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RESURRECTION OF *GLYPHOHESIONE* FRIEDRICH, 1950, WITH REDESCRIPTION OF *G. KLATTI* FRIEDRICH, 1950 AND DESCRIPTION OF *G. LONGOCIRRATA* (POLYCHAETA: HESIONIDAE)

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Abstract.—The formerly monotypic genus *Glyphohesione* Friedrich, 1950 is removed from synonymy with *Synelmis* Chamberlin, 1919 and emended. The type species, *G. klatti* Friedrich, 1950, from northern European waters, is redescribed, and *G. longocirrata*, a new species from the east coast of North America, is described. *Glyphohesione* is transferred from the Pilargidae to the Hesionidae, where it was originally placed, as the pilargid stem-species might have evolved from a hesionid species by progenesis.

Friedrich (1950) described the monotypic *Glyphohesione klatti* from Helgoland and recognized it as a hesionid. Eliason (1962a, 1962b), who reported the species from the Skagerrak and Öresund, considered it to be a pilargid belonging to the genus *Ancistrosyllis* McIntosh, 1879. Pettibone (1966) transferred it to the pilargid genus *Synelmis* Chamberlin, 1919. Comparison of brain morphology of different pilargid genera caused Fitzhugh & Wolf (1990) to doubt that specimens identified as *Synelmis klatti* in the collection of the U.S. National Museum, Washington, belong to this genus, and they suggested resurrecting the older taxon *Glyphohesione* for them. In a phylogenetic analysis of the Pilargidae (note: the correct spelling is Pilargidae, not Pilargiidae (see: International Commission on Zoological Nomenclature (1985): International Code of Zoological Nomenclature, art. 35 d (ii))), Licher & Westheide (1994) argued that the species of this family might form a monophyletic group within the Hesionidae. A subfamily Pilarginae beside the "Hesioninae" Hartmann-Schröder, 1971 and "Microphthalminae" Hartmann-Schröder, 1971 should not be erected until a comprehensive revision of the Hesionidae including pilargids has been made of the "true" hesionid taxa and is beyond the scope of the present study. The "Hesioninae" as well as the former "Hesionidae" ("Hesioninae" + "Microphthalminae") are very likely paraphyletic (Licher & Westheide 1994). The "Microphthalminae" represents a polyphyletic group (Westheide 1977). Reinvestigation of material of different species identified as *Synelmis klatti* in the course of the analysis of Licher & Westheide 1994 induced them to reestablish the old generic name.

The present paper emends the diagnosis of *Glyphohesione*, redescribes the European *G. klatti* and describes the eastern North American *Glyphohesione longocirrata*, new species.

Materials and Methods

For light microscopical preparations the fixed specimens (stored in 70% ethanol) were transferred into glycerine. Observations, drawings, and measurements were made by means of a LEITZ Diaplan microscope with interference-contrast optics and a camera lucida. For SEM investigations one specimen was dehydrated and critical-point dried with carbon dioxide. After sputtering with gold, it was analyzed with a JEOL JSM 820.

Material examined originates from the following museums: Gothenburg Natural History Museum (GNM); Senckenberg Museum, Frankfurt (SMF); U. S. National Museum of Natural History, Smithsonian Institution, Washington, D.C. (USNM); Zoological Museum, University of Copenhagen (ZMUC).

Glyphohesione Friedrich, 1950, emended

Type species.—*Glyphohesione klatti* Friedrich, 1950, by monotypy and original designation.

Additional material examined.—The holotype of the type species of *Synelmis* Chamberlin, 1919, *S. simplex* Chamberlin, 1919 (USNM 19480, type) and some non-type specimens of *S. albini* (Langerhans, 1881) (type locality the Canary Islands, type material lost) from the Galapagos Islands (W. Westheide coll., Osnabrück) have been examined.

