



<http://dx.doi.org/10.11646/zootaxa.3856.2.7>

<http://zoobank.org/urn:lsid:zoobank.org:pub:DB6AA930-C276-4D77-91A1-95AADA461DE4>

Hesionidae Grube, 1850 (Annelida: Polychaeta) from South-Southeastern Brazil, with descriptions of four new species

ALEXANDRA E. RIZZO¹ & SERGIO I. SALAZAR-VALLEJO²

¹Universidade do Estado do Rio de Janeiro, Instituto de Biologia, Depto. Zoologia, Maracanã, Rio de Janeiro – RJ, Brazil. 20.550-900. E-mail: aerizzo@hotmail.com

²Estructura y Función del Bentos, Depto. Sistemática y Ecología Acuática, ECOSUR, Chetumal, Quintana Roo, México. E-mail: ssalazar@ecosur.mx, savs551216@hotmail.com

³Corresponding author. E-mail: aerizzo@hotmail.com

Abstract

On the basis of extensive intertidal and subtidal samplings in South-Southeastern Brazil, five hesionid species were found; four are newly described and *Podarkeopsis levisfuscina* Perkins, 1984 is redescribed. *Micropodarke pleijeli* n. sp. differs from the other species because it lacks eyes, and by having a large number of pharynx papillae and by neurochaetal features; this species differs from *M. dubia* (Hessle, 1925) by lacking eyes, having a pharynx with more papillae, and by the neurochaetal features. *Syllidia amaralae* n. sp. resembles more closely *S. armata sensu* Day, 1967 (non *S. armata* de Quatrefages, 1865) because both have dorsal and tentacular cirri annulated or moniliform, and 10–15 pharyngeal papillae. However, *S. amaralae* n. sp. specimens differ from Day's ones because they have a quadrangular prostomium, by the relative size and arrangement of eyes, and by a reduced number of chaetae which are disposed in two bundles; these features are consistent and present in juveniles and mature specimens. *Neogyptis nonatoi* n. sp. is distinguishable from the others by having four types of neurochaetae; this species resembles *N. crypta* (Pleijel, 1993), and *N. plurisetis* (Hilbig, 1992). It differs from *N. crypta* by having a few acicular notochaetae with blunt tip, a small number of compound neurochaetae, simple capillary neurochaetae distally curved, and much slender notopodial and neuropodial lobes. The new species also differs from *N. plurisetis* by having four types of neurochaetae instead of having only falciger chaetae; there are less pharyngeal papillae and they are far apart to each other, conical and shorter in *N. plurisetis* when compared to those of *N. nonatoi* n. sp., which are fringed, longer and closer among them, having some other longer lateral papillae. *Oxydromus lanai* n. sp. resembles *O. obscurus* (Verrill, 1873) as recorded by Uebelacker (1984), *O. pugettensis* by Hilbig (1994), *O. guanicus* by Hoagland (1919), and *O. cf. guanicus* by Hartman (1951). The pharynx of *O. obscurus* does not have fringe or papilla on its border, and it has two types of neurochaetae, differing from *O. lanai* n. sp. which has a single furcate notochaeta, with its shorter tine serrated. *Oxydromus pugettensis* and *O. cf. guanicus* also have usually two, instead of one, furcate notochaeta, differing from *O. lanai* n. sp. *Oxydromus guanicus* differs from our new species in having a characteristic pigmentation pattern, to be very large, its median antenna is less than one-third as long as lateral antennae, and its cirrophores are distally constricted producing a colorless ring, whereby the cirrostyle is inserted. These species are the first Brazilian records for the genera *Podarkeopsis* and *Syllidia*, and for *Micropodarke*, it is newly recorded from the Atlantic Ocean. Keys are included to identify hesionid genera and the species of *Syllidia*, *Micropodarke*, *Neogyptis*, and *Podarkeopsis*.

