

marketing of silk is thus backward. With higher efficiency in marketing which is bound to come, as a result of establishment of a central marketing organisation, this industry should also benefit.

The decline of this industry, due to foreign competition, was brought to the notice of the Government who instituted an enquiry by the Tariff Board in 1932, which has been helpful to the industry and protection for the present has been given. If such an important and interesting industry should, for any reason, disappear, we shall be losing an industry on which depends the livelihood and prosperity of a large rural population.

**To Sum up.** (1) Sericulture is a perfect home industry. (2) It occupies an important place in the rural economy of the taluk. But for this industry, the poor ryot of Kollegal, would have been frequently faced with starvation. (3) For the cash, which the agriculturist requires, for his necessities and his expenses between one harvest and another sericulture helps him. At any rate, it gives him credit-worthiness. (4) Apart from the material advantages, the industry induces mental alertness and co-operation. A sericultural village, especially previous to the trade depression had a characteristic atmosphere of life and prosperity and even to-day looks more resistant than an ordinary village, to the havoc of trade depression, irregular rains and unemployment among labouring classes.

**The Industry in General.** With reference, in general, to the industry in India, there is a great possibility of expansion. It is estimated that India consumes about double the quantity of raw silk which she produces. With better methods of cultivation of mulberry, of rearing of worms, reeling, marketing and a better organisation of handloom weaving there is no difficulty for expansion, as India has all the natural advantages for the industry. In fact, the expansion of silk Industry, in places wherever possible, will open up fresh avenues of employment for the rural population.

**Acknowledgment.** I take this opportunity to thank Mr. K. T. Achiah, the Sericultural Expert and Mr. Ramachandra Rao, the Silk Superintendent, who kindly afforded me facilities for studying the industry, while I was in Kollegal.

## Research Notes.

### The White top shoot borer of sugarcane (*Scirpophaga*)

Mention has been made in the previous publications on the top shoot borer of cane about the presence of two species of *Scirpophaga* in South India, at any rate, in the Madras Presidency. These are *S. monostigma* and *S. auriflua* (*S. xanthogastrella*, *S. intacta*, *S. nivella*) the former with a black spot on each of the forewings and the latter without spots. In our recent studies of the pest it was found difficult to distinguish the larval and pupal stages of the two moths and this led us to suspect that there may be only one species after all. The



caterpillars hatching out of the eggs laid by the two moths were therefore reared separately in pot plants inside wire gauze cages. It was found that both the spotted and spotless forms were got from the progeny of either. It was also observed that there were gradations even in the size of the black spots. Some moths had prominent spots with about 100-150 black scales while others had very few such scales. So it looks as if there is only one species of *Scirpophaga*. Detailed studies including the examination of the genitalia of moths and rearings of larger number of caterpillars are in progress to confirm the results already obtained.

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Dated the 10th August '37.

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## EXTRACTS

**Jelly Making.** One of the most important things in making jelly is to get the fruit at the right stage. Half-ripe fruit is necessary to make good jelly. The proportion of sugar is generally 1 cup to 1 cup of liquid. Boil juice for 10 to 15 minutes. Add sugar and boil quickly from 10 to 20 minutes when it should be tested by putting a little on saucer. Any strong material with a close weave answers almost as well. Before straining jelly, the bag should be wrung out with clean, hot water. The last of the liquid should be allowed to drip slowly through the bag unaided by pressure. To strain small quantities of jelly, reverse a chair and place the seat flat on the table, tie cloth to the four legs, and place bowl under cloth.

**Recipes.** Apple Jelly.—Take as many apples as required, windfalls will do, and small ones are the best. Place in a preserving pan with enough water to cover them; when boiled to a pulp, do not stir, strain through a jelly bag, and to every breakfast cup of juice add three-quarters cup of sugar. Boil briskly until it jellies, and pour into jars. Exclude air from jars either by covering with paraffin wax or paper moistened by being applied to jar.

Lemon jelly.—4lbs. of lemons cut in slices in 4 quarts of water. Let stand all night. Boil for half an hour. Stand until next day, strain through flannel. A cup of sugar to cup of juice. Boil from 20 to 30 minutes.

Quince Jelly. 6lbs. quinces, 5 pints of water, sugar. Wash fruit and cut in small pieces. Put in pan with water and stew slowly, mashing from time to time until fruit becomes tender. Strain through jelly cloth. Boil liquid 20 minutes. Add equal amount of sugar. Boil briskly for 10 minutes. (*Journal of the Dept. of Agri. S. Australia—May 1937.*)

**Hybrid Vigour in Plants.** Increased vigour over either parent of the product of the cross between two inbred lines has been frequently reported in plant breeding and, through vegetative propagation, efforts have been made, especially with trees, to make practical use of the phenomenon. It is usually explained, in Mendelian terminology, as the result of association of several genes for size which had been isolated in either parent, and subsequent loss of vigour in succeeding generations is attributed to segregation. There has been little analysis, however, of the factors contributing to the heterosis or hybrid vigour during the development of the hybrid, so that considerable interest is attached to recent series of papers by Dr. Eric Ashby which have brought to light some most unexpected features of this process in specific cases.

In certain strains of maize and in two cases with tomato strains where the hybrid showed greater weight and dry weight, greater height, more leaves and larger leaf area than either parent, analysis of these differences showed no appreciable difference between hybrid and parent in relative rates of growth or