

INSECTA MUNDI

A Journal of World Insect Systematics

0116

Occurrence of the milliped, *Hiltonius carpinus carpinus* Chamberlin,
1943 (Spirobolida: Spirobolidae), in the United States
and new records from Mexico

Rowland M. Shelley
Research Laboratory
North Carolina State Museum of Natural Sciences
MSC #1626
Raleigh, NC 27699-1626 USA

Date of Issue: March 12, 2010

Rowland M. Shelley
Occurrence of the milliped, *Hiltonius carpinus carpinus* Chamberlin, 1943
(Spirobolida: Spirobolidae), in the United States and new records from Mexico
Insecta Mundi 0116: 1-3

Published in 2010 by

Center for Systematic Entomology, Inc.
P. O. Box 141874
Gainesville, FL 32614-1874 U. S. A.
<http://www.centerforsystematicentomology.org/>

Insecta Mundi is a journal primarily devoted to insect systematics, but articles can be published on any non-marine arthropod taxon. Manuscripts considered for publication include, but are not limited to, systematic or taxonomic studies, revisions, nomenclatural changes, faunal studies, book reviews, phylogenetic analyses, biological or behavioral studies, etc. **Insecta Mundi** is widely distributed, and referenced or abstracted by several sources including the Zoological Record, CAB Abstracts, etc.

As of 2007, **Insecta Mundi** is published irregularly throughout the year, not as quarterly issues. As manuscripts are completed they are published and given an individual number. Manuscripts must be peer reviewed prior to submission, after which they are again reviewed by the editorial board to insure quality. One author of each submitted manuscript must be a current member of the Center for Systematic Entomology.

Managing editor: Paul E. Skelley, e-mail: insectamundi@gmail.com
Production editor: Michael C. Thomas, e-mail: insectamundi@gmail.com
Editorial board: J. H. Frank, M. J. Paulsen

Printed copies deposited in libraries of:

CSIRO, Canberra, ACT, Australia
Museu de Zoologia, São Paulo, Brazil
Agriculture and Agrifood Canada, Ottawa, Ontario, Canada
The Natural History Museum, London, England
Muzeum I Instytut Zoologii Pan, Warsaw, Poland
National Taiwan University, Taipei, Taiwan
California Academy of Sciences, San Francisco, CA, USA
Florida Department of Agriculture and Consumer Services, Gainesville, FL, USA
Field Museum of Natural History, Chicago, IL, USA
National Museum of Natural History, Smithsonian Institution, Washington, DC, USA

Electronic copies in PDF format:

Printed CD mailed to all members at end of year.
Florida Center for Library Automation: purl.fcla.edu/fcla/insectamundi
University of Nebraska-Lincoln, Digital Commons: <http://digitalcommons.unl.edu/insectamundi/>
Goethe Universität, Frankfurt am Main: <http://edocs.ub.uni-frankfurt.de/volltexte/2010/14363/>

Author instructions available on the Insecta Mundi page at:
<http://www.centerforsystematicentomology.org/insectamundi/>

Printed Copy	ISSN 0749-6737
On-Line	ISSN 1942-1354
CD-ROM	ISSN 1942-1362

Occurrence of the milliped, *Hiltonius carpinus carpinus* Chamberlin, 1943 (Spirobolida: Spirobolidae), in the United States and new records from Mexico

Rowland M. Shelley
Research Laboratory
North Carolina State Museum of Natural Sciences
MSC#1626
Raleigh, NC 27699-1626 USA
rowland.shelley@ncmail.net

Abstract. *Hiltonius carpinus carpinus* Chamberlin, 1943 (Spirobolida: Spirobolidae), is authoritatively recorded from the United States for the first time; it is known only from southern/southeastern Arizona but should be expected in adjoining counties of New Mexico. The northernmost locality is the Pinaleno Mountains, Graham County, and its distribution extends to southern Mexico; the other subspecies, *H. c. vulcan* (Chamberlin, 1953), occurs in Guatemala. The range of *H. c. carpinus* includes the type locality of the enigmatic *H. fossulifer* (Pocock, 1908), lending credence to prior suggestions that the names are synonymous. Three new Mexican states – Durango, Jalisco, and Nuevo León – are documented for *H. c. carpinus*.

