

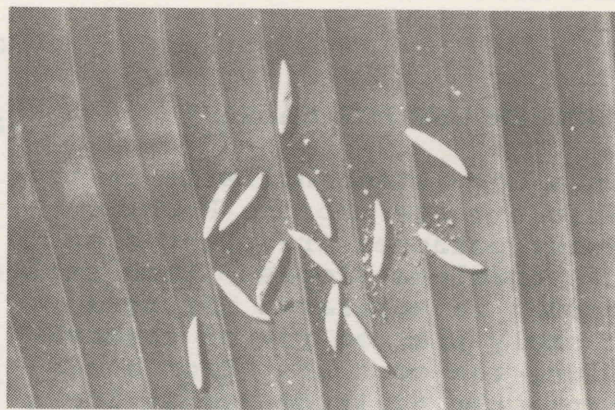
# ENTOMOLOGY BULLETIN: NO. 11

## SEXAVA: A PEST OF COCONUT AND OIL PALM

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### INTRODUCTION

Sexava, sometimes called the coconut treehopper, is a large grasshopper which feeds on the leaves of coconuts, and oil palm (as well as betel nut, several kinds of wild palm, banana, and pandanus). In coconut palms, this pest can cause severe defoliation and fruit fall. Palms can take up to two years to recover their vigour.



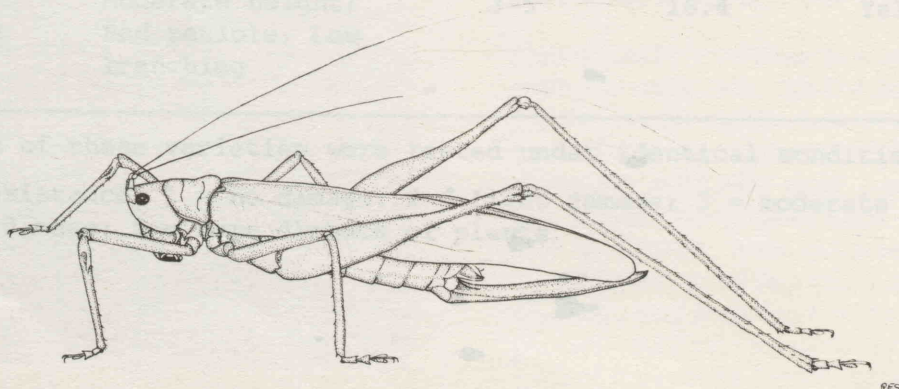
*Eggs of Sexava, about life size*

### DESCRIPTION

The name Sexava covers the seven pest species which are found in Papua New Guinea. All these species are either green or brown in colour and the antennae (feelers) are many times longer than the body. The body of the adult varies from about 4.5 to 6 cm in length. The nymphs (young stages) are similar to the adults, but smaller.

### BIOLOGY

The life cycle of Sexava varies from 100 to 240 days. The females lay their eggs in the soil beneath the palm, during the night. Sometimes eggs are also laid in the butts of old fronds, or in epiphytes (plants which grow on other plants) growing on the palm trunk. The eggs are about 1 cm in length. Females lay an average of 35 to 40 eggs. The egg stage lasts from 40 to 100 days.



*Adult female Sexava*

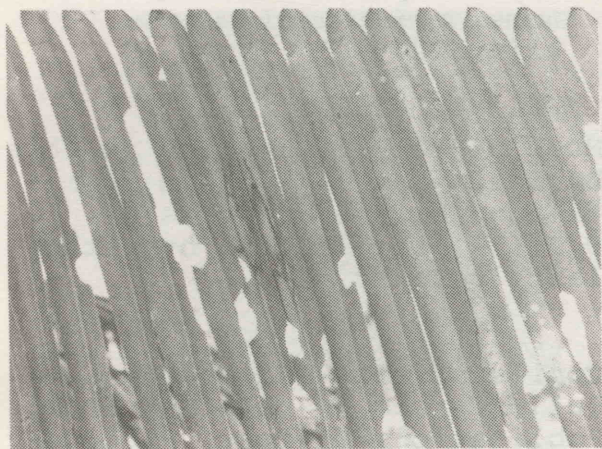


After the egg hatches, the first nymph stage climbs up the trunk of the palm, and after a time starts to feed on the fronds. There are 6 or 7 nymphal stages, each lasting 10 to 20 days. Therefore the nymphal stages altogether last from 60 to 140 days.

