diseased seed beed soil on cultivable land.

Other diseases in the seed bed.

An account of other diseases occurring in seedbeds is also given. The chief disease is a withering of the leaf which commences by a browning along the margins and this spreads over the whole leaf. Two fungi: Alternaria sp., and Macrosporium sp., have been isolated (see Tables 6 and 7 p. 428).

Frequently seedlings appear with albino leaves. It is thought to be a mutation, and we advise that they be removed from the seed bed.

Another form of white spots on the leaves is attributed to an excessive solar radiation.

Damage by frost has also been commented upon. The lower parts of the frosted plants revive and send out new buds (see Fig. 5 p. 429).

A frequent phenomenon in our seedbeds is bench rooting which occurs chiefly in seedlings where the hard seed — coats do not allow the growing point to come out. Presoaking in water for 36—48 hours is advised.

Nitrogenous Fertilizer on Green Maize.

by **S. Zemach.**

Maize grown under irrigation for green fodder is extraordinarily fond of nitrogenous fertilizer. In order to clear up this question we gave two applications of Chile Salpeter to the maize on our demonstration field at Magdiel: the first of 300 kg. to the hectare, and the second of 200 kg. to the hectare. By adding 100 kg. of salpeter to the usual dose (i. e. 200 kg. to the hectare) we increased the yield by 30 to 80 %.

Ground fleas control in Cabbage Nurseries.

by **H. Z. Klein and I. Weiss.**

The Entomological Division has tried two methods of control: 1) covering the nurseries with fly nets; 2) strewing "Pyrethrum" dust on the open nursery. Both methods yielded good results. Explanations are given on the application of these two methods.