

**Epifaunistic Earwigs (Dermaptera: Hemimerina)  
Associated with Emin's Pouched Rat (*Cricetomys  
emini*) in Cameroon, Africa**

Author(s) :Jerry L. Cook and Dennis J. Richardson

Source: Entomological News, 121(4):397-399. 2010.

Published By: The American Entomological Society

DOI: <http://dx.doi.org/10.3157/021.121.0415>

URL: <http://www.bioone.org/doi/full/10.3157/021.121.0415>

---

BioOne ([www.bioone.org](http://www.bioone.org)) is a nonprofit, online aggregation of core research in the biological, ecological, and environmental sciences. BioOne provides a sustainable online platform for over 170 journals and books published by nonprofit societies, associations, museums, institutions, and presses.

Your use of this PDF, the BioOne Web site, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at [www.bioone.org/page/terms\\_of\\_use](http://www.bioone.org/page/terms_of_use).

Usage of BioOne content is strictly limited to personal, educational, and non-commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

---

## SCIENTIFIC NOTE

**EPIFAUNISTIC EARWIGS (DERMAPTERA: HEMIMERINA) ASSOCIATED WITH EMIN'S POUCHED RAT (*CRICETOMYS EMINI*) IN CAMEROON, AFRICA<sup>1</sup>**Jerry L. Cook<sup>2</sup> and Dennis J. Richardson<sup>3</sup>

Members of two suborders within the order Dermaptera, Arixeniina and Hemimerina, are epifaunistic on mammals. The suborder Arixeniina includes a single family, Arixeniidae, with two genera and five species associated with bats in the South Pacific. The suborder Hemimerina also includes a single family, Hemimeridae, associated with rats in sub-Saharan Africa. The family Hemimeridae includes two genera, *Araeomerus* and *Hemimerus*. The genus *Araeomerus* contains two species and the genus *Hemimerus* contains 11 species that are associated with sub-Saharan African rats of the genera *Beamys* and *Cricetomys*, respectively (Nakata and Maa, 1974).

Traditionally, earwigs of the suborder Hemimerina have been referred to as ectoparasites; however, the true nature of the symbiotic relationship that exists between these insects and their hosts is poorly understood. It appears that hemimerine earwigs feed on the epidermis or dander of the rats (Jordan 1909; Rehn and Rehn, 1935; Nakata and Maa, 1974), and they have mouthparts consistent with this mode of feeding. Thus, these earwigs are not truly ectoparasites, but rather are commensal symbionts. Jordan (1909) suggested that these earwigs may even be beneficial to the rats by feeding on potentially harmful fungi associated with the epidermis. The true relationship of these symbionts with their hosts warrants further investigation.

In the present study, 15 Emin's pouched rats (*Cricetomys emini* Wroughton) collected in Bawa, West Province, Cameroon (approx. 5°20'N, 9°54'E), during May 2007 were examined for the presence of earwigs. This region of Cameroon is mountainous and forested. The rats were trapped by local children and purchased as a food item by the junior author. Earwigs were collected with watchmaker's forceps and placed into 70% ethanol. Earwigs were identified using the taxonomic key of Nakata and Maa (1974) and by reference to original descriptions (Sharp, 1895; Rehn and Rehn, 1935, 1937). During this inquiry, we discovered that figures 80-87 in Nakata and Maa (1974) are "reversed" and that the correct orientation of characters are as in figures 24-27 of Rehn and Rehn (1935) and figure 2 of Rehn and Rehn (1937).

<sup>1</sup> Received on May 5, 2009. Accepted on July 16, 2010.

<sup>2</sup> Texas Research Institute for Environmental Studies and Department of Biological Sciences, Sam Houston State University, Huntsville, Texas 77341-2448, USA. E-mail: jcook@shsu.edu. Corresponding author

<sup>3</sup> Department of Biology, EC-BIO, 275 Mt. Carmel Avenue, Quinnipiac University, Hamden, Connecticut 06518-1908, USA. E-mail: Dennis.Richardson@quinnipiac.edu

