



<http://dx.doi.org/10.11646/zootaxa.3905.1.1>

<http://zoobank.org/urn:lsid:zoobank.org:pub:4DE8E10A-2A06-4467-BFC4-F105C46DCCF1>

## A new schendylid centipede (Myriapoda: Chilopoda: Geophilomorpha) from the Bolivian Amazon Forest

LUIS ALBERTO PEREIRA

National Council for Scientific and Technological Research (CONICET) and National University of La Plata, Natural Sciences Faculty and Museum (Division of Invertebrate Zoology), Paseo del Bosque s/n, (1900) La Plata, Buenos Aires, Argentina.  
E-mail: [lpereira@fcnym.unlp.edu.ar](mailto:lpereira@fcnym.unlp.edu.ar)

### Abstract

*Schendylops grismadoi* sp. nov., a new schendylid centipede (Chilopoda: Geophilomorpha) from the Amazon forest of east-central Bolivia (Santa Cruz Department, Guarayos Province) is described and illustrated based on the holotype female. The new species is characterized by having an uninterrupted series of ventral pore-fields, from first to penultimate sternite inclusive (undivided on anterior and posterior sternites, divided in two subsymmetrical areas on the intermediate); these combined traits being shared by five other Neotropical species currently included in the genus *Schendylops* Cook, 1899, i.e., *S. tropicus* (Brölemann & Ribaut, 1911) (from French Guiana), *S. inquilinus* Pereira, Uliana & Minelli, 2007 (from Brazil), *S. coscaroni* (Pereira & Minelli, 2006) (from Brazil), *S. demelloi* (Verhoeff, 1938) (from Brazil), and *S. parahybae* (Chamberlin, 1914) (from Brazil). The new taxon is differentiated from all aforementioned species by having the anterior margin of cephalic plate conspicuously notched in the middle, dentate lamellae of mandibles divided in two blocks, and basal internal edge of forcipular tarsungulum with a small pigmented tooth; it is included in a key which will enable the identification of all known Neotropical members having sternal pore-fields all along the trunk (including those with an interrupted series on some mid-body sternites). *S. grismadoi* is only the fifth species of geophilomorph centipede recorded from Bolivia.

**Key words:** Chilopoda, Geophilomorpha, Schendylidae, *Schendylops*, new species, Bolivia, Amazon forest, Neotropical Region

### Introduction

The centipede genus *Schendylops* Cook, 1899 is one of the most widespread and diversified genera of the geophilomorph family Schendylidae, showing an amphiatlantic pattern of distribution (Hoffman & Pereira 1997; Morrone & Pereira 1999; Bonato *et al.* 2009; Pereira *et al.* 2004; Pereira 1998, 2008a). The genus embraces species in the 7–70 mm range of total body length and 27–87 leg-bearing segments (27 being the lowest number recorded up to the present in the centipede order Geophilomorpha [Minelli 2003; Minelli *et al.* 2000, 2009; Pereira 2013]).

Of the 67 species currently included in the taxon, 55 (in addition to the new species described below) occur in the Neotropics, while seven are known from mainland Africa and five from Madagascar. The Neotropical members are distributed as follows: one occurs in Argentina and Paraguay; 11 in Argentina only; two in Paraguay only; two in Bolivia; one in Brazil and Peru; 22 in Brazil only; one in Colombia; two in continental Ecuador and one in the Galapagos Islands; one in Guyana; one in French Guiana; five in Peru only; one in Puerto Rico, and the French Antilles (Guadeloupe); one in Venezuela, the British Virgin Is. (Virgin Gorda), and French Antilles (Martinique); two in Venezuela only; and one in Suriname. These taxa can be found in a wide variety of habitats, at altitudes ranging from sea level (*e.g.*, littoral species inhabiting the Caribbean area and Brazilian coasts of Rio de Janeiro State), up to *ca.* 4500 m a.s.l. (high altitude species living in the Andes). A detailed account of the geographic distribution of New World species of *Schendylops* can be found in Morrone & Pereira (1999).

