

Checklist of Questidae (Clitellata) and Aeolosomatidae (Oligochaeta) from South America

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Abstract: The faunistic assemblage of basal clitellates in South America presently has 2 marine species (*Questa media* Westheide, 1981 and *Aeolosoma maritimum dubiosum* Westheide & Schmidt, 1974), and 15 species of freshwater aeolosomatids: *A. aureum* Marcus, 1944; *A. beddardi* Michaelsen, 1900; *A. corderoi* Du Bois-Reymond Marcus, 1944; *A. evelinae* Marcus, 1944; *A. flavum* Štolc, 1903; *A. gertae* Marcus, 1944; *A. headleyi* Beddard, 1888; *A. hemprichi* Ehrenberg, 1831; *A. hyalinum* Bunke, 1967; *A. marcusii* Van der Land, 1971; *A. sawayai* Marcus, 1944; *A. travancorensis* Aiyer, 1926; *A. variegatum* Vejdovský, 1884; and *A. viride* Stephenson, 1911, and *Hystricosoma pictum* Schmarda, 1861, *species inquirenda*. Eight of these are known only from South America.

Key words: Distribution, lineage of continental annelids, faunistics, checklist, marine and freshwater “polychaetes”

Introduction

A series of catalogues on South American euclitellates have been published recently by me (Christoffersen, 2007a-c, 2008a-f, 2009a-b). I herein include the basal lineages of Clitellata occurring in South America. Their phylogenetic positions among the Clitellata have been treated in another paper (Christoffersen, 2012).

A catalogue of non-marine Polychaeta of the world, including the Aeolosomatidae, was provided by Glasby et al. (2009). Marcus (1944) and Timm (1984) suggested that aeolosomatids should be considered oligochaetes. More recently, Glasby and Timm (2008) and Glasby et al. (2009), however, placed these “enigmatic” worms among the polychaetes.

Materials and methods

(* , species known only from South America)

Results

QUESTIDAE Hartman, 1966

Questa Hartman, 1966

Type species: *Questa caudicirra* Hartmann, 1966.

Synonym: *Novaquesta* Hobson, 1970 (type: *Novaquesta trifurcata* Hobson, 1970).

Questa media Westheide, 1981

Distribution: Galápagos Islands: Santa Cruz, shallow sublittoral (Giere and Erséus, 1998: 353).

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APHANONEURA Vejdovský, 1884

AELOSOMATIDAE Levinsen, 1884

Synonyms: *Naidina* (part) Ehrenberg, 1831; *Naidea* (part), Grube, 1850; *Naides* (part), D'Udekem, 1855; *Schizoneura* P. J. Schmidt, 1897; *Aelosomatidae*, Perrier, 1897.

Aelosoma Ehrenberg, 1831

Type: *A. hemprichi* Ehrenberg, 1831.

Synonyms: *Derostoma* (part), Dugès, 1830; *Oelosoma* D'Udekem, 1859; *Nais?*, Dugès, 1837; *Aeolonais* Gervais, 1838; *Chaetodemus* Leidy, 1852; *Chaetogaster?* (part), Vaillant, 1890; *Pleurophebs* Vaillant, 1890.

**A. aureum* Marcus, 1944

Distribution: URU: Montevideo (Cordero, 1951: 232); BRA: SP: São Paulo: Serra da Cantareira (Marcus, 1944: 15).

Further distribution: Palearctic (Glasby et al., 2009: 32).

A. beddardi Michaelsen, 1900

Synonyms: *A. niveum*, Beddard, 1892, Cordero, 1931, non Leydig, 1865; *A. lucidus* Chen, 1940; ?*Chaetodermus panduratus* Leidy, 1852.

Distribution: ARG: Prov. Corrientes: San Cosme, at Laguna Cabrera (Di Pérsia, 1976: 13); URU: Montevideo: Barra de Santa Lúcia (Cordero, 1931: 343); Dep. De Canelones (Cordero, 1951: 231); BRA: RS: Pelotas (Cordero, 1951: 232); SUR: Lelydorp (Van der Land, 1970: 1).

Further distribution: Palearctic, Nearctic, and Oriental (Glasby et al., 2009: 33).

**A. corderoi* Du Bois-Reymond Marcus, 1944

Distribution: SP: Canindé: Rio Tietê (Du Bois-Reymond Marcus, 1944: 2).

Further distribution: Nearctic (Glasby et al., 2009: 33).

