

Preservation of Meat. The preservation of meat by means of salts has long been practised, but only recently have its scientific principles been studied. The production of colour as well as preservation from putrefaction is brought about by the use of saltpetre. Bacterial action converts the nitrate of the saltpetre into nitrite, which combines with haemoglobin, and when the meat is boiled the latter is converted into nitrohaemochromogen, which has the bright red colour characteristic of properly cured silverside. The micrococci responsible for this action can grow in media containing as much as 20 per cent. of salt, in which concentrations the putrefactive bacteria cannot exist. Nor can their spores develop in media containing as much as 10 per cent. of salt.

Chocolate and Confectionery. Changes in atmospheric temperature and humidity are liable to produce changes in chocolate and confectionery. The British Food Manufacturers' Research Association has given manufacturers a great deal of help in determining the conditions necessary for the production and storage of satisfactory chocolate. In the factory, it is generally possible to secure these conditions, but in retail premises it is not so easy. If the manufacturer were able to deliver his goods direct from his warehouse to consumer, defective products would not be so commonly seen as they are at the present time.

(*Nature*, July 31, 1937.)

Research Notes.

The Moringa Hairy Caterpillar.

Eupterote moliifera, Wlk., commonly known as the moringa hairy caterpillar is a pest of *Moringa pterygosperma* in South India. Though Lefroy, Fletcher and Ramakrishna Ayyar have made mention of this insect in their publications, no detailed account of it has been given by any of them. Hence the studies on the pest.

The moths are about 50 to 60 mm. and yellow in color. Pale yellow eggs are laid in clusters on the stalks of the moringa leaves and measure 1 mm. in diameter. The egg period varies from 14—18 days. The newly hatched caterpillars are 2 mm. long and 0.5 mm. broad with reddish head and yellowish pink body on which are seen numerous warts with black and brown hairs. The caterpillars are gregarious in habit and feed at night on the leaves of the food plant and rest during day time on the tree trunks. They undergo five moults. The mature caterpillars are 30—40 mm. long and 4 to 5 mm. broad. When the caterpillars are full grown they leave the food plant, enter the soil and pupate in cocoons made of silk covered with hairs on the body and particles of soil. The larval period is about 41 to 46 days. The pupae which are brown in color are 15—20 mm. long and 7 mm. broad. In about 27—30 days adult moths emerge from the pupae. The total life cycle of the pest ranges from 82 to 94 days.

The pest is known to do serious damage to moringa in some cases by defoliating the trees. In addition to moringa it has been noted recently on portia (*Thespesia populnea*) planted as avenue trees in Korukkai (Tanjore Dt.). It has also been recorded from Ceylon on *Erythrina*. An egg parasite has been collected at Coimbatore but is not found in sufficient numbers to check the pest. As the caterpillars have got the habit of resting on tree trunks in groups in large numbers they can be destroyed by burning them with a lighted torch or by spraying *Lotal* at a strength of 5 ozs. in 1 gallon of water. Care should be taken to see that the caterpillars are not handled as they have irritating and poisonous hairs. The pupae may also be destroyed by raking the soil round about the food plants as the caterpillars go to the soil for pupation. Detailed studies regarding other remedies are in progress.

Agricultural Research Institute, }
Coimbatore, 15th October '37. }

M. C. Cherian.
M. Basheer.