

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Insecta Mundi

Center for Systematic Entomology, Gainesville,
Florida

5-27-2022

First host record for the spider wasp *Cryptocheilus severini* Banks (Hymenoptera: Pompilidae: Pepsinae)

Frank E. Kurczewski

Rick C. West

James P. Pitts

Cecilia Waichert

Follow this and additional works at: <https://digitalcommons.unl.edu/insectamundi>



Part of the [Ecology and Evolutionary Biology Commons](#), and the [Entomology Commons](#)

This Article is brought to you for free and open access by the Center for Systematic Entomology, Gainesville, Florida at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Insecta Mundi by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

A journal of world insect systematics

INSECTA MUNDI

0935

First host record for the spider wasp *Cryptocheilus severini* Banks
(Hymenoptera: Pompilidae: Pepsinae)

Frank E. Kurczewski

1188 Converse Drive NE,
Atlanta, GA 30324, USA

Rick C. West

6365 Willowpark Way,
Sooke, BC, Canada V9Z 1L9

James P. Pitts

Department of Biology,
Utah State University,
Logan, UT 84322, USA

Cecilia Waichert

Departamento de Zoologia, Instituto de Ciências Biológicas,
Universidade de Brasília,
Brasília, DF, 70910-900, Brazil

Date of issue: May 27, 2022

Center for Systematic Entomology, Inc., Gainesville, FL

Kurczewski FE, West RC, Pitts JP, Waichert C. 2022. First host record for the spider wasp *Cryptocheilus severini* Banks (Hymenoptera: Pompilidae: Pepsinae). *Insecta Mundi* 0935: 1–4.

Published on May 27, 2022 by
Center for Systematic Entomology, Inc.
P.O. Box 141874
Gainesville, FL 32614-1874 USA
<http://centerforsystematicentomology.org/>

INSECTA MUNDI is a journal primarily devoted to insect systematics, but articles can be published on any non-marine arthropod. Topics considered for publication include systematics, taxonomy, nomenclature, checklists, faunal works, and natural history. *Insecta Mundi* will not consider works in the applied sciences (i.e. medical entomology, pest control research, etc.), and no longer publishes book reviews or editorials. *Insecta Mundi* publishes original research or discoveries in an inexpensive and timely manner, distributing them free via open access on the internet on the date of publication.

Insecta Mundi is referenced or abstracted by several sources, including the Zoological Record and CAB Abstracts. *Insecta Mundi* is published irregularly throughout the year, with completed manuscripts assigned an individual number. Manuscripts must be peer reviewed prior to submission, after which they are reviewed by the editorial board to ensure quality. One author of each submitted manuscript must be a current member of the Center for Systematic Entomology.

Guidelines and requirements for the preparation of manuscripts are available on the *Insecta Mundi* website at <http://centerforsystematicentomology.org/insectamundi/>

Chief Editor: David Plotkin, insectamundi@gmail.com
Assistant Editor: Paul E. Skelley, insectamundi@gmail.com
Layout Editor: Robert G. Forsyth
Editorial Board: Davide Dal Pos, Oliver Keller, M. J. Paulsen
Founding Editors: Ross H. Arnett, Jr., J. H. Frank, Virendra Gupta, John B. Heppner, Lionel A. Stange, Michael C. Thomas, Robert E. Woodruff
Review Editors: Listed on the *Insecta Mundi* webpage

Printed copies (ISSN 0749-6737) annually deposited in libraries

Florida Department of Agriculture and Consumer Services, Gainesville, FL, USA
The Natural History Museum, London, UK
National Museum of Natural History, Smithsonian Institution, Washington, DC, USA
Zoological Institute of Russian Academy of Sciences, Saint-Petersburg, Russia

Electronic copies (Online ISSN 1942-1354) in PDF format

Archived digitally by Portico
Florida Virtual Campus: <http://purl.fcla.edu/fcla/insectamundi>
University of Nebraska-Lincoln, Digital Commons: <http://digitalcommons.unl.edu/insectamundi/>
Goethe-Universität, Frankfurt am Main: <http://nbn-resolving.de/urn/resolver.pl?urn:nbn:de:hebis:30:3-135240>

Copyright held by the author(s). This is an open access article distributed under the terms of the Creative Commons, Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original author(s) and source are credited. <http://creativecommons.org/licenses/by-nc/3.0/>

First host record for the spider wasp *Cryptocheilus severini* Banks (Hymenoptera: Pompilidae: Pepsinae)

