

Case 3485***Lychnorhiza lucerna* Haeckel, 1880 (Cnidaria, Scyphozoa, Rhizostomeae): proposed conservation of generic and specific names**

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Abstract. The purpose of this application, under Article 23.9.3 of the Code, is to conserve the generic name *Lychnorhiza* Haeckel, 1880 for a genus of scyphozoan jellyfish (Cnidaria, Scyphozoa) from Central and South America and the Malayan Archipelago. The name is threatened by a senior synonym, *Rhacopilus* Agassiz, 1862, unused since its original description. It is also proposed to conserve the specific name *Lychnorhiza lucerna* Haeckel, 1880 (type species of the genus *Lychnorhiza*). The nomenclatural stability of this name is threatened by a senior subjective synonym, *Rhizostoma cruciata* Lesson, 1830.

Keywords. Nomenclature; taxonomy; Cnidaria; Scyphozoa; Rhizostomeae; LYCHNORHIZIDAE; *Lychnorhiza*; *Rhizostoma*; *Lychnorhiza lucerna*; *Rhizostoma cruciata*; scyphozoan jellyfish; Central and South America; Malayan Archipelago.

1. Lesson (1830, pp. 121–122) introduced the nominal species *Rhizostoma cruciata* based on specimens from the Brazilian coast (Santa Catarina State, Southern Region). The description does not mention the arrangement of the gastrovascular canals and thus could refer to any member of the group Inscapulatae, proposed by Stiasny in 1921. So far as can be ascertained, the type material studied by Lesson is lost or was never deposited in any collection (J. Goy, Institut Océanographique Paris, pers. comm.). Lesson (1843, p. 419) reiterated the original description.

2. Agassiz (1862, pp. 152–153) had access to an unpublished manuscript by J.P. Couthouy describing *Rhizostoma cyanolobata* from Rio de Janeiro Harbour, Brazil, and referred this species and *Rhizostoma cruciata* Lesson to the new genus *Rhacopilus* Agassiz, 1862 (p. 152), as *Rhacopilus cyanolobatus* Agassiz, 1862 (no type specimens are known to exist) and *Rhacopilus cruciatus*. Here, acting as First Reviser (Article 24.2 of the Code), I designate *Rhizostoma cruciata* Lesson, 1830 as the type species of the genus *Rhacopilus* Agassiz, 1862.

3. Haeckel (1880) proposed the new family LYCHNORHIZIDAE (p. 586), to accommodate the monotypic genus *Lychnorhiza* Haeckel, 1880 (p. 587) and the species *Lychnorhiza lucerna* Haeckel, 1880 (pp. 587–588) based on a single specimen (Zoological Museum Berlin, ZMB CNI 1170) from Rio de Janeiro, Southeastern Region, Brazil. In the same monograph, he established the genus *Cramborhiza* Haeckel, 1880 (p. 633), to accommodate the species *Cramborhiza flagellata* Haeckel, 1880 (p. 646) (Zoological Museum of the University of Copenhagen, ZMUC unnumbered), also found on the Brazilian coast in Pernambuco State,

Northeastern Region. In the same monograph the author commented on similarities in the morphology of the two species. Haeckel (1880, p. 620), using only the original description and information available in Agassiz (1862), included the species *Rhacopilus cruciatus* (Lesson, 1830) in the genus *Crambessa* Haeckel, 1869 (type species *Crambessa tagi* Haeckel, 1869, now *Catostylus tagi*, for which no type material exists) stating that *Rhacopilus cyanolobatus* Agassiz, 1862 and *Rhizostoma cruciata* Lesson, 1830 were conspecific. The name *cyanolobatus* Agassiz, 1862 has not been used as valid since 1899 (which meets the conditions of Article 23.9.1.1 of the Code), and the conditions of Article 23.9.1.2 are also met for *Lychnorhiza lucerna*; thus it is possible to apply Article 23.9.2 of the Code and declare the name *cyanolobatus* Agassiz, 1862 a nomen nudum.

