

SAGARTIA LUCIAE VERRILL, 1898 (COELENTERATA, ACTINIARIA): PROPOSED CONSERVATION BY THE USE OF THE RELATIVE PRECEDENCE PROCEDURE. Z.N.(S.)2363

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The validity of the long and widely used specific name *luciae* Verrill, 1898, as published in the binomen *Sagartia luciae*, is threatened by at least two and possibly three prior specific names: *pustulata* McMurrich, 1887, as published in the binomen *Sagartia pustulata*; *lineata* Verrill, 1869, as published in the binomen *Sagartia lineata*; and *cavernata* Bosc, 1802, as published in the binomen *Actinia cavernata*. From 1898 to 1978 the specific name *luciae* Verrill, 1898, has never been employed as a junior synonym of these or any other prior names. Nomenclatural stability will be served best by giving nomenclatural precedence to the specific name *luciae* Verrill, 1898, whenever prior specific names are regarded as denoting the same biological taxon.

2. The intertidal sea anemone currently known as *Diadumene* (or *Haliplanella*) *luciae* is among the most widely distributed and studied of all coelenterates. It might now be the most widely distributed of all intertidal marine invertebrates (Dr L. L. Minasian, personal communication), and at sites where it is present it usually occurs in abundance (e.g. Verrill, 1898; Hargitt, 1912). Under the specific name *luciae* it is cited in the primary zoological literature at least 125 times by 76 authors in 56 of the last 82 years, including 29 of the last 32 years, and every year from 1963 to 1980. From 1950 to the present it is documented by the name *luciae* in at least 31 publications that are primarily ecological or distributional, in 13 that are primarily taxonomic, and in 34 that are primarily physiological or morphological in emphasis. (Ten of these works use *luciae* as a valid name: Carlgren, 1952; Stephenson & Stephenson, 1952; Hedgpeth, 1954; Pax & Muller, 1962; Calder, 1972; Belem & Monteiro, 1977; Dunn & Hand, 1977; Honma & Kitami, 1978; Williams, 1979; Minasian, 1980.) In contrast, the specific name *pustulata* McMurrich, 1887, appears in two later taxonomic discussions (McMurrich, 1921, p. 737, footnote; Hand, 1956, p. 217), in a key (Parker, 1900, p. 754), and with a question mark in a list (Carlgren, 1949, p. 102). It is never used as a senior synonym of *luciae*. The specific name *lineata* Verrill, 1869, is cited in five subsequent publications. McMurrich (1921, p. 737), Uchida (1932, p. 73) and Hand (1956, p. 217) remarked that *lineata* might be a senior synonym of *luciae*, but only recently has *lineata* been formally proposed or employed as a valid name for the species under consideration (Williams, 1978, p. 17; 1980, p. 84). The specific name *cavernata* Bosc, 1802, is often cited in the literature, but never as a synonym of *luciae*.

3. McMurrich, 1921, was unable to decide whether or not the unstriped animals that he had described in 1887 as *Sagartia pustulata* were

conspecific with *Sagartia luciae* Verrill, 1898. No type material of *pustulata* exists (McMurrich, 1921, p. 733). External features aside, *Diadumene luciae* differs from its congeners primarily by the microstructural characteristics of everted nematocysts from acontia (Hand, 1956) and from catch tentacles (Seaton, unpublished). These characters, as well as the peculiarities of external morphology, texture and coloration attributed to *pustulata* (McMurrich, 1887, p. 60), exist in certain clones of unstriped *Diadumene luciae* from the Atlantic and Gulf of Mexico coasts of Florida (Seaton, unpublished). As Hand anticipated (1956, p. 217), re-examination of McMurrich's *pustulata* morphotype points to that specific name as a prior synonym of *Sagartia luciae* Verrill, 1898.

4. I concur with Williams, 1978, that the original description of *Sagartia lineata* (Verrill, 1869, p. 57) is diagnostic of the species described as *Sagartia luciae* Verrill, 1898. This is perhaps the only actiniarian species that in many cases can be identified with reasonable certainty by a color pattern alone: orange intermesenterial stripes (cf. Hand, 1956, p. 218). As Williams noted, Verrill, 1869, in fact described two of the four color 'races' recorded by Uchida, 1936, p. 895 (numbers one and four); but the stripes in Uchida's animals were orange or yellowish white, not red or pink as in Verrill's animals (1869, p. 57). It seems a minor distinction, yet one wonders why previous authors hesitated to assign validity to *lineata*. To my knowledge such red stripes, assuming that they are entirely red and not merely red distally, are uncommon, and also unknown in the literature after 1869 except for a color painting in Gosner, (1979, plate 12). I have seen such red-striped animals once, in a clone from Cameron, Louisiana.

