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## ON THE IDENTITY OF *SPENCEBATEA ABYSSICOLA* (CUMACEA), WITH ADDITIONAL OBSERVATIONS ON THE GENERA ALLIED TO *PROCAMPYLASPIS*

*Les Watling*

### A B S T R A C T

In 1879 Norman described *Spencebatea abyssicola*, new genus, new species, on the basis of a single specimen from a deep-sea site off Ireland. The species was transferred to the genus *Cumella* by Stebbing in 1913, where it has remained. A reexamination of the specimen indicated that it belongs to the genus *Procampylaspis*, since it possesses the recurved, tooth-bearing dactyl on maxilliped 2 which characterizes the genus. Seven other genera also exhibit modified dactyls on maxilliped 2, and, in addition, have styliform mandible molars, thus forming a coherent group within the family Nannastacidae.

Norman (1879) described the new genus, new species, *Spencebatea abyssicola*, from a single specimen dredged in 1869 by the *Porcupine* west of Donegal Bay [at Station 19, with coordinates 54°53'N, 10°56'W, and water depth 1,360 fathoms (2,487 m)]. The specimen was a subadult male and was described relatively completely (for the time), but was not illustrated. Nevertheless, Norman recognized that his species did not fit with any previously described genera. He gave as the diagnosis for this genus the following:

*“Characters of male.*—General aspect that of *Diastylis*. Five segments of cephalothorax exposed behind the carapace. All feet, except the last, palpigerous. No feet on the pleon. Telson rudimentary (as in *Eudorella*). Uropods with both branches two-jointed. *Female unknown.*”

This diagnosis served to distinguish his new genus from all other genera existing at the time, with the possible exception of *Cumella*, perhaps explaining why Stebbing (1913) moved the species to that genus with no comment (and, apparently, without examining the specimen). In a later revision of the genus *Cumella*, Watling (1991) failed to list the species.

Bonnier (1896) described the genus *Procampylaspis* for two new species, *P. armata* and *P. echinata*. Both species were taken in 950 m at the *Caudan* Station 13 in the Gulf of Gascogne. Bonnier noted the principal distinguishing feature of his new genus to be “la structure si particulière du dactylopedite du deuxième maxillipède (p. 544).” The ter-

minial article of this appendage bears strongly projecting and recurved teeth on its concave margin, which are now known to be highly characteristic of all species in this genus. In fact, all genera in the *Campylaspis-Procampylaspis* group have the dactyl of the second maxilliped modified in some way.

A reexamination of Norman's specimen (BMNH No. 1911.11.8:6023) showed that it clearly belongs in the genus *Procampylaspis*. This paper deals first with the redescription of Norman's specimen in the genus *Procampylaspis*, since it appears not to have been examined since its original discovery, and second, with a comparison of the closely allied genera.

### *Procampylaspis* Bonnier, 1896

*Spencebatea* Norman, 1879, nomen oblitum

*Diagnosis.*—Carapace elevated posteriorly, anterolateral (antennal) angle rudimentary to obtuse. Eye lobe rudimentary. Mandible molar styliform. Maxilliped 2 with 7 articles; carpus and propodus in line (not angled); propodus distal spine-seta absent; dactyl with 5 ventral teeth or spine setae, distalmost recurved.

### *Procampylaspis abyssicola* (Norman, 1879) Figs. 1, 2

*Spencebatea abyssicola* Norman, 1879.

*Cumella abyssicola* Stebbing, 1913.

*Procampylaspis inermis* Jones, 1984.

*Description (Modified from Norman).*—Subadult male and female, length 3–3.5 mm. Carapace smooth, with some scattered setae, about twice as long as deep; pseudorostrum about one-seventh length of carapace; eye

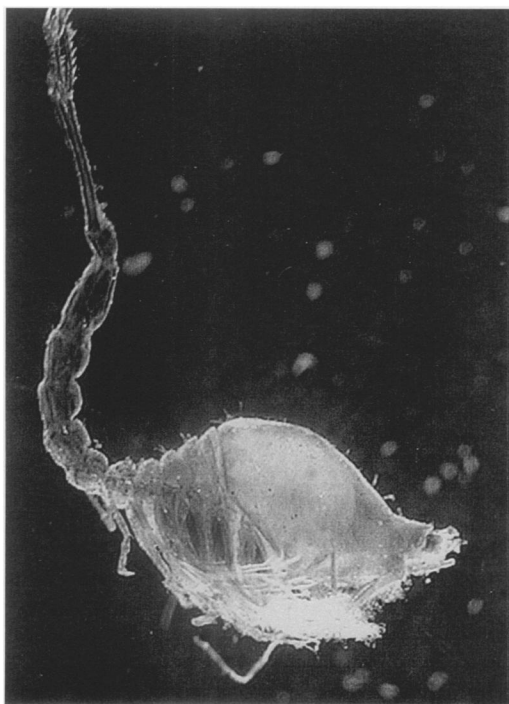


Fig. 1. Print from video image of holotype of *Spencebatea abyssicola*.

lobe small; anterolateral angle weak. Pereionites 1 and 2 with projections. Maxilliped 2 merus with 2 long plumose setae, 1 midfacial and 1 mediobasal; carpus with 1 simple plumose seta; propodus with short plumose seta distally; dactyl with third tooth longest, fourth tooth reduced and bearing small seta. Pereiopod 2 article 5 with 2 distal spinelike setae. Uropod peduncle elongate, with 8 setae along medial margin; endopod with 6 medial setae and 2 terminal spinelike setae, one of which about one-half length of article; exopod with 2 terminal spinelike setae, longest equal in length to distal article.

