Zootaxa 3760 (3): 396–408
www.mapress.com/zootaxa/

Article

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

http://dx.doi.org/10.11646/zootaxa.3760.3.6
http://zoobank.org/urn:lsid:zoobank.org:pub:982DAAEA-19F0-46A5-8D7F-C34E2835A60A

A new stygobitic species of Stygocarididae (Crustacea: Anaspidacea) from South America

MARCELA PERALTA
Instituto de Invertebrados, Fundación Miguel Lillo, Miguel Lillo 251, San Miguel de Tucumán (4000), Tucumán, Argentina.
E-mail: maperalta@csnat.unt.edu.ar

Abstract

The only South American Anaspidacean families are the Stygocarididae Noodt and the monotipic Patagonaspididae Grosso & Peralta. I describe a new Stygocarididae, *Parastygocaris luisgrossoi* **n. sp.** from the hyporheic zone of a stream in Sierra de San Luis, Argentina. The main characters of the new species include: antennula outer flagellum with 9–10 articles, sexual dimorphism in flagella; antenna with 4-segmented peduncle and 5-articulate flagellum; maxilla with row of 8 setae along inner margin of proximal endite; uropod: inner margin of protopod with 7-8 setae and distal segment of exopod lined by 7 setae; pereopod 6 female with 1 long plumose seta on basis. The morphology and chaetotaxy of the new taxon is compared with congeneric species. The long evolutionary history of the Gondwanan Anaspidacea and the accompanying fauna of the new species, suggest the probable existence of an ancient groundwater basin in western Argentina, south of 28ºS that would have harboured interstitial fauna of great and diverse antiquity.

Key words: Syncarida, *Parastygocaris*, San Luis, Argentina, hyporheic zone

Introduction

The order Anaspidacea Calman, 1904, is a basal lineage of Crustacea Syncarida, Packard, 1885, whose oldest fossil record corresponds to Triassic Australian freshwaters. Currently, the order consists of five families, 12 genera and 21 living species (Camacho & Valdecasas 2008). Recent Anaspidacea species inhabit freshwater environments in Australia, New Zealand, Tasmania, and southern South America, and they are therefore considered as a Gondwanan lineage. Its relictual character and ancient origin mean that every new species is a valuable element for phylogenetic and paleobiogeographic reconstruction.

The only anaspidacean families with representatives in South America, viz. Stygocarididae Noodt, 1963 and Patagonaspididae Grosso & Peralta, 2002, comprise only stygobitic species, ecological specialists with a very limited distribution.

In this report I describe a new Stygocarididae from the hyporheic zone of a stream in hilly areas near the volcanic cone Sololosta, in San Luis province, western Argentina.

Material and methods

All specimens were collected in hyporheic environments by the Karaman-Chappuis sampling method, using a 100-microns mesh net. Specimens are deposited in the Crustaceans Collection of Fundación Miguel Lillo, Tucumán, Argentina.

Drawings of specimens were made using a Leitz Dialux camera lucida. The cuticular extensions of two males were examined under a Jeol-35 CF scanning electron microscope (SEM). Materials used for SEM were prepared for study by standard critical point drying procedure.

In the description of the maxilla the four endites are enumerated sequentially (proximal endite= first endite) (Noodt 1970).

 Accepted by K. Meland: 20 Dec. 2013; published: 3 Feb. 2014

References

Brodtkorb, M.K. de, Pezzutti, N., Poma, S. & Fernández, R. (2009) Geoquímica y petrología de las metavolcanitas cámbricas de la Sierra de San Luis. *Revista de la Asociación Geológica Argentina,* 65 (3), 429–445.

Calman, W.T. (1904) On the classification of the Crustacea Malacostraca. *The Annals and Magazine of Natural History*, (7), 13, 144–158.

Camacho, A.I. & Valdecasas, A.G. (2008) Global diversity of syncarids (Syncarida; Crustacea) in freshwater. *Hydrobiologia,* 595, 257–266.
http://dx.doi.org/10.1007/s10750-007-9021-5

Grosso, L. & Peralta, M. (1997a) Hallazgo de un nuevo Stygocarididae en una antigua área de endemismo. *Parastygocaris schminkei* n. sp. (Crustacea, Syncarida*). Physis* B, 54 (126–127), 21–26.