4. Vanhöffen (1888, pp. 29–30) synonymised *Cramborhiza* with *Lychnorhiza* after having access to additional material from the Brazilian coast, but regarded *Cramborhiza flagellata* Haeckel, 1880 as distinct from *Lychnorhiza lucerna*. He commented on great similarity of *Cramborhiza flagellata* to *Lychnorhiza lucerna*, but mentioned that he could not solve the problem owing to inaccessibility of the type specimen of *Lychnorhiza lucerna*.

5. Mayer (1910, pp. 673–674), based on Vanhöffen's data, synonymised *Cramborhiza flagellata* under *Lychnorhiza lucerna*, arguing that the differences mentioned by previous authors were merely based on different developmental stages. Mayer (1910) referred the species *Rhizostoma cruciata* to the genus *Catostylus* Agassiz, 1862 (type species *Cephea mosaica* Quoy & Gaimard, 1824, now *Catostylus mosaicus*, neotype specimen G16878 in the Australian Museum).

6. Stiasny (1923, pp. 235–238), with the type specimens of *Cramborhiza flagellata* and *Lychnorhiza lucerna* at hand, agreed with Mayer that the two species were conspecific.

7. Vannucci (1951, pp. 94–95) described specimens of *Lychnorhiza lucerna* from the south and southeastern coasts of Brazil, and she also considered *Cramborhiza flagellata* and *Lychnorhiza lucerna* to be conspecific.

8. Kramp (1955, p. 167) re-examined the type specimen of *Cramborhiza flagellata* Haeckel deposited in the Copenhagen Museum (ZMUC unnumbered) and also considered that *Cramborhiza flagellata* and *Lychnorhiza lucerna* were conspecific.

9. Kramp (1961, pp. 366–367), in his synopsis of the medusae of the world, presented brief diagnoses and synonymies of the three *Lychnorhiza* species described up to that date: *Lychnorhiza arubae* Stiasny, 1920, *Lychnorhiza lucerna* Haeckel, 1880 and *Lychnorhiza malayensis* Stiasny, 1920. Kramp (1961, p. 370) also listed *Catostylus cruciatus* (Lesson, 1830).

10. Goy (1979, p. 292), while studying specimens from the Western South Atlantic Ocean (off Uruguay coast), identified five specimens as *Catostylus cruciatus*.

11. Mianzan & Cornelius (1999, p. 545) considered the species *Catostylus cruciatus* and *Lychnorhiza lucerna* conspecific, but were in some doubt about the synonymy because they did not examine the type specimens. Silveira & Cornelius (2000, p. 11, Tab. I) considered the record of *Catostylus cruciatus* doubtful. To confirm the identifications and synonymy the type specimens of *Cramborhiza flagellata* (ZMUC unnumbered), *Lychnorhiza lucerna* (ZMB CNI 1170), and the only available specimens identified as *Catostylus cruciatus* (deposited at the Muséum National d'Histoire Naturelle, MNHN Inv. M. 1719) were examined. The conclusion is that all

specimens belong to the same species. This resulted in a revision of the genus *Lychnorhiza* Haeckel, 1880 (Morandini, in prep.). This application is submitted to coincide as closely as possible with the publication of this revision.

12. The combination *Catostylus cruciatus* (Lesson, 1830) has been used only eight times in the literature, mainly in lists. Only Lesson (1830) and Goy (1979) mentioned collected specimens under this combination. In contrast, the name *Lychnorhiza lucerna* Haeckel, 1880 has been used more than four times more in literature (33 papers up to July 2009) and in more recent papers (Mianzan & Cornelius, 1999; Silveira & Cornelius, 2000; Schiariti et al., 2008).

