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ON THE IDENTITY AND NOMENCLATURE OF „*PECTINARIA BELGICA* (PALLAS, 1766)” (POLYCHAETA, AMPHICTENIDAE)

by

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In most Dutch scientific and popular books dealing with Polychaeta, the common amphictenid of the Dutch North Sea shore is indicated with the name *Pectinaria belgica* (Pallas, 1766). In preparing a revision of the Dutch Polychaeta, one of us (J. A. W. L.) studied the extensive collections of Dutch representatives of the family Amphictenidae present in the Rijksmuseum van Natuurlijke Historie at Leiden and the Zoological Museum at Amsterdam, as well as newly collected material from the Dutch beaches. Comparing these specimens with the account by Fauvel (1927:218-225) of the Amphictenidae in the Faune de France, all of the Dutch specimens (with the single exception of a specimen of *Pectinaria* (*Amphictene*) *auricoma* collected in the former Zuiderzee) proved to be identical with what Fauvel named *Pectinaria* (*Lagis*) *koreni* (Malmgren), and not with his *Pectinaria belgica* (Pallas). A closer study of the status of both the generic and specific name of the Dutch species lead to rather unexpected results.

GENERIC NAMES

The name *Pectinaria* was first published by Lamarck (1818:348). Its type-species is *Nereis cylindraria belgica* Pallas, 1766, by subsequent selection by Hartman (1959:479).

According to Malmgren (1866:355), the generic name *Pectinaria* does not date from Lamarck (1818), but from Lamarck (1812). In the latter publication, Lamarck (1812:95,96) divided the “Annelides” into two orders, the second of which, “Annelides Gymnobranches”, is again divided into two sections, (1) the “Gymn[obranches] libres ou vagabondes” and (2) the

"Gymn[obranches] tubicolaires". In the latter, again, two groups were distinguished, the first of which was characterized as follows: "Tuyaux membraneux, coriaces, ou arénacés", and under this definition a mere list of four names is given: "Térébelle, Sabellaire, Pectinaire, Amphitrite." This is the only place in the book where the name Pectinaire appears and *Pectinaria* is absent altogether. Pectinaire, apart from being a vernacular name, is also a nomen nudum, and for either of these reasons unavailable. There cannot be the least doubt, therefore, that *Pectinaria* dates from Lamarck, 1818.

Some authors (Hartman, 1959: 479; Hartmann-Schröder, 1971: 444) indicate "Savigny, 1818" as the author of *Pectinaria*, evidently intimating (Hartman, 1951: 142, 222) that the text of Lamarck's (1818) account of the Annelida, or at least a part of it, was written by Savigny. However, this does not appear to be the case. The 1818 text of the genus (Lamarck, 1818: 349), namely, contains the following clear statement "Sous ce nom [Pectinaire], j'ai établi dans mes leçons et cité dans l'*extrait de mon Cours* (p. 96) un genre particulier." The fact that "*mon Cours*" clearly refers to Lamarck's own 1812 publication shows that this part of the 1818 text is definitely written by Lamarck himself. Also, nowhere in the "Histoire naturelle des Animaux sans Vertèbres" have we been able to find a statement to the effect that the annelid text is written by anyone else than Lamarck. All through the Annelid part Lamarck cites himself as "je," "moi," etc., while he refers to Savigny as "M. Savigny" whom he often criticizes and whose classification he does not adopt. There can therefore be no doubt that Lamarck, 1818, is the author of the generic name *Pectinaria*. This name, however, proves to be invalid as it is a junior objective synonym of the name *Cistena* Leach, 1816.

