PROPOSALS TO CONSERVE OR REJECT NAMES

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(2686) Proposal to conserve the name *Alexandrium* against *Blepharocysta* (*Dinophyceae*)

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(2686) ***Alexandrium*** Halim in Vie & Milieu, Sér. A, Biol. Mar. 11: 102. 1960, nom. cons. prop.
Typus: *A. minutum* Halim

(=) *Blepharocysta* Ehrenb. in Festschrift Hundertjähr. Bestehens Ges. Naturf. Freunde Berlin: 4. 1873, nom. rej. prop.
Typus: *B. splendor-maris* (Ehrenb.) Ehrenb. (*Peridinium splendor-maris* Ehrenb.).

Christian Gottfried Ehrenberg (1795–1876) established a collection of "Infusionsthierchen" (motile microscopic algae and protists) on microscopic mica preparations embedded in Canada balsam, along with detailed information about where and when the specimens were collected. He also produced minute detailed drawings from his microscopic observations and specimens. Accordingly, original material is available in the Institut für Paläontologie, Museum für Naturkunde, Berlin (BHUPM) for almost all names.

In 1860, Ehrenberg (in Monatsber. Königl. Preuss. Akad. Wiss. Berlin 1859: 727–738, 791–793. 1860) described a new dinophyte species as "*Peridinium Splendor Maris*" including a Latin description and the explicit statement that original material, drawings as well as specimens, are available (Ehrenberg, l.c. 1860: 734, "Auf Glimmer zahlreich angetrocknete Exemplare des *Peridinium* konnten noch jetzt unter dem Mikroskop sammt den Zeichnungen der lebenden vorgelegt werden" [numerous specimens of this *Peridinium*, dried on mica, could be yet presented under the microscope, together with drawings of the alive ones]). Elbrächter & al. (in Notulae Algarum 60: 1–6. 2018) documented the original material and selected one of the mica preparations as lectotype, namely mica 290102-1 (BHUPM!). The description was supplemented by environmental information and the report of bioluminescence.

Thirteen years after he had published the description of *Peridinium splendor-maris*, Ehrenberg (in Festschrift Hundertjähr. Bestehens Ges. Naturf. Freunde Berlin: 4, pl. I. 1873) introduced the new generic name *Blepharocysta* Ehrenb., along with a print of his drawings of *P. splendor-maris* from "1859". The generic name is available under the *ICZN* (Ride & al., Int. Code Zool. Nomencl., ed. 4. 1999 & http://www.nhm.ac.uk/hosted-sites/iczn/code/) following the example of Art. 11.8 (Ride & al., l.c.) and is thus also validly published under the *ICN* (Turland & al. in Regnum Veg. 159. 2018: Art. 45.1). *Blepharocysta* was monotypic at this time and included only *Peridinium splendor-maris* implicitly by context (Ride & al., l.c.; *ICZN* Art. 11.9.3). The species name is available under the *ICZN* as *Blepharocysta splendormaris* (Ehrenberg, l.c. 1873) (*ICZN* Art. 32.5.2.2), and validly published also under the *ICN* as *Blepharocysta splendor-maris* (Ehrenb.) Ehrenb. (*ICN* Art. 60.11). The wrong authorship: "(Ehrenb.) F. Stein" occurs in several publications (e.g., Farr & al., Index Nominum Genericorum 1: 210. 1979; Elbrächter & al., l.c.; Carbonell-Moore in Taxon 67: 633–635. 2018), due to a failure to recognise the availability of the name under the *ICZN*. *Blepharocysta splendor-maris* is the type of the generic name *Blepharocysta* (*ICN* Art. 10.3, 38.6).

The nomenclatural status and type of *Blepharocysta* were very straightforward until Stein (Organism. Infusionsthiere 3.2: 21, t. VII 17–19, VIII 3–5. 1883) misapplied the name in his seminal work. Each of Friedrich von Stein's (1818–1885) images and published characters are doubtlessly different from Ehrenberg's taxon (Carbonell-Moore, l.c.); it is particularly the cingulum that is present in *B. splendor-maris* (Ehrenberg, l.c. 1860) but absent in Stein's taxonomic concept (see Elbrächter & al., l.c., for details). Subsequent authors did not consistently follow Stein (l.c.), as severe doubts about his application of the name *B. splendor-maris* were published early (e.g., discussion in Forti in Mem. Reale Comitato Talassogr. Ital. 97: 1–248, t. 13. 1922).