**Remarks.**—The primary problem with resolving taxonomic difficulties of this kind has to do with the fact that descriptions often do not include the details necessary to determine whether two taxa are synonymous. In the present case, Norman's verbal description, while fine for the time, did not have with it illustrations comparable to those being produced by other authors. Therefore, details that ordinarily would have been in the drawings were not available to colleagues, such as Stebbing, who were taking a larger, synthetic, look at the group. On the other hand, the more

modern descriptions by Jones (and others, including myself), while encompassing more of the animal, assume a degree of homogeneity within a genus, a certain level of detail is often omitted. As a consequence, the true identity of Norman's species could not be resolved until his specimen was reexamined and compared with specimens of other deep North Atlantic species, chiefly those described by Jones (1984).

Norman failed to note that his specimen was a subadult male (the second antenna, while being present, is not fully developed, as evidenced by its lack of setae) and that it bore projections on pereionites 1 and 2. He did not describe maxilliped 2 and therefore missed the significance of this appendage which was later seen by Bonnier. The description of *P. inermis* by Jones (1984) includes the statement "pereon and pleon somites without spines or other projections apart from a few setae." An examination of the type series (BMNH Numbers 1982:338:1 and 1982:340:10; see Jones, 1984, for exact locality data) showed that juvenile and subadult females of *P. inermis* have middorsal projections on the first and second pereionites, although in older females the lappets are closely pressed against the body. In Norman's specimen the lappets are small, approximating those of the females. Other similarities between Norman's specimen and those of *P. inermis* include: (1) the shape and design of the teeth of the maxilliped 2 dactyl (see Fig. 2); (2) the presence of a large plumose seta on the second maxilliped meral face; (3) the details of the setation and the presence of a meral hyaline frill on maxilliped 3; and (4) the details of the setation on the peduncle and inner ramus of the uropods in the subadult male.

As noted above, Stebbing moved Norman's species into the genus *Cumella*, presumably based entirely on Norman's written description. He had perhaps been influenced by Sars (1887), who suggested that the genus *Spencebatea* belonged in the Cumellidae, which to that time contained only the genera *Cumella* and *Nannastacus*. If Stebbing had examined Norman's specimen, he would have seen immediately that the genus *Procampylaspis* of Bonnier was, in fact, synonymous with Norman's *Spencebatea*. Unfortunately, this fact has gone unnoticed for all these years. Now, according to the International Code of Zoo-

Table 1. A comparison of characters used to distinguish *Procampylaspis* and allied genera, and including the genus *Cumella* as outgroup member.

Character	<i>Campylaspis</i> Sars, 1865	<i>Campylaspensis</i> Băcescu & Muradian, 1974	<i>Campylaspides</i> Page, 1929	<i>Cubanocuma</i> Băcescu and Muradian, 1977	<i>Floridocuma</i> Băcescu and Muradian, 1974	<i>Paracampylaspis</i> Jones, 1984	<i>Pavlovskola</i> Lomakina, 1955	<i>Procampylaspis</i> Bonnier, 1896	<i>Cumella</i> Sars, 1865
Carapace, anterolateral angle	not strongly produced	rudimentary	obtuse	rudimentary	acutely produced	strongly produced, rounded	rudimentary	rudimentary to obtuse	present, generally with acute spine
Eye lobe	most often rudimentary	rudimentary	rudimentary	large, with lenses	small	rudimentary	rudimentary	rudimentary	with or without lenses, sometimes elongate
Mandible molar	styliform	?	styliform	styliform	styliform	styliform	styliform	styliform	columnar, crushing
Maxilliped 2, number of articles	7	7	7	7	7	7	7	7	6
Maxilliped 2, carpus-propodus angle	approximately right angle	approximately right angle	approximately right angle	slightly angled	almost in line	almost in line	almost in line	almost in line	in straight line
Maxilliped 2, propodus distal spine or spine-seta	spine	spine-seta	spine-seta	spine-seta	spine-seta	spine	spine-seta	absent or plumose seta	absent, seta plumose
Maxilliped 2, dactyl	with 3 terminal heavy setae	with 4 terminal heavy setae	with 3 terminal spine-setae, in the form of a trident	with 4 terminal heavy setae	with 2 large and 1 small spine-setae	simple, flexible, bearing several setae	with 3 terminal spine-setae	with 5 ventral teeth/spine-setae, distal-most curved ventrally	with single terminal spine-seta

