So far, vitamin C is the only vitamin the indispensability of which to higher plants has been proved through *direct* experiments. Corresponding work on vitamin B_2 (lactoflavine) is at present in progress in this laboratory.

W. H. Schopfer has recently shown that vitamin B_1 promotes greatly the growth of lower fungi (Phycomyces, etc.). According to his results, the effect is very delicate and specific, so that it can be used for the quantitative determination of B_1.

The fact that certain compounds, which act as vitamins in the animal organism, have important functions in plants, is additional evidence of the similarity of the metabolism of plant and animal cells.

—*Artturi I. Virtanen.*

Review.

Hoard's Dairyman. This Journal contains a lot of useful information for persons connected with dairying and the care of animals. Some of the articles published by successful dairymen and business people are exceptionally good and are good examples to follow. Lists of important bulletins are also published. Pages are also allocated for articles on Poultry breeding and Veterinary matters which contain a lot of useful tips. Even the farmer's wife is not forgotten; recipes and notes on the home are also included. The cost of the Journal is small due to the large number of subscribers.

R. W. L.

Agricultural Fottings.

Campaign against Chillies Thrips. Chillies occupy an area of about 43,000 acres in the sixth circle comprised of Madura, Ramnad and Tinnevelly districts. Till very recently this crop gave satisfactory returns, yielding about 6 pothies of 250 lbs. each of dry chillies per acre. Of late the yield has been reduced considerably due to some cause or other. One of the causes, if not the chief cause, of this reduction in yield is the severe infestation of 'thrips'. Thrips are small straw coloured active insects which attack the plant in all stages of its growth. They suck up the 'sap' from the tender growing portions of the plant which make the leaves to shrivel up irregularly, causing leaf curl disease. The plants get stunted bear only a few flowers and of these only a small number grow up to the fruiting stage. In worst cases the plants dry up completely and do not flower at all and the farmer is forced either to give up the infested crop or to recultivate it, if the season is favourable, with fresh healthy seedlings.

It has been observed that during normal seasons the plant may be kept free from leaf curl disease by giving better preparatory cultivation, heavy manuring, frequent irrigation and above all by getting healthy and vigorous seedlings for planting. As the normal favourable season cannot be expected always, the cultivators are advised to take some precautionary measures to protect their crop by adopting suitable prophylactic measures against the attack of thrips. Remedies to mitigate the disease or to prevent it entirely are very simple and effective. Healthy seedlings may be obtained by treating the seedlings in the nursery with tobacco dust once a week or so from about 10 days after germination and rinsing them in tobacco decoction before planting.

During adverse season, in spite of the above precautions thrips get the upper hand even though healthy seedlings are planted. In such circumstances the

plants may be protected from the infestation of thrips by timely sprayings with tobacco decoction.

An acre of treated crop gave an increased yield of 22·65% over the untreated plot under similar conditions. The best of our demonstration plot at Uthamapalayam gave an acre yield of 10 pothies per acre, while the maximum yield of untreated fields was only 6 pothies. It costs only Rs. 10 per acre to treat the seedlings and to spray the crop thrice against thrips infestation which is about one-tenth of the cost of cultivation.

As chillies are being cultivated widely and in almost all seasons, the leaf curl disease can be controlled only with the active co-operation of the ryots of the area. Indifference on the part of a few will spoil the neighbours' crop as well to some extent, in spite of the precautions taken by the latter to protect their crops. If only the ryots take to better manuring, cultivate properly and spray in time according to season, a better harvest may be ensured.

The Cambodia Cotton Seed Multiplication and Distribution Scheme. Cambodia cotton (Gossypium hirsutum), a type of American cotton was introduced into South India in 1905 from the province of Cambodia in Indo-China. The yield and quality of the cotton soon attracted attention and the acreage both irrigated and unirrigated increased rapidly mainly in Madura and Coimbatore districts. Owing to the fact that other cottons were being grown side by side e. g., Karunganni, Uppam and Nadam, mixing of kappas before ginning was rife and soon mixed seed was being sown by the ryots to the detriment of quality and outturn.

In order to cope with this problem, the Department of Agriculture started selection work in Cambodia and strain No. 15 was released in 1921—22. In 1924—25, this was replaced by Co. 1 and in 1928—29 by Co. 2. The seed released by the Cotton Specialist, was taken over by the district staff and grown pure by ryots on seed farms under the supervision of the Agricultural Department. The kappas so produced was collected and ginned and the seed thus obtained was carefully stored for distribution during the next sowing season.