13. In order to conserve the widely used generic name *Lychnorhiza* Haeckel, 1880, I propose that the name *Rhacopilus* Agassiz, 1862 is suppressed under Article 23.9.2 of the Code, as this name has not been used as valid since 1899 (Article 23.9.1.1). Regrettably, the junior synonym (*Lychnorhiza* Haeckel, 1880) does not meet all the requirements of Article 23.9.1.2, and therefore a ruling by the Commission is necessary to maintain the uniform use of *Lychnorhiza*. If the Principle of Priority is strictly followed, then the change must be performed, and it will generate confusion regarding the usage of the generic name as the junior synonym (*Lychnorhiza*) is widely used in research other than systematics (see more below).

14. In order to maintain stability in the nomenclature of this group I propose that the name *Lychnorhiza lucerna* Haeckel, 1880 be conserved by suppression of *Rhizostoma cruciata* Lesson, 1830. Again, strict adherence to the Principle of Priority will fail to recognise the most used name (an old problem in nomenclature – see support for the maintenance of the most familiar name in Howden et al., 1968 and Cornelius, 1987). Repercussion of the rejection of the most used junior synonym (*Lychnorhiza lucerna*) will cause much confusion in literature, because the name *Lychnorhiza lucerna* is extensively applied in papers on ecology, faunal lists, reproduction, life cycle, and acoustic characterisation. The species is one of the commonest jellyfishes along the Argentinean and Brazilian coasts (Morandini et al., 2005; Schiariti et al., 2008), and is used regularly as material for practical zoology courses, especially in Brazil (Haddad, 2006, pp. 42–43).

15. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to suppress the following names for the purposes of the Principle of Priority, but not for those of the Principle of Homonymy:
 - (a) *Rhacopilus* Agassiz, 1862;
 - (b) *cruciata* Lesson, 1830, as published in the binomen *Rhizostoma cruciata*, and all the uses of this name before 1880;
- (2) to place on the Official List of Generic Names in Zoology the name *Lychnorhiza* Haeckel, 1880 (gender: feminine), type species by original designation *Lychnorhiza lucerna* Haeckel, 1880;
- (3) to place on the Official List of Specific Names in Zoology the name *lucerna* Haeckel, 1880, as published in the binomen *Lychnorhiza lucerna* and as defined by the holotype ZMB CNI 1170 in the Zoological Museum Berlin (specific name of the type species of *Lychnorhiza* Haeckel, 1880);
- (4) to place on the Official Index of Rejected and Invalid Generic Names in Zoology the name *Rhacopilus* Agassiz, 1862 as suppressed in (1)(a) above;

- (5) to place on the Official Index of Rejected and Invalid Specific Names in Zoology the name *cruciata* Lesson, 1830, as published in the binomen *Rhizostoma cruciata* and as suppressed in (1)(b) above.