Of the 15 (60%) rats examined, 9 were inhabited by earwigs. Five rats (33%) were inhabited with *Hemimerus hanseni* Sharp and four (27%) were infested with *Hemimerus sessor* Rehn and Rehn. The mean intensity of *H. hanseni* was 4.0 with a range of 2 to 5. Individual specimens of *H. hanseni* collected from each rat were aged and sexed as follows: 3 immature; 2 female, 2 immature; 4 immature; 3 female, 1 male; 1 female, 1 male, 3 immature. The mean intensity of *H. sessor* was 4.5 with a range of 1 to 7. Individual specimens of *H. sessor* collected from each rat were aged and sexed as follows: 2 female, 1 male, 1 immature; 1 male, 5 immature; 1 female, 6 immature; 1 female. All earwigs collected were deposited in the Sam Houston State University Entomology Collection (SHSU) at Sam Houston State University, Huntsville, Texas, USA. *Hemimerus hanseni* and *H. sessor* were assigned accession numbers 090010 and 090011, respectively.

*Hemimerus hanseni*, originally described by Sharp (1895) from the "Cameroons," (i.e. either in present-day Cameroon or southeastern Nigeria), is the most commonly reported and widely distributed earwig associated with rats. The primary host of *H. hanseni* appears to be *Cricetomys gambianus* (Rehn and Rehn, 1935; Nakata and Maa, 1974), although this earwig has also been reported from *C. emini* from Kenya and Uganda (Rehn and Rehn, 1935, 1937; Kock, 1973; Nakata and Maa, 1974). *Hemimerus hanseni* occurs throughout equatorial sub-Saharan Africa and has been specifically reported from Nigeria, Cameroon, Equatorial Guinea, Democratic Republic of the Congo, Central African Republic, Uganda, and Kenya (Nakata and Maa, 1974). The present study represents the first report of *H. hanseni* from *C. emini* in Cameroon.

*Hemimerus sessor* was originally described by Rehn and Rehn (1935) based on examination of 4 female specimens associated with *C. gambianus* collected in present-day Kenya by the Rainy African Expedition of 1911 at Mt. Gargues in "British East Africa." The male was later described by Rehn and Rehn (1937) based on specimens collected from *C. gambianus* and *C. emini* in Uganda.

In addition to *C. gambianus gambianus* and *C. emini*, *H. sessor* has been reported from *C. gambianus raineyi* Heller. *Hemimerus sessor* has been documented from mountain forests in the Togolese Republic, the Republic of Benin, Nigeria, Uganda, and Kenya (Nakata and Maa, 1974). The present report represents the first report of *H. sessor* from Cameroon.

Both *H. hanseni* and *H. sessor* appear to be common symbionts associated with *C. emini* in western Cameroon. Kock (1973) also noted the sympatric occurrence of these species in the Mt. Elgon area on the Uganda-Kenya border. Interestingly, although the two species occur sympatrically, they were never found on the same host individual in Cameroon. No other symbiotic earwigs have been reported from Cameroon; however, given the broad and patchy distribution of *Hemimerus* spp. and the broad distribution of *C. gambianus* and *C. emini*, more comprehensive surveys are necessary to further delineate the geographic range and host affinities of these fascinating earwigs.

---

**LITERATURE CITED**

- Jordan, K.** 1909. Notes on the anatomy of *Hemimerus talpoides*. *Novitates Zoologicae* 16: 327-330.
- Kock, D.** 1973. Die Gattung *Hemimerus* Walker (Insecta: Dermaptera) und ihr Wirt *Cricetomys gambianus* Waterhouse (Mammalia: Rodentia) in Ostafrika. *Senckenbergiana Biologica* 54: 1-14.
- Nakata, S. and T. C. Maa.** 1974. A review of the parasitic earwigs (Dermaptera: Arixeniina; Hemimerina). *Pacific Insects* 16: 307-374.
- Rehn, J. A. G. and J. W. H. Rehn.** 1935. A study of the genus *Hemimerus* (Dermaptera, Hemimerina, Hemimeridae). *Proceedings of the Academy of Natural Sciences of Philadelphia* 87: 457-508.
- Rehn, J. A. G. and J. W. H. Rehn.** 1937. Further notes on the genus *Hemimerus* (Dermaptera, Hemimerina, Hemimeridae). *Proceedings of the Academy of Natural Sciences of Philadelphia* 89: 331-335.
- Sharp, D.** 1895. Fam. II. Hemimeridae. *Cambridge Natural History* 5: 217-219.