When Cambodia seed farms were first started, the Department issued free seed, rogued the crops, advanced cultivation expenses to Rs. 30 per acre and then purchased the kappas from the ryots. With the development of Co-operative societies, advances to ryots were given by the Co-operative societies and purchase of kappas was stopped. Instead there was introduced the system of co-operative ginning, departmental officers acting as advisers in regard to ginning and sale of lint. All good seed was purchased by the department after ginning, at a premium of about Rs. 6 to Rs. 8 per 1000 lbs. About 1000 acres of seed farms were thus being handled by the Deputy Director of Agriculture, VIII Circle, Coimbatore with 12 limited liability Co-operative societies formed for the purpose in Avanashi and Tirupur areas.

The amount of seed produced on 1000 acres of seed farms was at most only sufficient to sow about 8000—10,000 acres of Cambodia out of a total acreage of over 1 lakh acres of Cambodia cotton. Full advantage could not be taken of this specially produced seed as mixing of the kappas with poorer types of Cambodia and other varieties of cotton led to mixed seed in the following year and the purity of the good seed was not maintained.

It therefore became necessary to produce good Cambodia seed on such a scale that almost the total acreage under this variety could be sown with pedigree seed. Such a scheme was drawn up in 1931 to be run by the Tirupur Co-operative Trading Society, Tirupur under advice from the Agricultural Department and financed by the Indian Central Cotton Committee. The scheme was put into operation in 1932 and the staff, acreage and seed production estimated as follows:

Year.	Agricultural staff paid from Indian Central Cotton Committee funds.	Actual seed farm acreage (Acres).	Production of seed in maunds.	Sufficient to sow.* Acres * (approximate).
1932—33.	Business Manager and 2 Agricultural Demonstrators.	1739	19,944	20,000
1933—34.	—do.—and 4 —do —	4122	29,596	30,000
1934—35	—do.—and 6 —do.—	5152½	53,545	54,000
1935—36.	—do.—and 6 —do.—	5320	45,995	46,000

The Business Manager and his staff are responsible for arranging the seed farms with the ryots, who should belong to a co-operative society, so that they may be financed if necessary through them. Advice is given during the cultivation period and kappas are collected in a central ginning factory usually in Tirupur for ginning. Ginning is carried out under the supervision of the Business Manager and the Agricultural Demonstrators and help is given to the ryots in the disposal of lint.

After ginning, all seeds of good germination capacity are purchased outright from the ryots by the Tirupur Co-operative Trading Society at a premium. The seed is carefully stored and during the next sowing season is issued for sale by the Tirupur Co-operative Trading Society, any profit on the transaction going to the society. In order to prevent any serious financial loss to the Tirupur Co-operative Trading Society, the Indian Central Cotton Committee has guaranteed interest on the money spent on the purchase of seed during the period between the purchase and sale of the seed, and also any loss incurred up to 10% of the total value of seed purchased.

Seed from the Cotton Breeding Station and Central Farm is handed over to the Deputy Director of Agriculture, Coimbatore, who grows it on the Departmental seed farms (inner area). Seed from this inner area is given to the Seed Multiplication Scheme for their 6000 acres seed farms (outer area) and from this area the pedigree seed is sold direct by the Tirupur Co-operative Trading Society to the ryots growing the commercial crop on up to 100,000 acres. The scheme is therefore a direct link in the chain from the Cotton Specialist to the ryot growing the commercial crop and pure seed is produced on such a large scale that few ryots who want good seed need go without it.

Correspondence.

I

To The Editor, Madras Agricultural Journal.

Sir,

Please publish the following in your valuable journal.

In an Industrial taluk like Coimbatore cereals are being sold at the same price as those prevailing in places with no industries and no scarcity of labour. But the agricultural wages are higher than elsewhere. Such a condition hits the landed interest rather hardly.

There is a competition between the mills and the ryots with regard to finding out the required labour with the result that the labour charges increase often, the increase in some months being double or treble of what is going on in non-industrial places. The little margin of profit is thus deprived of and the cultivator suffers much from being in the proximity of the mills and other industrial concerns