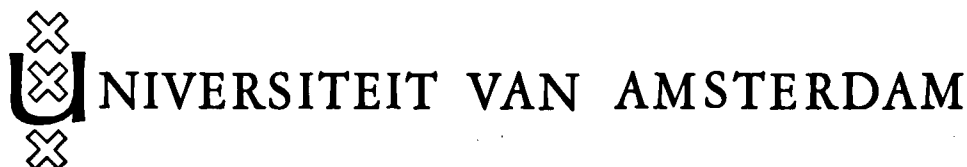


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NOTES ON COPEPODS ASSOCIATED WITH INVERTEBRATES, I, II.

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During the last 20 years, I accumulated numerous data concerning morphology, taxonomy, and distribution of Copepoda associated with invertebrates. Since these jottings have a fragmentary character, and could not be properly included in papers of a more comprehensive nature, they were left on file. Since they contain, however, data of some use, it was felt that publication still might be indicated. So, I decided to prepare them for publication, in the form of a series of loosely arranged "snippets". Each note is preceded by a summary, and concluded by a list of references pertaining to the note in question.

I. A NEW RECORD OF *GIARDELLA CALLIANASSAE* CANU, 1888 (CYCLOPOIDA,
CLAUSIDIIDAE) FROM THE ENGLISH CHANNEL

ABSTRACT

A single male of *Giardella callianassae* has been found in an oblique tow from the mouth of the English Channel, off Fécamp, France. The species is re-illustrated, with special emphasis on certain morphological details in the first and second antennae, and in the legs.

Giardella callianassae Canu, 1888, a cyclopoid copepod belonging to the family of the Clausidiidae, usually lives in the burrows of *Callianassa* (Canu, 1888, 1891, 1892), but males and certain copepodid stages are sometimes found in the plankton (Canu, 1888, 1892; Thompson, 1889, 1893).

Although Canu (1892: 254) considers the species "common" and "easy to collect", it is known from two places only: Canu's type-locality (the beach near Wimereux, French Channel coast) and Thompson's record of a single male in the plankton of Liverpool Bay. Canu's publications (1888, pl. XXVIII; 1891, pl. XXX figs. 6-9) are accompanied by fine illustrations, Thompson (1893, pl. XVII fig. 6) gives some rough sketches only. Through the courtesy of Dr. J.H. Nichols of the Fisheries Laboratory, Lowestoft, Great Britain, I received a single male specimen (length 1996 μ), belonging to *G. callianassae*, taken on 22 January 1971 at 1637 hours in an oblique haul of a high speed (5 knots) plankton sampler with 60 mesh per inch (24.6 meshes per cm) in the mouth of the English Channel. The exact position is 49°52'30" N, 00°15'00" E (= off Fécamp, France, dep. Seine-Maritime). The depth from which the specimen came cannot be ascertained, since the oblique haul covered the stretch from surface to bottom and return, but the sounding during the tow was 19 fathoms.

A closely related species, *G. thompsoni*, was described by A. Scott (1906), after a single male collected in a surface sample from Bahama Bank in the Irish Sea. Since this species is so similar to *G. callianassae*, and since Thompson found *callianassae* in the same area as *thompsoni*, Gooding (unpubl.: 74) supposes that Thompson's record might apply to *G. thompsoni* instead of to *G. callianassae*. Gooding (unpubl.: 45) used the number of setae on segment 3 of antenna 2 as discriminating character between the two species, *G. thompsoni* having 4 setae (2 long, 2 short) and *G. callianassae* 5 of a size. This distinction is no doubt based on Canu's plate (1888, pl. XXVIII fig. 6), but the present material does not bear out this supposed difference. The antenna of the male of *G. callianassae* at the hand bears 4 setae (2 longer and 2 shorter) on segment 3 of A2, just as in *G. thompsoni*. It may be assumed that Canu's illustration is erroneous on this point.

Apart from the illusory difference in the antennal armature, good differences between *callianassae* and *thompsoni* appear to exist in the shape of P5 and the length of the caudal rami. The P5 of *thompsoni* has a more slender second segment,

laterally armed with 2 spines; in *callianassae*, the distalmost lateral spine has moved into a subterminal position. The caudal ramus of the male of *thompsoni* is as long as urosome segments 4 to 6 combined, that of the male of *callianassae* is even longer than segments 3 to 6 combined.

