

RESEARCH NOTE

A note on *Euzophera villora* (Felder), A pyralid Borer of the Garden Egg

Babajide A. Matanmi
Department of Plant Science
Obafemi Awolowo University
Ile-Ife, Nigeria

Abstract

Euzophera villora (Felder) (Lepidoptera, Pyralidae) was recorded as a stem borer of the garden egg (egg-plant), *Solanum melongena* L. at Ile-Ife. Two parasites, *Syzeuctus* sp. (Ichneumonidae) and *Antrocephalus crassipes* Massi (Chalcididae) emerged from field-collected larvae and pupae of this borer, respectively.

Introduction

Ladipo (1983, pers. comm.) drew the author's attention to insect damage by an unknown species in his garden egg (*Solanum melongene* L.) planting at the University of Ife, Teaching and Research Farm. Earlier records of the insect pests of some exotic and local vegetables in Nigeria include those of Golding (1946), Libby (1968 a & b), Taylor (1974), Ayoade (1976), Akinlosotu (1977), and Medler (1980). Akinlosotu (loc. cit.) listed a noctuid, *Eublemma olivaceae* Wlk. as a common stem borer and fruitworm of the egg-plants, *S. gilo*, *S. macrocarpon*, and *S. aethiopicum* at Ibadan.

The insect responsible for the damage observed at Ile-Ife was identified as *Euzophera villora* (Felder) (Lepidoptera, Pyralidae). It is also known as "Shaggy Knothorn" (Pinhey 1975) or the egg-plant stem borer (Schmutterer 1969). Other members of the same genus have been recorded as stem borers on different plants in several parts of the world, viz: the plum in U.S.A. (Blakeslee 1915); brinjal (garden egg) in India (Gupta 1956, Srivastava 1961, Gill *et al.* 1984), brinjal, pepper, tomato, potato, etc. in several countries (Gentry 1965); tea and coffee in East Africa (Le Pelley 1959); garden egg in Southern Africa and Sudan (Pinhey (loc. cit.) and Schmutterer (loc. cit.), respectively. Although Medler (1980) mentioned in

passing an unspecified *Euzophera* Sp. in the Samaru insect collection, there is no published record of *E. villora* as a pest in Nigeria. This scientific note represents an account of aspects of the biology of *E. villora*.

Mode of Attack

The activities of *E. villora* are confined to the main stem mostly. Both young and old plants alike are attacked. During the course of our observations, this garden egg stem borer was never found to bore into the fruits of *S. melongena* varieties "New York", "Ex Benin", and "Ex-Jos"; only the stem was attacked. Eggs are laid in leaf axils, or on petioles. Emergent larvae attack the petiole or internodes where necrotic tissue and frass are easily recognizable. In the early stages of the crop, up to 4 to 5 weeks after transplanting, the attack is generally negligible. About 8 weeks after transplanting, the stems, particularly in the region of the crown, become heavily infested as the larvae feed concealed within the wood or under the frass in the stems and roots (Figs. 2, 3 and 4). This borer is capable of considerable damage to egg-plants that had been weakened by some disease attack or other form of stress; the mature plant could harbour as many as 7 larvae.

Life History

A partial life history could only be constructed at this point from the dissection of life stages from field-infested plants and subsequent rearing in the laboratory. Samples of the immature stages were preserved in 70% ethanol for microscopic examination while the adults as well as the parasites that emerged from laboratory rearings were similarly prepared and preserved for taxonomic determination.

The larvae are creamy-white in appearance. Three distinct larval instars were recognizable from the sorting of larvae of overlapping generations dissected from infested plants. The first instar measures about 2.1 mm by 0.25 mm, the second instar, about 3.95 mm by 1 mm, and the third instar, about 9.6 mm by 2 mm. The full-grown larva measures about 20–22 mm by 2.5 mm (Fig. 2). When it is ready to pupate it spins, in the tunnel, a dirty-shite silken cocoon about 31 mm long (Figs. 3 and 4) which subsequently appears brownish to black as *E. villora* adult is about to emerge from the pupa in the cocoon. Cocoons can also be seen attached to cracks and crevices in the roots. The pupa is a smooth, cylindrical structure, about 15–19 mm long. The adults, with somewhat brownish yellow fore-wings and thirax, and creamy hind-wings shaded brown towards the apex, (Fig. 1) measure 1.8 to 2.5 cm across both wings.

Host Plants

Apart from the garden egg, none of the other plants (pepper, cowpea, cotton, tomatoes, etc.) which were examined consistently in neighbouring plots to see if *E. villora* would also cause similar damage, was found to be infested. The garden egg varieties ("New York", "Ex-Benin, and "Ex-Jos") showed marked differential susceptibility to *E. villora* attack in the field and var. "New York" appeared to be immune as none of the plants was found to be infested either in sole or mixed plantings.