5. Uchida, 1932, p. 71, remarked that along with *lineata* three other of Verrill's 1869 species might be identified with *luciae*: *Sagartia radiata*, *Sagartia* sp., and *Sagartia* (?) *Napensis* [sic]. Uchida concluded that none of these, including *lineata*, could be accurately determined from Verrill's descriptions. With the exception of *lineata*, Uchida's judgement in this regard seems unquestionable.

6. The oldest reasonably certain record of the species under consideration might be the '*Actinia cavernosa* Bosc' of McCrady (1858, p. 275, 3 figs.), an incorrect subsequent spelling of the specific name *cavernata* Bosc, 1802. The specific name *cavernosa* is thus unavailable. Nothing in McCrady's paper demonstrates 'intent' to change the spelling in the sense of Article 33b (i) of the third edition of the Code. The identity of *Actinia cavernata* Bosc, 1802, is uncertain. Although Bosc's description and illustration (second edition, 1830, p. 260, plate 13 fig. 2) indicate similarities to *Diadumene luciae* (e.g. size, column texture, color pattern, habitat and abundance), like Andres (1881b, pp. 125-127) I recognize in Bosc's *cavernata* a stronger resemblance to *Aiptasiogeton comatus* (= *Paractis comata* Andres, 1881a) than to any other species. (In his 1883 monograph, Rome edition, pp. 166, 167, 240, Andres changed his mind.) Bosc's *cavernata* and McCrady's *cavernosa* were both collected in the Carolinas and have previously been considered synonyms (Verrill, 1864, p. 17;

Andres, 1883, p. 240; McMurrich, 1887, p. 62). Combined, the original descriptions of *cavernata* and *cavernosa* could only apply to *Diadumene luciae* among known Western Atlantic actinarians, but taxonomic arguments based on such reasoning do not compel assent.

7. A *prima facie* case (Bull. zool. Nom. vol. 31 (2), pp. 87–88) exists for suppressing the specific name *pustulata* McMurrich, 1887, but not for *lineata* Verrill, 1869. The specific name *cavernata* Bosc, 1802, cannot be suppressed without endorsement of uncertain taxonomic judgements. In view of the well established usage of the specific name *luciae* and the confusion that would ensue were any prior name to be substituted for it, it seems appropriate and parsimonious to request conservation under the 'relative precedence' procedure.

8. The International Commission on Zoological Nomenclature is accordingly requested:

(1) to use its plenary powers to rule that the specific name *luciae* Verrill, 1898, as published in the binomen *Sagartia luciae*, is to be given nomenclatural precedence over the specific names *pustulata* McMurrich, 1887, as published in the binomen *Sagartia pustulata*; *lineata* Verrill, 1869, as published in the binomen *Sagartia lineata*; and *cavernata* Bosc, 1802, as published in the binomen *Actinia cavernata*, whenever it and any one of them are treated as synonyms;

(2) to place on the Official List of Specific Names in Zoology:

- (a) *luciae* Verrill, 1898, as published in the binomen *Sagartia luciae*, with an endorsement that it is to be given nomenclatural precedence as ruled under the plenary powers in (1) above;
- (b) *pustulata* McMurrich, 1887, as published in the binomen *Sagartia pustulata*;
- (c) *lineata* Verrill, 1869, as published in the binomen *Sagartia lineata*;
- (d) *cavernata* Bosc, 1802, as published in the binomen *Actinia cavernata*;

each with an endorsement that it is not to be given priority over the specific name *luciae* Verrill, 1898, as published in the binomen *Sagartia luciae* when it is considered a synonym thereof.

REFERENCES

- ANDRES, A. 1881a. Prodrum neapolitanae actiniarum faunae, addito generalis actiniarum bibliographiae catalogo. *Mittheil. zool. Stat. Neapel*, vol. 2, pp. 305–371.
- 1881b. Intorno alla scissiparita delle attinie. *Mittheil. zool. Stat. Neapel*, vol. 2, pp. 305–371.
- 1883. *Le Attinie*, Reale Accademia dei Lincei (1882–1883), Rome. (x, +460 pp. Pagination in this Rome edition differs from other Rome (1883) and Leipzig (1884) editions.)

