AN ACCOUNT

OF THE

CRUSTACEA

OF

NORWAY

WITH SHORT DESCRIPTIONS AND FIGURES OF ALL THE SPECIES

BY

G. O. SARS

VOL. V

COPEPODA
HAPACTICOIDA

PARTS XXXI & XXXII

SUPPLEMENT (continued)

WITH 16 AUTOGRAPHIC PLATES

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Remarks.—This new species somewhat resembles in its outward appearance *I. angusta*, G. O. Sars, exhibiting a similar very slender form of body. It is, however, easily distinguished by the less slender anterior antennæ, and still more by the peculiar dilatation of the 2 middle caudal setæ.

Occurrence.—Of this form at first only a single female specimen was found at Lillesand. Last summer, however, I observed this species not unfrequently in another locality of the south coast, viz., at Korshavn.

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For Idyopsis, G. O. Sars.

Read: *Idyanthe*, G. O. Sars.

Remarks.—As the generic name *Idyopsis* has been previously appropriated in zoology, I have in my account of the Crustacea of the 2nd Fram Expedition proposed the above change of name.

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Rhynchothalestris helgolandica, (Claus).

Distribution.—Polar Islands north of Grinnell Land (2nd Fram Expedition).

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Add the following species:

Microthalestris littoralis, G. O. Sars, n. sp.

(Suppl. Pl. 11, fig. 1).

Specific Characters.—Female. Very like the type species both in size and general appearance, though perhaps a little less slender in form. Caudal setæ simple, none of them conspicuously dilated at the base. Anterior antennæ comparatively shorter than in the type species, but of a very similar structure. Posterior antennæ and oral parts almost exactly as in that species. 1st pair of legs exhibiting the structure characteristic of the genus, the rami being even still more slender than in the type species. Last pair of legs resembling in their general shape those in *M. forficula*, but differing conspicuously as to the number of marginal setæ on the distal joint, the inner edge of this joint having only a single seta, whereas in the type species 3 such setæ are constantly present.

Colour whitish, with a faint yellow tinge.

Length of adult female 0.60 mm.

Remarks.—The present form is closely allied to *M. forficula* (Claus), and indeed I have long been in doubt about its real specific difference. Having however met with this form in many different localities and always found the above mentioned characteristic difference in the structure of the last pair of legs perfectly constant, I prefer to describe it here as a new species. The forms recorded by Boeck as *Thalestris karmensis* and by Th. Scott as *T. forficuloides*, belong both to the type species, as proved by the structure of the last pair of legs.

Occurrence.—I have met with this form in many places, both of the south and west coasts of Norway and northwards to the Trondhjem Fjord (Bejan). It is a pronouncedly littoral form, being only found in the uppermost part of the littoral zone, and very often in shallow pools left by the tide.

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Dactylopusia vulgaris, G. O. Sars.

Distribution.—Polar Islands north of Grinnell Land (2nd Fram Expedition).

Page 129.

Dactylopusia micronyx, G. O. Sars.

Remarks.—This form seems to be the same as that recorded by Messrs. Normann and Scott as *D. valida*. I do not however know, which of these 2 names should be retained for the species, as they were proposed about simultanously.

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Add the following species:

Dactylopusia latipes, Boeck.

(Suppl. Pl. 11, fig. 2).

Dactylopus latipes, Boeck, Oversigt over de ved Norges Kyster iagttagne Copepoder. Chr. Vid. Selsk. Forhandl. f. 1864, p. 270.

Syn. Dactylopus brevicornis, Scott (not Claus).

Specific Characters.—Female. Body very robust, with the anterior division considerably dilated and of rounded oval form. Urosome much narrower and about half the length of the anterior division. Caudal rami very short, being nearly twice as broad as they are long; innermost but one of the apical setæ exhibiting at the base inside a very conspicuous dilatation. Anterior antennæ short and thick, consisting, as in *D. brevicornis*, of 5 joints only, with a slight

trace of a subdivision of the 3rd joint. Posterior antennæ and oral parts scarcely different in structure from those parts in *D. brevicornis*. 1st pair of legs very powerfully built, with the rami still shorter and stouter than in that species, the outer one scarcely extending to the end of the 1st joint of the inner, and having the apical claws shorter and less curved than in *D. brevicornis;* inner, ramus with the 2 outer joints very short and less perfectly separated, apical claws strong. Last pair of legs with the distal joint short, cordiform in shape, being only slightly longer than it is broad at the base; inner expansion of proximal joint extending nearly as far as the distal joint. Ovisac of moderate size and rounded oval in form.

Colour light yellow.

Length of adult female 0.75 mm.

Remarks.—This form, which I believe is that recorded by Boeck under the above name, is closely allied to *D. brevicornis* Claus, agreeing with that species in most of the structural details. It is, however, of larger size and considerably more robust form of body, and may moreover at once be recognised by the peculiar and very conspicuous dilatation which the innermost but one of the caudal setæ exhibits at the base inside, and of which no trace is found in *D. brevicornis*. The form described and figured by Th. Scott as *D. brevicornis* in the 24th Annual Report of the Fishery Board for Scotland seems to be referable to the present species.

Occurence.—I have met with this form not rarely in several places both of the south and west coasts of Norway in depths ranging from 20 to 40 fathoms.

Distribution.—Scottish coast (Scott).

Add also the following new genus and species:

Gen. **Dactylopodopsis,** G. O. Sars, n.

Generic Characters.—General form of body resembling that in *Dactylopusia*. Rostral projection well developed, lamellar. Anterior antennæ short and stout, with the number of joints considerably reduced. Posterior antennæ with the outer ramus small, but distinctly 3-articulate. Mandibles very strong, palp, however, comparatively narrow, with both rami imperfectly developed. 1st pair of legs rather small, outer ramus scarcely prehensile, inner unusually short and only composed of 2 joints. Natatory legs well developed, with the rami subequal in length. Last pair of legs with the distal joint small; inner expansion of proximal joint triangularly produced.

Remarks.—This new genus is chiefly characterised by the peculiar structure of the 1st pair of legs, which differs conspicuously from that in any of the other genera belonging to the present family. In the other structural details, as also in the external appearance, it exhibit a general ressemblance to some species of the genus *Dactylopusia* (D. brevicornis and latipes). Only a single species is known to me.

Dactylopodopsis dilatata, G. O. Sars, n. sp.

(Suppl. Pl. 12).