Adults have lived for 3 to 4 months in captivity, and probably live much longer in the wild state.

#### ECONOMIC IMPORTANCE

Both the nymphs and adults prefer to feed on the mature foliage, and avoid the very young leaves. They usually feed at night, and shelter in the spear of the palm during the heat of the day. Adult *Sexava* have been recorded eating up to 47 cm<sup>2</sup> of leaf per day. If defoliation is severe, the coconut palm will shed its nuts before they are ripe. It can take up to two years for the palms to recover full production



*Male and female Sexava on the underside of a coconut frond.*

In general, *Sexava* outbreaks build up slowly and in most cases go unnoticed until the damage is quite severe. The build-up is slow because *Sexava*



*Palms damaged by Sexava. Note that the damage is concentrated on the intermediate to older fronds. The youngest fronds are the least damaged.*

is a weak flier and cannot migrate very far, and also its reproductive rate is fairly low.

#### CONTROL MEASURES

##### Chemical control

1. Spraying the base of the palm with 2% Chlordane or 0.75% dieldrin. The object of this method is to stop the first instar nymphs climbing the palms. It is claimed to be effective in limiting outbreaks. For advice on preparation of the chemicals for spraying, you should contact the D.P.I. entomologist in your area.

2. Aerial spraying. Control of *Sexava* by spraying insecticide from aircraft was tried in 1974 at Asuramba, near Bogia. The insecticide used was 95% Malathion U.L.V. applied at the rate of about 700 ml per hectare. The results were reported to be highly successful. Aerial spraying would be the cheapest and quickest method of



chemical control, providing suitable aircraft and spray equipment are available. Aerial spraying can, however, cause other pest problems and should be undertaken with this in mind.

3. Trunk injection. A hole is bored in the trunk of the palm and an insecticide is injected into the hole. The hole is then plugged with a dowel. The insecticide is quickly carried up to the leaves. Sexava eat the leaves and are poisoned by the insecticide. This method has been very effective. The cost, using a generator and electric drill is about 30 t per palm.

The insecticide used is very poisonous, and the procedure requires skilled operators. D.P.I. entomologists should be consulted to obtain details of the insecticides used, before this method is attempted.

#### Mechanical control

The palm can be banded with sticky substances such as 'Osticon' or 'Tacktrap'. This will prevent first instar nymphs from climbing the palms. It will not affect the movement of adults. This method of control is though to be uneconomic.

#### Biological control

Two parasitic wasps, which attack the eggs of Sexava are widespread in Papua New Guinea, and appear to control Sexava in New Hanover. However, after repeated releases in the Manus and West New Britain Provinces, no control has yet been achieved.

Work on other parasites is continuing, as biological control seems to be the only long term answer. Usually, the price of copra is too low to support chemical control.

#### FURTHER READING

Froggatt, J.L.(1935). Measures for control of coconut tree-hopper. *New Guinea Agricultural Gazette*, 1(1) : 306

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Froggatt, J.L. and O'Connor, B.A.(1940). Insects associated with the coconut palm. *New Guinea Agricultural Gazette*, 6:16-32

Lever, R.J.A.W.(1969). *Pests of the Coconut Palm*. F.A.O., Rome. pp. 23-26

O'Connor, B.A.(1959). The coconut tree-hopper *Sexava* and its parasites. *Papua New Guinea Agricultural Gazette*. 11(4):121-125

Much of the information in this Bulletin has been drawn from the unpublished reports of D.P.I. entomologists over the last 30 years.

Copies of this Entomology Bulletin can be obtained from: Publications Officer, Publications Section, D.P.I., P.O. Box 2417, Konedobu.