Introduction

The milliped genus *Hiltonius* Chamberlin, 1918 (Spirobolida: Spirobolidae), comprises 10 species in Guatemala, Mexico, and southern Arizona and California, USA (Keeton 1960, Shelley 1995, Shelley and Bauer 1997, Hoffman 1999). Chamberlin (1941) described *H. thebanus* from Theba, Maricopa County (Co.), Arizona, but this name is a junior synonym of *Onychelus obustus* Cook, 1904 (Spirobolida: Atopetholidae) (Shelley and Bauer 1997, Shelley 1998, Hoffman 1999). Keeton (1960) subsequently assigned *H. thebanus* to a female spirobolidan from Santa Cruz Co., Arizona, that may be an actual species of *Hiltonius*, but the location of this specimen is unknown and the identification cannot be confirmed. *Hiltonius* has twice been authoritatively reported from Santa Cruz Co. (Shelley 1995, Shelley and Bauer 1997), but a species has not been mentioned nor have any localities been documented; I therefore put on record here seven samples of *H. carpinus* Chamberlin, 1943, from southern and southeastern Arizona, primarily from mountainous regions. The northernmost locality, in the Pinaleno Mountains, Graham Co., is some 95 mi (152 km) from the Mexican border, and the easternmost, from the Chiricahua Mountains, Cochise Co., is only around 10 mi (16 km) from the New Mexico line, suggesting that *H. carpinus* probably occurs in the Peloncillo Mountains in the southwestern corner of this state. In Mexico, the milliped is known from Tamaulipas (2 mi [3.2 km] S El Limón), Hidalgo (4 mi [6.4 km] W Pachuca), Morelos (Tepoztlán), Guerrero (El Mogote, Grutas de El Mogote, 23.8 mi [38 km] NE Taxco), and Mexico (Ixtapan del Oro) states (Chamberlin 1943, Keeton 1960, Loomis 1966, Hoffman 1999, Bueno-Villegas et al. 2004). I now add localities in Durango, Jalisco, and Nuevo León that extend the distribution to the northwest and nearly across the breadth of the country. The most proximate Arizona locality, in Cochise Co., is about 430 mi (688 km) northwest of that in Durango.

Hiltonius carpinus is a small to moderate-sized spirobolid with adult lengths varying from 41.9-59.0 mm and widths from 5.1-8.1 mm; it is diagnosed by the uncinuate anterior gonopod telopodites (Fig. 1) and the apically bilobate posterior gonopods (Fig. 2). The Arizona males demonstrate these features and agree with prior characterizations (Chamberlin 1943, Keeton 1960) except for the absences of spicules on both appendages and the more prolonged corners of the anterior gonopod coxal endites [terminology of Keeton (1960)]. Keeton recognized two subspecies, the nominate, to which all present records belong, and *H. c. vulcan* (Chamberlin, 1953) from Volcan Tajumulco in southwestern Guatemala. Hoffman (1999) retained this taxonomy but suggested that separate species might be more appropriate. Resolution of this matter is beyond the scope of the present contribution and requires much more material.

I append a map (Fig. 3) depicting known localities of *H. carpinus*. As the distribution encompasses the only known locality of the enigmatic species, *H. fossulifer* (Pocock, 1908), indicated by the triangle – Omilteme, a settlement 10 mi (16 km) WSW of Chilpancingo, Guerrero (Selander and Vaurie 1962) – it

lends substance to Keeton's suspicion that the names might be synonymous. New localities, all constituting new state records, are detailed below; missing data was not provided on vial labels. Repository acronyms are **AMNH**, American Museum of Natural History, New York, USA; **CNCO**, Canadian National Collection, Ottawa, Ontario, Canada; **LACM**, Los Angeles County Museum of Natural History, Los Angeles, California, USA; **LEMQ**, Lyman Entomological Museum, MacDonald College, McGill University, Ste. Anne de Bellevue, Québec, Canada; **MHNG**, Museum d'Histoire Naturelle, Geneva, Switzerland; **NCSM**, North Carolina State Museum of Natural Sciences, Raleigh, USA; and **UAIC**, Entomology Department, University of Arizona, Tucson, USA.

USA: Arizona: *Cochise Co.*, Southwest Research Station, 5 mi (8 km) W Portal, M, June 1956, E. Ordway (AMNH). *Graham Co.*, Mt. Graham near Safford, 2M, 2F, 14 July 1956, W. J. Gertsch, V. Roth (AMNH, NCSM). *Pima/Santa Cruz Cos.*, Madera Canyon, M, F, 30 June 1959 & juv. M, 23 August 1959 (MHNG) and M, 25 July 1970 (LACM). *Santa Cruz Co.*, Canelo, 2M, 2F, 4 September 1960. G. Butler (NCSM, UAIC); and Santa Rita Experiment Station, Florida, M, 9 July 1965, J. R. Bider (LEMQ).