Specific Characters.—*Female.* Body short and stout, with the anterior division considerably dilated and somewhat depressed, the posterior much narrower. Cephalic segment exceedingly large and having the posterior edge minutely denticulated; rostral projection large and prominent, linguiform in shape. Last pedigerous segment abruptly much narrower than the preceeding ones. Urosome about half the length of the anterior division and very slightly tapered behind. Caudal rami short, quadrangular in form, apical setæ normal and rather slender. Anterior antennæ short and stout, 5-articulate, resembling in structure those in *Dactylopusia brevicornis*, 3rd joint having a slight trace of a subdivision in the middle. 1st pair of legs much smaller than the 3 succeeding ones, outer ramus with the last joint scarcely shorter than the middle one and rather narrow, oblong in form, being armed outside with 3 simple spines successively increasing in length distally and at the tip with 2 slender setæ; inner ramus scarcely as long as the outer, proximal joint somewhat dilated and carrying inside below the middle a plumose seta, distal joint small, incurved, with 2 unequal apical spines. Natatory legs with both rami strongly built, middle joint of the inner one acutely produced at the outer corner. Last pair of legs comparatively small, distal joint of rounded form, and provided with 5 rather unequal marginal setæ; inner expansion of proximal joint extending beyond the distal one and carrying 5 setæ.

Colour not yet ascertained.

Length of adult female 0.85 mm.

Remarks.—As above stated, this form in several respects has a general resemblance to *Dactylopusia brevicornis* and its ally *D. latipes*, and indeed I was at first inclined to combine these 3 species in a particular genus. The anomalous structure of the 1st pair of legs in the present species, however, would seem to forbid such a combination, and I prefer therefore to leave the 2 said species in the old genus *Dactylopusia*, restricting the new genus to the present form.

Occurrence.—A solitary female specimen of this form was found in a sample taken at Bukken, south west coast of Norway from a depth of about 60 fathoms. Another specimen was taken, many years ago, off the Lofoten islands, from a dept of 100 fathoms, muddy bottom.

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Add the following species:

Dactylopodella clypeata, G. O. Sars, n. sp.

(Suppl. Pl. 13, fig. 1).

Specific Characters.—Female Body very short and compact, clypeiform, with the dorsal face strongly vaulted. Cephalic segment exceedingly large, occupying almost half the length of the body, rostral prominence short and deflexed. Epimeral plates of the 3 succeeding segments laterally expanded, subimbricate, hind corner acutely produced, 4th segment deeply emarginated, encompassing laterally the small last segment. Urosome very short, not even attaining $^1/_3$ of the length of the anterior division. Caudal rami small, apical setæ, however, rather slender and elongated. Antennæ and oral parts of a structure nearly agreeing with that in the type species. 1st pair of legs likewise rather similar, though having the outer ramus comparatively shorter and the apical claws of the inner less slender. 2nd pair of legs, as in the type species, with the outer 2 joints of the inner ramus confluent. Last pair of legs with the distal joint comparatively larger than in that species, inner expansion of proximal joint broader and less produced.

Colour brownish yellow.

Length of adult female 0.41 mm.

Remarks.—This form may at once be distinguished from *D. flava* (Claus) by its very short and compact, clypeiform body. In the structural details, however, it very closely agrees with that species.

Occurrence.—Several specimens of this form were found at Farsund and Korshavn, south coast of Norway, in depths ranging from 20 to 50 fathoms, sandy bottom.

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Add the following species:

Idomene borealis, G. O. Sars, n. sp.

(Suppl. Pl. 13, fig. 2).

Specific Characters.— Female. General form of body resembling that in the type species, though perhaps a little shorter and stouter. Cephalic segment large and evenly rounded in front, with a very small deflexed rostral expansion. Epimeral parts of this and the 3 succeeding segments sub-imbricate and acutely produced at the hind corner. Last pedigerous segment much narrower than the preceding ones, but provided with well defined acute epimeral plates. Urosome not nearly attaining half the length of the anterior division; last segment short and scarcely cleft behind. Caudal rami rather short, being scarcely longer than they are broad, apical setæ comparatively short, the innermost one not spiniform. Anterior antennæ rather small, and resembling in structure those in the type species. Posterior antennæ with the outer ramus comparatively smaller, but distinctly 3-articulate. Mandibular palp with the rami much smaller than in the type species, none of the setæ spiniform. Maxillæ and maxillipeds about as in that species. 1st pair of legs with the outer ramus much shorter than the 1st joint of the inner, this joint less dilated than in the type species and having the seta of the inner edge attached in front of the middle, last joint of same ramus rather small, scarcely longer than the preceding one, apical claws more slender than in the type species. Setæ of this and the preceding joint small and not plumose. Last pair of legs with the distal joint narrowly exserted at the tip, with only the 2 outermost setæ spiniform, seta of inner edge attached in front of the middle; inner expansion of proximal joint angularly incurved at the base outside and comparatively narrower than in the type species, marginal setæ 6 in number and of rather unequal size, the innermost but one reduced to a very short denticulated spine.

Colour, when alive, not yet ascertained.

Length of adult female 0.42 mm.

Remarks.—This form at first sight looks very like *I. forcipata* Phil. On a closer examination, however, it may at once be distinguished by the comparatively shorter caudal rami, and more particularly by the innermost apical seta not being spiniform. As mentioned in the above diagnosis, moreover, several other well marked differences in the structural details are found to exist.

Occurrence.—Some few specimens of this form, all of the female sex, were found in a sample kindly send to me from Mr. Nordgaard, who procured it in the Trold Fjord, inside the Lofoten islands.

Add also the following genus and species:

Gen. **Idomenella**, Scott.

Generic Characters.—Body somewhat resembling in shape that in *Dactylopusia*, but more depressed. Anterior antennæ comparatively short and stout, with the number of joints reduced, and carrying, in addition to the usual setæ a number of slender, densely pectinate spines. Posterior antennæ and oral parts on the whole built upon the same type as in *Idomene*. 1st pair of legs, as in that genus, having the inner ramus distinctly 3-articulate, with the 1st joint lamellarly dilated. Natatory legs normal. Last pair of legs, however, imperfectly developed, with no distinct boundary between the distal and proximal joints.

Remarks.—This genus has recently been established by Th. Scott, to include the form described by him at an earlier date as *Dactylopus coronatus*. As indicated by the generic name proposed, it is nearest allied to the genus *Idomene* Philippi, from which it chiefly differs in the structure of the anterior antennæ and of the last pair of legs. The diminutive end-syllable of the name *Idomenella* is somewhat unappropriate, in so far as the type species is in reality of considerably larger size than either of the 2 known species belonging to the genus *Idomene*.

Idomenella coronata, Scott.

(Suppl. Pl. 14).

Dactylopus coronatus, Scott, Additions to the Fauna of the Firth of Forth. Twelfth Ann. Rep. of the Fishery Board for Scotland, p. 255, Pl. IX, figs 12—20.

Syn: *Idomene coronata*, G. O. Sars.

