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Taxonomic and bionomic notes on *Arma chinensis* (Fallou) (Hemiptera: Pentatomidae: Asopinae)

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Abstract

The male genitalia and other important morphological characters of *Arma chinensis* are redescribed and illustrated. Some biological characters of this stink bug, such as the predatory behavior, mating, oviposition, hatching, molting, emergence, colonization, and cannibalism are noted.

Key words: *Arma chinensis*, Pentatomidae, taxonomy, bionomics

Introduction

Arma Hahn, a small genus in the pentatomid subfamily Asopinae, was established in 1831 by Hahn (Yang, 1962; Ahmad & Onder, 1990; Schuh & Slater1995). The widely distributed *A. chinensis* is a large predatory stink bug usually found on elm and poplar and in cotton and soybean fields. *A. chinensis* has received considerable attention because of its ability to suppress effectively lepidopteran (Gao et al., 1993; Chai et al., 2000; Liang et al., 2006), coleopteran (Gao et al., 1993; Chen et al. 2007), hymenopteran, and hemipteran (Yan, Tang et al., 2006; Yan, Li et al., 2006; Gao, 2010) pests of agriculture and forestry. This paper supplements previous work on *A. chinensis* by providing a detailed morphological redescription of the species and notes on various aspects of its biology based on laboratory rearing.

Material and methods

A laboratory colony of *A. chinensis* was established in Beijing and reared in 450 ml paper cups in pairs at a temperature of 27±2°C, RH of 75±5%, and 16:8 (L:D) h photoperiod, with pupae of *Antheraea pernyi* provided every 5 days. Egg masses were collected, transferred onto # 5 qualitative filter paper moistened with distilled water, and placed in a covered, 9 cm diameter Petri dish. Distilled water was added daily to the filter paper to enhance eclosion. After eclosion, first-instar nymphs (previously demonstrated to require only water for survivorship to second instar) were placed in 310 ml transparent plastic cups containing a piece of moist absorbent cotton. The newly molted second-instar nymphs were provided with pupae of *Antheraea pernyi* and distilled water in absorbent cotton. These nymphs were maintained in a light incubator and checked daily for ecdysis or death. Other nymphs were reared similarly. Any special behaviors were observed and noted.

Male terminalia of the bug were soaked in hot 10% NaOH solution for approximately 5 minutes to remove soft tissue, rinsed in distilled water, and dissected under a Motic binocular dissecting microscope. Dissected genitalia were placed in vials with glycerin and pinned under the corresponding specimens. Measurements were obtained

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