Key words: *Gyptis*, *Micropodarke*, *Oxydromus*, *Podarkeopsis*, *Syllidia*, keys, new species

Introduction

Hesionids are errant polychaetes whose bodies have a relatively small number of chaetigers. The members of this family have some anterior chaetigers displaced towards the head, or cephalized, which is notable by the development of several pairs of elongated cirri. Hesionids live in consolidated or soft substrates and can be associated with many groups of invertebrates, especially echinoderms, and live in a wide range of depth. As they have a definite growth and striking coloration patterns, some species have been proposed by using variations of the body pigmentation. Hesionids have a muscular pharynx, sometimes provided with jaws; the larger hesionids might

Acknowledgments

We wish to thank Miranda Lowe and Emma Sherlock (BMNH), Danny Eibye-Jacobsen (ZMUC), and William Moser and Kristian Fauchald (USNM) for the loan of specimens, and José Maria Lobo Orensanz which provided us material from Argentina. Our thanks to all participants of the “Revizee/South Score” and “Biota/Fapesp Marine Benthos” Programmes, at the CEBIMAR/USP (Centro de Biologia Marinha da Universidade de São Paulo) and at the UNICAMP (Universidade Estadual de Campinas). This work was supported by the State of São Paulo Research Foundation (FAPESP 02/04104-0, 05/0407-7) within the BIOTA/FAPESP - The Biodiversity Virtual Institute Program (www.biotasp.org.br). SISV had a visiting professor scholarship from UERJ for a two-month research visit. Leslie Harris kindly sent some publications difficult to find. Angel de León and an anonymous referee carefully read previous drafts and made very important recommendations to improve this contribution.