Specific Characters.—Female. Body moderately robust and pronouncedly depressed, tapering gradually behind. Cephalic segment rather large and produced in front into an obtuse rostral projection. Urosome comparatively short, not attaining half the length of the anterior division, its segments coarsely spinulose at the hind edge ventrally and laterally. Caudal rami scarcely longer than they are broad, apical setæ normal and of moderate length. Anterior antennæ comparatively short and stout, 6-articulate, gradually tapered and densely setiferous, carrying besides a number of slender spines edged with long spinules

in a comb-like manner. Posterior antennæ with the distal joint comparatively short, outer ramus attached near the end of the proximal joint, and fully as long as the distal joint. Mandibular palp with the rami of moderate size and simply setiferous. Posterior maxillipeds rather powerful, hand oval fusiform in shape, with an oblique row of delicate spinules crossing its base. 1st pair of legs with the outer ramus much shorter than the inner, middle joint with a rather strong plumose seta inside, last joint much smaller and armed with 3 curved spines and 2 somewhat longer setæ; inner ramus with the 1st joint rather dilated and carrying inside, somewhat beyond the middle, a strong plumose seta, the outer 2 joints well developed and combined nearly attaining the length of the 1st, each with a well-marked seta inside, last joint armed moreover at the tip with 2 unequal claw-like spines and a slender plumose seta. Natatory legs of usual structure, and having both rami coarsely spinulose outside. Last pair of legs each forming an irregular lamella divided in the middle by a deep incision into two rounded setiferous lobes, the outer one provided near the base with a small hair-like bristle and carrying moreover 5 marginal setæ, the outer 2 of which are falciform curved and clothed along the outer edge with coarse spinules; inner lobe a little more prominent and likewise edged with 5 setæ, the outer 2 of which are much the longest, whereas the innermost but one is rather short.

Colour pale yellowish grey.

Length of adult female 0.74 mm.

Remarks.—This form, as above mentioned, was at first described by Th. Scott as a species of the genus *Dactylopusia*, and was subsequently by the present author referred to the genus *Idomene* Philippi, to which it undoubtedly bears a near relation. Quite recently, however, Th. Scott has proposed for its reception the new genus *Idomenella*, which I believe ought to be supported.

Occurrence.—A solitary female specimen of this form was taken, some years ago, at Risør, south coast of Norway, from a depth of about 20 fathoms. Another specimen I found in a sample taken at Aalesund on the west coast.

Distribution.—Scottish coast (Scott), Polar Islands north of Grinnell Land (2nd Fram Exp.).

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Amenophia peltata, Boeck.

Distribution.—Polar Island north of Grinnell Land (2nd Fram Exp.).

Page 141.

Westwoodia assimilis, G. O. Sars.

Distribution.—Polar Islands north of Grinnell Land (2nd Fram Exp.).

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Add the following species:

Westwoodia monensis (Brady).

(Suppl. Pl. 15).

Pseudothalestris monensis, Brady. On Copepoda and other Crustacea taken in Ireland and the North east coast of England. Trans. Nat. Hist. Soc. N. D. & N. C., Vol. XIV, p. 59, Pl. I, figs. 15, 16, Pl. III, figs. 11—16.

Specific Characters.—Female. Body of the usual short pyriform shape, with the anterior division much dilated, the posterior short and tapered. Cephalic segment large, but not nearly so deep as in *W. minuta;* the 3 succeeding segments less conspicuously imbricate. Eye of quite normal structure. Anterior antennæ very slender, tapering, and composed of 8 well defined joints, 4 of which belong to the terminal part. Posterior antennæ and oral parts scarcely different in structure from those in the said species. 1st pair of legs likewise very similar, the outer ramus being distinctly biarticulate and about half as long as the 1st joint of the inner, seta attached inside this joint comparatively small and more remote from the base; apical claws of same ramus comparatively shorter than in *W. minuta* and still more unequal in size. Natatory legs scarcely different in structure from those in *W. minuta.* Last pair of legs with the distal joint rather small, oblong oval in form, outermost marginal seta somewhat remote from the base, middle one very thin, hair-like; inner expansion of proximal joint comparatively broader than in *W. minuta* and scarcely extending beyond the distal joint.

Male differing from the female in a manner similar to that found in the other species of the present genus. Inner ramus of 2nd pair of legs biarticulate, with 2 subequal spines at the tip, both slightly curved outwards. Last pair of legs not much different in shape from those in female; inner expansion of proximal joint however comparatively smaller and only provided with 3 marginal setæ.

Colour yellowish grey.

Length of adult female 0.55 mm.

Remarks.—The above—described form is unquestionably that recorded by Prof. Brady as *Pseudothalestris monensis.* It is closely allied to the species

described in the present work as *W. minuta* Claus, but differs in some particulars, especially as regards the structure of the anterior antennæ, so that it evidently ought to be regarded as specifically distinct. As to the genus *Pseudothalestris* of Brady, I am still of opinion, that it cannot be supported, since the only character on which it is based, the biarticulate condition of the outer ramus of the 1st pair of legs, is also found in a species, *W. assimilis* G. O. Sars, which so closely resembles the type species, *W. nobilis*, Baird, as hardly to be distinguished without dissection.

Occurrence.—Several specimens of this form were taken, some years ago, from tidal pools at Haugesund, west coast of Norway. Prof. Brady also found this species in tidal pools, and it would thus seem to be a pronouncedly littoral form.

Distribution.—British Isles (Brady).

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Amphiascus minutus (Claus).

Distribution.—Polar Island north of Grinnell Land (2nd Fram Exp.).

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For Amphiascus imus (Brady)

Read: *Amphiascus varians* (Norm. & Scott).

Stenhelia varians, Norman & Scott, Copepoda new to science from Devon and Cornwall. Ann. Mag. Nat. Hist. Ser. 1 Vol. XV, p. 284.

Remarks.—I find that the form decribed in the present account on page 156 as *Amphiascus imus* Brady is unquestionally identical with that recorded in the year 1905 by Messrs. Normann and Scott under the name of *Stenhelia varians* and subsequently more fully described and figured in their beautiful work „Crustacea of Devon and Cornwall". As these gentlemen also record the true *Stenhelia ima* of Brady, these 2 forms must in reality be specifically distinct. In describing the present species I have also pointed out some apparent differences, especially in the structure of the last pair of legs.

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Amphiascus hispidus (Brady).

Distribution.—Polar Islands north of Grinnell Land (2nd Fram Exp.).

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Amphiascus affinis, G. O. Sars.

Distribution.—Polar Islands north of Grinnell Land (2nd Fram Exp.).

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Amphiascus intermedius (Scott).

Distribution.—Polar Islands north of Grinnell Land (2nd Fram Exp.).

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Amphiascus typhlops, G. O. Sars.

Remarks.—It may be that this form is in reality identical with that recorded in 1893 by I. C. Thompson as *Stenhelia hirsuta*. Some doubt about the identity is however left, as the figures given by that author do not by far agree exactly with those here reproduced, and as there are 3 other closely allied species, to be described in the sequel, which with almost the same right might be adduced to Thompson's species. A re-eximation of the type specimens will be necessary, to settle this question.

Distribution.—Polar Islands north of Grinnell Land (2nd Fram Exp.).

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For Amphiascus productus, G. O. Sars

Read: *Amphiascus Blanchardi* (Scott).

