



A new species of *Lissodendoryx* (*Anomodoryx*) Burton, 1934 (Porifera: Demospongiae: Poecilosclerida) from deeper waters off the Atlantic coast of Brazil

THAYNÃ CAVALCANTI¹, GEORGE GARCIA SANTOS¹ & ULISSES PINHEIRO^{1,2}

¹Universidade Federal de Pernambuco, Centro de Ciências Biológicas, Departamento de Zoologia, Av. Nelson Chaves, s/n Cidade Universitária CEP 50373-970, Recife, PE, Brazil.

²Corresponding author. E-mail: uspinheiro@hotmail.com

The members of *Lissodendoryx* Topsent, 1892a are recognized by a spicule combination of ectosomal tylotes or strongyles, isodictyal reticulate architecture, arcuate isochelae and sigmas (Hofman & Van Soest 1995; Van Soest 2002). Five subgenera of *Lissodendoryx*, are recognized (Van Soest 2002): *Lissodendoryx* (*Acanthodoryx*) Lévi, 1961, *L. (Anomodoryx)* Burton, 1934, *L. (Ectyodoryx)* Lundbeck, 1909, *L. (Lissodendoryx)* Topsent, 1892a, and *L. (Waldoschmittia)* de Laubenfels, 1936. *Lissodendoryx (Anomodoryx)* is defined by the presence of a single megasclere type (Van Soest 2002). Currently has six recognized species (Van Soest *et al.* 2014) including two from Brazil (Muricy *et al.* 2011): *L. (A.) Recife* (Boury-Esnault, 1973) and *L. (A.) tylota* (Boury-Esnault, 1973). In this paper, a new species of *L. (Anomodoryx)* is described from the mesophotic zone off Bacia Potiguar (Rio Grande do Norte State, Northeastern Brazil). The specimen was preserved in ethanol 80% and deposited in the Porifera Collection of the Universidade Federal de Pernambuco (UFPEPOR).

Order Poecilosclerida Topsent, 1928

Family Coelosphaeridae Dendy, 1922

Genus *Lissodendoryx* Topsent, 1892a

Subgenus *Lissodendoryx (Anomodoryx)* Burton, 1934

Diagnosis *sensu* Van Soest (2002).

Lissodendoryx (Anomodoryx) vulcanus sp. nov.

Holotype. UFPEPOR 1647, Bacia Potiguar (04° 44.8945' S, 36° 25.4571' W), Rio Grande do Norte State, Brazil, depth 108 m, trawl, col. Petrobras, (23.V.2011).

Description of preserved specimen (Fig. 1A–C). Massive or volcano-shaped, 16 x 15 x 4 cm (length x height x width) (Fig. 1A), elastic and compressible consistency. Warty surface, with papillae (2.7mm high) covering the sponge. Two big membranaceous circular oscules (approximately 2 cm in diameter) at the top (Fig. 1A–C). The sponge exudes copious mucus when handled. Color in life is unknown and it is brownish-purple in ethanol. The specimens were collected in the same drag as *Aiolochoxia crassa* (Hyatt, 1875) and stored in the same container. It is possible that the *A. crassa* pigments discoloured the *Lissodendoryx (Anomodoryx)* specimen.

Skeleton: The ectosomal skeleton consists of some strewn tylotes, with abundant fibres, sigmas and arcuate isochelae also concentrated in this region (Fig. 1D). The choanosomal skeleton is a system of anastomosing spongin fibres without any regular architecture (Fig. 1B), the primary (trabeculae) and secondary fibres are cored by tylotes. Raphides are present throughout the mesohyl.

Spicules (Fig. 1E–I; Table 1). Tylotes (263–397.8–550 / 5–7.4–11 µm): large, smooth, straight to sinuously

References

- Boury-Esnault, N. (1973) Résultats Scientifiques des Campagnes de la 'Calypso'. Campagne de la 'Calypso' au large des côtes atlantiques de l'Amérique du Sud (1961–1962). I. 29. Spongiaires. *Annales de l'Institut océanographique*, 49, 263–295.
- Burton, M. (1934) Sponges. *Scientific Reports of the Great Barrier Reef Expedition 1928–29*, 14, 513–621.
<http://dx.doi.org/10.5962/bhl.title.68674>
- Hofman, C.C. & Van Soest, R.W.M. (1995) *Lissodendoryx* species of the Indo-Malayan Archipelago (Demospongiae: Poecilosclerida). *Beaufortia*, 45 (6), 77–103.
- Hyatt, A. (1875) Revision of the North American Poriferae; With remarks upon foreign species. Part I. *Memoirs of the Boston Society of Natural History*, 2, 399–408.
- Muricy, G., Lopes, D.A., Hajdu, E., Carvalho, M.S., Moraes, F.C., Klautau, M., Menegola, C. & Pinheiro, U. (2011) *Catalogue of Brazilian Porifera*. Rio de Janeiro, Museu Nacional, 300 pp. [Série Livros 46]
- Rützler, K., Piantoni, C. & Diaz, M.C. (2007) *Lissodendoryx*: rediscovered type and new tropical western Atlantic species (Porifera: Demospongiae: Poecilosclerida: Coelosphaeridae). *Journal of the Marine Biological Association of the United Kingdom*, 87 (6), 1491–1510.
<http://dx.doi.org/10.1017/s0025315407059243>
- Samaai, T. & Gibbons, M.J. (2005) Demospongiae taxonomy and biodiversity of the Benguela region on the west coast of South Africa. *African Natural History*, 1, 1–96.
- Topsent, E. (1892a) Contribution à l'étude des Spongiaires de l'Atlantique Nord (Golfe de Gascogne, Terre-Neuve, Açores). *Résultats des campagnes scientifiques accomplies par le Prince Albert I. Monaco*, 2, 1–165.
- Topsent, E. (1892b) Diagnoses d'éponges nouvelles de la Méditerranée et plus particulièrement de Banyuls. *Archives de Zoologie expérimentale et générale*, 10, 17–28.
- Van Soest, R.W.M. (2002) Family Coelosphaeridae Dendy, 1922. In: Hooper, J.N.A. & van Soest, R.W.M. (Eds.), *Systema Porifera. A guide to the classification of sponges. Vol. 1*. Kluwer Academic / Plenum Publishers, New York, pp. 528–546.
- Van Soest, R.W.M., Boury-Esnault, N., Hooper, J.N.A., Rützler, K., de Voogd, N.J., Alvarez, B., Hajdu, E., Pisera, A.B., Vacelet, J., Manconi, R., Schoenberg, C., Janussen, D., Tabachnick, K.R. & Klautau, M. (2014) World Porifera database. Available from: <http://www.marinespecies.org/porifera/> (accessed 3 May 2014)