References

- Amaral, A.C.Z. & Rossi-Wongtschowski, C.L.D.B. (2004) *Biodiversidade bentônica da região sudeste-sul do Brasil – Plataforma Externa e Talude Superior. Série Documentos Revizee – Score Sul*. Ulhôa Cintra Comunicação Visual e Arquitetura, São Paulo, 216 pp.
- Amoureux, L. (1985) Annélides benthiques récoltées à l'entrée de la lagune de la Manche-à-Eau, Guadeloupe (Antilles). *Bulletin du Muséum d'Histoire Naturelle, Paris, Series 4, Section A*, 7 (1), 93–107
- Assis, J.E. de, Alonso, C., Brito, R.J. de, Santos, A.S. dos & Christoffersen, M.L. (2012) Polychaetous annelids from the coast of Paraná State, Brazil. *Revista Nordestina de Biologia*, 21 (1), 3–45.
- Claparède, E. (1868) Les Annélides Chétopodes du Golfe de Naples. *Mémoires de la Société de physique et d'histoire naturelle de Genève*, 19 (2), 313–584.
- Day, J.H. (1963) The Polychaete fauna of South Africa. Part 8: New species and records from grab samples and dredgings. *Bulletin of the British Museum (Natural History)*, Ser. Zoology, 10 (7), 383–445
- Day, J.H. (1967) *A Monograph on the Polychaeta of Southern Africa*. British Museum of Natural History, Publications, London, 878 pp.
- Day, J.H. (1973) *New Polychaeta from Beaufort, with a key to all species recorded from North Carolina*. National Oceanographic and Atmospheric Administration, Technical Report of the National Marine Fisheries Service, Circular, 375, 153 pp.
- De Quatrefages, A. (1865) Note sur la classification des annélides, et réponse aux observations de M. Claparède. *Annales des Sciences Naturelles, cinquième série, Zoologie et Paléontologie*, 3, 253–296.
- De Quatrefages, A. (1866) *Histoire Naturelle des Annélés Marins et d'Eau Douce: Annélides et Géphyriens*. Librairie Encyclopédique de Roret, Paris, volume 2, part 1, 336 pp
- Ehlers, E. (1912) Polychaeta. *National Antarctic Expedition, Natural History, Zoology*, 6, 1–32.
- Ehlers, E. (1913) Die Polychaeten Sammlungen der Deutschen Südpolar-Expedition 1901–1903. *Deutsche Südpolar Expedition*, 13, 397–598.
<http://dx.doi.org/10.5962/bhl.title.58956>
- Engel, B.A. & Morris, N. (1996) Trilobites from the Lower Carboniferous of eastern Australia. *Geologica et Palaeontologica*, 30, 119–145.
- Fauchald, K. (1977) Polychaetes from intertidal areas in Panama, with a review of previous shallow-waters records. *Smithsonian Contributions to Zoology*, 221, 1–85.
<http://dx.doi.org/10.5479/si.00810282.221>
- Fauchald, K. & Jumars, P.A. (1979) The diet of worms: A study of polychaete feeding guilds. *Oceanography and Marine Biology, Annual Review*, 17, 193–284.
- Fauchald, K. & Reimer, A.A. (1975) Clave de poliquetos panameños con la inclusión de una clave para todas las familias del mundo. *Boletín del Instituto de Oceanografía, Universidad de Oriente, Venezuela*, 14, 71–94.
- Gardiner, S.L. (1976) Errant polychaete annelids from North Carolina. *Journal of the Elisha Mitchell Scientific Society*, 91, 77–220.
- Gibbs, P.E. (1971) The polychaete fauna of the Solomon Islands. *Bulletin of the British Museum (Natural History)*, Series Zoology, 21 (5), 101–211.
- Granados-Barba, A. & Solis-Weiss, V. (1997) The polychaetous annelids from oil platforms areas in the southeastern Gulf of Mexico: Phyllodocidae, Glyceridae, Goniadidae, Hesionidae, and Pilargidae, with description of *Ophioglycera lyra*, a new species, and comments on *Goniada distorta* Moore and *Scoloplos texana* Maciolek and Holland. *Proceedings of the Biological Society of Washington*, 110, 457–470.
- Grube, A.E. (1850) Die Familien der Anneliden. *Archiv für Naturgeschichte, Berlin*, 16, 249–364.
- Grube, A.E. (1855) Beschreibung neuer oder wenig bekannter Anneliden. *Archiv für Naturgeschichte*, 21, 81–136.
- Haaland, B. & Schram, T.A. (1982a) Larval development and metamorphosis of *Ophiodromus flexosus* (delle Chiaje) (Hesionidae, Polychaeta). *Sarsia*, 68, 85–96.