Frank E. Kurczewski

1188 Converse Drive NE,
Atlanta, GA 30324, USA
kurczewskifrank@gmail.com

Rick C. West

6365 Willowpark Way,
Sooke, BC, Canada V9Z 1L9
rickcwest@shaw.ca

James P. Pitts

Department of Biology,
Utah State University,
Logan, UT 84322, USA
james.pitts@usu.edu

Cecilia Waichert

Departamento de Zoologia, Instituto de Ciências Biológicas,
Universidade de Brasília,
Brasília, DF, 70910-900, Brazil
cwaichert@gmail.com

Abstract. The first host record for the North American spider wasp *Cryptocheilus severini* Banks (Hymenoptera: Pompilidae: Pepsinae) from Mazatlán, Sinaloa, México is introduced with pertinent observation information. The genus *Cryptocheilus* Panzer in North America is briefly described, its nesting habitat and prey transport outlined, and host specificity detailed.

Key words. Lycosidae, Mexico, new host record.

ZooBank registration. urn:lsid:zoobank.org:pub:65404A9D-0B4C-4F7B-B8E2-0301EE922EF4

Introduction

The genus *Cryptocheilus* Panzer (Hymenoptera: Pompilidae: Pepsinae) comprises medium to rather large species of average stoutness (Townes 1957). The six Nearctic species of *Cryptocheilus* are all closely related (Townes 1957). In the Old World this genus is much richer, with 24 species and structural diversity that can present problems in identification from other species complexes (Cambra and Wahis 2005). There are five species of *Cryptocheilus* occurring in the Neotropical region, from México to Colombia (Fernández et al. 2022).

Females of *Cryptocheilus* species nest in the ground, typically in a burrow off the side of a large fissure in the soil or a mammal burrow. The wasp may excavate the nest-cell prior to prey capture and immobilization of the spider by stinging, as in the related genus *Entypus* Dahlbom. Prey are transported backwards on the ground, the spider being grasped with the wasp's mandibles by a leg, pedipalp or chelicera. Host records for only four North American *Cryptocheilus* species are known and they comprise predominantly Lycosidae (wolf spiders) and, rarely, Agelenidae (funnel-web or grass spiders) (Table 1).

Materials and Methods

Frank Kurczewski, in perusing photographs of spider wasps on iNaturalist.org, noticed a species of *Cryptocheilus* with an immobilized spider for which there is no host information. He forwarded the link to James Pitts and

Cecilia Waichert who independently identified the species as *Cryptocheilus severini* Banks based upon specimens in the Utah State University insect collection. Rick West and Kurczewski separately identified the host spider as belonging to the family Lycosidae (wolf spiders) but were unable to arrive at a genus and/or species identification. West sent the link to Raz Lucio and Dany Candia Ramírez, two arachnologists familiar with the Mexican arachnid fauna, but they were unable to provide a genus and/or species name. Diego Barrales finally identified the host spider as *?Tigrosa* sp. (Lycosidae).

Frank Kurczewski wrote the manuscript. He and Rick West formulated Table 1. Cecilia Waichert revised and commented on the manuscript. West selected and improved one of Francisco Farriols Sarabia's photographs of wasp and host spider for use as Figure 1.

Results

Cryptocheilus severini Banks

Locality. México. Sinaloa State, Mazatlán, Paco's Reserva Natural de Flora y Fauna; 26 March 2022, 1208 HST; Francisco Farriols Sarabia, photographer.

Host. *?Tigrosa* sp. (Lycosidae) [det. D. Barrales], adult or subadult female. Five photographs show the wasp and immobilized spider on leaf litter. In these photographs the spider lies, dorsal side upward, with its legs spread outward. One photograph shows the wasp examining the spider with her apical antennal segments (Fig. 1). Another photograph shows the wasp grasping the base of the spider's left pedipalp with her mandibles prior to backward prey transport.

Acknowledgments

We thank Steven Alm, University of Rhode Island, Kingston, Rhode Island and Joseph Wilson, Utah State University, Logan, Utah for reviewing the manuscript. Francisco Farriols Sarabia graciously continues to post his photographs of rare and interesting Pompilidae species from Paco's Reserva Natural e Flora y Fauna, Mazatlán, Sinaloa, México online. We thank Diego Barrales, Curator, Paco's Reserva Natural e Flora y Fauna, Mazatlán, Sinaloa, México for the identification of the host spider. We acknowledge Raz Lucio, Arácnidos de Chetumal, Museo de Zoología, Chetumal, Quintana Roo, México and Dany Candia Ramírez, Colección Nacional de Arácnidos (CNAN), UNAM, México City, México for attempting to identify the host spider beyond the family level. This research was supported by the Utah Agricultural Experiment Station, Utah State University, and approved as journal paper number 9572.

