XXXVII.—*On the true* Podocerus *and some new Genera of Amphipods.* By the Rev. Thomas R. R. Stebbing, M.A., F.R.S., F.L.S., F.Z.S.

In the family Podoceridæ it may well be supposed that the genus *Podocerus* ought to maintain the position which it has so long held unquestioned. To rebut this presumption it is necessary to weigh carefully the words used by Leach when instituting in 1814 (or 1813) the two genera *Podocerus* and *Jassa*. In his well-known article "Crustaceology" he combines these two in the second section of the family, his account commencing thus:—

"Superior antennæ shorter than the under ones; the last joint scarcely articulated.

"Genus XI. Podocerus. Eyes hemispherical and somewhat prominent; four anterior feet didactyle, anterior pair smallest with an elongate-subovate hand; second pair with an ovate hand, and the internal side nearly strait.

"*Sp.* 1. *Variegatus.* Body, legs, and antennæ beautifully variegated with red.

"*Podocerus variegatus*, Leach's MSS.

"Inhabits the rocky shores of Devon, walking about on fuci and corallines with its antennæ as well as legs.

"Genus XII. Jassa. Eyes not prominent; four anterior feet didactyle with ovate hands; the anterior pair smallest; the hand of the second pair with the internal edge furnished with teeth."

Then follows the account of *Jassa pulchella*, with two varieties, from Devonshire, and of *Jassa pelagica* "from the Bell Rock in the German Sea," and a note that "*Cancer Gammarus falcatus* of Montagu, *Lin. Trans.* vol. ix. tab. 5. fig. 2. seems referable to this genus."

From 1830 to the present time we have all with one consent accepted the view that Leach did not know what he was talking about, and most of us have believed that his two genera were one and the same. Some authors have held that all the three species above mentioned were simply synonyms of Montagu's *falcatus*. The real fact is that they may without impropriety be taken as representatives of three

distinct genera, not one of them with any certainty falling as a synonym to Montagu's species.

The description of *Podocerus variegatus* above quoted from Leach is far from suiting the account which Milne-Edwards appends to the name in his 'Histoire naturelle des Crustacés,' vol. iii. p. 63. He omits all mention of the hemispherical eyes, states that the second pair of hands have no teeth on the lower margin, and assigns a pretty strong median tooth to the hind margin of the last segment of the peræon and the first of the pleon. There is in truth only one Amphipod known as inhabiting the rocky shores of Devon which reasonably answers to the various characters indicated by Leach. This is the species described and figured by Bate and Westwood ('British Sessile-eyed Crustacea,' vol. i. p. 481) as *Cyrtophium Darwinii*. It has the proper colouring and habits; the eyes tally with the description, and the gnathopods have a sufficient correspondence. It is true that the ovate hand of the second gnathopod in the male has two processes on the internal side, but these are so concealed among the long fringing setæ that the general effect is that of a straight lower, inner, or hind margin. The under antennæ are conspicuously longer than the upper, and it is interesting to notice that "the last joint"—the flagellum—which Leach describes as "scarcely articulated," is shown in Bate and Westwood's figure of it as a single piece, though in the text they explain that it "consists of one very long and one or two minute terminal articuli." In regard to this species Bate and Westwood make, without seeing the bearing of it, the important observation that "some specimens (mixed with those of the genus *Podocerus*) have long existed unrecognized in the collection of the British Museum, procured by Dr. Leach probably from the south coast of Devon."

In the 'Règne Animal de Cuvier,' published after Cuvier's death, without dates, and variously cited as 3^{e} édit., édit. illustrée, or edit. Crochard, Milne-Edwards gives a representation of *Podocerus variegatus* (pl. lxi. fig. 4), purporting to be drawn from Leach's type in the British Museum. When one considers that the drawing must have been made some sixty years ago from a dried specimen more than twenty years old, minute accuracy is little to be expected. The two dorsal teeth, which Milne-Edwards, as above mentioned, describes in his later work, are doubtless due to an optical illusion with which every student of Amphipoda must now be familiar. In the so-called *Cyrtophium Darwinii* the imbrication of the segments which gives rise to the illusion is

very strongly marked. In the text of the 'Règne Animal,' p. 179, Milne-Edwards, copying Latreille, 1829, characterizes the species simply by three words—"A yeux saillans." As it happens they suffice, since the figure supplies a second striking feature in the greatly elongated terminal joint of the peduncle of the lower antennæ.

Cyrtophium Darwinii, on Spence Bate's own showing, ought to have been referred to Dana's other genus *Platophium*. Now, therefore, its identification with *Podocerus variegatus*, Leach, entails the cancelling of *Platophium*, the various species of which must be transferred to the far earlier *Podocerus*. The list, in my opinion, comprises the following ten species:—*andamanensis* (Giles); *brasiliensis* (Dana); *cheloniæ*, Stebbing; *chelonophilus* (Chevreux & de Guerne); *cristatus* (G. M. Thomson); *Danæ*, Stebbing; *Darwinii* (Bate); *inconspicuus*, Stebbing; *lævis* (Haswell); *lobatus* (Haswell).