Mexico: Durango: 10 mi (16 km) W El Salto, M, F, 10 June 1964, J. E. H. Martin (CNCO). **Jalisco:** Ajijic, 5,000', in canyon, M, F, 20 September 1964, W. L. Nutting (NCSM). **Nuevo León:** 0.9 mi (1.4 km) S La Esmeralda, Cumbres de Monterrey National Park, 28° 8' N, 100° 29' W, 3M, 7F, 18 June 1975, Liner, Johnson, Chaney (NCSM).

Acknowledgments

I thank the following curators for loans from or access to specimens under their charge: L. Prendini (AMNH), R. Footit (CNCO), the late C.L. Hogue (LACM), the late D.K. McE. Kevan (LEMQ), P. Schwendinger (MHNG), and C. Olson (UAIC). F. Cupul-Magaña assisted with Mexican localities, and C. T. McAllister and R.L. Hoffman provided prepublication reviews.

Literature Cited

- Bueno-Villegas, J., P. Sierwald, and J. E. Bond. 2004.** Diplopoda. p. 569-599. *In:* B. J. Llorente, J. J. Morrone, O. Yáñez, and I. Vargas (eds). Biodiversidad, Taxonomía y Biogeografía de Artrópodos de México: Hacia una síntesis de su conocimiento. IV. UNAM; México. 660 p.
- Chamberlin, R. V. 1941.** New American millipeds. *Bulletin of the University of Utah* 31(11) [Biological Series 6(4)]: 1-39.
- Chamberlin, R. V. 1943.** On Mexican millipeds. *Bulletin of the University of Utah* 34(7) [Biological Series 8(3)]: 1-103.
- Hoffman, R. L. 1999.** Checklist of the millipeds of North and Middle America. *Virginia Museum of Natural History Special Publication Number 8*: 1-584.
- Keeton, W. T. 1960.** A taxonomic study of the milliped family Spirobolidae (Diplopoda: Spirobolida). *Memoirs of the American Entomological Society Number 17*: 1-146.
- Loomis, H. F. 1966.** Descriptions and records of Mexican Diplopoda. *Annals of the Entomological Society of America* 59(1): 11-27.
- Selander, R. B., and P. Vaurie. 1962.** A gazetteer to accompany the "Insecta" volumes of the "Biologia Centrali-Americana." *American Museum Novitates Number 2099*: 1-70.
- Shelley, R. M. 1995.** The milliped family Hirudisomatidae in the New World (Polyzoniida). *Brimleyana* 23:103-143.
- Shelley, R. M. 1998.** The milliped genus *Onychelus* Cook (Spirobolida: Atopetholidae: Onychelinae). *Myriapodologica* 5(11): 111-117.

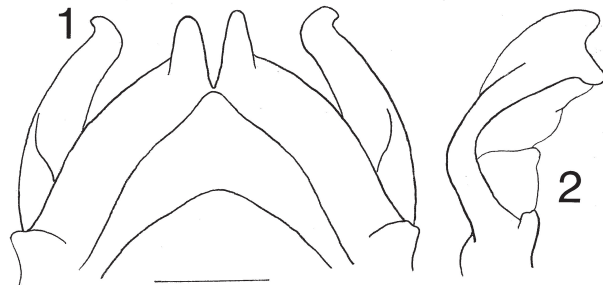


Figure 1-2. Gonopods of *Hiltonius c. carpinus* male from Cochise Co., Arizona. 1, anterior gonopods, anterior view. 2, left posterior gonopod, anterior view. Scale line = 1.00 mm for both figs.



Figure 3. Distribution of *Hiltonius carpinus*. Dots, *H. c. carpinus*. Star, *H. c. vulcan*. Triangle, type locality of *H. fossulifer*. AZ, Arizona; G, Guatemala; NM, New Mexico.

Shelley, R. M., and S. B. Bauer. 1997. Distribution of the milliped *Tylobolus utahensis* Chamberlin, with remarks on *T. fredericksoni* Causey (Spirobolida: Spirobolidae). *Great Basin Naturalist* 57(3): 231-237.

Received December 1, 2009; Accepted January 27, 2010.