- Haaland, B. & Schram, T.A. (1982b) Larval development and metamorphosis of *Gyptis rosea* (Malm) (Hesionidae, Polychaeta). *Sarsia*, 67, 107–118.
- Hall, J.R. & Saloman, C.H. (1975) Distribution and abundance of macroinvertebrate species of six phyla in Tampa Bay, Florida, 1963–64 & 1969. *National Marine Fisheries Service Data Report*, 100, 505 pp.
- Hansen, G.A. (1882) Recherches sur les annélides recueillis par M. le professeur Eduard van Beneden pendant son voyage au Brésil et a La Plata. *Mémoires Couronnés par l'Académie Royale des Sciences de Belgique, Bruxelles*, 44, 1–29.
- Hartman, O. (1951) The littoral marine annelids of the Gulf of Mexico. *Publications of the Institute of Marine Science*, 2, 7–124.
- Hartman, O. (1961) Polychaetous annelids from California. *Allan Hancock Pacific Expeditions*, 25, 1–226.
- Hartman, O. (1964) Polychaeta Errantia of Antarctica. *Antarctic Research Series*, 3, 1–131.
- Hartmann-Schröder, G. (1959) Zur Ökologie der Polychaeten des Mangrove-Estero-Gabietes von El Salvador. *Beiträge zur neotropischen Fauna*, 1, 69–183.
- Hartmann-Schröder, G. (1962) Zweiter Beitrag zur Polychaetenfauna von Peru. *Kieler Meeresforschungen*, 18 (1), 109–147.
- Hartmann-Schröder, G. (1983) Die Polychaeten der antiborealen Südküste Australiens (zwischen Albany im Westen und Ceduna im Osten). Teil 10. In: Hartmann-Schröder, G. and Gerd Hartmann. Zur Kenntnis des Eulitorals der australischen Küsten unter besonderer Berücksichtigung der Polychaeten und Ostracoden. *Mitteilungen aus dem Hamburgischen zoologischen Museum und Institut*, 81, 7–62.
- Hessle, C. (1925) Einiges über die Hesioniden und die Stellung der Gattung *Ancistrosyllis*. *Arkiv för Zoologi*, 17A, 1–36.
- Hilbig, B. (1992) New polychaetous annelids of the families Nereididae, Hesionidae, and Nephtyidae from the Santa Maria basin, California, with a redescription of *Glycera nana* Johnson 1901. *Proceedings of the Biological Society of Washington*, 105, 709–722.
- Hilbig, B. (1994) Family Hesionidae Sars, 1862. In: Blake, J.A. & Hilbig, B. (Eds.), *Taxonomic Atlas of the Benthic Fauna of the Santa Maria Basin and Western Santa Barbara Channel. Vol. 4. Oligochaeta and Polychaeta: Phyllodocida*. Santa Barbara Museum of Natural History, Santa Barbara, pp. 243–269.
- Hoagland, R.A. (1919) Polychaetous annelids from Porto Rico, the Florida Keys and Bermuda. *Bulletin of the American Museum of Natural History*, 41, 517–591.
- Imajima, M. & Hartman, O. (1964) The Polychaetous Annelids of Japan, Part 2. *Allan Hancock Foundation Occasional Papers*, 26, 239–452.
- Johnson, H.P. (1901) The Polychaeta of the Puget Sound region. *Proceedings of the Boston Society of Natural History*, 29, 381–437.
