

XVIII.—*Some Notes concerning the Male of Dexamine thea*, Boeck. By ALEXANDER PATIENCE.

Plate V.]

Family Dexaminidæ.

Genus DEXAMINE, Leach, 1814.

Dexamine thea, A. Boeck.

1860. *Dexamine thea*, Boeck, Forhl. ved. de Skand. Naturf., 8 mophe, p. 658, ♀. (1.)
 1862. *Dexamine tenuicornis* (err., non *Amphithoë tenuicornis*, H. Rathke, 1843!), Bate & Westwood, Brit. Sess. Crust. vol. i. p. 240 f, ♀. (2.)
 1870. *Dexamine thea*, Boeck, Crust. Amphi. bor. et arct. p. 107, ♀. (3.)
 1881. *Dexamine dolichonyx*, Nebeski, Beiträge zur Kenntniss der Amphipoden der Adria, p. 35, fig. 40, ♂ ♀. (4.)
 1885. *Dexamine thea*, J. S. Schneider, Ein Beitrag zur Kenntniss der Amphipoden der arktischen Norwegens, p. 20, t. 2, ♀. (5.)
 1887. *Dexamine dolichonyx*, Chevreux, Assoc. Franç. pour l'avance. des Sciences, p. 2 (separate copy), ♂ ♀. (6.)
 1888. *Dexamine dolichonyx*, Chevreux, Bull. de la Société d'études sci. de Paris, 11^e année, 1^{er} semestre, p. 8 (separate copy), ♂ ♀. (7.)
 1888. *Dexamine thea*, Robertson, Cat. Amphi. & Iso. of Firth of Clyde, Glasgow Nat. Hist. Soc. p. 34 (separate copy), ♀. (8.)
 1895. *Dexamine thea*, Sars, Crustacea of Norway, vol. i. p. 168, fig. 1, p. 477, ♀. (9.)
 1906. *Dexamine thea*, T. Scott, Crust. of River Forth & Est., Proc. Roy. Phys. Soc. Edin. vol. xvi. p. 161, ♀. (10.)
 1906. *Dexamine thea*, Stebbing, Das Tierreich, Amphipoda Gammaridea, p. 516, ♀. (11.)

Tritæta gibbosa (Bate).—The male of this species which has the hand of the first gnathopod incised on the front margin, and is in fact very like the same organ in *D. thea* ♂, has been regarded by northern authors hitherto erroneously as the *D. dolichonyx* of Nebeski. From the following references it would seem that Mr. Stebbing first fell into the mistake and has been followed by others. This male of *Tritæta gibbosa* has been figured by Walker (13) and by Sars (15).

1888. *Tritæta gibbosa* (Bate), ♂ as = *dolichonyx*, Nebeski, Stebbing, Rep. Voy. 'Challenger,' pp. 520, 941, 945. (12.)
 1890. *Tritæta dolichonyx*, A. O. Walker, Report Higher Crustacea of Liverpool Bay taken in 1889, Trans. Biol. Soc. Liverpool, vol. iv. p. 249, pl. 16. figs. 4-6, ♂. (13.)
 1892. *Tritæta gibbosa* (Bate), ♂ as = *dolichonyx*, Nebeski, Robertson, 2nd Contr. Amphi. & Iso. of Firth of Clyde, Glas. Nat. Hist. Soc. p. 16 (separate copy). (14.)
 1895. *Tritæta gibbosa* (Bate), ♂ as = *dolichonyx*, Nebeski, G. O. Sars, Crust. Norway, vol. i. p. 698, Supp. pl. viii. fig. 1. (15.)

1895. *Tritæta gibbosa* (Bate), ♂ as = *dolichonyx*, Nebeski, A. O. Walker, Rev. Amphi. L. M. B. C. p. 306 (separate copy). (16.)
 1906. *Tritæta gibbosa* (Bate), ♂ as = *dolichonyx*, Nebeski, Stebbing, Das Tierreich, Amphi. Gam. p. 518. (17.)
 1906. *Tritæta gibbosa* (Bate), ♂ as = *dolichonyx*, Nebeski, Norman & Scott, Crustacea of Devon & Cornwall, p. 77. (18.)