Stenhelia Blanchardi, Scott, on some new and rare British Copepoda. Anz. & Mag. Nat. Hist. Ser. 6. Vol. XVI, p. 353, Pl. XV, figs. 1—10.

Remarks.—Though the habitus-figure (lateral view) given by Th. Scott scarcely display with sufficient clearnes the extremely slender and elegant form of the body in this species, the detail-figures reproduced do not leave any doubt on the identity of these 2 forms. The description of Th. Scott was published in 1905, that of the present author the next year.

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Add the following 12 species:

Amphiascus latifolius, G. O. Sars.

(Suppl. Pl. 16).

Amphiascus latifolius, G. O. Sars, Crustacea of the 2nd Fram Exp., p. 28, Pl. III.

Specific Characters.—Female. Body somewhat robust and only slightly tapered behind. Cephalic segment of moderate size, rostrum conically produced.

Ursome considerably shorter than the anterior devision, with the segments well marked off from each other and densely spinulose at the hind edge ventrally and laterally. Caudal rami short quadrangular, broader than they are long, inner medial seta conspicuously dilated in its proximal part and exceeding half the length of the body. Anterior antennæ of moderate lenght, gradually tapering distally, and composed of 9 well defined joints, the 4 first successively diminishing in size, terminal part about half the length of the proximal one. Posterior antennæ with the outer ramus distinctly 3-articulate, middle joint setiferous. Oral parts of the usual structure. 1st pair of legs with both rami pronouncedly prehensile, the outer one about equalling in length the 1st joint of the inner, its middle joint long and slender, somewhat curved in its proximal part, last joint very short, lamelliform, and armed with 3 strong curved claws, successively increasing in length distally, and accompanied outside by a small bristle, inside by a well developed curved seta; inner ramus with the 1st joint linear in form and carrying near the end a comparatively short seta, the outer 2 joints very small and connected by an oblique suture, the last one armed at the tip with 2 strong claws of unequal length. Natatory legs well developed, with the full number of setæ. Last pair of legs large and pronouncedly foliaceous, distal joint of unusual size and very thin, obliquely rounded in form, and edged with 6 setæ, one of them, issuing from the tip, very thin and hair-like; inner expansion of proximal joint obtusely rounded at the tip and scarcely extending beyond the middle of the distal joint, marginal setæ 5 in number, the 2 outermost closely juxtaposed.

Colour not yet ascertained.

Length of adult female 0.70 mm.

Remarks.—This species was described and figured by the present author in the year 1909 from specimens procured during the 2nd Fram Expedition. The arctic specimens were of larger size than those found off the Norwegian coast, but otherwise agreed in all essential structural details. It is a very distinct and easily recognisable species.

Occurrence.—Some few specimens of this form, all of the female sex, were found in a sample taken by Mr. Nordgaard in the Trold Fjord, inside the Lofoten islands. Another female specimen was derived from a sample taken, many years ago, at Christiansund, west coast of Norway.

Distribution.—Polar Islands north of Grinnell Land (2nd Fram Exped.).

Amphiascus thalestroides, G. O. Sars, n. sp.

(Suppl. Pl. 17).

Specific Characters.—Female. Body comparatively slender and gradually tapered behind, resembling in shape somewhat that in certain species of the genus *Parathalastris*. Rostrum not much prominent, triangular in form, with the tip somewhat blunted. Urosome almost as long as the anterior division, and having the segments very sharply marked off from each other, the last one rather small. Caudal rami quadrangular, broader than they are long and spinulose inside, apical setæ unusually strong and dark-coloured, the inner medial one, as usual the longest and gradually thickened in its proximal part. Anterior antennæ of moderate length and composed of 8 joints, the first 2 much the largest, the 2 succeeding ones about equal-sized, terminal part rather slender, considerably exceeding half the length of the proximal one. Posterior antennæ with the middle joint of the outer ramus imperfectly developed and without any setæ. Maxillæ with the masticatory lobe unusually strong and armed with a limited number of coarse claw-like spines. Oral parts otherwise normal. 1st pair of legs with both rami distinctly prehensile, the outer one rather short, not nearly attaining the length of the 1st joint of the inner, its middle joint somewhat dilated and oval in form, last joint lamellar, rounded, and armed with 4 curved claws successively increasing in length distally, and at the inner corner with a slender seta; inner ramus with the 1st joint linear in shape and carrying near the end inside a well-developed plumose setæ, the 2 outer joints of larger size than in the preceding species, and each provided inside with a small seta, last joint being larger than the preceding one and carrying on the tip 2 strong unequal claws accompanied inside with a thin seta. Natatory legs well developed, with the full number of setæ, middle joint of inner ramus acutely produced at the outer corner. Last pair of legs rather large, distal joint broadly cordiform and edged with 6 rather strong, dark-coloured setæ, one of them, however, attached to the conically produced tip of the joint, thinner than the others; inner expansion of proximal joint comparatively short, triangular, not nearly extending to the middle of the distal joint, marginal setæ 5 in number, the middle one the longest.

Colour not yet ascertained.

Lenght of adult female about 1 mm.

Remarks.—This is one of the larger species of the genus, and, like the preceding one, belongs to the section in which both rami of the 1st pair of legs are pronouncedly prehensile. It may easily be recognised both by the general form of the body and by the structure of the 1st and last pairs of legs.

Occurrence.—Only a solitary female specimen of this form has hitherto come under my notice. It was found in a sample taken at Farsund, south coast of Norway, from moderate depth.

Amphiascus denticulatus (Thompson).

(Suppl. Pl. 18).

Stenhelia denticulata, I. C. Thompson, Revised Report on the Copepoda of Liverpool Bay. Trans. Liverp. Biol. Soc. Vol. VII, p. 194, Pl. XXX.

Specific Characters.—Female. Body very slender, sub-linear in form, with the anterior division scarcely at all broader than the posterior. Rostrum prominent, conically produced. Urosome nearly as long as the anterior division, its segments less sharply marked off from each other than in the 2 preceding species and less coarsely spinulose at the hind edge, last segment well developed, though somewhat shorter than the preceding one. Caudal rami small, broader than they are long and scarcely spinulose at the edges; apical setæ quite normal and of moderate length. Anterior antennæ rather slender, 8-articulate, 2nd joint the largest, gradually widening distally, and produced at the end outside to an acute spiniform lappet curving anteriorly, 4th joint longer than 3rd, terminal part not attaining the length of those joints combined. Posterior antennæ with the middle joint of the outer ramus well defined and setiferous. Oral parts normal. 1st pair of legs slender, with the outer ramus scarcely prehensile, and exceeding somewhat the length of the 1st joint of the inner, its last joint longer than either of the other 2 and narrow oblong in form, being armed with 3 simple spines and 2 slender geniculate setæ; inner ramus with the 1st joint linear in form and somewhat exceeding in length the other 2 combined, last joint very narrow and about 3 times as long as the middle one, carrying on the tip a slender claw-like spine, a somewhat longer seta and, inside the latter, a small bristle. Natatory legs with the rami very slender, number of setæ somewhat reduced. Last pair of legs with the distal joint rather narrow, conical in form, and edged with 5 rather unequal setæ, having moreover, just outside the end, a peculiar knob-like appendage tipped by a small hair; inner expansion of proximal joint narrow triangular and scarcely extending beyond the middle of the distal joint, marginal setæ 5 in number, none of them of any considerable length. Ovisacs comparatively small, narrow oblong in form and only containing a limited number of ova.