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References

- Agassiz, L. 1862. *Contributions to the Natural History of the United States of America, IV*. 380 pp. Little, Brown & Co., Boston.
- Cornelius, P.F.S. 1987. Use versus priority in zoological nomenclature: a solution for an old problem. *Bulletin of Zoological Nomenclature*, **44**: 79–85.
- Goy, J. 1979. Campagne de la Calypso au large des côtes atlantiques de l’Amérique du Sud (1961–1962) – 35. Méduses. *Résultats scientifiques des campagnes de la Calypso*, **11**: 263–296.
- Haddad, M.A. 2006. Cnidaria. Pp. 26–53 in Ribeiro-Costa, C.S. & Rocha, R.M. (Coords), *Invertebrados. Manual de aulas práticas*, 2nd edition. Holos Editora, Ribeirão Preto.
- Haeckel, E. 1869. Ueber die Crambessiden, eine neue Meduse-Familie aus der Rhizostomeengruppe. *Zeitschrift für wissenschaftliche Zoologie*, **19**: 509–537.
- Haeckel, E. 1880. *Das System der Medusen. I, 2: System der Acraspeden*. Pp. 361–672. Gustav Fischer, Jena.
- Howden, H.F., Evans, H.E. & Wilson, E.O. 1968. A suggested revision of nomenclatural procedure in animal taxonomy. *Systematic Zoology*, **17**: 188–191.
- Kramp, P.L. 1955. A revision of Ernst Haeckel’s determinations of a collection of medusae belonging to the Zoological Museum of Copenhagen. *Deep-Sea Research*, **3**(Suppl.): 149–168.
- Kramp, P.L. 1961. Synopsis of the medusae of the world. *Journal of the Marine Biological Association of the United Kingdom*, **40**: 7–469.
- Lesson, R.P. 1830. Zoophytes. Pp. 67–83 in Lesson, M., *Voyage autour du monde, exécuté par ordre du Roi, sur la corvette de sa Majesté, La Coquille, pendant les années 1822, 1823, 1824 et 1825, Vol. II, 2e partie (Zoologie), 2e division*. Arthus Bertrand, Paris.
- Lesson, R.P. 1843. *Histoire naturelles des Zoophytes. Acalèphes*. 596 pp. Paris.
- Mayer, A.G. 1910. *The Medusae of the world III. The Scyphomedusae*. Pp. 499–735. Carnegie Institution of Washington, Publication 109, Washington.
- Mianzan, H.W. & Cornelius, P.F.S. 1999. Cubomedusae and Scyphomedusae. Pp. 513–559 in Boltovskoy, D. (Ed.), *South Atlantic Zooplankton*, vol. 1. Backhuys Publishers, Leiden.
- Morandini, A.C., Ascher, D., Stampar, S.N. & Ferreira, J.F.V. 2005. Cubozoa e Scyphozoa (Cnidaria: Medusozoa) de águas costeiras do Brasil. *Iheringia, Série Zoologia*, **95**: 281–294.

- Quoy, J.R.C. & Gaimard, J.P.** 1824. Des Zoophytes ou Animaux rayonnés. Pp. 559–571 in de Freycinet, M.L. (Ed.), *Voyage autour du monde, entrepris par ordre du roi, sous le ministère et conformément aux instructions de s. exc. m. le vicomte du Bouchage, secrétaire d'état au département de la marine, exécuté sur les corvettes de SM l'Uranie et la Physicienne, pendant les années 1817, 1818, 1819 et 1820. Zoologie IV.* l'Imprimerie Royale, Paris.
- Schiariti, A., Kawahara, M., Uye, S. & Mianzan, H.** 2008. Life cycle of the jellyfish *Lychnorhiza lucerna* (Scyphozoa: Rhizostomeae). *Marine Biology*, **156**: 1–12.
- Silveira, F.L. da & Cornelius, P.F.S.** 2000. Novas observações sobre medusas (Cnidaria, Scyphozoa, Rhizostomeae) no Nordeste e Sul do Brasil. *Acta Biologica Leopoldensia*, **22**(1): 9–18.
- Stiasny, G.** 1920. Die Scyphomedusen-Sammlung des Naturhistorischen Reichsmuseums in Leiden. III. Rhizostomeae. *Zoologische Mededeelingen*, **5**: 213–230.
- Stiasny, G.** 1921. Das System der Rhizostomae. *Tijdschrift der Nederlandsche Dierkundige Vereeniging*, **18**: 93–99.
- Stiasny, G.** 1923. XIII. Ergebnisse der Nachuntersuchung einiger Rhizostomeen-typen Ehrenberg's, Haeckel's und Vanhöffen's aus den Zoologischen Museen im Berlin und Königsberg. *Zoologische Mededeelingen*, **7**: 225–242.
- Vanhöffen, E.** 1888. Untersuchungen über semäostome und rhizostome Medusen. *Bibliotheca Zoologica*, **1**(3): 5–52.
- Vannucci, M.** 1951. Hydrozoa e Scyphozoa existentes no Instituto Paulista de Oceanografia. I. *Boletim do Instituto Paulista de Oceanografia*, **2**(2): 69–104.

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