- La Greca, M. (1946) Studi sui Policheti del Golfo di Napoli. *Pubblicazioni della Stazione Zoologica di Napoli*, 20 (3), 270–280.
- Lana, P.C. (1984) *Anelídeos poliquetas errantes do litoral do Estado do Paraná*. Ph. D. Thesis. Instituto Oceanográfico, Universidade de São Paulo, São Paulo, 275 pp.
- Laubier, L. (1961) *Podarkeopsis galangau* n. g., n. sp., Hesionidae des vases cotières de Banyuls-sur-Mer. *Vie et Milieu*, 12, 211–217.
- Malm, A.W. (1874) Annulater i hafvet utmed Sveriges vestkust och omkring Göteborg. *Göteborgs Vetensk. Samh. Handl. n.s.*, 14, 67–105.
- Marion, A.F. (1874) Sur les Annélides du golfe de Marseille. *Comptes Rendu de l'Académie des Sciences*, 79, 398–401.
- Morgado, E.H. & Amaral, A.C.Z. (1984) Anelídeos poliquetos associados ao briozoário *Schizoporella unicornis* (Johnston). IV. Phyllodocidae e Hesionidae. *Revista Brasileira de Zoologia*, São Paulo, 2 (2), 49–54.
<http://dx.doi.org/10.1590/s0101-81751983000200002>
- Müller, F. (1858) Einiges über die Annelidenfauna der Insel Santa Catharina an der brasilianischen Küste. *Archiv für Naturgeschichte, Berlin*, 24, 211–220.
- Muona, J. (2006) To be named or not to be named – *Heteropodarke pleijeli* sp. n. (Annelida, Polychaeta). *Cladistics*, 22, 634–635.
<http://dx.doi.org/10.1111/j.1096-0031.2006.00123.x>
- Nonato, E. (1981) *Contribuição ao Conhecimento dos Anelídeos Poliquetas Bentônicos da Plataforma Continental Brasileira, entre Cabo Frio e o Arroio Chui*. Livre-docência Thesis. Instituto Oceanográfico, Universidade de São Paulo, São Paulo, 246 pp.
- Nonato, E.F. & Luna, J.A.C. (1970) Anelídeos poliquetas do nordeste do Brasil, 1. Poliquetas bentônicos da costa de Alagoas e Sergipe. *Boletim do Instituto Oceanográfico da Universidade de São Paulo*, 19, 59–130.
- Obraztsov, N.S. (1960) Beitrag zur Klassifikation der mitteleuropaischen Olethreutinae (Lepidoptera: Tortricidae). *Beiträge zur Entomologie*, 10 (5–6), 459–485.
- Okuda, S. (1938) Polychaetous annelids from the vicinity of the Mitsui Institute of Marine Biology. *Japanese Journal of Zoology*, 8, 75–105.
- Özdikmen, H. (2009) Nomenclatural changes for twenty trilobites genera. *Munis Entomology and Zoology*, 4, 155–171.
- Parapar, J., Besteiro, C. & Moreira, J. (2004) Família Hesionidae Grube, 1850. In: Viéitez, J.M., Alós, C., Parapar, J., Besteiro, C., Moreira, J., Núñez, J., Laborda, J. & San Martín, G. (Eds.), Annelida, Polychaeta I. In: Ramos, M.A. et al (Ed.), *Fauna Ibérica, vol. 25*. Museo Nacional de Ciencias Naturales, CSIC, Madrid, 210–266.
- Perkins, T.H. (1984) New species of Phyllodocidae and Hesionidae (Polychaeta) principally from Florida. *Proceedings of the Biological Society of Washington*, 97, 555–582.