If this view of *Podocerus* be accepted, as I think it must, the obvious and necessary consequence is that *Jassa* will be upheld as a distinct genus, with the species *pulchella*, Leach, for its type. Whether the specific name *pulchella* should be retained is a separate question. Leach, as already noticed, instituted a second species of *Jassa* under the name *pelagica*, and suggested that Montagu's *Gammarus falcatus* might also belong to the genus. What Leach could not determine, later authors with more or less confidence, and with unanimity less rather than more, have settled for him. In the 'Règne Animal,' pl. lxi. fig. 2, Milne-Edwards claims to give a representation of Leach's *Jassa pelagica*, and in fig. 3 undoubtedly does represent Leach's *Jassa pulchella*. But in the text he refers both fig. 2 and fig. 3 to *Jassa pulchella*. Then, in the 'Hist. nat. des Crustacés,' 1840, he describes the species *Cerapus pelagicus*, with *Cancer falcatus*, Montagu, and *Jassa pelagica*, Leach, in the synonymy, thus acknowledging but disregarding the priority of *falcatus*. In this Guérin-Méneville had set the example in the 'Iconographie du Règne Animal' by roughly copying Montagu's figure of *Gammarus falcatus*, and, without the least apology or explanation, calling it *Jassa pelagica*, Leach. As Lord Nelson was fond of saying, "Such things are." Subsequently the claims of *falcatus* were vindicated with so much vehemence that by some authors Leach's three species, *variegatus*, *pulchellus*, and *pelagicus*, have all been reduced to synonyms of it. But he must be a bold naturalist who will affirm that he knows for certain what Montagu's species

really is. The finger of the second gnathopods, figured with a strong tooth on the inner margin, and thus corresponding to the description "fangs falciform, with one tooth," will not suit any of the synonyms. Moreover, Montagu says:—"This curious and rare species inhabits the deep, amongst *Sertularia*, and *Algæ*, and has only been taken by dredging at Tor-cross." No one in South Devon needs to go dredging for Leach's *pulchellus*. It is a common shore species. The possibility that *falcatus* is identical with *Herdmani*, Walker, and *odontonyx*, Sars (see A. O. Walker, Ann. & Mag. Nat. Hist. ser. 6, vol. xv. p. 472), is weakened by the fact that the specimens described by the later authors have a length less than half that recorded by Montagu, so that his species really remains, as it was left by Leach, indeterminate.

It has long been recognized, apparently on Norman's initiative, that the form which Spence Bate had named *Podocerus pelagicus* (Leach) was the female to the male form *pulchellus*. But by acute and diligent scrutiny of the specimens in the British Museum Mr. A. O. Walker has discovered that Leach's species *Jassa pelagica* corresponds not with Bates's female of *pulchellus*, but with Rathke's *Podocerus capillatus*. Around this latter form a curious mystification has gathered. In 1859 Bruzelius referred it to the genus *Jassa* of Leach, while to *Podocerus* he assigned two species, one of which belongs to *Ischyrocerus* of Kröyer and the other is a synonym of *Jassa pulchella*. Twelve years later Boeck erroneously identified Rathke's *capillatus* with *Podocerus variegatus*, Leach, but, instead of calling it by that name, he described it as *Janassa variegata*, at the same time making Leach's *pulchella* and *pelagica* the synonyms of a species which he called *Podocerus falcatus*, Montagu. He regarded *Jassa* of Leach as a synonym of *Podocerus*, and *Jassa* of Bruzelius as preoccupied by Münster in 1839 for the generic name of a fish, on these grounds introducing the name *Janassa*, the very one which was, in fact, as Mr. Smith Woodward tells me, preoccupied by Münster in 1832 for a well-known extinct fish. For this genus, therefore, the name *Parajassa* is now proposed, to comprise the two species *pelagica* (Leach) and *tristanensis*, Stebbing.

For the species *Podocerus cumbrensis*, Stebbing & Robertson, a new genus—*Microjassa*—is proposed. It nearly resembles *Jassa*, but has the side-plates of the second to the fourth pairs much deeper than the rest, and the large fourth pair conspicuously emarginate behind for the small fifth; the second antennæ are but little stronger than the first, the outer

plates of the maxillipeds are but scantily armed, and, as in *Ischyrocerus*, the first and second gnathopods of the female are but little unequal, though in the male the second are much larger than the first and differ in shape as well as size from those of the female.

To the family Dulichiidæ I add the genus *Leipsuropus*. This is like *Cyrtophium*, Dana, except that the fifth segment of the pleon, though present, is devoid of appendages.

The name, signifying an omission of a uropod, refers to the important generic character. The genus contains at present only the Australian species described by Professor Haswell as *Cyrtophium parasiticum*.

In the Corophiidæ a new genus is required for the New Zealand species described by Mr. G. M. Thomson as *Corophium excavatum*. The definition is as follows:—

Body compressed, side-plates continuous. First antennæ slender; flagellum consisting of several joints, without accessory flagellum. Second antennæ robust; flagellum slight, of more than three joints. Mandibular palp three-jointed. First gnathopods as in *Corophium*. Second gnathopods nearly as in *Corophium*, but having the long process of the fourth joint fringed on its front or inner margin, while the fifth is fringed on its hind margin, the two joints therefore, though fitting together, having no look of coalescence; the sixth joint with a small palm. Third peræopods the shortest, setose, strongly spined on the sixth joint. Fourth and fifth peræopods successively much longer, second joint of the third to the fifth pairs widely expanded. First uropods, and still more the second, stout, strongly spined; third pair small, outer ramus nearly as long as the peduncle, inner oval, minute. Telson short, entire.

For the species described by Professor Della Valle as *Siphonœcetes typicus*, Kröyer, I propose the name *S. Dellavallei*.

As personally I am strongly opposed to preliminary notices and duplicate publication in natural history, it should be explained that these notes are not a freewill offering on my part. They are submitted in compliance with the rules that govern contributors to 'Das Tierreich.' In the general revision of the Amphipoda readjustments of classification, appearing in their proper sequence, can be explained with more brevity and understood with more ease than when they have to be presented in isolation and detachment.