Natural Enemies

Syzeuctus sp. (Hymenoptera, Ichneumonidae) was reared from field-collected larvae while *Antrocephalus crassipes* Masi (Hymenoptera, Chalcididae) was reared from field-collected pupae. The author suspects that *A. crassipes* could be a hyperparasite of *Syzeuctus* as five of the former emerged on one occasion from a vial from which *Syzeuctus* has earlier emerged. This is subject to confirmation although the report of Greathead (1971) in respect of unspecified *Antrocephalus* sp. as a probable secondary parasite of *Pimpla heliophila* Cam. (Ichneumonidae) also lends credence to this suspicion.

Acknowledgements

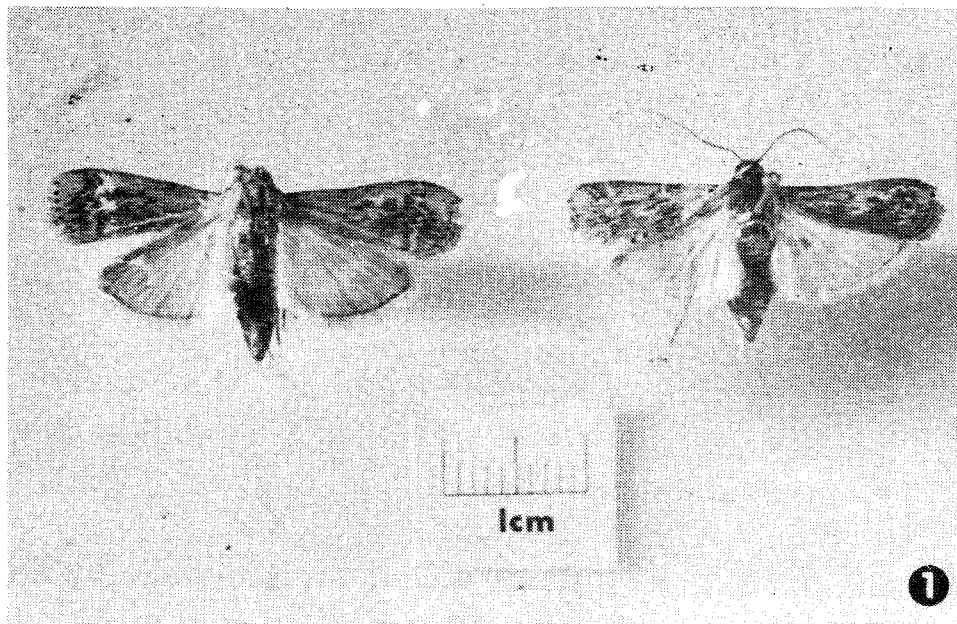
The author would like to thank Professor J. L. Ladipo, Department of Plant Science, Obafemi Awolowo University, for drawing the former's attention to this study and for supplying the planting material. Dr. J. D. Bradley, Commonwealth Institute of Entomology, (CIE) London, kindly provided taxonomic determination of the garden-egg borer while Drs. Z. Boucek and I. D. Gauld also of CIE kindly provided taxonomic determination of the hymenopterous parasites.

Gratitude is also due to Mr. T. I. Oyetade for assistance with the field work.

