Opiliones: Samoidae: *Neoscotolemon* spp.

Originally one of the countless subfamilies of the Phalangodidae, Samoidae is one of the lesser known families of Laniatores harvestmen. Typical Samoidae occur in Polynesia, Melanesia, Australia, Mexico, Venezuela and the West Indies. They are remarkably uniform worldwide both in external morphology and genital features. Most of them can be promptly recognized by the presence of elongate basichelicerite without delimitation of a bulla, rounded hourglass-shaped laterally convex body, scutal grooves poorly defined and swollen calcaneus of leg III of males, but the most reliable characteristics come from the male genitalia with a *pars distalis* with leaf-shaped spines and ending in a *calyx*, *capsula interna* eversible with two rigid conductors and the *follis* not visible externally (Fig. 1).

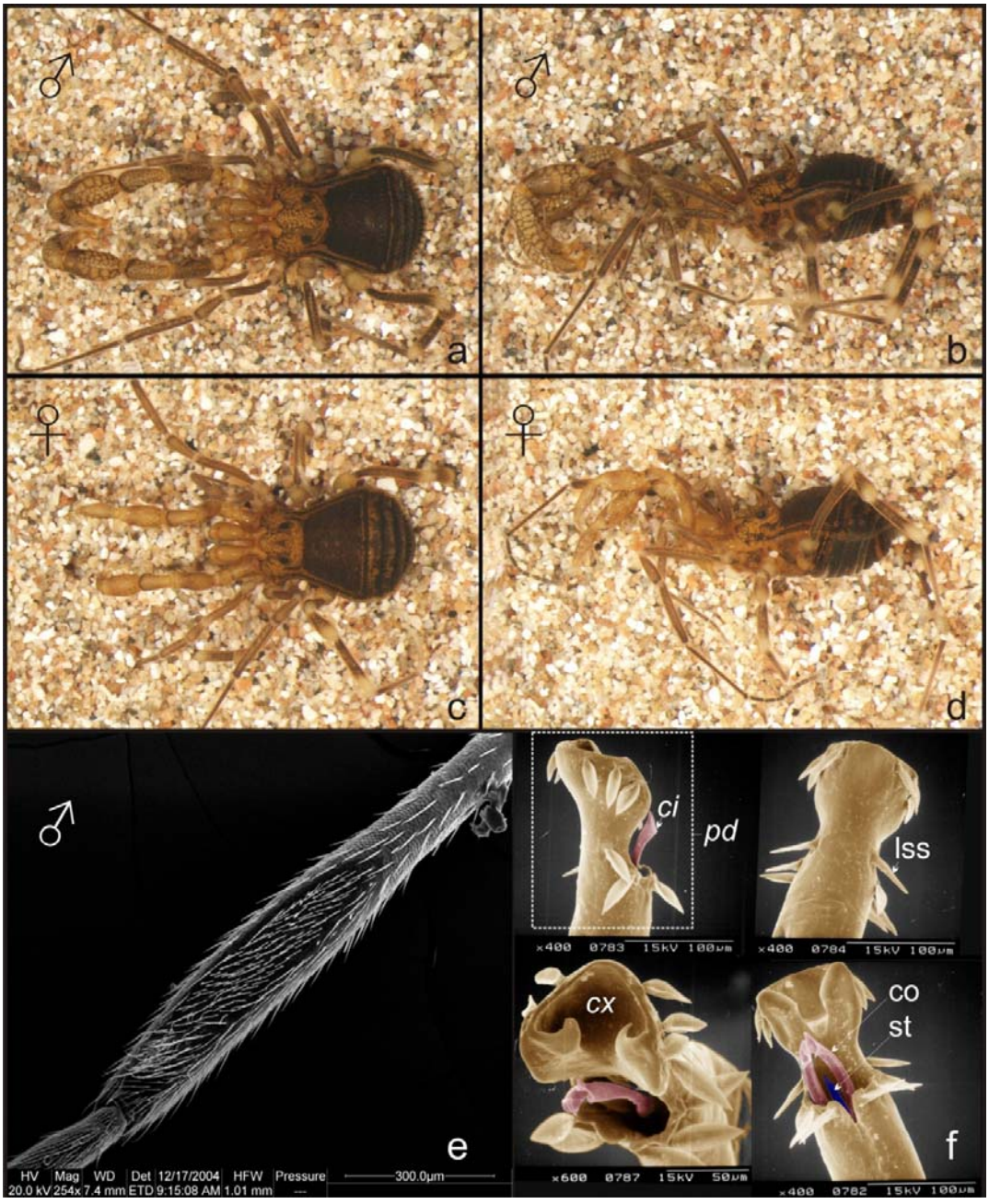

Fig. 1. a–d: *Neoscotolemon pictipes* (Banks, 1908) from Cuba, a) male dorsal, b) male lateral, c) female dorsal, d) female lateral, note the remarkable male enlarged pedipalp. e–f: *Neoscotolemon* sp. from Cuba, e) swollen calcaneus of leg III of males, ventral view, f) penis (artificially colored), *pars distalis*. Abbreviations: *ci*: *capsula interna*, *cx*: *calyx*, *pd*: *pars distalis*, lss: leaf-shaped spines, co: conductors, st: stylus .

The genus *Neoscotolemon* has been recently related with Samoidae (Pérez-González & Kury 2007) but further data are needed to determine the relationships among these families (Pérez-González, in progress). Currently only two species are assigned to *Neoscotolemon*. However, the work of Goodnigh and Goodnight (1951) lumped several *Neoscotolemon* (and other samoids) under *Stygnomma* (Stygnommatidae). An illustrative example is the widespread Neartic species *Stygnomma spinifera*, with three subspecies (US, Cuba and Yucatán Peninsula), that all represent different *Neoscotolemon* species (Pérez-González, in progress). All the records of *Stygnomma spinifera* and *Stygnomma* sp. from US (Ohio), Cayman Islands, Jamaica, Hispaniola and Puerto Rico need to be verified. A Cuban radiation have been detected with around 20-25 new species (unpublished data) (Fig. 2).