Male considerably smaller than female and exhibiting the usual sexual differences. Anterior antennæ distinctly hinged and exhibiting the spiniform projection of the 2nd joint characteristic of the species. Inner ramus of 2nd pair of legs biarticulate, with the 2 usual juxtaposed spines outside the distal joint.

Last pair of legs much smaller than in female, with only 2 spines on the inner expansion of the proximal joint, distal joint of a form similar to that in female and exhibiting also the characteristic appendage inside the tip.

Colour light yellowish grey.

Length of adult female about 1 mm.

Remarks.—The above described form is unquestionably that recorded by I. C. Thompson as *Stenhelia denticulata*. The characteristic spiniform expansion of the 2nd joint of the anterior antennæ is alone sufficient for recognising the present form from any of the other known species.

Occurrence.—I have only met with this elegant and comparatively large species in a single locality, viz., at Kroshavn, south coast of Norway. It occurred here not rarely on a coarse sandy bottom at a depth of about 20 fathoms.

Distribution.—British Isles (Thompson).

Amphiascus Normani, G. O. Sars (new name).

(Suppl. Pl. 19, fig. 1).

Stenhelia longirostris, Norman & Scott, Copepoda new to Science from Devon and Cornwall. Ann. Mag. Nat. Hist. ser. 7. Vol. XV, p. 288 (not Amphiascus longirostris Claus).

Specific Characters.—Female. Very like the preceding species, but of smaller size and somewat less slender form of body. Anterior antennæ comparatively shorter and less attenuated, 2nd joint simple, without any trace of the spiniform lappet found in *A. denticulatus*, 4th joint only slightly longer than 3rd, terminal part exceeding in length those joints combined. 1st pair of legs with the outer ramus scarcely longer than the 1st joint of the inner, otherwise resembling in structure those in *A. denticulatus*. Last pair of legs likewise very similar in shape, the distal joint having outside the tip an appendage of the same peculiar appearance as in that species.

Colour not yet ascertained.

Length of adult female 0.95 mm.

Remarks.—This form was at first briefly characterised by Messrs. Norman and Scott in a preliminary paper published in the year 1905, and was subsequently more fully described and figured in "The Crustacea of Devon and Cornwall" by the same authors. The specific name *longirostris* proposed by those authors cannot be accepted, since there is another species of the present genus having this name given to it already by Claus. I have therefore changed it in honour to the one of the above-named authors. This species is very closely allied to *A. denticulatus*, so closely indeed, that I have been in some doubt about its real specific difference. Having, however, found several specimens and in none

of them detected even the slightest trace of the spiniform lappet on the 2nd joint of the anterior antennæ so characteristic of *A. denticulatus*, I think that it must be kept apart from that species.

Occurrence.—Some specimens of this form, all of the female sex, were found in a sample taken last summer at Korshavn from moderate depth. It also occurred occasionally in another locality, viz., at Agnefest, uppermost part of the Ros Fjord.

Distribution.—British Isles (Norman & Scott).

Amphiascus amblyops, G. O. Sars, n. sp.

(Suppl. Pl. 19, fig. 2).

Specific Characters.—Female. Body rather slender and only slightly attenuated behind, with very thin and pelluid integuments. Rostrum prominent, conically produced. Urosome not nearly attaining the length of the anterior division, last segment scarcely shorter than the preceding one. Caudal rami short, broader than they are long; apical setæ normal. Eye replaced by a diffuse branching pigment of a light yellow colour. Anterior antennæ moderately slender, 8-articulate, the first 2 joints much the largest and subequal in size, 4th joint a little longer than 3rd, terminal part scarcely exceeding in length those joints combined. Posterior antennæ with the middle joint of the outer ramus well defined and setiferous. 1st pair of legs with the outer ramus considerably shorter than the 1st joint of the inner, middle joint without any seta inside, last joint of about same size and armed with 3 spines and 2 geniculate setæ; inner ramus with the 1st joint narrow linear in form carrying near the end inside a slender seta, last joint 3 times as long as the middle one and armed in the usual manner, both joints combined scarcely more than half as long as the 1st. Natatory legs with the rami very slender, but having the full number of setæ. Last pair of legs with the distal joint oval in form, tip slightly bilobular, marginal setæ comparatively short and 6 in number, the 2 apical ones very thin, hair-like; inner expansion of proximal joint narrow triangular and extending somewhat beyond the middle of the distal joint, marginal setæ 5 in number.

Colour whitish.

Length of adult female 0.72 mm.

Remarks.—This form may, in the fresh state, at once be recognised by its highly pellucid body and the imperfectly developed visual organ. In the structural details also some well marked differences are found to exist, distinguishing it from the other known species.

Occurrence.—Only a solitary female specimen of this form has hitherto come under my notice. It was taken in the Lyngen Fjord inside Farsund, from a depth of about 50 fathoms, muddy sand.

Amphiascus lagenirostris, G. O. Sars, n. sp.

(Suppl. Pl. 20).

Specific Characters.—Female. Body moderately slender and nearly cylindrical in form, being only very slightly tapered behind. Rostrum of a very peculiar appearance, being considerably expanded at the base and narrowly exserted at the tip, thus assuming a lageniform shape. Urosome much shorter than the anterior division, last segment comparatively short. Caudal rami small, scarcely longer than they are broad; apical setæ normal and rather slender. Anterior antennæ almost attaining the length of the cephalic segment, and 8-articulate, 2nd joint much the largest and narrower than the first, exhibiting in the middle indside a well-marked setiferous ledge and produced at the tip to a sharp somewhat incurved dentiform projection, 4th joint about twice as long as 3rd, terminal part slightly exceeding in length those joints combined. Posterior antennæ likewise rather slender, outer ramus distinctly 3-articulate, with the 1st joint longer than the other 2 combined. Posterior maxillipeds with the hand comparatively narrow and clothed inside with slender spinules. 1st pair of legs rather slender, outer ramus much shorter than the 1st joint of the inner, middle joint with a well-marked seta inside, last joint of about same size, and armed with 3 spines and 2 geniculate setæ, inner ramus with the 1st joint very narrow, linear, and carrying near the end indside a well-developed seta, last joint about twice as long as the middle one and armed in the usual manner, both joints combined scarcely exceeding in length $^1/_3$ of the 1st. Natatory legs with the rami narrow and the number of setæ somewhat reduced, the last joint of the outer ramus having in the 2 anterior pairs only a single seta inside. Last pair of legs with the distal joint narrow oblong in form, marginal setæ 6 in number, the 2 apical ones much more slender than the others; inner expansion of proximal joint narrow triangular in form and extending about to the middle of the distal joint, marginal setæ 5 in number, 2 of them rather slender.