As we realise today, Ehrenberg made a substantial contribution to research on harmful algal blooms (HABs), as he described the first mass development of a species assignable to *Alexandrium* Halim (Balech, Genus Alexandrium. 1995; Hallegraeff & al., Manual Harmful Mar. Microalgae. 2003). Ehrenberg's observation of bioluminescence is remarkable and agrees with the detection of

bioluminescence in a bloom of an *Alexandrium* from coastal Tyrrhenian waters (Montresor & al. in Graneli & al., Toxic Mar. Phytoplankt. 1990). The nomenclatural consequences of our study are substantial, as *Alexandrium* currently is a later taxonomic synonym of *Blepharocysta* which has priority. Following the guidelines specified by McNeill & al. (in Taxon 64: 163–166. 2015; cf. clause (1) under "Conservation and rejection procedures") and applying *ICN* Art. 14.1–14.4, we propose here to conserve the name *Alexandrium* against *Blepharocysta*.

Acceptance of our proposal will assure nomenclatural stability in *Alexandrium* (though it requires a nomenclatural transfer from *P. splendor-maris* to *Alexandrium*). This has particular importance as many species of *Alexandrium* are toxic, and the generic name is not only used in the biological scientific community but also by chemists, medical scientists such as toxicologists, veterinarians, administrators, and policy makers (Hallegraeff & al., l.c.). The rejection of *Blepharocysta* appears acceptable, as the name is rarely used in its original sense (Ehrenberg, l.c. 1873) but rather in the incorrect interpretation of Stein (l.c.). Unless the alternative proposal by Carbonell-Moore (l.c.) were to be accepted (see below), rejection of our proposal would force all species names today accepted under the well-established name *Alexandrium* (approximately 33 species, many of which have been intensely studied) to be transferred to *Blepharocysta* (currently with the only acceptable element *P. splendor-maris*). This would cause severe nomenclatural instability, and such new combinations would most likely not be accepted by the scientific community.

Our proposal causes disadvantage regarding the deviant concept of *Blepharocysta* only. It is described by Carbonell-Moore (l.c.), who aims at preserving the misapplied usage of *B. splendor-maris* in the interpretation of Stein (l.c.) under *ICN* Art. 14.9 with a conserved type, namely with pl. VII 17. The strategy would be justified in case of the absence of original material assignable to *P. splendor-maris* but in this case, Ehrenberg's specimens and drawings clearly date prior to the publication of the name (Elbrächter & al., l.c.). Overall, the proposal by Carbonell-Moore (l.c.) aims at an easy but ambiguous solution to preserve current misapplications of *Blepharocysta* (including 12 names, 9 of them species including synonyms, all of them scarcely observed). However, accepting this solution would neglect Ehrenberg's careful documentation of the species. Furthermore, Stein's misidentification cannot be brought in line with Ehrenberg's protologue data including the species description (see Elbrächter & al., l.c.). According to our studies, Stein's concepts of *Blepharocysta* and *B. splendor-maris*, currently only consisting of a misapplied name and some drawings, do not need any conserved type but new formal descriptions and legitimate and validly published names as well as a contemporary physical type, independent of Ehrenberg's (l.c. 1860) observations. Later names, formally linked to Ehrenberg's concept and characterised by original material but based on the misapplication of *Blepharocysta* would remain available to serve as basionyms for appropriate combinations (*ICN* Art. 56.1 Note 1).

For the authors of this proposal rejection of *Blepharocysta* in favour of *Alexandrium* is a higher good than preserving misapplications of *Blepharocysta* by means of a conserved type.

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(2687) Proposal to conserve the name *Phyllopsora* against *Triclinum* and *Crocynia* (*Ramalinaceae*, lichenized *Ascomycota*)

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(2687) ***Phyllopsora*** Müll. Arg. in Bull. Herb. Boissier 2, App. 1: 11, 45. Jan 1894, nom. cons. prop.
Typus: *P. breviuscula* (Nyl.) Müll. Arg. (*Lecidea breviuscula* Nyl.).

(=) *Triclinum* Fée, Essai Crypt. Écorc. 1: 147. 15 Oct 1825, nom. rej. prop.
Typus: *T. cinchonarum* Fée