Table 1. Host spider species of Nearctic species of *Cryptocheilus*.

<i>Cryptocheilus</i> species	Host spider species (Family)	References
<i>C. attenuatum</i> Banks	<i>Alopecosa aculeata</i> (Clerck) (Lycosidae)	Kurczewski et al. 2017
	<i>Hogna antelucana</i> (Montgomery) (Lycosidae)	Kurczewski and Kurczewski 1968
	<i>Hogna ?helluo</i> (Walckenaer) (Lycosidae)	Kurczewski and Kurczewski 1968
	<i>Schizocosa avida</i> (Walckenaer) (Lycosidae)	Krombein 1979
	<i>Lycosa</i> sp. (Lycosidae)	Townes 1957
	<i>Novalena</i> sp. (Agelenidae)	Wilson and Pitts 2007
<i>C. idoneum</i> Banks	<i>Hogna tigana</i> Gertsch and Wallace (Lycosidae)	Evans 1959
	<i>Lycosa impavida</i> Walckenaer (Lycosidae)	Kurczewski 1963
<i>C. severini</i> Banks	<i>?Tigrosa</i> sp. (Lycosidae)	This study; Barrales 2022, pers. comm.
<i>C. terminatum</i> (Say)	<i>Lycosa</i> sp. (Lycosidae)	Evans 1970



Figure 1. *Cryptocheilus severini* female examining a lycosid spider with her apical antenna segments as the immobilized spider lies dorsal side upward on leaf litter. Photograph © Francisco Farriols Sarabia.

Literature Cited

- Cambra RA, Wahis R. 2005.** New species of *Cryptocheilus* Panzer from Panama and Costa Rica (Hymenoptera: Pompilidae, Pepsinae). *Notes fauniques de Gembloux* 56: 3–6.
- Evans HE. 1959.** Prey records of some midwestern and southwestern spider wasps (Hymenoptera: Pompilidae). *Journal of the Kansas Entomological Society* 32: 75–76.
- Evans HE. 1970.** Ecological-behavioral studies of the wasps of Jackson Hole, Wyoming. *Bulletin of the Museum of Comparative Zoology* 140: 451–511.
- Farriols Sarabia F. 2022.** Genus *Cryptocheilus*. Available at <https://www.inaturalist.org/observations/109694438>. (Last accessed 30 March 2022.)
- Fernández F, Rodríguez J, Waichert C, Decker B, Pitts J. 2022.** Twenty two years later: An updated checklist of Neotropical spider wasps (Hymenoptera: Pompilidae). *Zootaxa* 5116(4): 451–503.
- Krombein KV. 1979.** Family Pompilidae. p. 1523–1570. In: Krombein KV, Hurd PD Jr., Smith DR, Burks BD (eds.). *Catalog of Hymenoptera in America north of Mexico. Volume 2, Apocrita (Aculeata)*. Smithsonian Institution Press; Washington, DC. 1198 p.
- Kurczewski FE. 1963.** Some new pompilid prey records from southern Florida (Hymenoptera: Pompilidae). *Florida Entomologist* 46: 209–213.
- Kurczewski FE, Edwards GB, Pitts JP. 2017.** Hosts, nesting behavior, and ecology of some North American spider wasps (Hymenoptera: Pompilidae), II. *Southeastern Naturalist* 16 (Monograph 9): 1–82.

Kurczewski FE, Kurczewski EJ. 1968. Host records for some North American Pompilidae (Hymenoptera) with a discussion of factors in prey selection. *Journal of the Kansas Entomological Society* 41: 1–33.

Townes H. 1957. Nearctic wasps of the subfamilies Pepsinae and Ceropalinae. *United States National Museum Bulletin* 209: 1–286.

Wilson JS, Pitts JP. 2007. New host associations for New World spider wasps (Hymenoptera: Pompilidae). *Journal of the Kansas Entomological Society* 80: 223–228.

Received April 6, 2022; accepted May 6, 2022.

Review editor David Plotkin.