Male much smaller than female, but exhibiting the very same characteristic form of the rostrum. Anterior antennæ hinged in the usual manner, their 2nd joint agreeing in shape with that in female. Inner ramus of 2nd pair of legs transformed in a similar manner to that in most other species of the present genus. Last pair of legs with the distal joint much shorter than in female and

having only 5 rather unequal marginal setæ; inner expansion of proximal joint with 2 apical setæ accompanied outside by a small spinule.

Colour not yet ascertained.

Length of adult female 0.77 mm., of male 0.57 mm.

Remarks.—This is a very distinct and easily recognisable species, being especially characterised by the peculiar form of the rostrum and the structure of the anterior antennæ.

Occurrence.—Only 2 specimens of this form, a female and a male, have hitherto come under my notice. They were found in a sample taken last summer at Korshavn, south coast of Norway, from a depth of 20 to 30 fathoms, coarse sandy bottom.

Amphiascus nanoides, G. O. Sars, n. sp.

(Suppl. Pl. 21, fig. 1).

Specific Characters.—Female. Body comparatively slender, sublinear in form. Rostrum narrow conical in shape. Urosome almost as long as the anterior division, last segment well developed. Caudal rami short, quadrangular; middle apical setæ rather strong and somewhat thickened in their proximal part, exhibiting moreover a peculiar flexure, seta of outer corner unusually long. Anterior antennæ rather slender, 8-articulate, first 2 joints the largest, 4th joint only slightly longer than 3rd, terminal part about the length of those joints combined. Posterior antennæ with the middle joint of the outer ramus very small and without any seta. Posterior maxillipeds well developed, with the hand oval fusiform in shape. 1st pair of legs with the outer ramus about the length of the 1st joint of the inner, middle joint without any seta inside, last joint a little longer and armed with 2 spines only and 2 geniculate setæ, distal spine coarsely denticulated along the outer edge; inner ramus very slender, its last joint more than 3 times as long as the middle one and armed in the usual manner, both joints combined nearly as long as the 1st. Natatory legs slender, with the number of setæ considerably reduced. Last pair of legs with the distal joint narrow oblong in shape and carrying 5 marginal setæ, the 2 apical ones very slender; inner expansion of proximal joint triangularly produced and extending considerably beyond the middle of the distal joint, marginal setæ 5 in number.

Colour not yet ascertained.

Length of adult female 0.56 mm.

Remarks.—This form belongs to the smaller species of the genus, and may easily be recognised by the thickened caudal setæ and their peculiar flexure.

In the structural details also several well-marked differences from the other known species are found to exist.

Occurrence.—Some specimens of this form, all of the female sex, were found in samples taken last summer at Korshavn, south coast of Norway, from depths ranging from 20 to 40 fathoms, coarse sandy bottom.

Amphiascus bulbifer, G. O. Sars, n. sp.

(Suppl Pl. 21, fig. 2).

Specific Characters.—Female. Body somewhat less slender than in the last species and slightly tapered behind. Rostrum not much produced and somewhat obtuse at the tip. Urosome almost as long as the anterior division and having the segments sharply marked off from each other, last segment well developed and only slightly shorter than the preceding one. Caudal rami comparatively large and broad, quadrangular in form, apical setæ exhibiting rather an anomalous appearance, the outer medial one being comparatively short, but forming at the base a large bulbous dilatation coarsely ciliated in its outer part on both sides and abruptly narrowed to a thin hair-like bristle, inner medial seta very slender and not at all thickened at the base, nor exhibiting any trace of the usual joint, seta of inner corner small, that of outer corner coarse, spiniform. Anterior antennæ unusually short and stout, and only composed of 6 joints, the 2nd being much the largest and together with the 1st occupying half the length of the antenna, 4th joint scarcely longer than 3rd but considerably expanded in front, terminal part only consisting of 2 joints, the distal one much the longer. Posterior antennæ with the middle joint of the outer ramus well defined and setiferous. Mandibular palp with the outer ramus very small, nodiform. Posterior maxillipeds less strongly built than in the last species. 1st pair of legs with the outer ramus about the length of the first 2 joints of the inner combined, middle joint without any seta inside, last joint somewhat longer and armed with 2 simple spines and 2 geniculate setæ; inner ramus with the 1st joint somewhat dilated and shorter than usual, carrying, like the middle one, near the end inside a well developed ciliated seta, last joint nearly twice as long as the middle one and armed on the tip with a rather strong claw-like spine, a slender seta, and inside the latter with a small bristle; both joints combined considerably exceeding the length of the 1st joint. Natatory legs slender, with the number of setæ considerably reduced. Last pair of legs comparatively small, distal joint of inconsiderable size and rounded form, carrying 5 rather unequal setæ; inner expansion

of proximal joint extending beyond the distal joint, and carrying only 4 comparatively short spiniform setæ.

Colour not yet ascertained.

Length of adult female 0.44 mm.

Remarks.—This is a very small form and in some respects differs considerably from the other known species. It may at once be recognised from any of them by the anomalous structure of the caudal setæ, especially that of the outer medial one. The structure of the anterior antennæ also is rather peculiar, and the 1st and last pair of legs likewise differ somewhat in shape from that usually met with.

Occurrence.—2 female specimens of this peculiar form were found in a sample taken last summer at Korshavn from a depth of 20—30 fathoms, sandy bottom.

Amphiascus spinulosus, G. O. Sars, n. sp.

(Suppl. Pl. 22).

Specific Characters.—Female. Body comparatively shorter and stouter than in the preceding species and somewhat tapering behind. Rostrum of usual shape, conically produced. Urosome considerably shorter than the anterior division, and having the segments well marked off from each other, the anterior ones exhibiting each laterally 2 oblique rows of spinules somewhat remote from the hind edge, last segment shorter than the preceding one. Caudal rami comparatively small, apical setæ of moderate length and normal structure. Anterior antennæ not much elongated, but rather slender, 8-articulate, the first 2 joints of about equal size, 4th joint considerably longer than 3rd, terminal part about the length of those joints combined. Posterior antennæ with the outer ramus normally developed. 1st pair of legs with the outer ramus shorter than the 1st joint of the inner, middle joint without any seta inside, last joint of about same size and, as in the 2 preceding species, armed with 2 spines and 2 geniculate setæ; inner ramus with the 1st joint long and slender carrying near the end inside the usual seta, last joint scarcely twice as long as the middle one and armed on the tip with a claw-like spine, a thickish seta and a small bristle; both joints combined not attaining half the length of the 1st. Natatory legs with the rami less narrow than in the preceding species; number of setæ somewhat reduced. Last pair of legs with the distal joint oblong in form, slightly bilobular at the end, marginal setæ 6 in number, the 2 apical ones longer and thinner than the others; inner expansion of proximal joint broadly triangular and narrowly truncated at the end, scarcely extending beyond the middle of the distal joint, marginal setæ 5 in number.