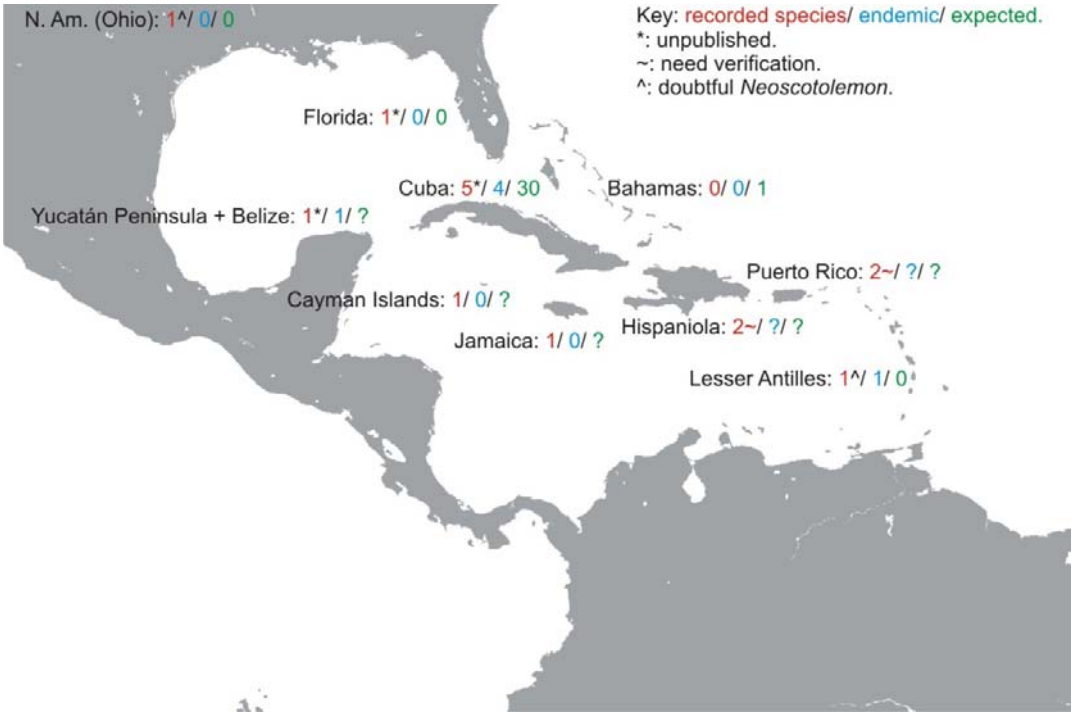

Fig. 2. Distribution of *Neoscotolemon* records, extracted from Cokendolpher & Camilo-Rivera (1989), Hounsome (1994), Kury (2003) and unpublished data.

Monophyly. The monophyly of *Neoscotolemon* has not been tested. Several genitalic and external morphological characters seem to be constant among all the species, but these putative synapomorphies need to be tested phylogenetically. Externally all the *Neoscotolemon* are remarkably sexually dimorphic with males having a conspicuous enlargement of the palpal tibia and tarsus (Fig. 1).

Amber species. None *Neoscotolemon* spp. have been found in Dominican amber, but two other samoids species have been described from amber fossils: *Pellobunus proavus* Cokendolpher, 1987 and *Hummelinckiolus silhavyi* Cokendolpher & Poinar, 1998. The latter seems to be a real Samoidae, but the generic and familiar placement of the first one need to be revisited. Another fossil, *Philacarus hispaniolensis* Cokendolpher & Poinar, 1992, also belongs to Samoidae, but is not a *Philacarus* but

represents a new samoid genus with extant undescribed representatives in the Antilles (Pérez-González, Alegre & Cokendolpher, in progress).

Dispersal. The species of *Neoscotolemon* are litter-dwelling with some cavernicolous (troglophiles and troglobites) species and exhibit a high endemism indicating very poor dispersal ability.

Search strategy. The species are soil and litter-dwelling with a cryptic coloration and thanatosis comportment that make them difficult to find. **VISUAL SEARCH, BERLESSE AND WINKLER STRACTORS.** Remark: in Costa Rica some series of the samoid *Pellobunus insularis* were efficiently collected by vegetation beating.

Similar genera. It is easy to confuse with any other samoid because the homogeneous external morphology of the family, but the enlarged palpal tibia and tarsus of the males are a good hint for a reliable identification.

Needed collecting. All areas are in need of new collecting, top-priority Mexico, Belize, Hispaniola, Jamaica, Cayman Island, Puerto Rico, US Virgin Islands and Lesser Antilles. Fresh material for DNA extraction is needed for all species.

References

Cokendolpher, J.C. & Camilo-Rivera, G.C. 1989. Annotated bibliography to the harvestmen of the West Indies (Arachnida: Opiliones). *Occasional Papers of the Florida State Collection of Arthropods*, 5, 1–20.

Goodnight, Clarence J. & Marie L. Goodnight, 1951. The genus *Stygnomma* (Phalangida). *American Museum Novitates*, New York, 1491: 1-20, 23 figs.

Hounsome M.V., 1994. Terrestrial invertebrates (other thaan insects) of the Cayman Islands. Pp. 307-331. In: Brunt, M.A. & J.E. Davies (eds.). *The Cayman Islands Natural History and Biogeography*. Kluwer Academic Publishers, The Netherlands. 576 pp.

Kury, A. B., 2003. Annotated catalogue of the Laniatores of the New World (Arachnida, Opiliones). Revista Iberica de Aracnología, Zaragoza, vol. especial monográfico, nº 1: 1-337.

Pérez-González., A. & Kury, A.B. 2007. Samoidae Sørensen, 1886. Pp 224-226. In: Pinto-da-Rocha, R., G. Machado & G. Giribet (eds.). *Harvestmen: the biology of the Opiliones*. Harvard University Press, Cambridge and London. x + 597 pp.