Thompson (1889: 185) states that the single specimen found by the "Despatch" expedition in a surface tow in Liverpool Bay "corresponds with the second or less developed stage". This remark fits with the statement (1893: 15) that this specimen was only 0.75 mm long (adults of *G. callianassae* can attain a length of 2.5 mm - Canu, 1888: 411). On the other hand, Thompson's figures (1893, pl. XVII fig. 6) illustrate an adult male. There is no indication, that Thompson copied the only figures available, those of Canu, of *G. callianassae*, on the contrary he illustrates the correct number (4) of setae on segment 3 of the second antenna whereas Canu incorrectly shows 5 setae.

The characters in the fifth leg and in the furcal rami as shown in Thompson's figures, correspond with those for *G. callianassae* and not with *G. thompsoni*. For the moment, no other support for Gooding's supposition that Thompson's *callianassae* could have been *thompsoni* is available than the same geographic origin of the materials (Irish Sea).

Gooding (unpubl.: 35-43) proposes to lump the genera *Hemicyclops* Boeck, 1873, *Hersiliodes* Canu, 1888, and *Giardella* Canu, 1888. For the moment, I do not adhere to this view, and I have retained the genus *Giardella*. Since the detailed structure of the cephalic appendages is one of the basic characters on which the generic subdivision in the Clausidiidae is based, and since the new material shows certain minor differences from Canu's illustrations, it was considered useful to re-illustrate *G. callianassae* completely. Moreover, the legs 1 to 4, which have not been completely illustrated in the earlier publications, are shown in the present paper.

The differences in comparison with Canu's figures, are in the A1 (more setae on segments 2 and 3, the presence of aesthetes on segments 6 and 7) and in the A2 (4 setae on segment 3, 7 setae on segment 4). But upon the whole, the more than 80

years old figures of Canu are still a marvel of accuracy, which cannot be said of most other copepod work from that same epoch.

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II. *HETERANTHESSIUS FURCATUS* STOCK, 1971 (CYCLOPOIDA,
PSEUDANTHESIIDAE), IN BRITTANY

ABSTRACT

Heteranthesius furcatus Stock, 1971, has recently been described from the Mediterranean coast of France. It has been rediscovered on the French Atlantic coast, at the isle of Callot in the Bay of Morlaix.

Recently, Stock (1971) described a cyclopoid copepod, found off St.-Cyprien at the French Mediterranean coast (département des Pyrénées-Orientales) under the name of *Heteranthesius furcatus*. Humes & Stock (1972) classified this genus of copepods with the (new) family Pseudanthesiidae.

H. furcatus was based on a single female specimen, found in the branchial sac of a tunicate of the genus *Microcosmus*.

During a student course of our University at the Roscoff Biological Station, in the autumn of 1972, we were fortunate enough to come across another specimen of *Heteranthesius*, again a female. This specimen was found at the isle of Callot in the Bay of Morlaix (département de Finistère), at low tide, in washings of a white sponge collected under overhanging rocks at the foot of the church of Callot. To my surprise, the specimen belonged to *H. furcatus*, described from the Mediterranean, and not to *H. scotti* Bocquet, Stock & Bénard, 1959, a species recorded from Brittany.

The present specimen agrees in all essential details with *H. furcatus*. Also the measurements are much the same (length, without furcal setae,

2.95 mm; maximum width, at the level of the first metasome segment, 1.32 mm).

Some minor differences, without taxonomic value, were found in the number of small, nearly rudimentary, setules on the legs. The holotype from St.-Cyprien has 5 such setules on the third segment of the exopod of P₃, against 4 and 6 setules on the contralateral exopodites, respectively, of the Atlantic individual. The chaetotaxis formula of the basal endopod segment of P₃, is 0-0 in the Mediterranean specimen, against 1-1 in the Atlantic specimen. In the Atlantic material, the endopod of P₄ is devoid of ornamentation; the Mediterranean material has 2 minuscule setules in that position. In all other morphological details, the Atlantic and Mediterranean specimens are absolutely similar.