A. evelinae Marcus, 1944

Distribution: ARG: Prov. De Corrientes: Dept. de São Cosme: Laguna Cabrera (Di Pérsia, 1976: 11); Prov. De Santa Fé (Dioni, 1967: 111); Paraná River (Di Pérsia and Radici de Cura, 1973: 309). URU: Montevideo (Dioni, 1961: 107). BRA: SP: São

Paulo (Marcus, 1944: 17). SUR: Paramaribo, Uitkijk, Bernharndsdorp, and Ovenwacht (Van der Land, 1970: 1; 1971: 665).

Further distribution: Palearctic and Nearctic (Glasby et al., 2009: 33).

**A. flavum* Štolc, 1903

Distribution: ARG: Prov. Corrientes: San Cosme: Lagunas Sotelo and Cabrera (Di Pérsia, 1976: 10); Paraná River (Di Pérsia & Radici de Cura, 1973: 309); Prov. Santa Fé (Di Pérsia, 1974: 89).

Further distribution: Palearctic (Glasby et al., 2009: 33).

A. gertae Marcus, 1944

Distribution: SP: São Paulo: Caxingui, Cidade Jardim (Marcus, 1944: 18).

Further distribution: Palearctic (Van der Land, 1971: 672).

A. headleyi Beddard, 1888

Synonyms: *Aelosoma* sp. I Stephenson, 1911; *A. spec.* Aiyer, 1926; *A. quaternarium*, Cordero, 1931; ?*Aelosoma* sp. II Stephenson, 1931; *A. variegatum*, Chen, 1940; *A. pointneri* Marcus, 1944.

Other combination: *A. headleyi headleyi* (Beddard, 1888); *A. headleyi* var. *pointneri*, Dioni, 1961.

Distribution: ARG: Córdoba (Frenzel, 1891: 21; Cognetti, 1905: 4, as *A. quaternarium*); Tucuman (Cordero, 1951: 232); Buenos Aires Prov: Berisso (Pujals, 1988: 125; Gluzman de Pascar, 1989: 8, as *A. quaternarium*). URU: Montevideo: Maldonado: Priápolis (Cordero, 1931: 347, 348; 1951: 252). PAR: Paraguayan Chaco (Stephenson, 1911, 1931). BRA: SP: São Paulo (Marcus, 1944: 16). SUR: Paramaribo, Uitkijk, Lelydorp, Republiik, and Hannover (Van der Land, 1970: 1).

Further distribution: Palearctic, Nearctic, and Oriental (Van der Land, 1971: 677).

A. hemprichi Ehrenberg, 1831

Synonyms: *A. quaternarium* Lankester, 1869 (non Ehrenberg, 1831); *A. ehrenbergi*, D'Udekem, 1858; *A. emprichi*, Ferronière, 1899; *Chaetodemus balsamoi*, Czerniavsky, 1880; *Chaetodermus multisetosus* Czerniavsky, 1880; *A. hemprichi* f. *typica*, Chen, 1940; ?*Derostoma laticeps* Dugès, 1830; ?*A. josephi* Štolc,

1903; *A. hemprichii* var. *kashyapi* Stephenson, 1923; ?*Nais* ?*laticeps*, Dugès, 1837; ?*Chaetogaster* ?*laticeps*, Vaillant, 1890; *A. decorum*, Ehrenberg, 1831; *Aeolonais hemprichi*, Gervais, 1838; *Aeolonais decorum*, Gervais, 1838; *Oelosoma ehrenbergi*, D'Udekem, 1859; *A. balsamo* Maggi, 1866; *A. laticeps*, Van der Land, 1971.

Distribution: ARG: Buenos Aires Prov.: Berisso (Gluzman de Pascar, 1989: 8); Tucumán (Cordero, 1951: 231). URU: Montevideo (Cordero, 1931: 348); Arroyo Colorado (Cordero, 1951: 232). BRA: RS: Pelotas (Cordero, 1951: 231); PR: Curitiba; SP: São Paulo: Caxingui, Cidade Jardim, Itaim, Canindé, Cantareira, Parque Paulista (Marcus, 1944: 21). SUR: Paramaribo, Uitkijk, Lelydorp, Republiek, and Hannover (Van der Land, 1970: 1).

Further distribution: Afrotropical, Palearctic, Nearctic, Oriental, Australasian, and Pacific (Glasby et al., 2009: 33).