In the present contribution a new species of the genus is described from the Bolivian Amazon forest, on the basis of an adult female specimen collected in a selective logging area (La Chonta forestry concession). La Chonta is

is the fifth species of the order to be recorded from this country. Considering that Bolivia represents an extensive geographic area with a great variety of environments located at elevations ranging from a few hundred meters above sea level in the Amazon basin to high altitudes in the Andes, the foregoing taxa likely represent only a small portion of the chilopod biodiversity in this vast and diverse territory, which still remains almost unexplored in respect to its centipede fauna.

## Acknowledgements

I am grateful to Cristian José Grismado of the Museo Argentino de Ciencias Naturales “Bernardino Rivadavia” (CONICET) for access to the only geophilomorph specimen he collected during an arachnological expedition to Bolivia. William A. Shear (Hampden Sydney College) and an anonymous referee contributed with accurate reviews to improve the final version of the manuscript. Batik (stationery supplies, La Plata) generously provided useful advice on appropriate items for making the illustrations. Hernán Lucas Pereira and José Luis Pereira (La Plata) helped in digitizing and editing the figures.

## References

- Bonato, L., Bevilacqua, S. & Minelli, A. (2009) An outline of the geographical distribution of world Chilopoda. *Contributions to Natural History*, 12, 183–209.
- Bonato, L., Edgecombe, G.D., Lewis, J.G.E., Minelli, A., Pereira, L.A., Shelley, R.M. & Zapparoli, M. (2010) A common terminology for the external anatomy of centipedes (Chilopoda). *Zookeys*, 69, 17–51. <http://dx.doi.org/10.3897/zookeys.69.737>
- Brölemann, H.W. & Ribaut, H. (1912) Essai d'une monographie des Schendylina (Myriapodes, Géophilomorphes). *Nouvelles Archives du Muséum d' Histoire naturelle*, Paris, Série 5, 4 (1), 53–183.
- Felton, A., Felton, A.M., Wood, J. & Lindenmayer, D.B. (2006) Vegetation structure, phenology, and regeneration in the natural and anthropogenic tree-fall gaps of a reduced-impact logged subtropical Bolivian forest. *Forest Ecology and management*, 235, 186–193. <http://dx.doi.org/10.1016/j.foreco.2006.08.011>
- Felton, A., Hennessey, B.A., Felton, A.M. & Lindenmayer, D.B. (2007) Birds surveyed in the harvested and unharvested areas of a reduced-impact logged forestry concession, located in the lowland subtropical humid forests of the Department of Santa Cruz, Bolivia. *Check List*, 3 (1), 43–50. Available from: <http://www.checklist.org.br/getpdf?SL014-06> (accessed 2 December 2014)
- Foddai, D., Minelli, A. & Pereira, L.A. (2002) Chilopoda Geophilomorpha. In: Adis, J. (Ed.), *Amazonian Arachnida & Myriapoda*. Pensoft, Sofia-Moscow, pp. 459–474.
- Foddai, D., Pereira, L.A. & Minelli, A. (2000) A catalogue of the geophilomorph centipedes (Chilopoda) from Central and South America including Mexico. *Amazoniana*, 16 (1–2), 59–185. Available from: [http://naturalis.fcnym.unlp.edu.ar/repositorio/\\_documentos/sipcyt/bfa003922.pdf](http://naturalis.fcnym.unlp.edu.ar/repositorio/_documentos/sipcyt/bfa003922.pdf) (accessed 2 December 2014)
- Hoffman, R.L. & Pereira, L.A. (1997) The identity and taxonomic status of the generic names *Schendylops* Cook, 1899, and *Schendylurus* Silvestri, 1907, and the proposal of *Orygmadyla*, a new related genus from Peru (Chilopoda: Geophilomorpha: Schendylidae). *Myriapodologica*, 5 (2), 9–32. Available from: [http://www.vmnh.net/content/File/Research\\_and\\_Collections/Myriapodologica/Myriapodologica\\_v5\\_2.pdf](http://www.vmnh.net/content/File/Research_and_Collections/Myriapodologica/Myriapodologica_v5_2.pdf) (accessed 2 December 2014)
- Minelli, A. (2003) *The development of animal form. Ontogeny, morphology, and evolution*. Cambridge University Press, Cambridge - New York, 323 pp. [USA]
- Minelli, A. (Ed.) (2006) Chilobase: a web resource for Chilopoda taxonomy. Available from: <http://chilobase.bio.unipd.it> (accessed 27 August 2014)
- Minelli, A., Chagas-Junior, A. & Edgecombe, G.D. (2009) Saltational evolution of trunk segment number in centipedes. *Evolution & Development*, 11 (3), 318–322. <http://dx.doi.org/10.1111/j.1525-142x.2009.00334.x>
- Minelli, A., Foddai, D., Pereira, L.A. & Lewis, J.G.E. (2000) The evolution of segmentation of centipede trunk and appendages. *Journal of Zoological Systematics and Evolutionary Research*, 38, 103–117. <http://dx.doi.org/10.1046/j.1439-0469.2000.382137.x>
- Morrone, J.J. & Pereira, L.A. (1999) On the geographical distribution of the Neotropical and Andean species of *Schendylops* (Chilopoda: Geophilomorpha: Schendylidae). *Revista de la Sociedad Entomologica Argentina*, 58 (3–4), 165–171. Available from: [http://naturalis.fcnym.unlp.edu.ar/repositorio/\\_documentos/sipcyt/bfa003932.pdf](http://naturalis.fcnym.unlp.edu.ar/repositorio/_documentos/sipcyt/bfa003932.pdf) (accessed 2 December 2014)
- Park, A., Justiniano, M.J., & Fredericksen, T.S. (2005) Natural regeneration and environmental relationships of tree species in