The genus *Cistena* was described by Leach (1816: 452), its type-species by monotypy is *Cistena Pallasii* Leach (1816). In his description, Leach (1816: 452, pl. 26) gave a short diagnosis and a figure of the species which shows it to be an amphictenid, but the data are insufficient to make the specific identity fully certain. At the same time, however, Leach referred *Nereis cylindraria* Pallas, 1766, *Sabella tubiformis* Pennant, 1777 and *Nereis conchilega* sensu Pennant, 1777, to his new species, with the further indication "Inhabits the sandy shores of Britain". The reference to Pallas is clearly to the var. *Belgica*, as shown by the indication "Miscel. Zool. 131. tab. IX. fig. 3." Pennant (1777: 148, pl. 92 fig 163) gave a short diagnosis of his new *Sabella tubiformis* and a rather crude figure, which shows that his species is an amphictenid; furthermore he referred to "*Nereis cylindracea belgica*. Pallas. Misc. Zool. p. 211 tab. IX fig. 3."

Under *Nereis conchilega*, Pennant (1777: 47) referred to Pallas's (1766) original description of that species, but at the same time stated that his own specimen "Inhabits the *Sabella Tubiformis*"; also Pennant's description makes it clear that his specimen was an amphictenid, rather than the terebellid *Lanice conchilega* (Pallas). In order to definitely settle the identity of *Cistena Pallassii* Leach, 1816 and of *Sabella tubiformis* Pennant, 1777, we now select as the lectotype of both species the specimen of *Nereis cylindraria Belgica* Pallas, which Pallas (1766) figured on his pl. 9 fig. 4. This same specimen now is also selected as the lectotype of *Nereis cylindraria belgica* Pallas. In this way these three taxa become objective synonyms and the type species of the genus *Cistena* Leach, 1816, thus is *Nereis cylindraria belgica* Pallas, 1766.

It is evident, therefore, that *Cistena* Leach, 1816, and *Pectinaria* Lamarck, 1818, are objective synonyms and that the former name, being the senior of the two has to be used, the latter disappearing entirely.

SPECIFIC NAMES

The only species of *Cistena* so far found on the Dutch shores is the one named *Pectinaria (Lagis) Koreni* (Malmgren) by Fauvel (1927: 221, fig. 77a-i), who followed Malmgren (1866) in the interpretation of the species.

Pallas (1766: 122-131, pl. 9 figs. 3-13) gave an extensive description and good figures of the animals that he named *Nereis cylindraria* varietas *belgica*. He stated them to be very common on the west coast of Holland, where throughout the year the sea deposits great numbers of specimens on the beaches ("Tubos istos vix non toto anno fluctus in occidentalem Hollandiae oram copiose egestant" : 123). In all probability, these specimens came from the North Sea coast at Scheveningen near The Hague, as Pallas stayed in The Hague from 1763 to 1767; the fact that Pallas conducted experiments with live specimens and kept them in sea water shows that he must have obtained them close to where he was living. Also his vivid account of how the animals, together with other marine species like starfish, crabs and shells, are deposited alive on the Dutch beaches and are eaten at low tide by the many crows that always can be found along the coast, shows that he observed them there himself. The name *belgica* does not refer to the present day Belgium, but to the Netherlands. In Pallas's time the latin name *Belgia* was used to indicate the Netherlands as a whole, as is shown also by Pallas's dedication of his *Miscellanea Zoologica* to Willem V, stadholder of the Netherlands, which he indicated as "Guilielmo V, haereditario Foederatae Belgicae Gubernatori." Although Pallas's figures are not all fully clear, those that can be recognized (pl. 9 figs. 3, 4,

10 and 11) show *Lagis koreni* Malmgren, fig. 6 is less accurate and shows some discrepancies. The description, although quite extensive and agreeing fully with that of Malmgren's *koreni*, is such that the possibility that other species are involved is not entirely excluded. The fact, however, that only *P. koreni* has been found on the Dutch North Sea coast and is very plentiful there, makes it fully justified to assume that all of Pallas' material belonged to that species. To remove any possible doubt the specimen figured on pl. 9 fig. 4 has been chosen as the lectotype of Pallas's *Nereis cylindraria belgica* (see above). The name *koreni* Malmgren, 1866, as published in the combination *Lagis koreni*, therefore, now falls as a junior subjective synonym of the name *belgica* Pallas, 1766, as published in the combination *Nereis cylindraria belgica*.

