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On *D'Arcythompsonia neglecta*, a new Harpacticid Copepod from brackish water in Holland

by

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INTRODUCTION.

Among the notes and collections that came to the Zoological Museum, Amsterdam, after Dr H. C. REDEKE's death in 1945, I found an entirely completed manuscript, dealing with a new *D'Arcythompsonia* found in a canal at Den Helder (Netherlands). This is the species cited as *nomen nudum* by KARL LANG (1948, p. 274), in his "Monographie der Harpacticiden".

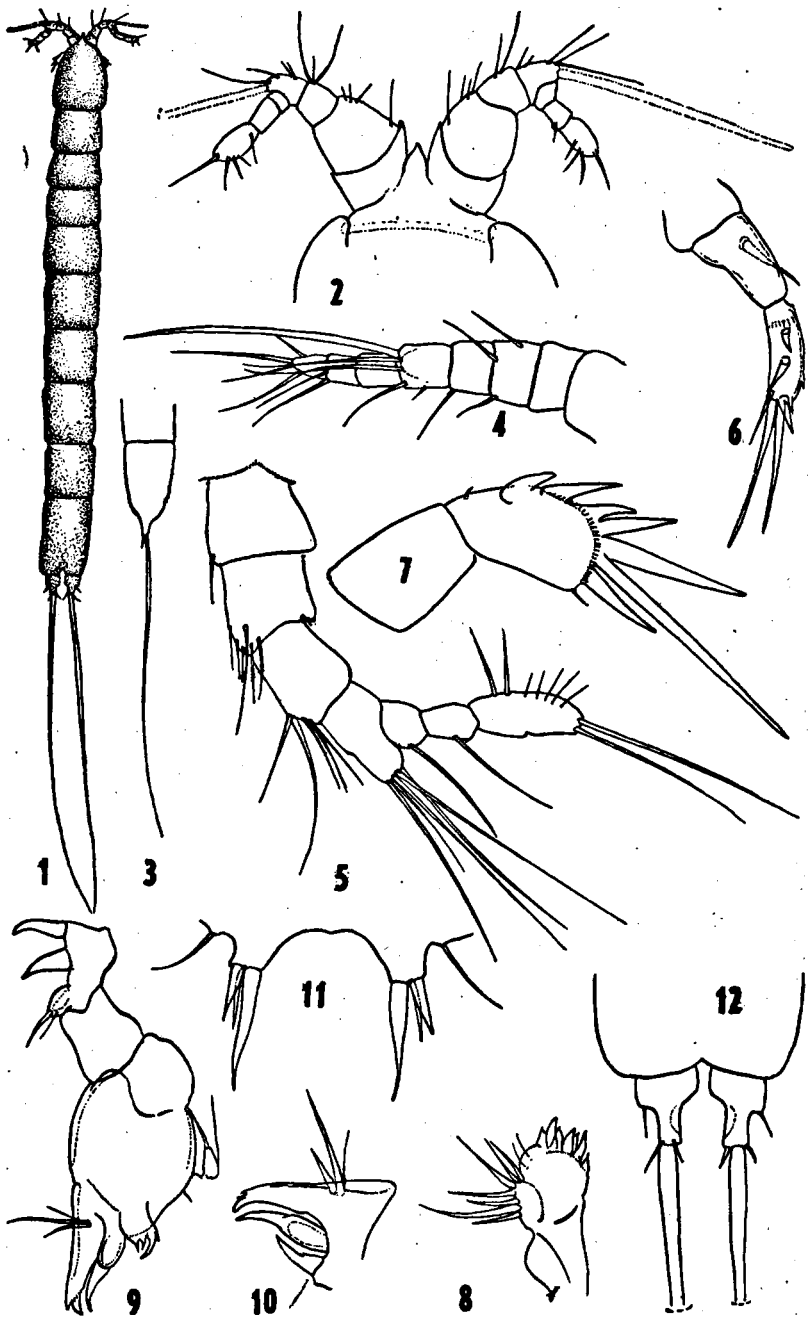
Pencil drawings and two coloured pictures relating to this species were found among REDEKE's papers. They have been redrawn in China Ink, without important alterations. The original slides used for these illustrations were found among the temporary glycerin mounts of Dr REDEKE; they are now — in a rather bad condition of course — in the Zoological Museum, with the collection number Co. 105,002. The holotype ♂ (Z.M.A. coll. no. Co. 105,000) and allotype ♀ (Z.M.A. coll. no. Co. 105,001) were selected from a vial labelled in REDEKE's handwriting *"D' Arcythompsonia neglecta n.sp."*

It seemed important to publish the description and figures as left behind by Dr REDEKE. (A. P. C. DE VOS).

