scum five kilograms of euglenae were obtained as a non-hygroscopic, dusty, gray-green, granular powder.

CHARLES E. BILLS

ZOOLOGICAL LABORATORY
THE JOHNS HOPKINS UNIVERSITY

SYRPHID LARVÆ AS PESTS

WE are all accustomed to regard the predacious larvae of several of our syrphid flies as distinctly beneficial insects. It was, therefore, a great surprise to learn, a few days ago, that the larvae of some of these flies were the cause of the closing of several canneries in the Santa Clara Valley, California.

During the past few years the business of canning spinach has grown until it is now an industry of considerable importance in California. Hundreds of acres are sown to this crop, the grower receiving about $20 a ton for the spinach cut and crated in the field. The average yield is four to six tons per acre.

Soon after the spinach began to come into the canneries this spring it was noticed that there was an unusual number of "worms" on the leaves and that many of these were not removed in the usual washing process and that some of them even found their way to the cans that were ready for sealing. The cannery men immediately stopped canning and sent word to the growers that no spinach infested with the "worms" would be received. This meant the loss of hundreds of thousands of dollars to the growers as well as tremendous losses to the cannery men who had already contracted to deliver what they had every reason to believe would be the largest output in their history.

An investigation showed that the principal cause of all this trouble was the larvae of one of our most common syrphid flies *(Lasiophthicus pyrastri)* which were feeding on the aphid *(Rhopalosiphum persicae)* which is a common pest of the spinach. The larvae of other syrphid flies were present also, but this *L. pyrastri* was the most common. The season had been a particularly favorable one for the flies and we found that the larvae were doing a remarkable work in destroying the aphids. But as some of them would stick to the leaves even through the washing process and turn white when the spinach was in the scalding water, their presence on the leaves when it was ready for the can was easily detected and, of course, the product could not be used.

A few days later the number of larvae to be found on the spinach in the field began to decrease very rapidly and at the end of a week they were so scarce that some of the cannery men decided to see whether by using particular care in picking over the spinach in the cannery they could not get a clean product. Even the most careful work, however, failed to dislodge all of the larvae and it was decided not to pack any more spinach this season, as the cannery men are determined that the pack that goes out from their places shall be perfectly clean. This means that the growers in this valley will lose approximately $400,000 because of the presence of this "friendly" insect in their fields.

Spinach that is planted early in the fall and is ready for the cannery in March is not infested by the aphids to any extent and the syrphid larvae are not to be found until the aphids are there. Early planting, then, is the remedy.

R. W. DOANE

STANFORD UNIVERSITY
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ON THE VITALITY OF COTTON SEED

AMONG our most destructive cotton diseases is anthracnose which is caused by the fungus *Colletotrichum Gossypii Southw.* So widespread and destructive is this disease in the cotton growing states that its literature is now quite extensive. In common with other members of the genus, the fungus infects the seed and in this way is carried over from one season to the next. It is, therefore, necessary in order to combat the disease effectively to secure uninfected seed for planting.

Treating the seed with fungicides has been tried with negative results. The difficulty encountered was the inability of the disinfectant to penetrate the seedcoats and so reach the fungus. The hot water method of treating seed was also tried and promised well but was later abandoned as unpracticable. The thermal death point of the fungus appeared to be too near that of the seed. From the results of previous work it appears that the ordinary method of seed treatment will give unsatisfactory results.