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# *Stephanocha nom. nov.*, a replacement name for the illegitimate silicoflagellate genus *Distephanus* (Dictyochophyceae)

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## Abstract

*Stephanocha nom. nov*. (Silicoflagellata, Dictyochophyceae) is herein proposed as a replacement name for the illegitimate genus name *Distephanus*, which is a later homonym of *Distephanus*, a flowering plant. The old generic description is emended, with *S. rotunda* as the designated type, and new combinations are made for all *bona fide* silicoflagellate taxa previously assigned (including those tentatively assigned) to *Distephanus*, except most already transferred to *Distephanopsis*.

**Key words:** *Cannopilus*, *Dictyocha*, double skeleton, *Octactis*

## Introduction

While investigating Late Miocene radiolarian assemblages from the Sicilian Province of Girgenti (Agrigento), Stöhr (1880: 121) observed a single specimen of an unusual silicoflagellate, which he assigned to a new genus *Distephanus*. However, unbeknown to Stöhr (and subsequent workers for the next 100 years), the genus was a later homonym of a higher plant, *Distephanus* Cassini (1817: 151), and was thus illegitimate (McNeill *et al*. 2012: International Code of Nomenclature (ICN) Article 53.1). Since *Distephanus* Cassini is still in current use (e.g., Robinson & Kahn 1986), conservation of *Distephanus* Stöhr is not feasible (cf., Desikachary & Prema 1996 on pp.186–187). Thus, taxa currently in *Distephanus* Stöhr must either be transferred to an existing genus or a replacement name for the genus must be erected.

Some biologists have synonymized *Distephanus* with *Dictyocha* Ehrenberg (1837: 61), due to the illegitimate status of *Distephanus* Stöhr (e.g., Moestrup & Thomsen 1990, Henriksen *et al*. 1993) as well as the result of earlier culture work on *Dictyocha fibula* Ehrenberg (1839: 129) (Van Valkenburg & Norris 1970), in which some of the skeletal morphologies were thought to resemble *Distephanus* and *Cannopilus* Haeckel (1887: 1567). However, these skeletons are teratoid and taxonomic conclusions should not be based on them. Since *Dictyocha* and *Distephanus* have distinct lineages over long stratigraphic records, many biologists, paleontologists and oceanographers have continued to use *Distephanus* despite the known illegitimacy (Barron & Bukry 2007, Takahashi *et al*. 2009, Malinverno 2010, Witkowski *et al*. 2012, McCartney *et al*. 2014). Thus, transferring *Distephanus* taxa to *Dictyocha* does not seem to be the logical answer.

Ling & Takahashi (1985) transferred the genus *Octactis* Schiller (1925: 66) to *Distephanus* because some *Distephanus* taxa possessed similar thin apical elements. However, McCartney *et al*. (2014) have noted distinct differences in the basal ring and double skeleton design and reaffirmed that the two genera are sufficiently different morphologically to warrant separation (see also Abe *et al*. submitted). Thus, transferring the *Distephanus* taxa to *Octactis* also is not logical.

Although it is assumed that *Cannopilus* evolved from *Distephanus* (Locker and Martini 1986), they are considered distinct enough that most, if not all, workers separate them at the genus level. Furthermore, the cannopilid morphology was relatively short-lived, occurring in the middle of the stratigraphic range of *Distephanus*, and is not present in modern oceans. Thus, it would make no sense to transfer all the *Distephanus* taxa to it.

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