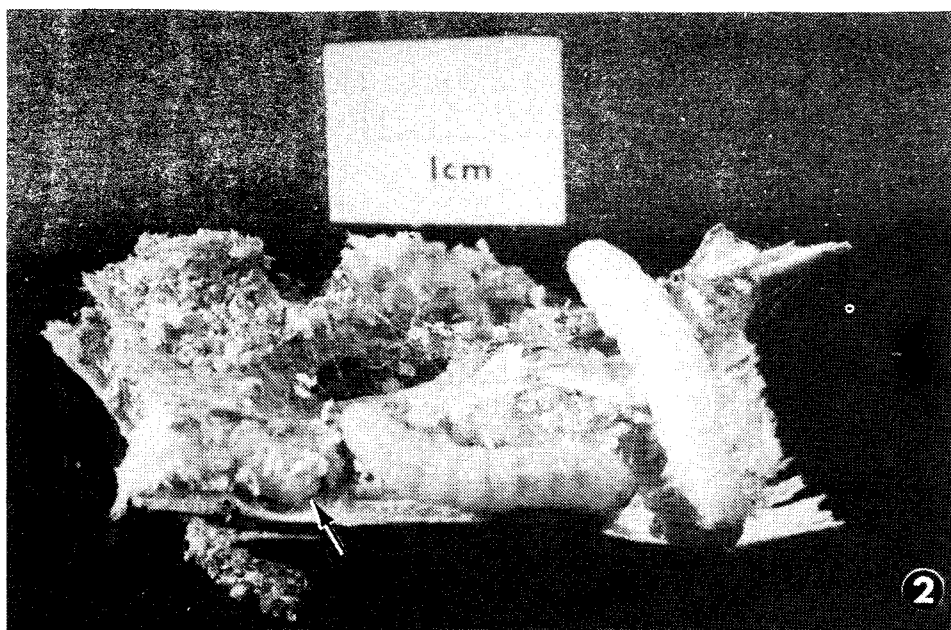
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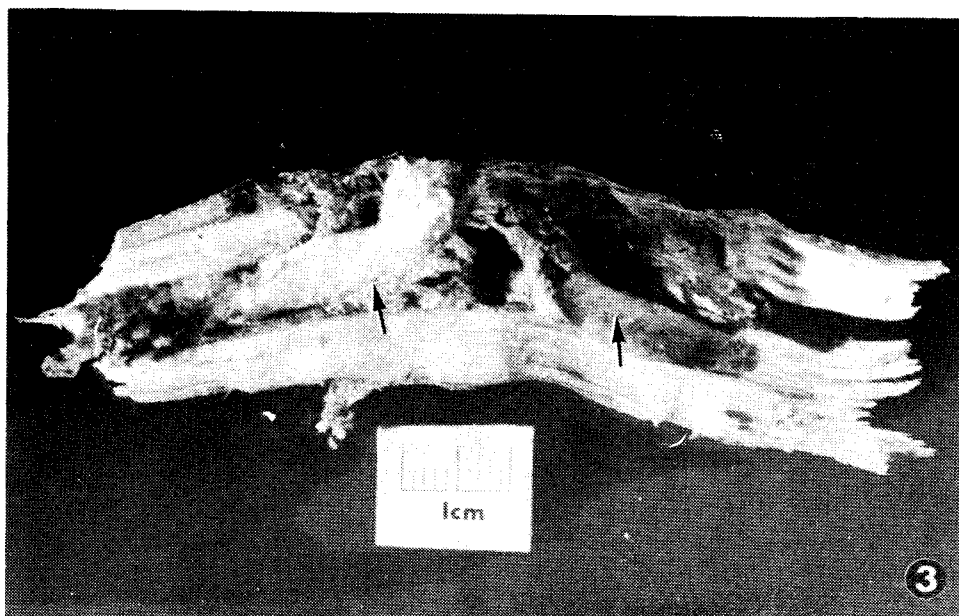
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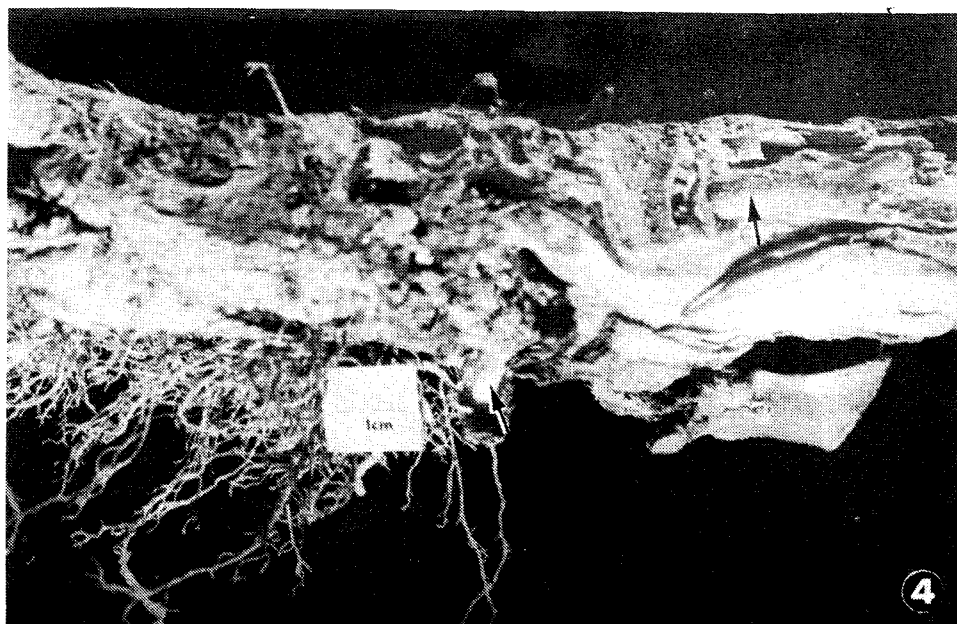
1. *Euzophera villora* (Felder) adults.



2. Larvae of *E. villora* which bored into garden egg wood (Arrow indicates a larva burrowing under frass and about to pupate in silken cocoon).



3. Infested garden egg stem showing pupae of *E. villora* in silken cocoons (arrows)
The brownish to black cocoon contains *E. villora* about to emerge as adult.



4. Heavily-infested garden egg stem in the region of the crown showing cocoons of *E. villora* (arrows indicate some) hidden in crevices. Note the characteristic necrosis of tissue and rather abnormal proliferation of root hairs.