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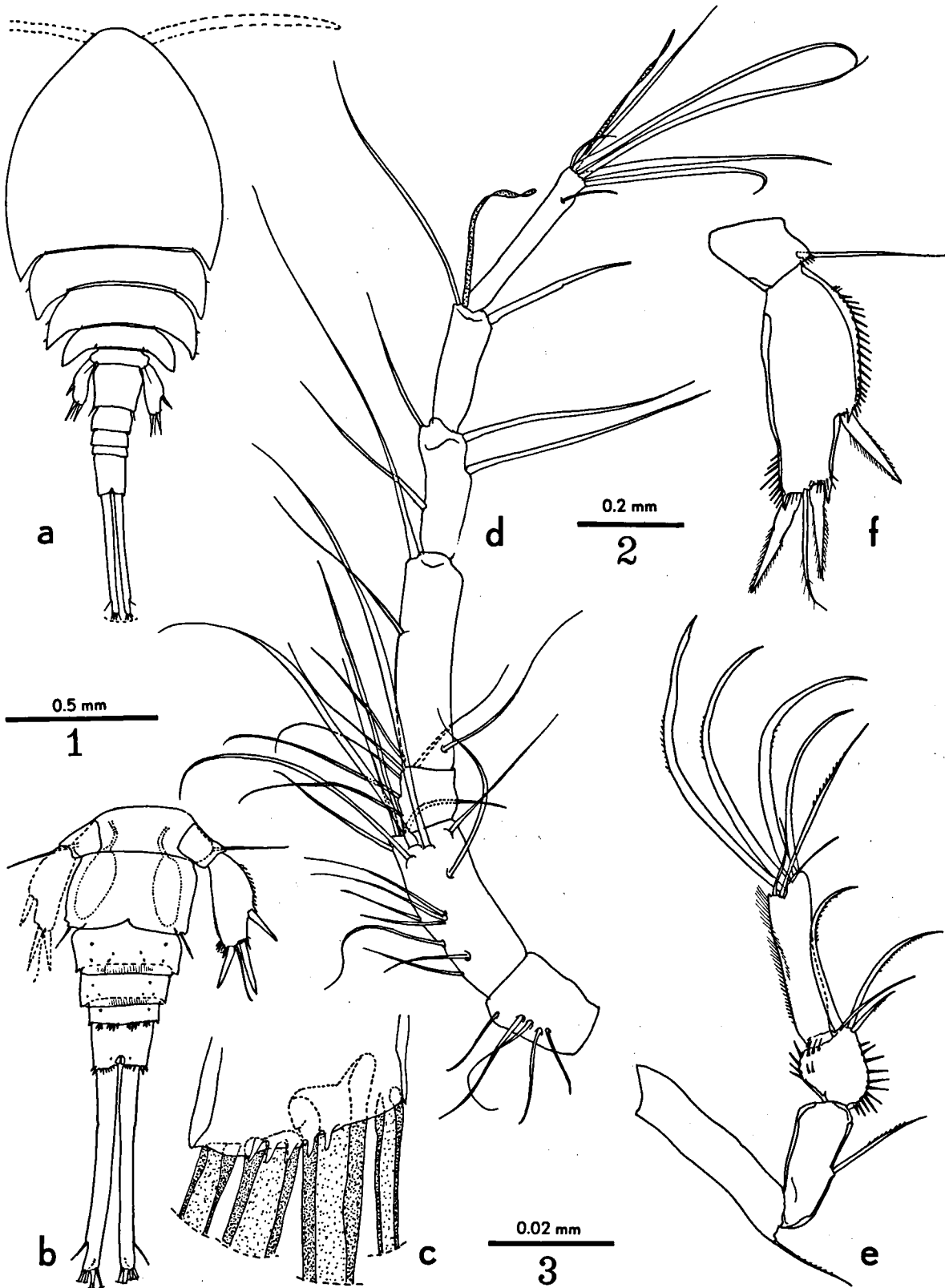


Fig. 1. *Giardella callianassae* Canu, 1888, male from off Fécamp. a, entire animal in dorsal view (scale 1); b, urosome in ventral view (the four terminal setae of the caudal rami were broken in the single specimen available) (2); c, distal end of right caudal ramus in ventral view (3); d, anterior antenna (4); e, posterior antenna (4); f, fifth leg (4).

