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Aspects of the Biology of *Borbo zazzau* Norman Ms (Lepidoptera: Hesperiidae) on Rice in Calabar, Nigeria

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ABSTRACT

Borbo zazzau Norman Ms has been identified as the most abundant rice leaf-folder or tier in Cross River State, Nigeria. The life history studied under screened cages was completed in 33-43 days within the mean minimum and maximum temperature of 21.05 ± 0.12^{0}C and 27.91 ± 0.14^{0}C respectively and relative humidity of 84.8 ± 0.83%. The duration of the developmental stages (mean ± S.E) was embryonic development, 7.1 ± 0.28 days; 1st instar, 10.1 ± 0.35 days; 2nd instar, 4.5 ± 0. 7 days; 3rd instar, 5.7 ± 0.26 days; pre-pupa, 20.2 ± 0.29 hours, and pupa, 10.2 ± 0.33 days. The head capsule measurement in the successive instars was 1.5 ± 0.01mm for 1st instar, 1.92 ± 0.01mm for 2nd instar and 2.50 ± 0.02mm for 3rd instar, giving the geometric progression ratio ranging from 1.27 to 1.30. The 1st instar larvae caused scarification of young rice leaves while mature larvae caused serious defoliation.

INTRODUCTION

Rice (*Oryza sativa* L.) is one of the commonly cultivated cereals in Nigeria. The cultivation of this crop provides food and generates income for many rural populations engaged in its production. The average yield of the crop in most African countries including Nigeria is reported to be low. For example, average yield of upland rice is put at 1 ton/ha (Jacquot and Courtois, 1987). The yield according to Jacqnot and Courtois (1987) can be increased to 2.5 tons/ha or more as it is obtained in other continents such as Asia. Among the reasons adduced for the low yield of the crop in Africa were, lack of adoption of improved agronomic practices, absence of intensive cultivation and the inability to effectively control

the menace of pests on the crop, pests such as insects, birds, rodents and phytopathological agents (bacteria, fungi, etc) (Jacquot and Courtois, 1987).

A four year surveillance of insects associated with rice agroecosystems in Cross River State revealed that the inability of farmers to suppress the depredation of insect pests on the crop was one important factor militating against optimum yield of the crop in the area (Emosairue, 1993, Emosairue and Usua, 1994). The economically important pests of the crop in Nigeria have been reported and these include stem borers and grain suckers (Libby, 1968, Ukwungwu and Joshi, 1990) Among the insect pests regarded as minor pests are the leaf folders or tiers. This group of insect pests has become increasingly abundant and important in the rice agroecosystem in Cross River State, especially in areas where continuous cropping, staggered planting and ratooning are practiced without insecticide application (Emosairue, 1993).

The objective of the study was to provide information on some aspects of the biology of *Borbo zazzau* which is not known in this area and had not been previously studied. This information is important in pest forecasting and constructing the life table for the insect pest.

MATERIALS AND METHODS

Aspects of the biology *B. zazzau* studied

Preliminary observations on the behaviour of *B. zazzau* under screened cages revealed that the butterfly would not mate nor lay eggs in captivity. Therefore, aspects of the biology such as pre-copulation and copulation behaviour, pre-oviposition period, and fecundity per female could not be studied. The aspects of the life history studied commenced with freshly laid eggs on potted rice plants by the female in the green house premises. Thirty-two vigorously growing rice seedling, one per pot were arranged in four rows spaced 1m apart in the green house premises of the Faculty of Agriculture, University of Calabar. These plants were examined twice daily, in the morning between 8.00 and 10.00 a.m. and in the afternoon/evening between 2 to 5p.m, for freshly laid eggs of *B. zazzau*. Potted plants with freshly laid eggs were tagged and transferred to experimental screened cages where the developmental stages from eggs to the emergence of adults were observed. Each cage measured 1m x 1m x 1.22m in dimension with a door at the side to permit entrance. The cages were constructed with wood and $2mm^2$ sized mosquito plastic mesh.

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