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The centipedes (Arthropoda, Myriapoda, Chilopoda) from Colombia: Part I. Scutigermorpha and Scolopendromorpha

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Abstract

This study presents an updated list of centipedes of the orders Scutigermorpha and Scolopendromorpha from Colombia based on data from the literature, the World Catalogue of Centipedes (CHILOBASE), and specimens examined in museum collections. Four families, nine genera, 37 species and four subspecies are listed. One species belongs to Scutigermorpha, and 36 species and four subspecies to Scolopendromorpha. Eleven species and four subspecies of scolopendromorphs are recorded for the first time from Colombia. *Newportia* Gervais, 1847 is the most diverse genus with 12 species and three subspecies. Six species of Scolopendromorpha are endemic. Three species—*Otostigmus inermis* Porat, 1876, *O. scabri-cauda* (Humbert & Saussure, 1870) and *Cryptops iheringi* Brölemann, 1902—are deleted from the fauna of Colombia. The Andean Región in Colombia has the most records of Scutigermorpha and Scolopendromorpha. Maps showing the geographical distribution are given for the orders, genera, and some species.

Key words: Neotropical Región, Western South America, taxomomy, species list

Introduction

Colombia is one of the most biodiverse regions in the world (Armenteras *et al.* 2003). However, the centipede fauna of Colombia is poorly known when compared to other groups of organisms, such as birds, insects and plants. Of the 3300 species of centipedes worldwide, only 36 are recorded from Colombia. It is only the sixth richest country in number of species of centipedes in South America.

Reports of centipedes from Colombia date back to the mid to late 19th century (Gervais 1844a, b, 1859; Humbert & Saussure 1870; Karsch 1884; Pocock 1896) and early 20th century (Kraepelin 1903). Scientific expedition reports mention different species of centipedes, and at least nine were recorded in Colombia: one scutigermorph, one geophilomorph and seven scolopendromorphs. Apart from the occasional early mentions of centipedes from Colombia, the first specific study of the Colombian centipede fauna was published more than a century ago and derives from a scientific expedition by O. Fuhrmann and Eugene Mayor to Colombia (Ribaut 1912). Seventeen species were recorded; three of them were new—*Scolopendra arthrorhabdoides* Ribaut, 1912, *Newportia fuhrmanni* Ribaut, 1912 and *Ribautia fuhrmanni* Ribaut, 1912. Three papers on the centipedes of Colombia were published by Chamberlin (1921, 1946, 1957). Chamberlin (1921) cited 11 species, seven scolopendromorphs, three geophilomorphs and one scutigermorph. Two species were described as new: *Schendylurus colombianus* Chamberlin, 1921 and *Pselliodes colombiana* Chamberlin, 1921 (eventually a synonym of *Sphendononema guildingii* (Newport, 1845)). Chamberlin (1946) cited a scutigermorph from Pearl Island and

(9–3800 m). All species of *Scolopendra* were recorded between 7–140 m, except for *S. arthrorhabdoides* whose altitudinal range varies from 150 to 1550 m, and species of *Rhysida* that were found from 14 to 485 m. The latter two genera are typically found at low elevations. *Scolopocryptops miersii* is found only at low elevation (83 to 200 m); on the other hand, *N. albana* (2298 m), *N. longitarsis tropicalis* (2700–3200 m) and *N. phoreta* (3055–3250 m) are typically found at higher elevations.

Although we have nearly doubled the number of species that were listed for the country a century ago (including only species of Scutigermorpha and Scolopendromorpha), the number of species of centipedes in Colombia is still underestimated and the Myriapodological collections are mostly very recent. New sampling in this poorly explored country is required to improve the collections and increase knowledge of this group of terrestrial arthropods in Colombia.