**A. hyalinum* Bunke, 1967

Distribution: SUR: Hannover (Van der Land, 1970: 1).

Further distribution: Palearctic and Nearctic (Glasby et al., 2009: 33).

**A. marcusii* Van der Land, 1971

Syn: *A. headleyi*, sensu Marcus, 1944.

Distribution: ARG: Buenos Aires: Rio de La Plata (Gluzman de Pascar, 1994: 346; 1997: 138). BRA: SP: São Paulo: Canindé, Santana, and Caxingui (Marcus, 1944: 20).

**A. maritimum dubiosum* Westheide & Schmidt, 1974

Distribution: Galapagos Islands, interstitial (Westheide and H. Schmidt, 1974: 601).

**A. sawayai* Marcus, 1944

Distribution: ARG: Prov. De Corrientes, Dept. San Cosme: San Cosme (Di Pérsia, 1976: 14). URU: Dept. de Canelones (Dioni, 1961: 108). BRA: PR: Curitiba SP: Santa Rita, Mogi das Cruzes; São Paulo: Pinheiros, Santo Amaro (Marcus, 1944: 24). SUR: Paramaribo, Uitkijk, Onverwacht, Republiek, and Hannover (Van der Land, 1970, 1971: 665).

Further distribution: Palearctic (Glasby et al., 2009: 32).

A. travancorensis Aiyer, 1926

Distribution: ARG: Prov. De Santa Fé: Lago Redondo (Dioni, 1967: 111); Parana River (Di Pérsia and Radici de Cura, 1973). URU: Montevideo BRA: PR: Curitiba; SP: São Paulo: Pinheiros, Itaim, Caxangui, Vila Leopoldina; Emas-Pirassununga; Mogi das Cruzes (Marcus, 1944: 25). SUR: Paramaribo, Uitkijk, Lelydorp, Bernhardsdorp, Onverwacht, Republiek, and Zanderij (Van der Land, 1970: 1; 1971: 665).

Further distribution: Afrotropical, Palearctic, Nearctic, and Oriental (Glasby et al., 2009: 32).

A. variegatum Vejdovský, 1884

Synonym: *A. varium* Beddard, 1895; not Cekanovskaya, 1962 (= *A. tenuidorsum* Baskin, 1928), not Chen, 1940 (= *A. headleyi* Beddard, 1888).

Distribution: SUR (Van der Land, 1971: 681). VEN: Quebrada de la Toma (Botea, 1987: 67).

Further distribution: Afrotropical, Palearctic, and Nearctic (Glasby et al., 2009: 32).

A. viride Stephenson, 1911

Synonym: *A. spec.* Stephenson, 1907.

Distribution: BRA: SP: São Paulo: Pinheiros (Marcus, 1944: 27).

Further distribution: Palearctic (Glasby et al., 2009: 32) and Oriental (Righi, 1984: 18).

Hystricosoma Michaelsen, 1926

Type: *Hystricosoma chappuisi* Michaelsen, 1926.

**Hystricosoma pictum* Schmarda, 1861, *species inquirenda*

Synonym: *Hystricosoma pictum* (Schmarda, 1861).

Distribution: COL: near Cali: Valle di Cauca (Schmarda, 1861: 10; Cognetti, 1905: 4).

Discussion

Fauchald (1977) includes the Questidae, together with Orbiniidae Hartman, 1942 and Paraonidae Cerruti, 1909, in the order Orbiniida. He comments that it is quite possible that the family should be considered among the oligochaetes, although this possibility was precluded by Jamieson and Webb

(1984), who did not find sperm apomorphies of questids with either oligochaetes or euclitellates. Giere and Erséus (1998) suggest that the complexities seen in the reproductive system of questids, including a clitellum, spermathecae, and reduction of gonads to few segments, represent convergences with oligochaetes. Characters leading previous authors to consider questids as polychaetes, such as the presence of nuchal organs, lateral organs, a ventral buccal pad, and the prostomial position of the supraesophageal ganglia (Giere and Riser, 1981; Jamieson and Webb, 1984; Westheide, 1997), are all plesiomorphic characters at this level of analysis. Consequently, there is no longer any need to avoid terms such as

a clitellum for questids (cf. Giere and Erséus, 1998). More recently, Almeida and Christoffersen (2001), Almeida et al. (2003), and Garraffoni and Amorim (2003) identify the Questidae as more closely related to Clitellata than to other polychaetes.

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