While examining lately some Amphipoda I had taken in the Firth of Clyde last summer I came across some specimens of *Dexamine thea*, Boeck, in which the propodal joint of the first gnathopods was peculiarly constructed, having a deep sinus on the upper margin, and in this respect showing an approach to the structure of the same joint of the first gnathopods of the male of *Tritæta gibbosa* (Bate). This peculiarity I found to obtain in the male sex only.

Boeck, in his descriptions of the species (1, 3), makes no mention of this sexual character, the male evidently not having come under his observation. Nebeski (4) seems to have been the first to observe the peculiar formation of the hand of the first gnathopods in *D. thea*, but evidently being unaware of Boeck's description of this species, he redescribed it under the name of *Dexamine dolichonyx*, n.s. The Rev. Thos. R. R. Stebbing (12), having in view the peculiar hand-formation of the male of *Tritæta gibbosa*, assumed that Nebeski was in error in referring *dolichonyx* to the genus *Dexamine*, and remarks: "The deep narrow cavity in the back of the hand of the second gnathopod was only found in the two male specimens, not in the females. A specimen of this curious species, from the Clyde, sent me by Mr. David Robertson, of Glasgow, shows in the peræopods a short hand and wrist preceded by a very long joint, which is characteristic of Boeck's genus *Tritæta*. The species should, I think, be named *Tritæta dolichonyx*." Nebeski's figure, however, of the extremity of the second peræopod (fig. 40) makes it clear that he was right in ascribing the species to *Dexamine*. Moreover, a reading of the text "das 2., 3. und 4. Segment des Abdomens am dorsalen Hinterrande in einem spitzen Zahn ausgezogen," which Stebbing himself quotes, puts the matter, I think, beyond doubt. The tooth on the first segment of the metasome is rarely nearly obsolete, especially in the male, and this probably accounts for Nebeski having failed to notice it on that segment.

Mr. Stebbing has as lately as 1906 (17) included "*Dexamine dolichonyx*, Nebeski," in his synonymy of *Tritæta gibbosa* (Bate).

Mr. A. O. Walker (13) has also erred in this matter. He records "*Tritæta dolichonyx*, Nebeski," from Puffin Island and Port Erin, Isle of Man (p. 241), and in a note (p. 249),

under the heading of "*Tritæta dolichonyx*, Nebeski," he states: "I have little doubt that this is the adult male of *T. gibbosa* (Bate). Only the males appear to have the characteristic excavation in the anterior edge of the hand of the second gnathopods, and both Mr. D. Robertson and myself have taken them associated with *T. gibbosa*." Again, he observes in referring to *Tritæta gibbosa* (Bate) (16): "It is remarkable that the emargination of the propodos of the first gnathopod in the adult males of this species, *which caused Nebeski to make a distinct species of it (T. dolichonyx)*—the italics are mine,—should have escaped the notice of so many carcinologists, including even so careful and accurate an observer as Professor G. O. Sars." Sars, in describing *D. thea* in the first part of his great work (9), makes no reference to the male sex; but in his Supplement (15), where he describes the male of *T. gibbosa* (Bate), he evidently accepts Walker's view, for he observes: "According to Mr. Walker, this peculiar sexual character has given rise to the establishment of a spurious species, viz. *T. dolichonyx* (Nebeski), which is nothing but the male of *T. gibbosa*."

Both Nebeski and Chevreux have made a rather curious mistake in observation in ascribing the peculiar formation of the hand to the *second* gnathopods, whereas it really occurs in the *first*. Nebeski (4) says "das breite Handglied des *zweiten* Gnathopodenpaares beim Männchen am Oberlande tief ausgebuchtet." Chevreux (6), in recording *D. dolichonyx*, Neb., from the coast of France, observes: "Le mâle se reconnaît immédiatement à l'échancrure si caractéristique du bord antérieur de la main des pattes de la *seconde* paire"; and again (7) he says: "Cette forme a peut-être été quelquefois confondue avec *D. thea*, Boeck, dont elle se rapproche par l'absence d'une dent au premier article des antennes supérieures. Les mâles relativement peu nombreux se distinguent au premier coup d'œil de ceux de l'espèce voisine par l'échancrure si caractéristique du bord antérieur de la main du *deuxième* gnathopod, échancrure qui n'existe pas chez les femelles. L'espèce est bien nettement caractérisée par les dentelures qui bordent les épimères des quatre premières paires."