- logging gaps in a Bolivian tropical forest. *Forest Ecology and Management*, 217, 147–157.  
<http://dx.doi.org/10.1016/j.foreco.2005.05.056>
- Pereira, L.A. (1983) Estudios sobre Geofilomorfos neotropicales V. Sobre algunas especies de Schendylidae referidas por Silvestri al género *Nannophilus* (Chilopoda: Geophilomorpha). *Bolletino del Laboratorio di Entomologia agraria Filippo Silvestri*, 40, 69–87. [Portici]
- Pereira, L.A. (1985a) Estudios sobre Geofilomorfos neotropicales XI. Sobre algunas especies andinas del género *Schendylurus* Silvestri, 1907, descritas por R.V. Chamberlin en 1956 y 1957. (Chilopoda: Geophilomorpha: Schendylidae). *Bolletino del Laboratorio di Entomologia agraria Filippo Silvestri*, 42, 47–80. [Portici]
- Pereira, L.A. (1985b) Estudios sobre Geofilomorfos neotropicales XII. Nuevos aportes al conocimiento de *Schendylurus perditus* Chamberlin, 1914 y *Schendylurus varipictus* (Chamberlin, 1950). (Chilopoda: Geophilomorpha: Schendylidae). *Revista de la Sociedad Entomológica Argentina*, 44 (1), 17–30. Available from: [http://naturalis.fcnym.unlp.edu.ar/repositorio/\\_documentos/sipcyt/bfa003927.pdf](http://naturalis.fcnym.unlp.edu.ar/repositorio/_documentos/sipcyt/bfa003927.pdf) (accessed 2 December 2014)
- Pereira, L.A. (1998) Chilopoda. In: Morrone, J.J. & Coscarón, S. (Eds.), *Biodiversidad de Artrópodos Argentinos. Una perspectiva biotaxonomica*. Ediciones Sur, La Plata, pp. 463–474. Available from: [http://naturalis.fcnym.unlp.edu.ar/repositorio/\\_documentos/sipcyt/bfa004004.pdf](http://naturalis.fcnym.unlp.edu.ar/repositorio/_documentos/sipcyt/bfa004004.pdf) (accessed 2 December 2014)
- Pereira, L.A. (2000) The preparation of centipedes for microscopical examination with particular reference to the Geophilomorpha. *Bulletin of the British Myriapod Group*, 16, 22–25.
- Pereira, L.A. (2008a) A new species of *Schendylops* Cook, 1899 from a high plateau of the Córdoba mountains (central Argentina), with notes on other Neotropical members of the genus (Myriapoda: Chilopoda: Geophilomorpha). *International Journal of Myriapodology*, 1 (2), 205–230.  
<http://dx.doi.org/10.1163/187525408x395940>
- Pereira, L.A. (2008b) A new species and first record of the centipede genus *Ribautia* (Chilopoda: Geophilomorpha) from Bolivia, with redescription of two poorly known members from the Peruvian Andes. *Studies on Neotropical Fauna and Environment*, 43 (1), 47–76.  
<http://dx.doi.org/10.1080/01650520701461285>
- Pereira, L.A. (2009) Description of *Schendylops jeekeli* sp. n., a new geophilomorph centipede (Myriapoda: Chilopoda) from the Paranapiacaba fragment of the Atlantic Forest in Southeastern Brazil, with complementary notes on similar Neotropical species. *International Journal of Myriapodology*, 2 (2), 167–214.  