- Pleijel, F. (1993a) Taxonomy of European species of *Amphiduros* and *Gyptis* (Polychaeta: Hesionidae). *Proceedings of the Biological Society of Washington*, 106, 158–181.
- Pleijel, F. (1993b) *Gyptis crypta*, a new hesionid species from the U.S.A. East coast, with a redescription of *G. vittata* Webster & Benedict, 1887 (Annelida: Polychaeta). *Proceedings of the Biological Society of Washington*, 106, 237–242.
- Pleijel, F. (1998) Phylogeny and classification of Hesionidae (Polychaeta). *Zoologica Scripta*, 27, 89–163.
<http://dx.doi.org/10.1111/j.1463-6409.1998.tb00433.x>
- Pleijel, F. (1999) Phylogenetic taxonomy, a farewell to species, and a revision of *Heteropodarke* (Hesionidae, Polychaeta, Annelida). *Systematic Biology*, 48, 755–789.
<http://dx.doi.org/10.1080/106351599260003>
- Pleijel, F. (2001) Revision of *Amphiduros* Hartman, 1959 (Polychaeta, Hesionidae, Gyptini). *Ophelia*, 54, 15–27.
<http://dx.doi.org/10.1080/00785326.2001.10409453>
- Pleijel, F. & Rouse, G.W. (2000) A new taxon, “*capricornia*” (Hesionidae, Polychaeta), illustrating the LITU (“Least Inclusive Taxonomic Unit”) concept. *Zoologica Scripta*, 29, 157–168.
<http://dx.doi.org/10.1046/j.1463-6409.2000.00041.x>
- Pleijel, F. & Rouse, G.W. (2005) A revision of *Micropodarke* (Psamathini, Hesionidae, Polychaeta). *Journal of Natural History*, 39, 1313–1325.
<http://dx.doi.org/10.1080/00222930400020129>
- Pleijel, F., Rouse, G.W., Sundkvist, T. & Nygren, A. (2012) A partial revision of *Gyptis* (Gyptinae, Ophiodrominae, Hesionidae, Aciculata, Annelida), with descriptions of a new tribe, a new genus and five new species. *Zoological Journal of the Linnean Society*, 165, 471–494.
<http://dx.doi.org/10.1111/j.1096-3642.2012.00819.x>
- Rullier, F. & Amoureux, L. (1979) Campagne de la Calypso au large des côtes atlantiques de l’Amérique du Sud (1961–1962), 33. *Annélides polychètes*. *Annales de l’Institut océanographique*, 55, 145–206.
- Ruta, C. & Pleijel, F. (2006) A revision of *Syllidia* (Psamathini, Hesionidae, Polychaeta). *Journal of Natural History*, 40, 503–521.
<http://dx.doi.org/10.1080/00222930600727291>
- Salazar-Vallejo, S.I. & Orensanz, J.M. (2006–2007) *Pleijelius longae* n. gen., n. sp., a remarkable deep water polychaete from the Northwestern Atlantic (Polychaeta: Hesionidae). *Scientia Marina*, 70 (S3), 157–166.
<http://dx.doi.org/10.3989/scimar.2006.70s3157>
- Salazar-Vallejo, S.I. & Rizzo, A.E. (2009) Hesionidae Grube, 1850 y hesionoides. In: de León-González, J.A., Bastida-Zavala, J.R., Carrera-Parra, L.F., García-Garza, M.E., Peña-Rivera, A., Salazar-Vallejo, S.I., Solís-Weiss, y.V. (Eds.), *Poliquetos (Annelida: Polychaeta) de México y América Tropical*. Universidad Autónoma de Nuevo León, Monterrey, México, pp. 227–243.
- Sars, M. (1862) Uddrag af en af detaillerede Afbildninger ledsaget udførlig Beskrivelse over følgende norske Annelider. *Videnskabs-Selskabet Forhandlinger; Christiania*, 1861, 87–95.
- Schram, T.A. & Haaland, B. (1984) Larval development and metamorphosis of *Nereimyra punctata* (O.F. Müller) (Hesionidae, Polychaeta). *Sarsia*, 69, 169–181.
- Schröder, P.C. & Hermans, C.O. (1975) Reproduction of Marine Invertebrates. In: Giese, A.C. & Pearse, J.S. (Eds.), *Annelida: Polychaeta. Vol. 3*. Academic Press, New York, pp. 1–213.
- Shaffer, P.L. (1979) The feeding biology of *Podarke pugettensis* (Polychaeta: Hesionidae). *Biological Bulletin*, 156, 343–355.
<http://dx.doi.org/10.2307/1540922>
- Taylor, J.L. (1971) *Polychaetous annelids and benthic environments in Tampa Bay, Florida*. Ph.D. Dissertation, University of Florida, Gainesville, Florida, 1332 pp.
- Tenerelli, V. (1973) Recherche sulla Fauna e sulla Zoogeografia della Sicilia, 63. *Ophiodromus longocirrtus* n. sp. (Polychaeta, Hesionidae) del Golfo di Catania. *Bolletino delle sedute della Accademia Gioenia di Scienze Naturali in Catania, Serie 4*, 12, 369–376
- Uebelacker, J.M. (1984) Family Hesionidae Sars, 1862. In: Uebelacker, J.M. & Johnson, P.G. (Eds.), *Taxonomic guide to the polychaetes of the northern Gulf of Mexico. Vol. 4*. Barry A. Vittor and Associates Inc., Mobile, Alabama, Chapter 28, pp. 1–39.
- Verrill, A.E. (1873) Report upon the invertebrate animals of Vineyard Sound and the adjacent waters, with an account of the physical characters of the region. *Report of the United States Commissioner of Fisheries 1871/1872*, 295–778.
- Villalobos-Guerrero, T.F. & Harris, L.H. (2012) *Oxydromus* Grube, 1855 reinstated over *Ophiodromus* Sars, 1862 (Polychaeta, Hesionidae). *ZooKeys*, 241, 21–31.
- Webster, H.E. & Benedict, J.E. (1887) The Annelida Chaetopoda from Eastport, Maine. *Annual Report of the Commissioner of Fish and Fisheries 1885*, 707–758.
<http://dx.doi.org/10.3897/zookeys.241.3820>