Malmgren's (1866) unfortunate incorrect interpretation of Pallas's *Nereis cylindraria belgica*, was followed by McIntosh (1922), Fauvel (1927), Hartman (1959), Hartmann-Schröder (1971) and many other specialists in the group. The discovery of this error makes it now necessary to change the names of two well known European polychaete species. For the species indicated as *Pectinaria belgica* by Fauvel, the oldest available name seems to be *Nereis pectinata* Sowerby, 1805, from the British Isles. Sowerby (1805: 107, pl. 51) described and figured a species with a straight tube, which is either *Cistena belgica* (Pallas) or *C. belgica* auctt. Sowerby stated that his species possesses 14 pairs of parapodia bearing golden setae. As the first three seta-bearing parapodia in *C. belgica* auctt. are small, they may have been overlooked by Sowerby so that his material actually had 17 pairs of such parapodia, agreeing with *C. belgica* auctt. In *C. belgica* (Pallas) the number is 15. Therefore the species known as *Pectinaria* (or *Cistena*) *belgica* auctt., correctly should be named *Cistena pectinata* (Sowerby). Sowerby's (1805) paper has been overlooked in the polychaete literature.

Another problem that must be given some attention here is the identity of the species *Nereis cylindraria* Pallas (1766). Pallas described that species as new and recognized in it two "varietates": *Capensis* from Cape of Good Hope and *Belgica* from the Netherlands. Both varietal names have been adopted by subsequent authors and at present are still in use. The name *cylindraria*, however, is usually ignored. Hartman (1959: 478) listed it as "Indeterminable" and gave the type locality as "Europe." Hartman (1959: 257) referred *Nereis cylindraria* to *Amphictene auricoma*. Actually, however, as *Nereis cylindraria* was divided by Pallas into two varieties, *N. cylindraria capensis* and *N. cylindraria belgica*, the name *cylindraria* must be synonymous with either *capensis* or *belgica*, whichever

is chosen to be the nominate subspecies. So far as we are aware, this has never been done. Hartman's action of restricting the type locality to Europe is not to be considered such a selection. The name *capensis* Pallas, 1766, is currently used for a South African species, listed as *Pectinaria capensis* by Hartman (1959: 479). More correctly it should be known as *Cistena capensis* (Pallas, 1766); no ambiguity seems to exist concerning this name. As the name *belgica* Pallas, 1766, is now severely compromised by having been used for a very long period for the wrong species, and as it also has been employed for various other species, it seems a good solution to get rid of this name altogether. Therefore we now select as the lectotype for *Nereis cylindraria* the specimen figured by Pallas (1766) as fig. 4 of pl. 9 of his *Miscellanea Zoologica*, viz., the lectotype specimen of *Nereis cylindraria belgica* Pallas (1766). By this selection *Nereis cylindraria* Pallas, 1766 and *N. c. belgica* Pallas, 1766, become objective synonyms. As the two names *cylindraria* and *belgica* have been published simultaneously, we now indicate as the first revisers that the name *cylindraria* should be used in preference to *belgica*. The correct name of the species indicated as *Pectinaria koreni* (Malmgren) by Fauvel and other authors thus becomes *Cistena cylindraria* (Pallas, 1766), *C. belgica* falling as a synonym. In summary, the synonymies of the species dealt with here are the following:

Cistena cylindraria (Pallas, 1766) n. comb.

- Nereis cylindraria* Pallas, 1766: 117.
Nereis cylindraria belgica Pallas, 1766: 122, 211.
Cistena pallasi Leach, 1816: 452.
Lagis koreni Malmgren, 1866: 360; McIntosh, 1922: 49.
Pectinaria (Lagis) koreni — Fauvel, 1927: 221; Hartmann-Schröder, 1971: 446.

Cistena pectinata (Sowerby, 1805) n. comb.

- Nereis pectinata* Sowerby, 1805: 107.
Pectinaria belgica — Malmgren, 1866: 356; McIntosh, 1922: 38. (Not *Nereis cylindraria belgica* Pallas).
Pectinaria (Pectinaria) belgica — Fauvel, 1927: 220; Hartmann-Schröder, 1971: 444 (not *Nereis cylindraria belgica* Pallas).

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