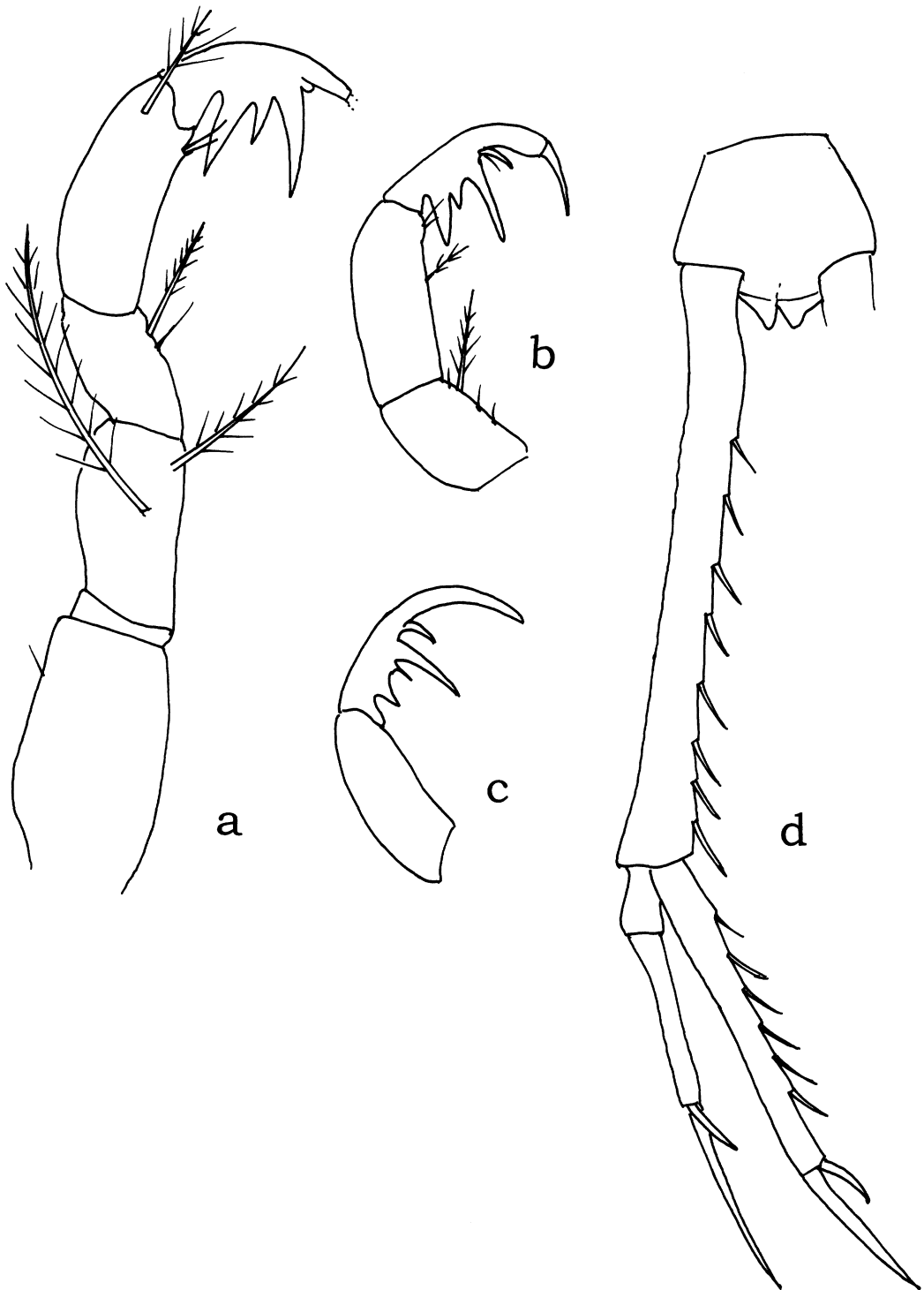


Fig. 2. a, maxilliped 2 of type specimen of *Spencebatea abyssicola*; b, propodus and dactyl of maxilliped 2 from a paratype subadult female *Procampylaspis inermis* Jones; c, propodus and dactyl of maxilliped 2 from a paratype mature male *P. inermis* Jones; d, uropod from type specimen of *S. abyssicola*.

logical Nomenclature, Article 23b, the genus *Spencebatea* should be submerged in the interests of nomenclatural stability.

COMPARISON OF THE GENERA ALLIED TO  
*PROCAMPYLASPIS*

Within the family Nannastacidae there is a group of seven genera, all of which possess a second maxilliped with the dactyl modified in some way—usually bearing teeth in various arrangements—and a styliform mandible. These genera have several similarities and form a more or less coherent grouping. In Table 1 the important mouth appendage characters are given for this group of genera along with the same features for the genus *Cumella*, which typifies the remaining 12 nannastacid genera. It should be noted that the table includes the genus *Floridocuma* Băcescu and Muradian, which had been incorporated into *Campylaspis* by Jones (1974). Sars (1900), even though only the genera *Campylaspis*, *Cumella*, and *Nannastacus* were well known at the time (he questioned the validity of Bonnier's *Procampylaspis*), recognized that *Campylaspis* was different from the others, especially with regard to its "oral parts," and on that basis created the family Campylaspididae. The possibility of resurrecting the family Campylaspididae as distinct from the remaining Nannastacidae will be discussed in a following paper.

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