D'Arcythompsonia neglecta n. sp.

In the summer and autumn of 1916 a number of Harpacticids were found in the plankton of a polluted brackish water canal at Den Helder (North Holland), which were easily recognized as belonging to the genus *D'Arcythompsonia*. They were afterwards recorded as *D'Arcythompsonia fairliensis* SCOTT (DE LINT, 1923).

Some time ago I found among other old material a tube containing 8 full-grown specimens of this *D'Arcythompsonia*, viz. 2 males, 6 females, and a fragment (urosome) of another male. A closer examination of these specimens showed that they belonged to a hitherto undescribed species, which for obvious reasons I propose to name *D'Arcythompsonia neglecta*.



Figs. 1—12 : Female

DESCRIPTION.

Female. Body slender, cephalic segment with lateral wing-like projections, rostral prominence rather conspicuous, the eight succeeding segments of about the same length, last (anal) segment longer than the preceding ones. Furcal rami with a broad, basal and a narrow terminal part, and three lateral setae, terminal setae very long, a little more than one half the body length. Anterior antennae 7-jointed, the four joints of the proximal part rather thick and tapering towards the end, terminal part narrowing abruptly, forming an angle with the proximal part but no articulation, last joint a little longer than the preceding two combined. Last joint of the basal part with a distal projection bearing two setae and a slender aesthetask reaching beyond the terminal setae. Second antennae short, two-jointed, with 7 claw-like spines on the last joint, which is somewhat rounded at its outer distal edge. Mandibles and maxillae show no peculiarities. The first maxilliped has two strong setae and a tiny hair near the basis of the terminal joint; the nodiform appendage of the second maxilliped is tipped with a minute bristle and a small seta.

First pair of legs with a strong spine at the inner angle of the second basal joint; this spine is absent from the succeeding legs; inner ramus nearly as long as the outer, with a short spine and two unequal setae at the end; outer ramus with an outside spine on each of the three joints[1]), and a long spine and two unequal setae at the end. Second pair: distal joint of inner ramus nearly twice as long as the proximal with a spine above its inner angle, two very long setae at the end and a spine at the distal outer angle; outer ramus with a short spine above the inner angle of the second joint and three unequal setae at the end. Third pair: distal joint of the inner ramus a little longer than the proximal one, spines and setae as in the second pair; outer ramus with a stout and slightly curved spine on the inner side of the second and third joint, and three unequal setae at the end. Fourth pair: inner ramus very short, not quite as long as the first and second joint of the outer ramus combined, with a spine near the base at the inner side of each joint and another at the distal outer angle, terminal appendages as in the foregoing pair; outer ramus with a short stout spine on the inner side of the second and third joint and three unequal setae at the end.

Fifth pair of legs small, with three setae at the end, the innermost being the largest and spine-like, with a somewhat swollen basis and slightly curved; the middle one is very tiny and difficult to see; the fourth seta on the small lateral knob-like projection is also very thin.