Walker has made a similar mistake in observation (13), but subsequently (16) he rightly ascribes the peculiar formation of the hand to the first gnathopods.

Robertson (14) drew attention to Nebeski's error in this connection, but, curiously enough, he also regarded Nebeski's species as identical with the male of *T. gibbosa* (Bate). He remarks: "The Clyde specimens of *T. gibbosa* agree with

Dexamine dolichonyx, Nebeski, in having the peculiar incision in the upper or front margin of the hand of one of the gnathopods, but according to our experience the peculiarity belongs to the first gnathopods, not to the second to which Nebeski ascribes it."

Neither Schneider (5) nor Scott (10) makes any reference to the sexual character of the male here referred to, although the former has fully described and figured the species.

In endeavouring to clear up this matter I sent males of *D. thea* to Professor G. O. Sars, Rev. T. R. R. Stebbing, and Canon Norman, and enquired whether they were aware of the peculiarity of the incised gnathopod in that sex, but it had not been observed by any of them. Professor Sars, however, having examined his specimens, kindly sent me the two sexes from Norway, and Canon Norman wrote that on examination he now found the characteristic male in his collection from several British localities, including the two extremes Shetland and Jersey, and also among his last Finmarkian gatherings; and that the male was evidently the true *Dexamine dolichonyx*, as was evident by Nebeski's description of the spines on the metasome and his figure of the extremity of the second peræopod; and therefore those English authors who have regarded Nebeski's species as the male of *Tritæta gibbosa* have been in error. Subsequently to this he has informed me that in answer to his request M. Chevreux had sent him specimens of what he had called *D. dolichonyx*, and that these also were the males of *Tritæta gibbosa*. A reading of Chevreux's text (7), however, in which he says "L'espèce est bien nettement caractérisée par les dentelures qui bordent les épimères des quatre premières paires," leads one to the belief that he had then under examination *D. thea*, the characters of which he had rightly appreciated. Thus all references to Nebeski up to the present time, with probably the doubtful exception of Chevreux's, have been erroneous.

The two genera here under consideration comprise three British species: *Tritæta gibbosa* (Bate), *Dexamine thea*, Boeck, and *D. spinosa* (Mont.). The following short synoptic table may be useful for the discrimination of these genera and species:—

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|----------------------------------------------------------------|---|-----------------------------------------------------------------|-----------------------------|
| 1. | { | Peræopods 1-5, 4th joint longer than 5th and 6th combined | 1. <i>Tritæta gibbosa</i> . |
| Peræopods 1-5, 4th joint shorter than 5th and 6th combined.—2. | | | |
| 2. | { | Peræopod 5, 2nd joint sublinear | 2. <i>Dexamine thea</i> . |
| Peræopod 5, 2nd joint laminar | | 3. <i>D. spinosa</i> . | |

Remarks on the Male of D. thea.

The body is much more slender than in the female and also somewhat more compressed. The eyes are comparatively very slightly larger, the pigment being very dark brown with a lighter coating. Both pairs of antennæ are comparatively more slender and elongated. Antenna 1, flagellum 14-16-jointed. Antenna 2, ultimate joint of peduncle subequal to penultimate, flagellum slightly longer than peduncle and 11-12-jointed. The propodos of the first pair of gnathopoda * is peculiarly modified, having on the upper margin a somewhat deep sinus. Although somewhat resembling the propodos of the first pair of gnathopods of the male of *Tritæta gibbosa* (Bate), yet it appears to differ in one or two points. The notch in the hand of the last-named species appears to be deeper, and the upper margin is not so much rounded as in *D. thea*, while the disposition of the setæ is somewhat different, and these setæ are also more numerous than in the just-named species. The 3rd to 5th peræopods are of similar construction to those we find in the female, although they are not so setous, while the uropoda are not so spinous as in the opposite sex. The telson is cleft nearly to the base, each half with three lateral spines, one subdorsal and one on each finely serrated apex.