<http://dx.doi.org/10.1163/187525409x12577705044665>
- Pereira, L.A. (2013) Discovery of a second geophilomorph species (Myriapoda: Chilopoda) having twenty-seven leg-bearing segments, the lowest number recorded up to the present in the centipede order Geophilomorpha. *Papéis Avulsos de Zoologia*, 53 (13), 163–185.  
<http://dx.doi.org/10.1590/s0031-10492013001300001>
- Pereira, L.A., Foddai, D. & Minelli, A. (2000) New taxa of Neotropical Geophilomorpha (Chilopoda). *Amazoniana*, 16 (1–2), 1–57. Available from: [http://naturalis.fcnym.unlp.edu.ar/repositorio/\\_documentos/sipcyt/bfa003921.pdf](http://naturalis.fcnym.unlp.edu.ar/repositorio/_documentos/sipcyt/bfa003921.pdf) (accessed 2 December 2014)
- Pereira, L.A. & Minelli, A. (1993) On two new species of *Schendylurus* Silvestri, 1907 from Venezuela, with redescription of *S. colombianus* Chamberlin, 1921 and *S. virgingordae* Crabill, 1960 (Chilopoda Geophilomorpha Schendylidae). *Tropical Zoology, Special Issue*, 1, 105–123. Available from: [http://naturalis.fcnym.unlp.edu.ar/repositorio/\\_documentos/sipcyt/bfa003776.pdf](http://naturalis.fcnym.unlp.edu.ar/repositorio/_documentos/sipcyt/bfa003776.pdf) (accessed 2 December 2014)
- Pereira, L.A. & Minelli, A. (1996) The species of *Schendylurus* Silvestri, 1907 from Argentina, Brazil and Paraguay (Chilopoda: Geophilomorpha: Schendylidae). *Tropical Zoology*, 9, 225–295.  
<http://dx.doi.org/10.1080/03946975.1996.10539312>
- Pereira, L.A., Minelli, A. & Barbieri, F. (1995) Description of nine new centipede species from Amazonia and related matters on Neotropical geophilomorphs. *Amazoniana*, 13 (3–4), 325–416. Available from: [http://naturalis.fcnym.unlp.edu.ar/repositorio/\\_documentos/sipcyt/bfa003053.pdf](http://naturalis.fcnym.unlp.edu.ar/repositorio/_documentos/sipcyt/bfa003053.pdf) (accessed 2 December 2014)
- Pereira, L.A., Minelli, A. & Uliana, M. (2004) The species of *Schendylops* Cook, 1899 (Chilopoda, Geophilomorpha, Schendylidae) from Madagascar. *Zoosystema*, 26 (4), 727–752.
- Pereira, L.A., Uliana, M. & Minelli, A. (2007) Geophilomorph centipedes (Chilopoda) from termite mounds in the northern Pantanal wetland of Mato Grosso, Brazil. *Studies on Neotropical Fauna and Environment*, 42 (1), 33–48.  
<http://dx.doi.org/10.1080/01650520600915613>
- Pinard, M., Putz, F.E. & Licona, J.C. (1999) Tree mortality and vine proliferation following a wildfire in a subhumid tropical forest in eastern Bolivia. *Forest Ecology and Management*, 116, 247–252.  
[http://dx.doi.org/10.1016/s0378-1127\(98\)00447-2](http://dx.doi.org/10.1016/s0378-1127(98)00447-2)
- Silvestri, F. (1897) Viaggio del Dott. Alfredo Borelli nel Chaco boliviano e nella Repubblica Argentina. IV. Chilopodi e diplopodi. *Bollettino dei Musei di Zoologia e Anatomia comparata della Regia Università di Torino*, 12 (283), 1–11.