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References

- Armenteras, D., Gast, F. & Villareal, H. (2003) Andean forest fragmentation and the representativeness of protected natural areas in the eastern Andes, Colombia. *Biological Conservation*, 113, 245–256.
[http://dx.doi.org/10.1016/S0006-3207\(02\)00359-2](http://dx.doi.org/10.1016/S0006-3207(02)00359-2)
- Attems, C. (1903) Beiträge zur Myriopodenkunde. *Zoologische Jahrbücher, Abteilung für Systematik*, 18, 63–154.
- Attems, C. (1928) Neue Scolopendriden der Museen Wien und Hamburg. *Zoologischer Anzeiger*, 78, 279–309.
- Attems, C. (1929) Myriapoda. 1. Geophilomorpha. Das Tierreich, 52. Walter de Gruyter, Berlin, Leipzig, 388 pp.
- Attems, C. (1930) Myriapoda 2. Scolopendromorpha. Das Tierreich, 54. Walter de Gruyter, Berlin, 308 pp.
- Brölemann, H.W. (1900) Myriapodes d’Amerique. *Mémoires de la Société Zoologique de France*, 13, 89–131.
- Brölemann, H.W. (1902) Myriapodes du Musée de São Paulo. *Revista do Museo Paulista*, 5, 35–237.
- Brölemann, H.W. (1909) *Essai d’un Catalogue des myriapodes du Brésil. Vol. II.* Museu Paulista, São Paulo, Brazil, XX + 94 pp., XI Taf.
- Bücherl, W. (1939) Os Quilópodos do Brasil. *Memórias do Instituto Butantan*, 13, 43–362.
- Bücherl, W. (1942) Catálogo dos quilópodos da zona neotropical. *Memórias do Instituto Butantan*, 15, 251–372.
- Bücherl, W. (1959) Chilopoden von Venezuela (II). *Memórias do Instituto Butantan*, 29, 233–241.
- Bücherl, W. (1974) Die Scolopendromorpha der Neotropischen Región. *Symposia of the Zoological Society of London*, 32, 99–133.
- Chagas-Jr, A. (2003) The Neotropical taxa of the genus *Dinocryptops* Crabill, 1953 (Chilopoda: Scolopendromorpha). *Zootaxa*, 237, 1–11.
- Chagas-Jr, A. (2008) *Revisão sistemática e análise filogenética dos Scolopocryptopinae (Chilopoda, Scolopendromorpha)*. PhD thesis, Universidade Federal do Rio de Janeiro, Rio de Janeiro, 219 pp.
- Chagas-Jr, A. (2010) On *Scolopocryptops* from Fiji Islands (Chilopoda, Scolopendromorpha, Scolopocryptopidae). *International Journal of Myriapodology*, 3, 159–168.
<http://dx.doi.org/10.1163/187525410x12578602960623>
- Chagas-Jr, A. (2012) The centipede genus *Otostigmus* Porat in Brazil: Description of three new species from the Atlantic Forest; a summary and an identification key to the Brazilian species of this genus (Chilopoda, Scolopendromorpha, Scolopendridae, Otostigminae). *Zootaxa*, 3280, 1–28.
- Chagas-Jr, A. (2013) A redescription of *Rhysida celeris* (Humbert & Saussure, 1870), with a proposal of eight new synonyms (Scolopendromorpha, Scolopendridae, Otostigminae). *Zookeys*, 258, 17–29.
- Chamberlin, R.V. (1914) The Stanford Expedition to Brazil, 1911, John C. Branner, Director. The Chilopoda of Brazil. *Bulletin of the Museum of comparative Zoology*, 58, 151–221.
- Chamberlin, R.V. (1920) The Myriapoda of the Australian Región. *Bulletin of the Museum of Comparative Zoology*, 64, 1–269