Colour yellowish, semipellucid, mottled with pink and orange.

Length 2.5 to 3.5 mm.

The reason why the male had not been previously known is probably due to the facts: 1st, that the male is always apparently of smaller size than the female, and thus might be passed by as younger specimens; and 2nd, because the first gnathopod, when not in use, seems to be habitually tucked away among the mouth-organs and is not visible without dissection.

It may be interesting to state that I have taken *T. gibbosa* from the outer integument of *Ascidia mentula*, O. F. M.,

* Robertson (14) has drawn attention to the occurrence of this notch in the female of *Tritæta gibbosa* (Bate). He states: "Moreover it has been observed in female specimens, so that probably the unnotched form of the hand belongs to individuals not adults, unless the species *gibbosa* and *dolichonyx* are distinct." Stebbing (17) observes, "occasionally also in ♀, perhaps a copulatory feature." In my investigations among the Clyde Crustacea during the past twelve years, I have come across two female specimens of this species where the propodos of the first gnathopods had a slight notch only (Pl. V. fig. gn. 1. ♀), but the hand was of the normal structure otherwise, and unlike that of the male. I have not come across this peculiarity in the female of *Dexamine thea*.

from Kames Bay, Loch Fyne, 10/25 fathoms. Walker (12) also records this species from Puffin Island and Port Erin, "encysted in the outer integuments of ascidians."

Both *T. gibbosa* and *D. thea* are widely distributed throughout the Clyde sea-area in depths up to 35 fathoms.

While preparing this paper, I have been much indebted to Canon Norman, F.R.S., who kindly gave me assistance and advice and put at my disposal some of the literature on the subject, which was not otherwise available to myself.

EXPLANATION OF PLATE V.

- C. Cephalon and antennæ of male of *Dexamine thea*, Boeck.
 gn. 1. ♂. First gnathopod of male of ditto.
 gn. 1*. Part of first gnathopod of male of ditto (greatly enlarged).
 gn. 2. ♂. Second gnathopod of male of ditto.
 gn. 1. ♀. Propodal joint of first gnathopod of female of *Tritæta gibbosa* (Bate), showing abnormal structure.
 gn. 1. Tg. Part of first gnathopod of male of *T. gibbosa*.
 prp. ♂, 3, 4, 5. 3rd, 4th, and 5th peræopods of male of *Dexamine thea*, Boeck.
 ep. 3. ♂. 3rd epimeral plate of male of ditto.
 up. 3. ♂. 3rd uropod of male of ditto.
 T. Telson of male of ditto.

XIX.—*The Species of the Genus Dactylopsila.*

By OLDFIELD THOMAS.

A RENEWED examination of the specimens in the British Museum hitherto referred to *Dactylopsila trivirgata* shows that they may be readily separated into three species by the coloration of the hands and feet, as indicated in the following synopsis of the genus:—

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|-------------------------------------------------------------------------------------------------------|---------------------------------|
| A. Fourth finger rather longer than others. | |
| a. Hands and feet wholly white. (N.W. New Guinea and neighbouring islands.) | 1. <i>D. trivirgata</i> , Gray. |
| b. Hands and feet not wholly white. | |
| a ² . Hands and feet wholly black. (S.E. New Guinea.) | 2. <i>D. melampus</i> , sp. n. |
| b ² . Metapodials and toes black, fingers and a band across ankles white. (N. Queensland.) | 3. <i>D. picata</i> , sp. n. |
| B. Fourth finger enormously longer than others | 4. <i>D. palpator</i> , M.-Edw. |

DESCRIPTIONS OF THE NEW SPECIES.

Dactylopsila melampus.

General characters as in *D. trivirgata*, but in all the



Patience, Alexander. 1908. "XVIII.—Some notes concerning the male of *Dexamine thea*, Boeck." *The Annals and magazine of natural history; zoology, botany, and geology* 1, 117–122. <https://doi.org/10.1080/00222930808692367>.

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