Diagnosis.—Hesionidae with body dorsoventrally flattened; some anterior segments distinctly wider, appearing somewhat inflated. Integument smooth, without papillae. Prostomium bilobed anteriorly, with two palps consisting of palpophores fused totally with prostomium and elongated palpostyles. Three slender antennae; lateral antennae located at anterior prostomial margin, close to palps; median antenna positioned at posterior margin. Pharynx unarmed. Peristomium achaetous, with two pairs of slender tentacular cirri. Parapodia biramous. Notopodia each with elongated dorsal cirrus, one notoacicula, and one stout emergent spine-like notochaeta, the latter in median and posterior segments only. Neuropodia well developed, each with slender ventral cirrus, one neuroacicula and simple chaetae only. Pygidium with two elongated anal cirri.

Remarks.—Eliason (1962a, 1962b) placed the monotypic *Glyphohesione* in *Ancistrosyllis* McIntosh, 1879, based on similarities with *Synelmis albini* (Langerhans, 1881) (=*Ancistrosyllis albini*). However, *Ancistrosyllis* possesses a hook-shaped notochaeta, not a straight one, which is characteristic for *Synelmis*. Pettibone (1966) transferred both *A. albini* and *A. klatti* to *Synelmis*, assuming *S. klatti* to be a juvenile of *S. albini*. Pearson (1970), Hartmann-Schröder (1971), and Katzmann et al. (1974) considered *S. klatti* to be a member of *Synelmis*. Fitzhugh & Wolf (1990) investigated American material identified as *Synelmis klatti* and suggested resurrecting the original generic name.

Glyphohesione Friedrich, 1950 clearly differs from *Synelmis* Chamberlin, 1919 in lacking the two emergent neuropodial spines which are apomorphic for *Synelmis* (Fitzhugh & Wolf 1990, Licher & Westheide 1994). In *Glyphohesione*, dorsal cirri are longer than ventral cirri, and the dorsal cirri of the first chaetiger are longer than those of the following ones, whereas in *Synelmis* dorsal and ventral cirri of all chaetigers are subequal. In addition, this taxon is known to possess nuchal organs, which were not found in *Synelmis*, and the brain is similar to that of *Sigambra* Müler, 1858 (Fitzhugh & Wolf 1990). *Glyphohesione* clearly differs from *Sigambra* in having notopodial spines and in lacking hook-shaped notochaetae.

Discussion.—Licher & Westheide (1994) conclude that there are good indications that the pilargid stem-species might have evolved by progenesis from a juvenile stage of a large-bodied hesionid species. This induced them to include the family Pilargidae in the Hesionidae, a view generally adopted by earlier authors (e.g., Ehlers 1908, Fauvel 1923, Augener 1927, Monro 1933, Treadwell 1941).

According to Licher & Westheide (1994), within the pilargids *Glyphohesione* is the taxon with the highest number of plesiomorphic characters shared with juvenile hesionids, e.g., (1) possession of elongated palpostyles, (2) lateral antennae located at the anterior prostomial margin, and (3) prostomial, peristomial, parapodial and pygidial appendages elongated and well developed.

