Journal on New Biological Reports **3**(2): 151 – 154 (2014) **ISSN 2319 – 1104 (Online)**

First record of *Callosobruchus nigritus* (Coleoptera: Bruchidae) in Manipur, India

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(Received on: 15 July, 2014; accepted on: 01 August, 2014)

ABSTRACT

Callosobruchus nigritus (Coleoptera: Bruchidae) was found for the first time in the infested seeds of soybeans (*Glycine max*) collected from Tamenglong district of Manipur, India. The male aedaegus consists of a pair of elongated lateral lobes and a short median lobe. It is the first report of its presence in the Indian subcontinent.

Key Words: *Callosobruchus*, Bruchidae, First record, Aedaegus, *Glycine max*, Tamenglong district.

INTRODUCTION

The pulse beetles known as Bruchids are the serious pests to grain legumes worldwide. Many of the pulse beetles have crossed the geographical boundaries and have cosmopolitan in distribution through human mediated migrations and import/export of food grains. This has made these beetles highly adaptive and hence is distributed from temperate to tropical climates.

The family Bruchidae contains about 1300 species which breed mainly in leguminous seeds and are found all over the world. But most of these species develop in tropical and subtropical regions (Southgate 1979). Several members of this family are of economic significance as they breed in grain legume crops and develop several generations in one year. This group of species is known as "Storage bruchids'', as distinct from the "Field bruchids'' which infest seeds in the field and cannot develop in mature dry seeds (Calderon 1958).

The genus *Callosobruchus* is noted especially among the storage bruchids as consisting of some very serious stored legume pests. Three of these species, namely *Callosobruchus chinensis, C. maculatus* and *C. analis* are well established in Manipur and are pests of economic importance, breeding in several hosts such as seeds of cowpea (*Vigna unguiculata)*, Chick peas (*Cicer arietinum*), Pea (*Pisum sativum*), kidney bean,*(Phaseolus vulgaris*), etc.

Several new species belonging to the genus *Callosobruchus* have been reported from the new and old world and many new species have been identified in the Neotropical region by many researchers such as Anton (2000), Calderon, et al (1987), Thakur (2012), etc. No work is done on this line so far in Manipur and less work in India also. As sufficient literatures are not available; this present paper may fill up a long gap in the future researchers.

MATERIAL AND METHODS

The specimens was studied in the Entomology Research Laboratory, P.G. Department of Zoology, D. M. College of Science (ELDMC- SG-1), Imphal, Manipur. The material examined for this study was collected from the Tamenglong district of Manipur and stored in the laboratory. The male aedaegus were dissected under a stereo zoom microscope and cleared in 10% KOH solution for 1-2 hrs and photographed. 10 specimens were deposited in the museum of Entomology Research Laboratory, P.G. Department of Zoology, D.M. College of Science (ELDMC- SG-1), Imphal, Manipur, North East India.

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RESULTS

Callosobruchus nigritus (Anton) 2000; **Fig. 7**

Differential diagnosis: Body short, oval, 2.26-2.3.mm in length, 1.03-1.04 mm in width, color bluish black, antennal segments 1-4 reddish brown and remaining segments greyish, male aedaegus with a pair of longer lateral lobes and a short median lobe.

Description: Body length 2.26-2.30 mm, width 1.03-1.04 mm, Body color bluish black. Head moderate length, 0.33-0.35 mm width. Eyes bulging, tempora very short, frons and vertex convex. Antenna 11 segmented 1-4 segments reddish brown, 5-11 segments greyish, 1.22-1.26 mm length. Pronotum conical with sides weakly concave, 0.65-0.67 mm length, 0.32-0.35 mm width, vestiture of scutellum and prescutellar area of pronotal base erected, ochre white, silky, very dense. Elytra longer than pronotum, elytra with circumscutellar area and two more or less distinct irregular transverse, grayish white bands, first oblique, at the end of basal third to beginning of apical half and second at beginning of apical third. Striae distinct, punctuate, striae with protuberance, intervals flat with moderately dense, partially rugulous micropunctation and with irregular row of large punctures.

Forelegs blackish with tarsi completely, tibiae incompletely, extreme apex of femora reddish yellow. Midlegs blackish with tarsi completely, extreme apex and base of tibiae and extreme apex of femora reddish yellow. Hind femora with acute, preapical denticle at lateroventral and mesoventral margins, lateroventral denticle distinctly broader and feebly longer than mesoventral denticle. Hind tibia with ventral, ventrolateral, lateral, dorsal and dorsomesal carinae complete. Pygidium white, densely punctuate.

Male antenna extending to end of elytral mid third, 11 segmented, 1-2 filiform, 3 subserrate, 4 serrate,5-10 subpectinate,11 elongate and arcuate, 4-8 segments steadily broader than remaining segments. Abdomen moderately telescoped, last abdominal sternite V nearly completely emarginated.