- Chamberlin, R.V. (1921) Results of the Bryant Walker expeditions of the University of Michigan to Columbia 1913 and British Guiana 1914. *Occasional Papers of the Museum of Zoology, University of Michigan*, 97, 1–28.
- Chamberlin, R.V. (1946) A new centipede and two new millipeds from the Pearl Islands, Colombia, *Pan-Pacific Entomologist*, 22, 145–147.
- Chamberlin, R.V. (1955) Reports of the Lund University Chile Expedition 1948–49. 18. The Chilopoda of the Lund University and California Academy of Science Expeditions. *Acta Universitatis Lundensis*, 51 (5), 1–61.
- Chamberlin, R.V. (1957) Scolopendrid chilopods of the Northern Andes Región taken on the California Academy South America Expedition of 1954–1955. *Great Basin Naturalist*, 17, 30–41.
- Crabill, R.E. Jr. (1953) Concerning a new genus, *Dinocryptops*, and the nomenclatorial status of *Otocryptops* and *Scolopocryptops* (Chilopoda: Scolopendromorpha: Cryptopidae). *Entomological News*, 64, 96.
- Edgecombe, G.D., Vahtera, V., Stock, S.R., Kallonen, A., Xiao, X., Rack, A. & Giribet, G. (2012) A scolopocryptopid centipede (Chilopoda: Scolopendromorpha) from Mexican amber: synchrotron microtomography and phylogenetic placement using a combined morphological and molecular data set. *Zoological Journal of the Linnean Society*, 166, 768–786. <http://dx.doi.org/10.1111/j.1096-3642.2012.00860.x>
- ESRI (2011) ArcGIS Desktop: Release 10. Redlands, Environmental Systems Research Institute, CA.
- Gervais, P. (1844a) Myriapodes. In: le Baron Walckenaer, M. & Gervais, P. (Eds.), *Histoire Naturelle des Insectes Aptères*, 4, pp. 1–623.
- Gervais, P. (1844b) Description des Myriapodes recueillis par Goudot en Colombie. *Annales de la Société Entomologique de France*, 2 (9), XXVI–XXIX.
- Gervais, P. (1859) Myriapodes et Scorpions. In: *Animaux nouveaux ou rares recueillis pendant l'expédition dans les parties centrales de l'Amérique du Sud, de Rio de Janeiro à Lima, et de Lima au Para; exécutée par ordre du Gouvernement Français pendant les années 1843 à 1847, sous la direction du Comte Francis de Castelnau*. P. Bertrand, Paris, pp. 1–39, pls. 1–6.
- Humbert, A. & Saussure, H. (1870) Myriapoda nova Americana. Description de divers Myriapodes nouveaux du musée de Vienne. *Revue et Magasin de Zoologie*, 22, 196–205.
- Falling Rain Genomics, Inc (1996–2010) Global Gazetteer Version 2.2. Available from: <http://www.fallingrain.com/world/index.html> (accessed 01 May 2013)
- IGAC (2010) Instituto Geográfico Agustín Codazzi. Available from: <http://www.igac.gov.co> (accessed 10 May 2013)
- Karsch, F. von (1884). Über einige neue und minder bekannte Arthropoden des Bremer Museums. *Abhandlungen herausgegeben vom naturwissenschaftlichen Verein zu Bremen*, 9, 65–71.
- Kraepelin, K. (1903) Revision der Scolopendriden. *Mitteilungen aus dem Naturhistorischen Museum in Hamburg*, 20, 1–276.
- Kraus, O. (1957) Myriapoden aus Peru VI. Chilopoden. *Senckenbergiana Biológica*, 38, 359–404.
- Minelli, A., Bonato, L., Dioguardi, R., Chagas-Juniór, A., Edgecombe, G.D., Lewis, J.G.E., Pereira, L.A., Shelley, R.M., Stoev, P., Uliana, M., Zapparoli, M. (2006) onwards. *Chilobase: a web resource for Chilopoda taxonomy*. Available from: <http://chilobase.bio.unipd.it> (accessed 1 April 2013)
- Newport, G. (1845) Monograph of the class Myriapoda order Chilopoda; with observations on the general arrangement of the Articulata. *Transactions of the Linnean Society of London*, 19, 265–302, 349–439.
- Pocock, R.I. (1896) Class Chilopoda. In: Chilopoda and Diplopoda. *Biologia Centrali-Americana*, 1, 1–40.
- Porat, C.O. von (1876) Om några exotiska Myriopoder. *Bihang till Kongliga Svenska Vetenskaps-Akademiens Handlingar*, 4 (no. 7), 1–48.
- Ribaut, H. (1912) Contribution à l'étude des chilopodes de Colombie (O. Fuhrmann et Eug. Mayor, voyage d'exploration scientifique en Colombie). *Mémoires de la Société de Sciences Naturelles de Neuchâtel*, 5, 67–95.
- SIB (2013) Sistema de información sobre Biodiversidad de Colombia. Available from: <http://www.sibcolombia.net/web/sib/cifras> (accessed 01 November 2013)
- Schileyko, A.A. (2002) Scolopendromorpha. In: Adis, J. (Ed.), *Amazonian Arachnida and Myriapoda*. Pensoft, Sofia, Moscow, pp. 479–500.
- Schileyko, A.A. & Minelli, A. (1998) On the genus *Newportia* Gervais, 1847 (Chilopoda, Scolopendromorpha, Newportiidae). *Arthropoda Selecta*, 7 (4), 265–299.
- Schileyko, A.A. & Stagl, V. (2004) The collection of scolopendromorph centipedes (Chilopoda) in the Natural History Museum in Vienna: a critical re-evaluation of former taxonomic identifications. *Annalen des Naturhistorischen Museums in Wien*, 105 (B), 67–137.
- Shelley R.M. (2000) The centipede order Scolopendromorpha in the Hawaiian islands (Chilopoda). *Bishop Museum Occasional Papers*, 64, 39–48.
- Shelley, R.M. (2006) A chronological catalog of the New World species of *Scolopendra* L., 1758 (Chilopoda: Scolopendromorpha: Scolopendridae). *Zootaxa*, 1253, 1–50.
- Shelley, R.M. (2008) Revision of the centipede genus *Hemiscolopendra* Kraepelin, 1903: and possible misidentifications of *Scolopendra* spp.; proposal of *Akymnopellis*, n. gen. and redescriptions of its South American components (Scolopendromorpha: Scolopendridae: Scolopendrinae). *International Journal of Myriapodology*, 2, 171–204.
- Shelley, R.M. & Edwards, G.B. (2004) A fourth Floridian record of the centipede genus *Rhydisa* Wood, 1862; potential establishment of *R. l. longipes* (Newport, 1845) in Miami-Dade county (Scolopendromorpha: Scolopendridae: Otostigminae). *Entomological News*, 115, 116–119.

