Achaea Janata *L.—A Noctuid Defoliating the flush of* Theobroma Cacao.

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Achaea janata L. (Plate I) is a moth in the family Noctuidae, which has a very wide distribution, and also a wide range of host plants. It has been recorded from Africa, Asia, Australia and many islands in the Pacific Area, and its hosts include rubber (*Hevea brasiliensis*), *Albizzia* spp., castor bean (*Ricinus communis*), Crotons (*Codiaeum variegatum*), peanuts (*Arachis hypogaea*), and cacao (*Theobroma cacao*) (Szent-Ivany 1961).

In the Gazelle Peninsula (New Britain) along with several Geometrids, it has caused extensive damage to the young flush on cocoa (Plate II), which is often sufficient to kill the growing point of the shoot, causing excessive branching. Work on the biology of *A. janata* in the laboratory at Keravat, using *Ricinus communis* as the host plant, gave a life cycle agreeing fairly closely with that of Kalshoven 1950.

Table I.

Stage	Length of Stage
Eggs	3 days
Larvae	11-17 days
Pupa	9-14 days
Prepupae	1 - 2 days
Adults	10-20 days
Adults (pre-oviposition)	4-10 days
Egg—Egg	32-38 days

The adults live approximately three weeks, though females exhausted by egg laying seem to live only about 10 days. In a test with two females, rate of egg laying was found to be about 600 in five days (though Kalshoven quotes a mean of 1,000 with a maximum of 2,380, for 10 species of *Achaea*). The females were caged singly, and fed on a honey/water mixture.

Eggs are laid overnight, over both surfaces of the leaves, but mainly on the upper surface. Both females died on the fifth day of oviposition.

Plate I.—Cocoa flush damaged by *Achaea*, one leaf of which has been reduced to the midrib.

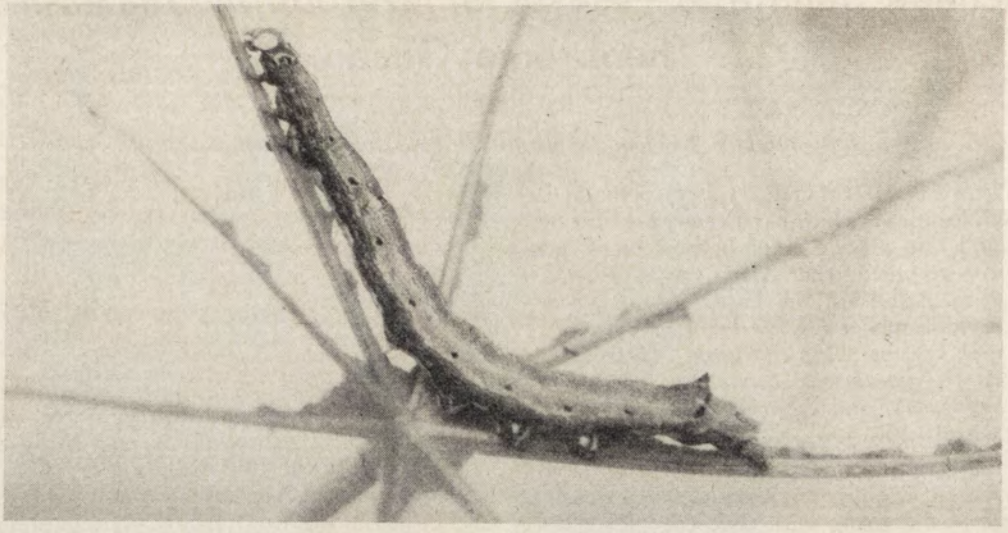

Plate II.—Larva of *Achaea* on *Ricinus communis*. This is a final instar.

Plate III.—Cocoa flush eaten by Achaea.

Table II.

Dates of Oviposition (Eggs/day).

	1	2	3	4	5	total
Female 1	252	172	77	30	60	676
Female 2	177	185	62	107	71	617

The young caterpillars for the first few days attack only the epidermis of the leaf, but soon commence eating large holes in the leaves, till eventually only the mid-rib and main veins remain (Plates I, II and III). Under conditions of extreme over-population such as when the attack is severe, the late instar caterpillars will extensively damage the epidermis of the growing point, causing its death. The young caterpillars are a pale grey colour, later a darker grey/brown colour with black markings and two prominent red protuberances on the eighth abdominal segment.

The caterpillars usually pupate in the leaves, sewing them together with a silk-like substance (Plates IV and V). It was noticed, however, that the caterpillars often pupated on the surface of the soil or in convenient corners, where they wove a silk cocoon which was covered on the exterior with grains of soil, small pieces of vegetable matter or other similar material.

The adult is a moth of about 2½ inches wing-span. The forewings are brown with black markings, while the hindwings are prominently marked with black and white (Plate VI). This

Plate IV.—Pupa still within leaves.

Plate V.—Pupa removed from leaves. It has a light grey appearance.

moth is a strong flier and can travel long distances, even over the sea (Kalshoven 1950).

Work on the control of these caterpillars is proceeding.

REFERENCES.

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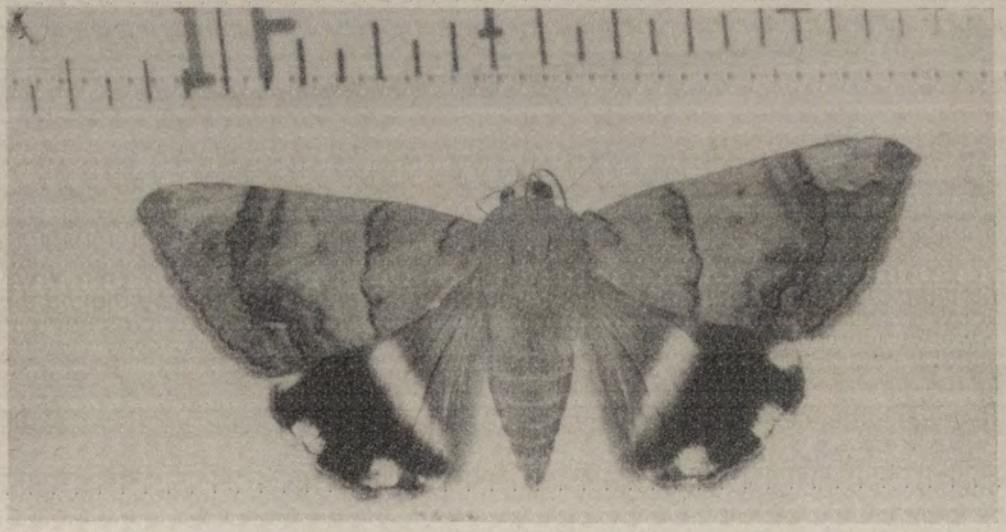

Plate VI.—Adult of *Achaea janata.*