

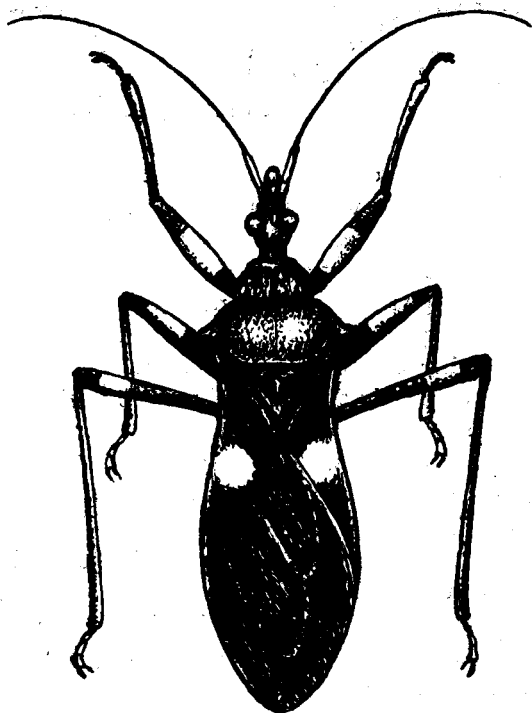
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REPORTS were received as early as 1961 from different parts in Kerala State on the shedding of immature coconuts which presented characteristic cracks and gummosis. Research workers at the Central Plantation Crops Research Institute, Regional Station, Kayangulam, were in search of the causal agent behind this damage. Recently immature stages and adults of a bug were observed on crowns of coconut palms. This insect was identified as *Paradasynus* belonging to the hemipteran family Coreidae. Identical coreids were reported as damaging cashewnuts, rubber, guava, mango, tapioca, etc.

In the laboratory this particular coreid was found to feed on female flowers (buttons) and immature nuts. The feeding punctures produced by the bug just below the perianth developed into necrotic lesions, which left permanent somewhat deep furrows or crinkles with gummosis. The bugs liberated in cages covering a one month old inflorescence caused shedding of buttons. In the field buttons which escaped shedding in spite of the attack by the bugs developed into undersized or barren nuts.

A NEW ENEMY OF COCONUT IN INDIA

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Paradasynus Sp. (Adult)

Distribution. This pest is mostly seen to cause severe damage to coconuts in Alleppey and Quilon Districts of Kerala State. Damage caused by the bug was recorded from Cannanore to Trivandrum Districts of this state. State wide distribution of the pest is reported with varying degrees of magnitude of damage. Recently, based on a report from Chirayinkeezh, a survey was made. Two hundred ha of coconut gardens were found infested by the pest in varying degrees of intensity. An average of 74 per cent of the palms were infested. Presence of this pest is also reported from Thirthahalli in Karnataka State.

Life history. Eggs are seen to be laid on the inflorescence or in its vicinity. Eggs hatch in 8 to 10 days. The immature ant-like young ones pass through five stages covering a period of 30 days before they become adults. The adult lives for a period of 50 days.

Mode of feeding. This insect possesses a long needle like mouth part (Proboscis). They thrust this organ into the tender nut and suck the sap. While sucking they inject their saliva into the tender nut. This saliva consists of some toxic material which causes the damage. The amount of toxin injected, the depth of the wound caused and the age of the nut are, probably the factors that decide the fate of the infested nut.

Control Measures

Being a new pest to the coconut cultivation no attempt was made to control the pest till very recently. Efforts are in progress at the C.P.C.R.I. Regional Station, Kayangulam, to work out a suitable control measure for this pest. Indications so far received from the field trials are that spraying with 0.1% BHC (2 g 50% BHC in 1 litre water) or 0.05% carbaryl (1g 50% carbaryl in 1 litre water) is effective in controlling this pest. Spraying is to be done at bimonthly intervals on coconut bunches/inflorescence and leaf axils. Care should be taken not to spray on just opening flower bunches and buttons in receptive stage. Spraying on such bunches may adversely affect the pollination and fertilization. As the pollinators especially honey bees are more active in the forenoon, it will be advantageous if spraying is done in the afternoon.