- Shelley, R.M. Edwards, G.B. & Chagas-Jr. A. (2005) Introduction of the centipede *Scolopendra morsitans* L., 1758, into Northeastern Florida, the first authentic North American record, and a review of its global occurrences (Scolopendromorpha: Scolopendridae: Scolopendrinae). *Entomological News*, 116 (1), 39–58.
- Shelley, R.M. & Kiser, S.B. (2000) Neotype designation and a diagnostic account for the centipede, *Scolopendra gigantea* L. 1758, with an account of *S. galapagoensis* Bollman 1889 (Chilopoda Scolopendromorpha Scolopendridae). *Tropical Zoology*, 13, 159–170.
- Stoev, P. & Geoffroy, J.J. (2004) An annotated catalogue of the scutigeromorph centipedes in the collection of the Muséum National d'Histoire Naturelle, Paris (France) (Chilopoda: Scutigeromorpha). *Zootaxa*, 635, 1–12.
- Wood, H.C. Jr. (1862) On the Chilopoda of North America with a catalogue of all the specimens in the collection of the Smithsonian Institution. *Journal of the Academy of Natural Sciences of Philadelphia*, 5, 5–52.
- Würmli, M. (1978) Synopsis der neotropischen Psellioidae (Chilopoda: Scutigeromorpha). *Studies on Neotropical Fauna and Environment*, 13, 135–142.