- BELEM, M. J. C. & MONTEIRO, D. C. 1977. Contribucoes ao conhecimento da fauna de cnidarios de Rio de Janeiro. II. *Haliplanella luciae* (Verrill, 1898), una nova occurencia no Brazil. *Univ. fed. Rio de Janeiro, Inst. Biol., Dept. Zool.* separate 26, pp. 1–19.
- BOSC, L. A. G. 1802. *Histoire naturelle des vers, contenant leur description et leurs moeurs; avec figures dessinées d'après nature*, 3 vols., Paris, Déterville.
- 1830. *Histoire naturelle des vers...* (second edition, 3 vols.) Librairie Encyclopédique de Roret, Paris.
- CALDER, D. R. 1972. Cnidaria of the Chesapeake Bay. *Chesapeake Sci.* vol. 13 (Suppl), pp. 100–102.
- CARLGREN, O. 1949. A survey of the Ptychodactiaria, Corallimorpharia, and Actiniaria. *K. svenska Vetensk. Handl.* (4) vol. 1 (1), pp. 1–121.
- 1952. Actiniaria from North America. *Ark. Zool.* (2) vol. 3 (30), pp. 373–390.
- DUNN, D. F. & HAND, C. 1977. *Haliplanella* Treadwell, 1943 (Polychaeta): Request for suppression under the plenary powers in favour of *Haliplanella* Hand, 1955 (Anthozoa). *Bull. zool. Nom.* vol. 34, pp. 94–97.
- GOSNER, K. L. 1979. *A field guide to the Atlantic seashore*, Houghton Mifflin Co., Boston.
- HAND, C. 1956. The sea anemones of central California. Part III. The acontiarian anemones. *Wasmann J. Biol.* vol. 13, (for 1955) pp. 189–251.
- HARGITT, C. W. 1912. The Anthozoa of the Woods Hole region. *Bull. U.S. Bur. Fish.* vol. 32, pp. 223–254.
- HEDGPETH, J. W. 1954. Anthozoa: The anemones. *Fish. Bull. U.S. Fish Wildl. Serv.* vol. 55, pp. 285–290.
- HONMA, Y. & KITAMI, T. 1978. Fauna and flora in the waters adjacent to the Sado Marine Biological Station, Niigata University. *Ann. Rep. Sado mar. Biol. Stn., Niigata Univ.* no. 8, pp. 7–81.
- McCRADY, J. 1858. Instance of incomplete longitudinal fission in *Actinia cavernosa* Bosc. *Proc. Elliott Soc. Sci. Art.* vol. 1, pp. 275–278.
- McMURRICH, J. P. 1887. Notes on Actiniae obtained at Beaufort, N.C. *Stud. biol. Lab. Johns Hopkins Univ.* vol. 4, pp. 55–63.
- 1921. Note on the systematic position and distribution of the actinian *Sagartia luciae*. *Proc. zool. Soc. Lond.* (1921), pp. 729–739.
- MINASIAN, L. L. 1980. The distribution of proliferating cells in an anthozoan polyp, *Haliplanella luciae* (Actiniaria: Acontiarina), as indicated by 3H-thymidine incorporation. Pp. 415–420. In P. Tardent & R. Tardent, eds., *Developmental and Cellular Biology of Coelenterates*, Elsevier/North-Holland Biomedical Press, Amsterdam.
- PARKER, G. H. 1900. Synopses of North American invertebrates. XIII. The Actiniaria. *Amat. Nat.* vol. 34, pp. 747–758.
- PAX, F. & MULLER, I. 1962. Die Anthozoenfauna der Adria. *Fauna Flora Adriat.* vol. 3, pp. 1–343.
- STEPHENSON, T. A. & STEPHENSON, A. 1952. Life between tide marks in North America. Part II. Northern Florida and the Carolinas. *J. Ecol.* vol. 40, pp. 1–49.
- UCHIDA, T. 1932. Occurrence in Japan of *Diadumene luciae*, a remarkable actinian of rapid dispersal. *J. Fac. Sci. Hokkaido imp. Univ.* (6) vol. 2, pp. 69–82.
- 1936. Influence of the currents upon the distribution of races and frequency of asexual reproduction in the actinian, *Diadumene luciae*. *Zool. Mag., Tokyo*, vol. 48, pp. 895–906.

- VERRILL, A. E. 1864. Revision of the polypi of the eastern coast of the United States. *Mem. Boston Soc. nat. Hist.* vol. 1, pp. 1–45.
- 1869. Synopsis of the polyps and corals of the North Pacific Exploring Expedition, under Commodore C. Ringgold and Capt. John Rogers, U.S.N., from 1835 to 1856. Collected by Dr Wm. Stimpson, naturalist to the expedition. Part IV. Actiniaria. *Essex Inst. (Salem, Mass.) Commun.* vol. 6, pp. 51–104.
- 1898. Descriptions of new American Actinians, with critical notes on other species, I. *Am. J. Sci.* (4) vol. 6, pp. 493–498.
- WILLIAMS, R. B. 1978. A comment on the request for suppression of *Haliplanella* Treadwell (Polychaeta) in favour of *Haliplanella* Hand (Anthozoa). *Bull. zool. Nom.* vol. 35, pp. 17–18.
- 1979. A survey of the littoral anthozoa, with additional notes on some other marine invertebrates of Gower, South Wales. *Nature Wales* vol. 16, pp. 253–266.
- 1980. A further note on catch tentacles in sea anemones. *Trans. Norfolk Norwich Nat. Soc.* vol. 25, pp. 84–86



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