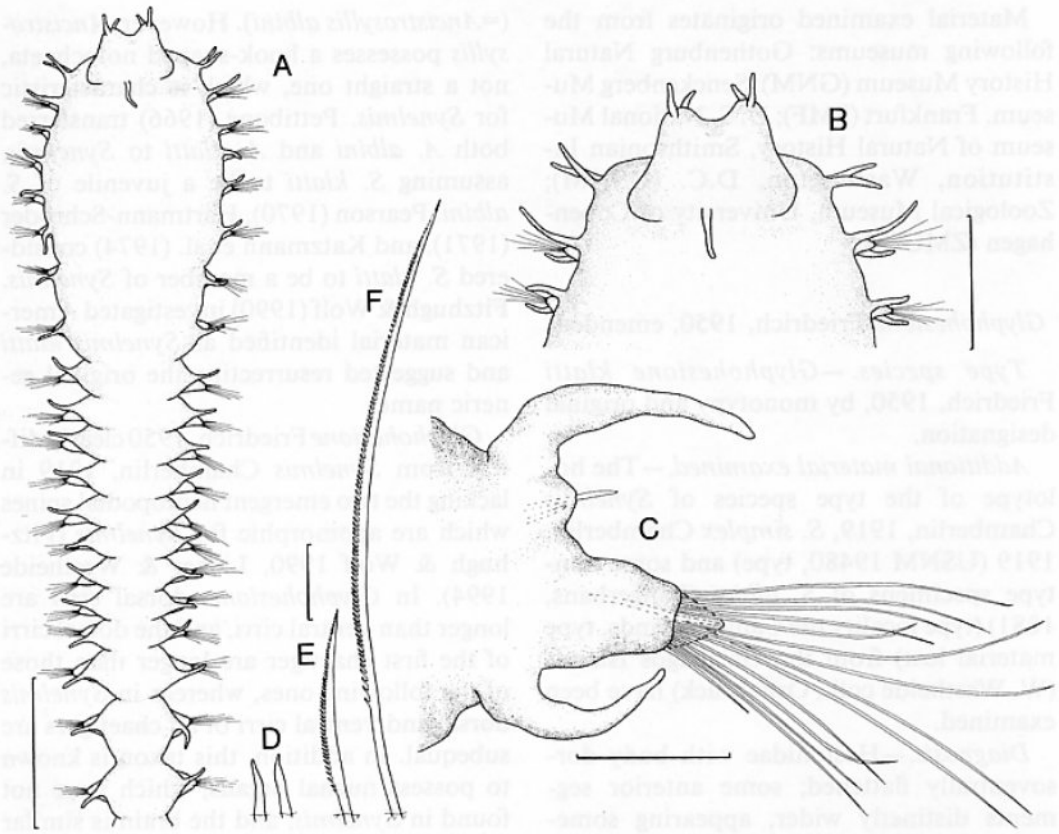

Fig. 1. *Glyphohesione klatti* Friedrich, 1950 (ZMUC POL-178). A. Anterior and median part of the body, dorsal view. B. Anterior end, dorsal view. C–F. Parapodium 21 (ZMUC POL-178-A): C. Parapodium, posterior view, half of neuropodial fascicle omitted. D. Emergent spine-like notochaetae. E. Ventralmost neurochaeta. F. Dorsalmost neurochaeta. Scales: A = 500 μm; B = 250 μm; C = 100 μm; D–F = 25 μm.

Glyphohesione is monophyletic and the adelphotaxon of the stem-species of all other pilargid genera (Licher & Westheide 1994).

Genus *Glyphohesione* Friedrich, 1950, resurrected

Glyphohesione klatti Friedrich, 1950

Figs. 1–2

Glyphohesione klatti Friedrich, 1950:171–173, figs. 1–2.

Ancistrosyllis klatti.—Eliason, 1962a:241; 1962b:29–32, fig. 3.

Synelmis klatti.—Pettibone, 1966:190–191.—Pearson, 1970:74–75, fig. 2b, c.—Hartmann-Schröder, 1971:144–145, fig. 49.—Katzmann et al., 1974:27–28. [Not *Synelmis klatti* of Wolf 1984; not Fitzhugh & Wolf 1990 (both = *G. longocirrata,* new species)].

Material examined.—Kattegatt: Off Skagen, Denmark, 58°01′N, 10°52′E, 190 m, fine mud, M. E. Petersen coll., 22 Sep 1968 (ZMUC POL-178, 5 incompl. specimens; ZMUC POL-178-B, 1 incompl. SEM preparation). Laholmsbukten, off Laholm, Sweden, St. 150/417, 21 m, stiff clay and some sand, "Akka," L. A. Jägerskiöld coll., 17 Jun 1933 (GNM 11347, 1 incompl. specimen).—Skagerrrak: Saltkällefjord, off Gullmaren, Sweden, 56 m, P. Bagge coll., 24