All other pests except few of minor importance, bats and rats cause only indirect loss of nuts. But this nut crinkler pest (coreid bug) directly/adversely hits the target of the cultivator. Even one individual of this pest can cause shedding or barrenness of the nuts in large numbers. Hence, needless to say that farmers are to be vigilant on the occurrence of the pest and to take effective control measures to bring the pest under control before they increase in number and cause devastation.

In this connection it will be interesting to know about similar types of pests causing almost similar type of damage to coconuts in other coconut growing tracts of



The coreid feeding on immature nut

the world. A brief account of such pests is given below.

At least three species of coreids are reported from various parts of the world causing damage to coconut.

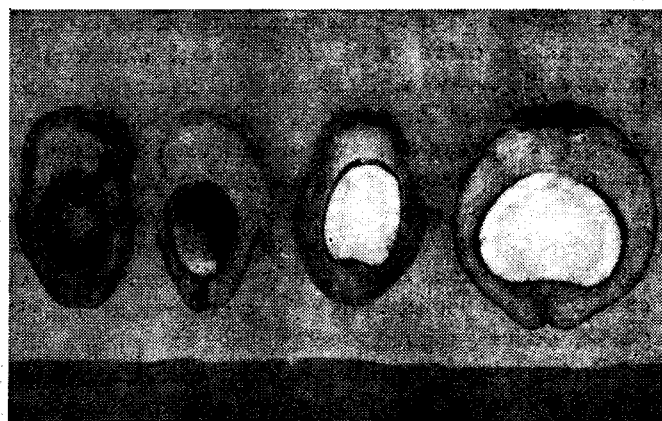
Amblypelta cocophaga China

This pest is found in most of the islands in South China and in Malaita of the north China of Solomon islands. The wound caused by this pest provokes a gummy exudation. If the attack is on a tender nut it invariably falls off prematurely. Since each feeding puncture destroys a relatively large amount of tissue, a single insect (young or adult) can do great damage in its life time. About 10 per cent loss in nuts is reported due to this pest. This pest also feeds on cacao, mango, kapok, tapioca, sugarcane, papaya and many other tropical plants.

Control. Dieldrin, endrin, BHC and Chlordane are reported as giving satisfactory control. A predatory



Characteristic symptoms of coreid infestation on nuts which escaped shedding



Split halves of barren, partially barren and under-sized coreid-damaged nuts compared with the normal

ant *Oecophylla smaragdina* which nests on the palm is a very effective natural enemy of the pest.

Amblypelta lutescens Distant

This is a pest on coconut in New Guinea and Queensland in Australia. It was known as a pest of rubber, tapioca and *Ipomoea*.

Pseudotheraptus wayi Brown

This is a serious pest of coconut in eastern Africa including coastal zones of Tanzania and Kenya and islands of Zanzibar, Pemba and Mafia. A single puncture by it results in necrotic lesions and gummosis and shedding of nuts even in the third month of their development, but from the age of 4 months nuts are able to continue their development even if severely punctured by bugs. The annual crop loss in Zanzibar due to *Pseudotheraptus* has been valued at the equivalent of U.S. \$ 5,600,000 (calculated on 1960 values). Besides coconut this insect feeds on cacao, guava, mango and cinnamon.

It takes 26-40 days from egg to adult stage. Adult stage lasts 84 days for males and 73 days for females. One female, on an average, lays 74 eggs. Each individual makes nearly 200 punctures in the course of its existence. Nymphs are generally found near the spadix. They shun direct light and heavy rain. Feeding takes place early morning or late afternoon. Insects are more active on cloudy but not heavily overcast days. Pest occurs on an average of one per palm.

Control. Dusting with 0.4% gamma BHC at about 22.5 kg per hectare. *Oecophylla longinoda* is a natural enemy of this pest.

The pest *Paradasynus* sp., being one that caused direct damage to the produce, is kept under surveillance for studies on spread and intensity in the various pockets of its occurrence of spread to new coconut-growing tracts. Action is simultaneously in progress to standardise the methods of control which are now being tested under field conditions.