Female antenna similar to male, weakly shorter, but segments 5-10 serrate. Eyes moderately bulging. Abdomen weakly telescoped, pygidium longer than wide, last abdominal sternite V not emarginated. Ovipositor very short.

Male genitalia with a pair of elongated lateral lobes, tridal from base. Median lobe shorter, more or less spear shaped. Aedaegus length 1.39-1.40 mm.

Material examined: 5♂, 7♀, 20.vi.2014, Tamenglong district, 24.9833^0N, 93.4833^0E, Manipur, coll. M. Bhubaneshwari Devi, N. Victoria, O. Sandhyarani Devi and S. Dineshwar.

Remarks: We have considered the present species as *C. nigritus* based on the male aedeagus structure provided by Anton (2000).

DISCUSSION

Callosobruchus nigritus was distinguished from other *Callosobruchus* members by its peculiar aedaegus. Morphologically *Callosobruchus nigritus* is almost similar in coloration with *C. nigripennis* but differs in aedaegus having two elongated lateral lobes and a shorter median lobe. Distinction is made based on male aedaegus structure provided by Anton (2000). Seventeen different species of *Callosobruchus* were reported recently in the check list of Pulse beetles by Bano et al (not cited) without *C. nigritus* in the list. In this present paper *C. nigritus* is reported for the first time from Tamenglong district of Manipur, North East India.

ACKNOWLEDGEMENTS

The authors are thankful to the Department of Science and Technology (DST), New Delhi, for providing financial assistance during the work. Thanks are also due to the Principal and Head, P.G. Department of Zoology, D.M. College of Science, Imphal for providing laboratory facilities during the course of work.

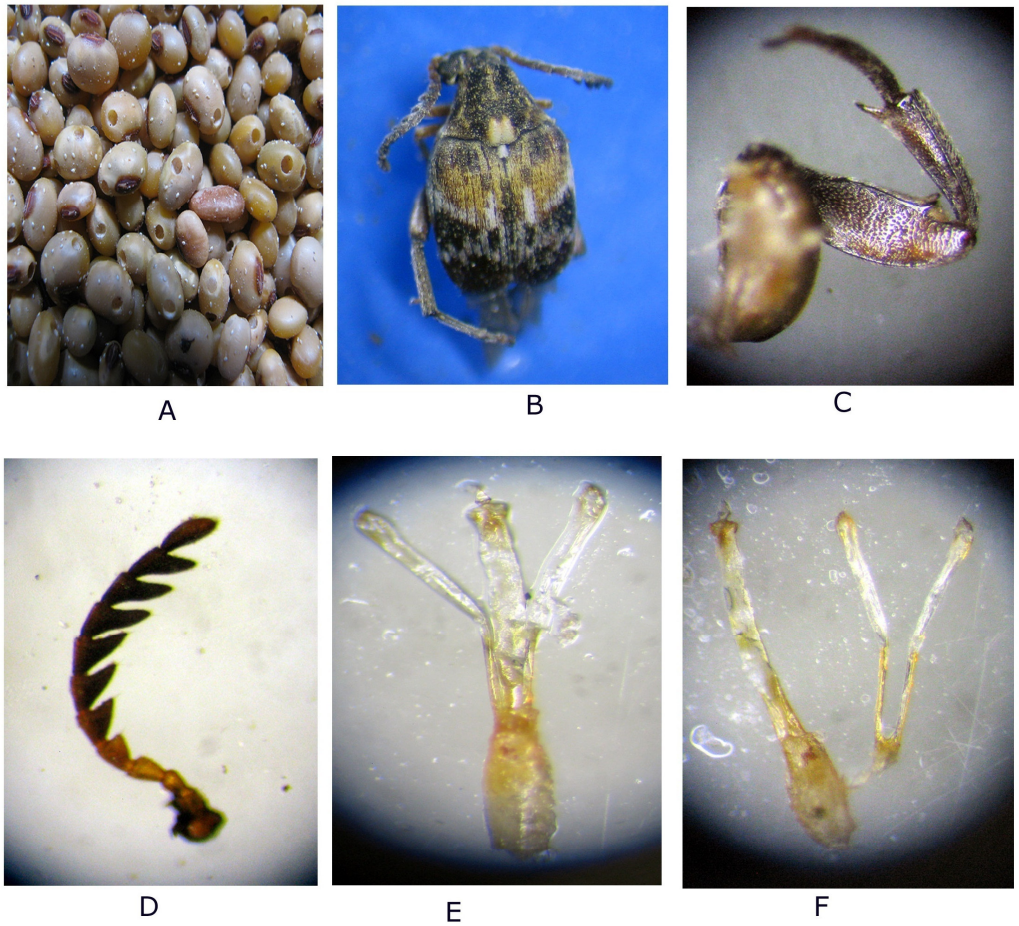

Figure 1: Callosobruchus nigritus

A: Infested grains.
B: Dorsal view of male adult.
C: Hind femur.
D: Male antennae
E: Male aedeagus
F: Separated male aedeagus
G: Diagram of Male aedeagus and antennae.

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