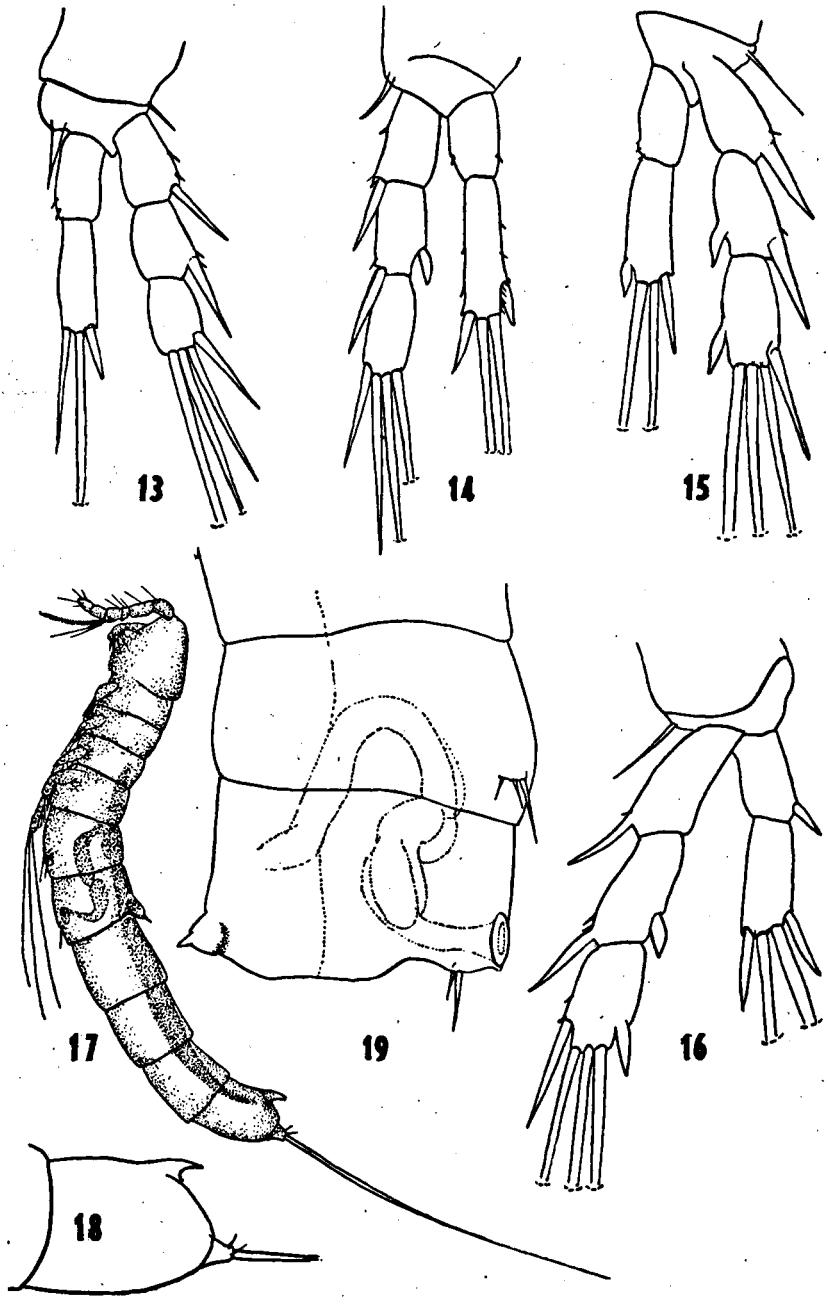
Sixth pair of legs is wanting.

The animals are in preserved state still rather transparent with a greyish or brownish hue.

Length (5 ♀ ♀): 1.1, 1.1, 1.2, 1.2, 1.3 mm.

Male. Somewhat smaller than female and having the genital segment distinctly subdivided; first abdominal segment with a median sucker-like projection on the dorsal surface, anal operculum deeply cleft and pro-

[1]) These three spines are also present on the outer ramus of the other natatory legs; they are not mentioned in the following descriptions.



Figs. 13—16 : Female.
Figs. 17—19 : Male

jecting as a pair of conspicuous hooks. Anterior antennae 6-jointed, the terminal part consisting of two joints, articulated, hinges being present between the four distal joints; posterior antennae and mouthparts as in the females.

First pair of legs with a strong curved, and partly denticulated spine on the inner angle of the second basal joint; the number and disposition of the appendages of this and the other swimming legs are the same in both sexes, but in the male the spines are distinctly more slender and the terminal setae much longer.

Fifth pair as in the females; each sixth pair represented by two tiny hairs.

Length (2 ♂ ♂): 1.0, 1.0 mm.

DISCUSSION.

Since the discovery of *D'Arcythompsonia fairliensis* three other species of this genus were described, viz. *D'A. scotti* GURNEY, 1920; *D'A. parva* WILSON, 1932; *D'A. inopinata* SMIRNOW, 1934. In one respect the new species closely agrees with *D'A. scotti* GURNEY, showing a similar dorsal tubercle in the males. In *D'A. neglecta* it is situated at the base of the first abdominal segment, opposite the sixth feet, and has a small, short and blunted spine. According to GURNEY in *D'A. scotti* the dorsal projection is situated on the second abdominal segment and appears to be crowned with a striated horseshoe-shaped membrane. In my specimens I have not seen such a membrane.

