

A summary of the work which was carried out with mustard and barley provides the following:

"The mutual action of one plant on another when growing in juxtaposition, usually known as competition, is a very complex phenomenon.

"When the food supply is limited the dominant factor of competition is that of food and in particular the amount of available nitrogen. Other things being equal the total growth as measured by the dry matter produced is determined by the nitrogen supply, irrespective of the number of plants drawing on the resources.

"With limited food supply the efficiency index of dry weight production decreases with the number of plants as the working capacity of the plant is limited by the quantity of material available for building up the tissues.

"The decrease in light caused by overcrowding is a most potent factor in competition even when an abundance of food and water is presented to each individual plant."

T. F. C.

### Effect of Lightning on Trees.

The question as to what extent groups of trees are effected by lightning and how far the damage extends after they have been struck is frequently discussed on estates where apprehension is often felt as to how wide a circle from the tree actually struck will be affected. The following extract taken from the *Indian Forester* Vol. XLVI, No. 3. contains interesting observations on this subject.

"Lightning-struck trees may be found surrounded by others which show no signs of having been struck at all, and trees standing only 4 ft. away from a tree may thus escape. On the other hand several trees standing close together are usually all more or less similarly affected. Of a number of records which I have of the maximum distance apart of any two trees struck in the same locality the four greatest distances are 50", 36", 35" and 33".

"Young chir advance growth and small woody shrubs have been found killed within a circle up to 18 feet radius round the base of a lightning-struck tree, but it is more frequent to find such shrubby growth apparently unaffected and I have no record of herbaceous growth showing any signs of damage at all. It is of course well known that the taller an object is the more likely it is to be struck, and it would therefore be unnatural to expect to find shrubby growth affected to the same extent as trees standing overhead.

"As a matter of fact I believe that only a very small percentage indeed of trees struck would die if other agencies did not combine to complete their destruction. Overmature tree with decreasing vitality might succumb but not healthy sound trees in full vigour. From general observations which are not, however, based on definite countings, I believe that under existing conditions about 50 per cent of trees struck (namely, so severely as to give clear

evidence) survive, and the death of the remaining 50 per cent is, I believe, mainly brought about by insect and perhaps also fungal attack.

"It will be seen that I should account for the subsequent death of lightning-struck trees in the main to insect and fungal attack following on local injury caused to the cambium and I can find nothing to confirm any theory which would attribute subsequent deaths to the belated but direct effects of the lightning."

T. F. C.

### **Castor Oil Plant Diseases.**

The ever recurrent discussion as to the practicability of planting Castor Oil Plant as a first class crop in Malaya makes one keep a look out of enemies that the plant has encountered in other countries. The Tropical Agriculturist Vol. LIV, No. 3, contains the following quotation from the Journal of Mysore Agric. and Exp. Union Vol. I, No. 2,

"To the already considerable list of natural host plants of *Bacterium Solanacearum* (brown-rot of Solanaceae) must now be added the castor oil plant (*Ricinus communis*), which has been seriously attacked by the disease in various localities of Georgia and Florida,

"The *Ricinus* plants wilt in various stages of growth, and often at an early one. Dwarfing is usually the first sign of the disease in the seedling plants.

"Land on which any of the sommon Solanaceous plants have wilted should not be planted to *Ricinus*, unless it is known positively that the wilt was not of bacterial origin."

T. F. C.

### **Manuring of Rice.**

The Agricultural Journal of Egypt, Vol. IX, contains an interesting note on the effect of nitrate of soda as a fertiliser for rice. Four plots manured with 85 kilos of nitrate of soda gave a return of 15010 rotls as compared with 12693 rotls from four untreated control plots.

T. F. C.

### **Vegetable Oil and Palm Products Industry,**

The following notice appearing in Tropical Life March, 1920, may prove of interest to those contemplating planting the Oil Palm in Malaya.

It has been proposed that an Association be formed to advance and safeguard the Vegetable Oil Palm Products Industry.