Ceratocorys mariaovidiorum P.Salgado, S.Fraga, F.Rodríguez, P.Riobó & I.Bravo is a junior synonym of Pentaplacodinium saltonense K.N.Mertens, M.C.Carbonell-Moore, V.Pospelova & M.J.Head

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Recently, two species were independently described that are shown here to be heterotypic (taxonomic) synonyms. The first, Pentaplacodinium saltonense K.N.Mertens, M.C.Carbonell-Moore, V.Pospelova & M.J.Head 2017 was described in Harmful Algae 71 (online and in print with the pagination pp. 66–70) in Mertens et al. (2018). This name, representing a new genus and species, was introduced using new morphological observations, as well as new Large Subunit (LSU), Internal Transcribed Spacer (ITS) and Small Subunit (SSU) ribosomal DNA (rDNA) sequences obtained from freshly isolated plankton samples from the Salton Sea (California, USA), and culture material (strains CCMP404, CCMP1720, CCMP1721, CCMP3241 and CCMP3243) established from cells from the Salton Sea (California, USA), Biscayne Bay (Florida, USA), and Indian River Lagoon (Florida, USA). A scanning electron photomicrograph image of a planktonic cell from the Salton Sea (Mertens et al. 2018, plate 3A) was designated as the holotype. The effective online date of publication by Mertens et al. (2018) was 16 December 2017 (as verified by the publisher’s Version of Record).

The second name, Ceratocorys mariaovidiorum P.Salgado, S.Fraga, F.Rodríguez, P.Riobó & I.Bravo 2017 was described in the Journal of Phycology (online with the pagination 1–12) by Salgado et al. (2018) and is based on new morphological observations and previously published ITS/5.8S rDNA sequences of two strains, CCMP404 (Salton Sea) and CCMP1720 (Biscayne Bay). The authors designated an SEM stub from the CCMP404 culture strain (Salton Sea) as the holotype. The effective date of online publication by Salgado et al. (2018) was 29 December 2017 (as verified by the publisher’s Version of Record).

Since the same strains (CCMP404 and CCMP1720) were used to describe Pentaplacodinium saltonense (Mertens et al., 2018) and Ceratocorys mariaovidiorum (Salgado et al., 2018) and the holotypes of both species are based essentially on cells from the Salton Sea with identical sequences, we are in no doubt that these two names are synonymous. As priority for the effective date of publication is based on the Version of Record (Art. 30.2 and 30.3, International Code of Nomenclature for Algae, Fungi, and Plants; McNeill et al. 2012), Ceratocorys mariaovidiorum is thus a junior synonym of Pentaplacodinium saltonense.

Mertens et al. (2018) introduced the genus name Pentaplacodinium to accommodate the following observations:

1. Molecular biology demonstrated a clear separation and significant distances in the three presented phylogenies (LSU, ITS and SSU rDNA) from both Ceratocorys and Protoceratium Bergh (Mertens et al. 2018, figures 5–7 on p. 71–73).
2. Morphologically, the genus is superficially similar to Ceratocorys because it has five precingular plates. The differences are:
a. There is only minimal contact between plates 1” and *6”, whereas in Ceratocorys this contact is very long (Mertens et al. 2018, plate 3, figure A on p. 64).
b. The anterior sulcal plate (Sa) in Ceratocorys is unusually well-separated from the first apical plate (1’) (Carbonell-Moore 1996), as opposed to Pentaplacodinium (Mertens et al. 2018, pl. 3: fig. D on p. 64).
c. A roundish body cell. Most Ceratocorys species are polygonal, with the exception of C. guerretii which is oval.
d. No pronounced appendages present as in Ceratocorys. Antapical ‘spines’ observed by Salgado et al. (2018, fig. 4a on p. 6) on the hypotheca of Pentaplacodinium saltonense are here considered artefacts of culturing, since this feature has not been observed in situ in the Salton Sea or other localities studied by Mertens et al. (2018).
e. Resting cysts have not been linked to any Ceratocorys species.
f. The difference in the reported number of sulcal plates between Pentaplacodinium saltonense and Ceratocorys mariaovidiorum needs clarification. Mertens et al. (2018) observed six sulcal plates in P. saltonense, whereas Salgado et al. (2018) observed seven. The number of sulcal plates observed in Ceratocorys species varies between five and ten (Carbonell-Moore 1996, p. 7).

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