On the other hand the new species is clearly distinct by its smaller size, the more or less claw-like spines on the natatory legs of the females and the absence of a second spine on the inner side of the ultimate joint of P. 4, ram. ext., in both sexes. In this respect it stands alone among the other species of *D'A.* hitherto described, which all have two inner spines on that joint.[1]) The caudal rami resemble those of *D'A. fairliensis* but the contracted distal part is situated almost in the middle, and a seta is present on the outer angle. Other remarkable features are the short claw-like spines on the swimming legs of the females and the structure of P. 5 in both sexes, showing two bold setae and an extremely feeble one on the basal lobe. The sixth feet are present only in the males. The structure of the first antennae deserves special mentioning. In the female it is 7-jointed, the last (fourth) joint of the basal part has the usual dorsal projection carrying the aesthetask, the terminal part is 3-jointed. In the male the first antennae are geniculated; the basal part is also 4-jointed but the terminal part has only two joints.

In *fairliensis* the ♀ first antenna is also 7-jointed; SARS saw no males.

According to GURNEY (l.c., p. 138) the first antenna of *scotti* consists of six joints in both sexes. He has not figured the antennae but it follows from his description that the structure of the male antenna, bearing

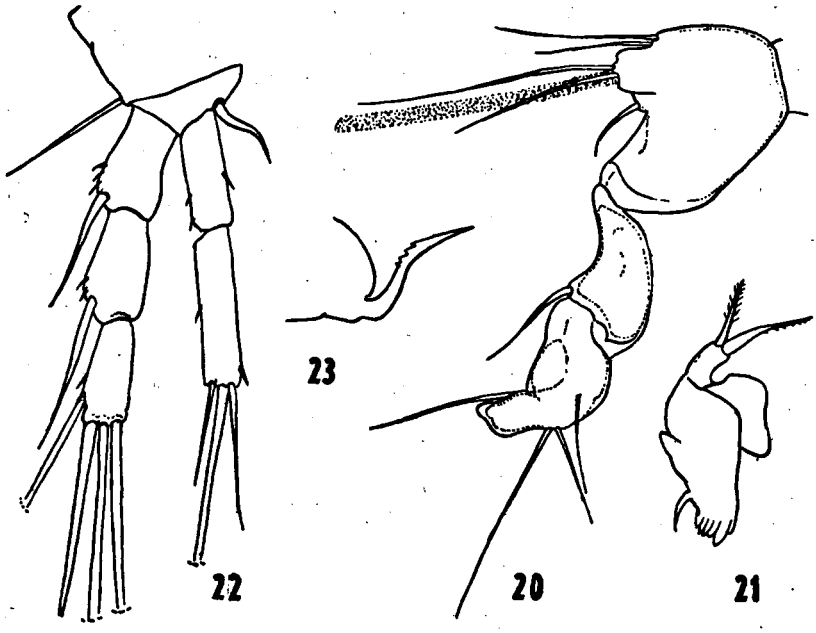
[1]) GURNEY (1920, pl. VII, fig. 6) figures two inner spines on the last joint of the external branch of P. 3. ♀ in *D'A. scotti*. In WILSON's figure (1932, pl. 18, fig. f) of P. 4. ♂ the inner seta of the second joint of the exp. is wanting, the third joint has one spine and four setae near the extremity, one of which probably corresponds with the single inner seta in *D'A. neglecta*.

the aesthetask on the fourth joint of the basal part and having two terminal joints, corresponds with that of *neglecta*. In the female the aesthetask being borne by the third joint of the basal part the distal one has obviously three joints, as in *fairliensis* and *neglecta*. But in neither of the sexes there is a marked division between basal and distal parts. In this respect there is an essential difference between GURNEY's species and mine, and it is especially important to note that in the former the first male antennae are not geniculated.