Male rather smaller than female, but exhibiting a very similar armature at the caudal segments. Anterior antennæ hinged in the usual manner. Inner ramus of 2nd pair of legs distinctly 3-articulate, last joint comparatively small and armed outside with 2 coarse juxtaposed spines. Last pair of legs with the distal joint very small, rounded oval in form, and only provided with 5 marginal setæ, inner expansion of proximal joint carrying 3 subequal spines.

Colour light yellowish grey.

Length of adult female 0.55 mm.

Remarks.—This form somewhat resembles, as to the outward appearance, *A. longiremis* (Brady). It is however of much smaller size, and may moreover at once be distinguished by the peculiar armature of the caudal segments, a character from which the specific name here proposed has been derived. In the structure of the legs also some well-marked differences are found to exist.

Occurrence.—Several specimens of this form were found last summer at Korshavn, south coast of Norway, in a depth of 30—40 fathoms, sandy bottom.

Amphiascus confusus, (Scott).

(Suppl. Pl. 23).

Stenhelia confusa, Th. Scott, Twentieth Ann. Rep. of the Fishery Board for Scotland, p. 458, Pl. XXII, figs. 17—25.

Syn: *Stenhelia Meeki* Brady.

Specific Characters.—Female. Body slender, cylindrical in form, being only very slightly tapered behind. Rostrum rather prominent, conically produced and acutely pointed at the tip. Urosome not much shorter than the anterior division, and having the last segment smaller than the preceding one. Caudal rami considerably produced, exceeding in length the anal segment and sublinear in form, being slightly incurved, with the outer edge sharpened, the inner thickened and somewhat concaved, tip transversely truncated; apical setæ of normal structure and rather slender, the inner medial one about equalling in length the urosome. Eye wanting. Anterior antennæ resembling in structure those in *A. typhlops*, being composed of 8 well-defined joints densely clothed with strong curved setæ, the first 2 joints much the largest and combined about occupying half the length of the antenna. Posterior antennæ and oral parts scarcely differing in their structure from those parts in *A. typhlops*. 1st pair of legs likewise very similar, having the inner ramus rather slender, with the outer 2 joints combined about the length of the 1st; apical claw-like spine of this ramus very long and slender. Natatory legs of almost exactly same structure as in *A. typhlops*. Last pair of legs, however, differing in the shape of the distal joint, which is narrow conical

in form, with one of the setæ of the outer edge removed from the others and attached in front of the middle; inner expansion of proximal joint narrowly produced and extending considerably beyond the middle of the distal joint; marginal setæ 5 in number, the 2 innermost ones distinctly bifid at the tip. Ovisacs of moderate size and sligthly divergent, each containing only a very limited number of ova.

Male exhibiting the usual sexual differences. Inner ramus of 2nd pair of legs biarticulate, distal joint the larger and armed outside with an unusually strong spiniform appendage blunted at the tip and accompanied by a much thinner spine of about same length. Last pair of legs with the distal joint narrow sublinear in form; inner expansion of proximal joint armed with 2 subequal apical spines, both bifid at the tip.

Colour whitish.

Length of adult female 0.98 mm.

Remarks.—The identity of the above-described form with that recorded by Th. Scott as *Stenhelia confusa* would seem to be somewhat doubtful, as the figures given by that author, especially those of 1st and last pairs of legs, do not fully agree with those here reproduced. In every case it is closely allied to that species, as also to *A. typhlops*, G. O. Sars. From the latter it is chiefly distinguished by the more prominent rostrum, the shape of the caudal rami and that of the last pair of legs. The form recorded by Prof. Brady as *Stenhelia Meeki* seems to me to be referable to the same species.

Occurrence.—I found this form last summer rather abundantly in one place, at Korshavn, south coast of Norway. It occurred here on a coarse sandy bottom, at a depth of 40—50 fathoms, together with many other interesting forms to be described in the following pages.

Distribution.—British Isles (Scott, Brady).

Amphiascus typhloides, G. O. Sars, n. s.

(Suppl. Pl. 24, fig. 1).

Specific Characters.—*Female.* Body comparatively slender, sub-cylindrical in form, and only slightly tapered behind. Rostrum less prominent than in the preceding species, but of a very similar form. Urosome about the length of the anterior division, and having the last segment well developed. Caudal rami about the length of the anal segment and of almost uniform width throughout, inner egde straight; apical setæ slender, the inner medial one thickened in its proximal part and exhibiting at some distance from the base inside a peculiar nodi-

form excrescence unequally bilobed at the end, inner edge of the seta immediately behind the excrescence coarsely ciliated. Eye wanting. Anterior antennæ somewhat more slender than in the last species, but otherwise of a very similar structure, the first 2 joints combined, however, not fully occupying half the length of the antenna. Posterior antennæ, oral parts and the 4 anterior pairs of legs very little different from those in *A. confusus*. Last pair of legs with the distal joint comparatively shorter and broader, oblong oval in form, setæ of outer edge very small, hair-like; inner expansion of proximal joint less produced, though extending a little beyond the middle of the distal joint. Ovisacs comparatively small, each containing a very limited number of ova.

Colour whitish grey.

Length of adult female 0.73 mm.

Remarks.—This form is perhaps still more closely allied to *A. typhlops* than the preceding species, but is of smaller size than either of them, and moreover at once recognised by the peculiar structure of the inner medial caudal seta, which character seems to be pretty constant. Slight differences may also be found in the structure of the anterior antennæ and the last pair of legs.

Occurrence.—Some specimens of this form were found at Farsund and Korshavn in depths ranging from 10 to 28 fathoms. In all of them the inner medial caudal seta exhibited exactly the same peculiar excrescence inside the base.

Amphiascus lamellifer, G. O. Sars, n. sp.

(Suppl. Pl. 24, fig. 2),

Specific Characters.—Female. Body somewhat more strongly built than in the 2 preceding species, though nearly cylindrical in form. Rostrum rather prominent and very acute at the tip. Urosome rather shorter than the anterior division, and having the last segment well developed. Caudal rami about the length of the anal segment, and of a comparatively broad, lamelliform shape, with the inner edge conspicuously convex; apical setæ of normal structure and comparatively shorter than in the 2 preceding species. Eye absent. Anterior antennæ built in the same manner as in the said species, though somewhat shorter and stouter. 1st pair of legs with the outer ramus fully as long as the first 2 joints of the inner combined; inner ramus with the outer 2 joints rather slender and combined exceeding in length the 1st. Last pair of legs with the distal joint comparatively large, oblong oval in form and having the setæ of the outer edge well developed; inner expansion of proximal joint scarcely extending beyond the middle of the distal joint.

Colour whitish.

Length of adult female 0. 97 mm.

