

REVISION OF NEOTROPICAL CENTIPEDES OF THE SCOLOPOCRYPTOPINAE  
(CHILOPODA: SCOLOPENDROMORPHA: SCOLOPOCRYPTOPIDAE).

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Proposal to SSB "mini-PEET" fellowship.

**Introduction**

The chilopod order Scolopendromorpha contains the largest centipedes in the world and the largest invertebrate carnivores in many terrestrial ecosystems. Because of their size, they are well known to the general public, and they can deliver a painful bite with potential medical implications. Nearly 600 species have been proposed worldwide with an estimated 700-800 species awaiting description (Adis & Harvey 2000); 165 species are known from the Neotropics (Bücherl, 1974), but most of the genera and species there need formal revision. Most of the available publications on Neotropical Scolopendromorpha are non-revisory checklists or descriptions of species collected from the late 19<sup>th</sup> through the middle 20<sup>th</sup> centuries (Pocock, 1893; Brölemann, 1909; Chamberlin, 1914, 1918, 1921, 1955; Attems, 1930; Bücherl 1941, 1974). Only a few taxonomic papers have been published on this fauna in recent years (Schileyk & Minelli, 1998; Shelley & Kiser, 2000; Chagas-Jr, 2001).

Currently there are only four taxonomists in the world specializing on the Scolopendromorpha: J. E. Lewis, UK, who studies the Eurasian and African faunas; V. Khanna, who studies the Indian fauna; R. Shelley, USA, who focuses on North American species; and myself, researching Neotropical taxa. The North American Scolopendromorpha were recently treated by Shelley (2002), and it is timely to begin elevating knowledge of the Neotropical fauna to a comparable level.

**Background and study proposal**

Currently, I'm finishing my M. Sc. research on Neotropical Scolopocryptopinae from the Museu Nacional/UFRJ, Brazil, under the advisorship of Prof. Dr. Adriano Brilhante Kury, a renowned arachnologist. As the only other chilopodologist in South America is an Argentinian specialist on the order Geophilomorpha, I have had to pursue my research alone without benefiting from a daily exchange of ideas with an experienced scolopendromorph taxonomist. This would be highly valuable to me in dealing with such intricacies of scolopendromorph taxonomy as determining species limits and distinguishing between intra and inter-specific variation. Many past authors described species based on only one or a few specimens but species like *Scolopocryptops ferrugineus* and *S. melanostomus* have wide distributions and confuse taxonomies. Some species with limited distributions may fall within the range of variation of these wide spread species, but only a thorough analysis of many specimens from different parts of the Americas will allow for accurate hypotheses of synonymies.

Therefore, to advance my research on Neotropical Scolopocryptopinae and expand my overall expertise, I need to examine a complete series of specimens from the Neotropics plus representatives from the United States and Canada, and copious material is housed in repositories in the USA. More importantly, I need to associate one-on-one with an experienced taxonomist to benefit from another person's expertise, and Dr. Shelley is the only such person in the Americas. This experience would be of capital importance to me and allow me to extend his research on North American scolopendromorphs to the New World fauna south of the United States.

This application therefore requests \$4,000 to support a 4-month training period in his laboratory at North Carolina State Museum of Natural Sciences, Raleigh, which will serve as "seed money" to solicit additional funds to support short visits to institutions with significant holdings of Neotropical scolopendromorphs — the United States National Museum, Smithsonian Institution; the American Museum of Natural History, New York; the Museum of Comparative Zoology, Harvard University; and the Florida State Collection of Arthropods, Gainesville (FSCA). I anticipate that association with Dr. Shelley will lead to collabora-

tive research projects, one being a “Chronological Catalog of New World Species of *Scolopendra* L.” There are four indigenous species of *Scolopendra* in the United States (Shelley 2002), all of which range southward for varying distances into Mexico, Central America, and the Caribbean, and literally dozens of additional nominal species, scattered through a host of publications, have been proposed for Neotropical forms. Many names are undoubtedly synonyms, and clarifying this fauna is a difficult task. An initial step is to simply consolidate the literature and list all the available names in one place, and doing so in a chronological sequence would show taxonomic priorities and facilitate decisions on synonymies. The opportunity associated with Dr. Shelley is therefore compatible with the goals of the “mini-PEET” program, as it will increase my expertise in scolopendromorph taxonomy, advance my research on the Scolopocryptopinae, and lead to collaborative research that would elevate knowledge of the Neotropical fauna.

#### **Budget**

Air fares from and to Brazil .....	US\$ 2,000.
Lodging .....	US\$ 800.
Basic maintenance in NC for the period .....	US\$ 1,200.
<b>Total:</b> .....	<b>US\$ 4,000.</b>

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