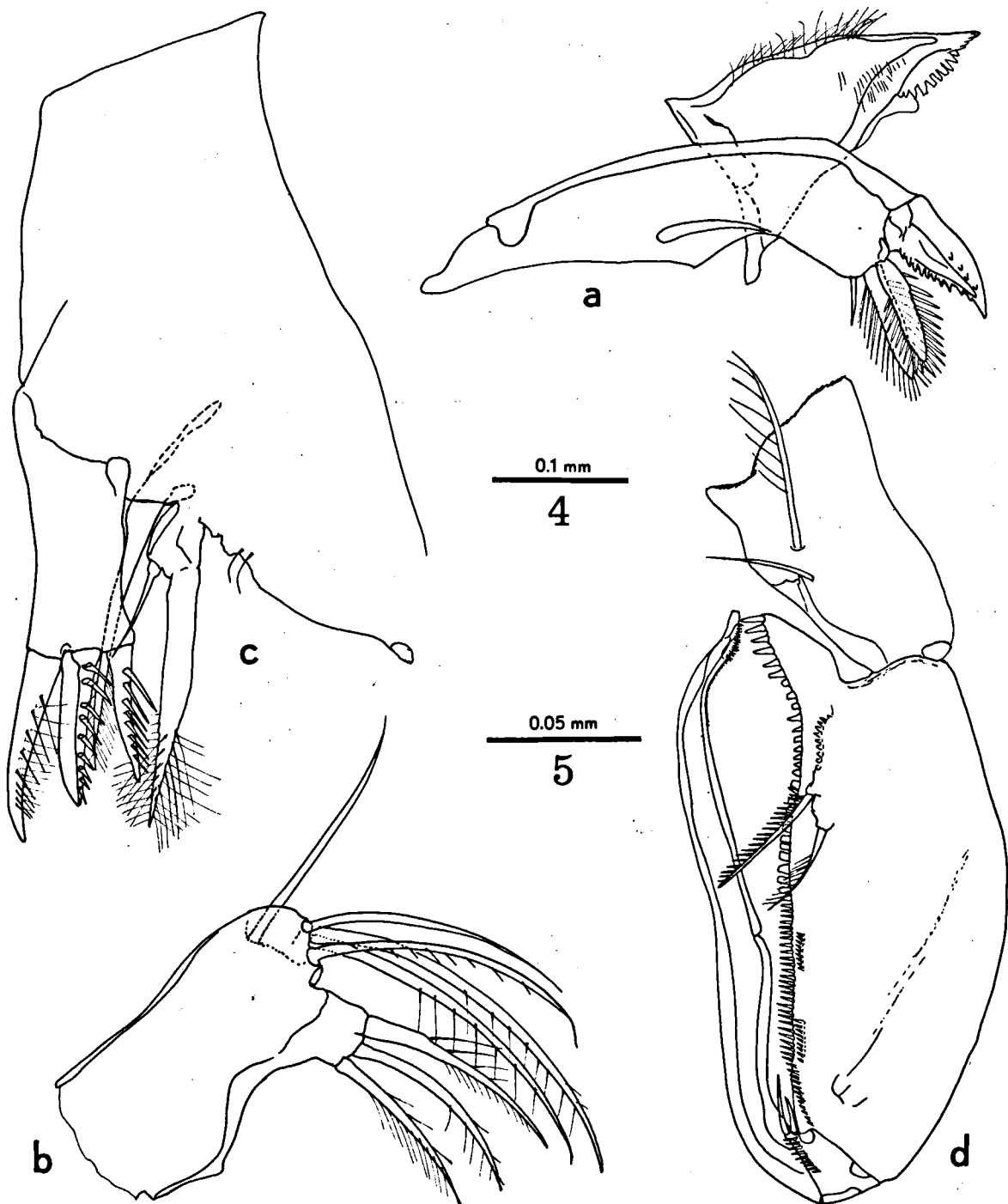


Fig. 2. *Giardella callianassae* Canu, 1888, male from off Fécamp. a, mandible and paragnath (scale 5); b, anterior maxilla (5); c, posterior maxilla (5); d, maxilliped (4).