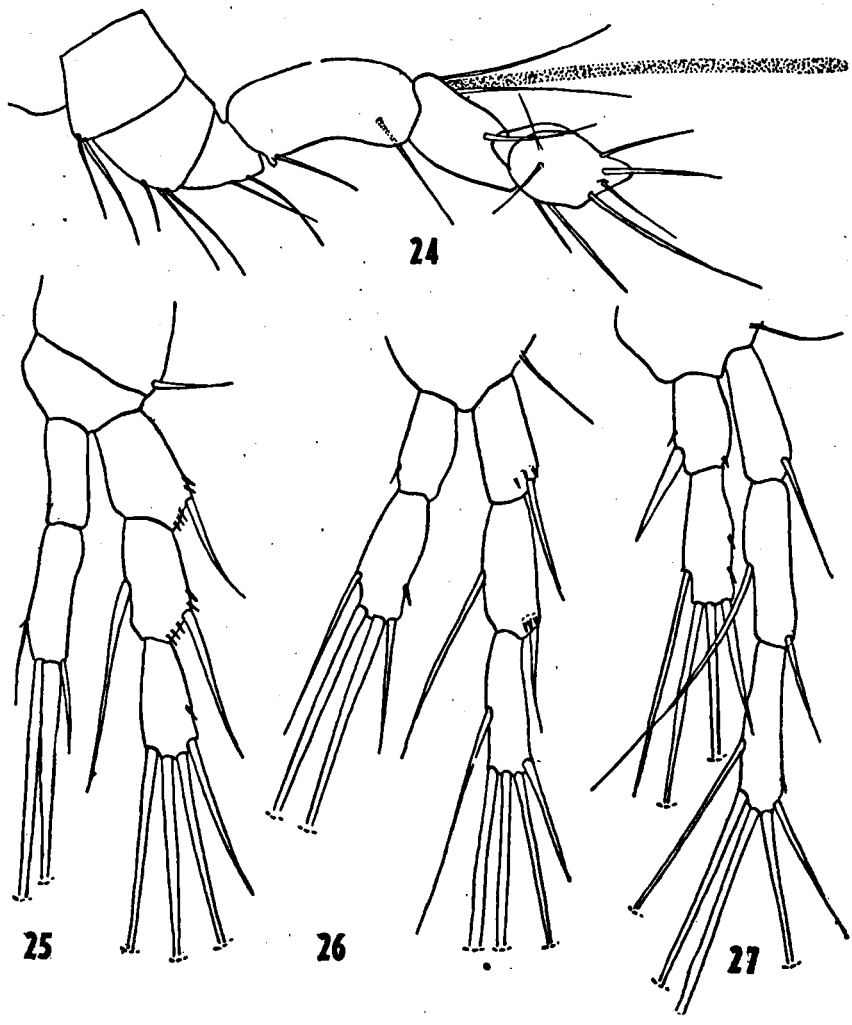
WILSON (l.c., p. 291) says with regard to *D'A. parva* ♀ : "The first antennae are short, stout at the base, and regularly tapered, 6-segmented, rather sparsely setose ; the fourth segment has a stout aesthetask reaching beyond the tip of the antenna". We must conclude from this description, that the terminal part of the female antenna has only two joints. As to the male he only states (p. 292): "First antennae not geniculated." His figure (pl. 18 b) shows the terminal part with two joints as normal.

SMIRNOW (1934) had at his disposition a single ripe female of 1.33 mm. From his figure 5 it appears that the structure of the 7-jointed first antenna closely agrees with that of *fairliensis* ♀ and *neglecta* ♀, the distal part being also slightly bent downward.

D'Arcythompsonia inopinata stands alone with 3 setae on the fifth pair of legs, all other known species having four. Moreover, the very strong and spinuled lateral seta in SMIRNOW's fig. 7 seems to be very characteristic.



Figs. 20—23 : Male



Figs. 24—27 : Male

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EXPLANATION OF THE FIGURES.

D'Arcythompsonia neglecta n. sp.

1. Dorsal view of entire animal	×	64
2. Cephalon, in dorsal view	×	320
3. Last abdominal segment and furca in lateral view	×	64
4. First antenna	×	320
5. First antenna	×	600
6. Second antenna	×	320
7. Tip of second antenna	×	600
8. Maxilla	×	600
9. First and second maxillipeds	×	320
10. First maxilliped	×	600
11. Fifth leg	×	600
12. Furca	×	264
13. First leg	×	600
14. Second leg	×	600
15. Third leg	×	600
16. Fourth leg	×	600
17. Lateral view of entire animal	×	88
18. Last abdominal segment and furca in lateral view	×	264
19. Body segment 5 & 6, in lateral view	×	264
20. First antenna	×	600
21. Mandible	×	600
22. First leg	×	600
23. Spine of basale of first leg	×	1200
24. First antenna	×	600
25. Second leg	×	600
26. Third leg	×	600
27. Fourth leg	×	600