Grosso, L. & Peralta, M. (1997b) *Parastygocaris clapsi* nuevo sincárido Stygocarididae descubierto en la zona hiporreica del río Aicuña (La Rioja-Argentina). *Neotrópica*, 43 (109–110), 27–34.

Grosso, L. & Peralta, M. (2002) *Patagonaspides* gen. n.; *P. sandroruffoi* sp. n. (Crustacea, Syncarida). First phreatobite species of a new anaspidacean family discovered in Patagonia with cladistic analysis of Stygocaridinea (Anaspidacea). *Bolletino del Museo Civico di Storia Naturale di Verona,* 26, 105–118.

Lundberg, J.G., Marshall, L.G., Guerrero, J., Horton, B., Malabarba, M.C. & Wesselingh, F. (1998) The Stage for Neotropical Fish Diversification: A History of Tropical South American Rivers. *In*: Malabarba, L.R., Reis, R.E., Vari, R.P., Lucena, C.A.S. & Lucena, Z.M.S. (Eds.), *Phylogeny and Classification of Neotropical Fishes*. Part 1. Museu de Ciências e Tecnologia, PUCRS. Porto Alegre, Brazil, pp. 13–48.

Noodt, W. (1963a) Estudios sobre crustáceos de aguas subterráneas. III.- Crustacea Syncarida de Chile Central. *Investigaciones Zoológicas Chilenas*, 10, 151–167.

Noodt, W. (1963b) Anaspidacea (Crustacea, Syncarida) in der südlichen Neotropis. *Verhandlungen der Deutschen Zoologischen Gesellschaft in Wien,* 1962, 568–578.

Noodt, W. (1970) Zur Eidonomie der Stygocaridacea, einer Gruppe interstitieller Syncarida (Malacostraca). *Crustaceana,* 19, 227–244.
http://dx.doi.org/10.1163/156854070x00310

Packard, A.S. (1885) The Syncarida, a group of Carboniferous Crustacea. *The American Naturalist*, 19, 700–703.

Peralta, M. (2010) Sistema de clasificación de las setas de crustáceos Stygocarididae y Patagonaspididae (Anaspidacea). *Acta Zoológica Lilloana,* 54 (1–2), 43–60.

Potter, P.E. (1997) The Mesozoic and Cenozoic paleodrainage of South America: a natural history. *Journal of South American Earth Sciences,* 10 (5–6), 331–344.
http://dx.doi.org/10.1016/s0895-9811(97)00031-x

Rabassa, J., Carignano, C. & Cioccale, M. (2010) Gondwana Paleosurfaces in Argentina: an Introduction. *Geociências*, 29 (4), 439–466.

Schminke, H.K. (1974) *Psammaspides williamsi* gen.n., sp.n., ein Vertreter einer neuen Famlie mesopsammaler Anaspidacea (Crustacea, Syncarida). *Zoologica Scripta*, 3, 177–183.
http://dx.doi.org/10.1111/j.1463-6409.1974.tb00814.x

Schminke, H.K. (1975) Phylogenie und Verbreitungsgeschichte der Syncarida (Crustacea, Malacostraca). *Verhandlungen der Deutschen Zoologischen Gesellschaft (Stuttgart),* 1974, 384–388.

Schminke, H.K. (1980) Zur Systematik der Stygocarididae (Crustacea, Syncarida) und Beschreibung Zweier Neuer Arten (*Stygocarella pleotelson* gen. n., sp. n. und *Stygocaris giselae* sp. n.). *Beaufortia*, 30 (6), 139–154.

Schram, F.R. (1984) Fossil Syncarida. *Transactions of the San Diego Society of Natural History*, 20 (13), 189–246.

Schram, F.R. (2008) Does biogeography have a future in a globalized world with globalized faunas?. *Contributions to Zoology*, 77 (2), 127–133.

Schram, F.R. & Hessler, R.H. (1984) Anaspidid Syncarida. *In*: N. Eldredge & S.M. Stanley (Eds.), *Living Fossils*. Springer-Verlag, New York, Berlín, pp. 192–195.

Thomson, G.M. (1893) Notes on Tasmanian Crustacea, with description of new species. *Papers and Proceedings of the Royal Society of Tasmania*, 45–76.

Vonk, R. & Schram, F.R. (2003) Ingolfiellidea (Crustacea, Malacostraca, Amphipoda): a phylogenetic and biogeographic analysis. *Contributions to Zoology*, 72 (1), 39–72.