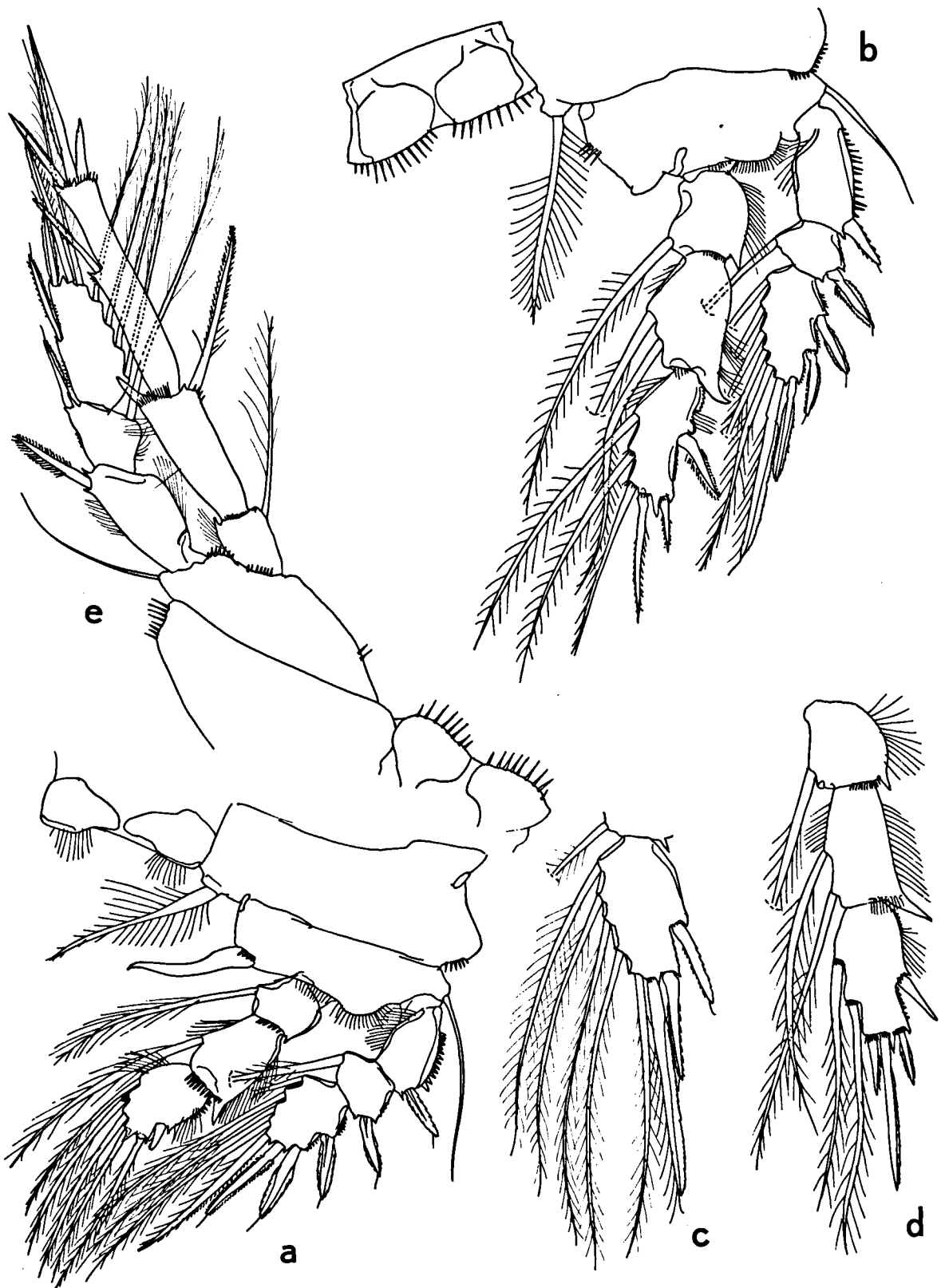


Fig. 3. *Giardella callianassae* Canu, 1888, male from off Fécamp. a, first leg (scale 4); b, second leg (4); c, third exopod segment of third leg (4); d, endopod of third leg (4); e, fourth leg (4).