Remarks.—This is another form closely allied to the 2 preceding species, as also to *A. typhlops*. There are, however, some minor differences both as to the external appearance and the structural details, which make it convenable to keep it apart as a distinct species. The specific name here proposed is derived from the broad lamelliform shape of the caudal rami, in which respect this form is at once recognised from any of the 3 said species.

Occurrence.—Some specimens of this form, all of the female sex, were found in the same place in which *A. confusus* occurred.

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Stenhelia gibba, Boeck.

Remarks.—The form described by Prof. Brady[1]) as *Ameira brevirems* is in my opinion undistinguishable from the present species.

Distribution.—Polar Islands north of Grinnell Land (2nd Fram Exp.).

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Stenhelia palustris (Brady).

Distribution.—Polar Islands north of Grinnell Land (2nd Fram Exp.).

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Gen. *Stenheliopsis*, G. O. Sars.

Remarks.—The characters of this genus must be slightly changed, in order to comprise the 2 new species described below, which both differ from the type species in the distinctly triarticulate inner ramus of the natatory legs.

Stenheliopsis latifurca, G. O. Sars, n. sp.

(Suppl. Pl. 25, fig. 1).

Specific Characters.—*Female.* Body comparatively short and stout, with the anterior division considerably dilated and of rounded oval form; epimeral plates of the segments laterally expanded and sub-imbricate. Rostral plate large and prominent, with the tip broadly rounded. Urosome almost equalling in length the anterior division, but much narrower, genital segment large and imperfectly divided in the middle, last segment but little shorter than the preceding one and not cleft at the end. Caudal rami comparatively large and broad, equalling in length the last 2 segments combined, and scarcely at all divergent, apical setæ

[1]) Trans. Nat. Hist. Soc. N. D. & N. C. 1905.

rather short and abruptly curved outwards. Eye absent. Anterior antennæ comparatively small, but densely setiferous, 6-articulate, joints of proximal part successively diminishing in size, the 4th being very short but considerably expanded in front, terminal part distinctly biarticulate and about equalling in length the 3 preceding joints combined. Posterior antennæ with the outer ramus well developed, about equalling in length the distal joint, and composed of 2 well-defined joints, the distal one the larger and carrying 4 setæ, 2 lateral and 2 apical. Mandibles, maxillæ and anterior maxillipeds of a similar structure to that in the type species. Posterior maxillipeds, however, much smaller, with the basal part rather narrow and exhibiting a well-marked angular ledge inside, hand rounded oval in form. 1st pair of legs with the outer ramus shorter and narrower than the inner, middle joint with a distinct, though small seta inside, last joint of about same size and, as in the type species, armed with 3 spines and a slender geniculate seta; inner ramus with the proximal joint considerably dilated and ciliated on both edges, but without any seta inside, distal joint longer and much narrower than the proximal one, carrying indside about in the middle a small seta, tip somewhat obliquely truncated and armed with 3 spines successively increasing in length inwards. Natatory legs very powerfully built, with both rami distinctly 3-articulate and armed with unusually strong spines, last joint of outer ramus carrying 5 such spines and a single very small seta inside; inner ramus in the 2 anterior pairs of about same length as the outer and having the last joint spatulate in form, with 3 strong spines at the end and a small seta inside; inner ramus of 4th pair of legs shorter than the outer, with the last joint comparatively small and only provided with 3 diverging apical spines. Last pair of legs imperfectly developed, each forming a thin lamella, sub-quandrangular in form, and edged with 6 setæ, the outermost of which is hair-like and attached at some distance from the others.

Colour yellowish white.

Length of adult female 0.57 mm.

Remarks.—The above-described form, it is true, in some particulars differs rather markedly from the type of the genus *Stenheliopsis*. Yet I think that it more properly ought to be referred to that genus than to the genus *Stenhelia*, as it agrees with the former in the structure of the mandibles and in the imperfect development of the last pair of legs.

Occurrence.—Only a solitary female specimen of this form has hitherto come under my notice. It was taken in the Lyngen Fjord, near Farsund, from a depth of about 60 fathoms, muddy sand.

Stenheliopsis media, G. O. Sars, n. sp.

(Suppl. Pl. 25, fig. 2).

Specific Characters.—Female Body comparatively less robust than in the preceding species, more resembling that in the type one. Rostral plate of a similar shape to that in *S. latifurca*, though perhaps a little less broad. Urosome shorter than the anterior division and slightly tapered behind, last segment comparatively small and deeply cleft at the end. Caudal rami much narrower than in the preceding species, though not nearly so extremely slender as in the type, and considerably divergent, apical setæ, as in the 2 other species abruptly curved outwards. Anterior antennæ resembling those in *S. latifurca*, though only composed of 5 distinctly defined joints, the penultimate one being wholly coalesced with the preceding joint, so that the terminal part only consists of a single joint. Posterior antennæ and oral parts nearly as in *S. latifurca*. 1st pair of legs likewise of a very similar structure, though having the 1st joint of the inner ramus still broader in proportion to its length and provided inside with a well developed seta. Natatory legs, as in the preceding species with both rami distinctly 3-articulate, but of far less robust form, last joint of both rami much narrower and exhibiting a quite normal armature. Last pair of legs resembling those in *S. latifurca*, each forming a simple quadrangular lamella edged with 6 setæ. Ovisacs very small, each only containing a single ovum.

Colour pale yellow.

Length of adult female 0.46 mm.

Remarks.—As to the external appearance, the present form more resembles the type species than does the preceding form. It is however undoubtedly more nearly allied to the latter than to the former, as proved by the structure of the several appendages. In the shape of the caudal rami it occupies, as it were, an intermediate position between both, a feature which has given rise to the specific name here proposed.

Occurrence.—Some specimens of this small Copepod, all of the female sex, were taken in the harbour of Farsund, from a depth of about 20 fathoms, muddy bottom.

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Mesochra pygmæa (Claus).

Distribution.—Polar Islands north of Grinnell Land (2nd Fram Exp.).

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Add the following species:

Mesochra exigua, G. O. Sars, n. sp.

(Suppl. Pl. 26, fig. 1).

Specific Characters.—Female. Body comparatively short and stout, slightly depressed in front, with the anterior division somewhat broader than the posterior. Rostral prominence well marked, subtriangular in form, with the tip obtusely rounded. Urosome nearly as long as the anterior division and only very slightly tapered behind, last segment well developed, though a little shorter than the preceding one. Caudal rami very small and placed rather far apart; apical setæ normal and of moderate length. Anterior antennæ comparatively short and only composed of 5 joints densely clothed with rather strong setæ, the 3 first joints belonging to the proximal part, the last 2 to the terminal part, the latter occupying not fully half the length of the antenna and having the 1st joint short, the 2nd elongate fusiform. Posterior antennæ with the outer ramus small, but distinctly biarticulate. Mandibular palp with a slight rudiment of an outer ramus. Posterior maxillipeds of moderate size and normal structure. 1st pair of legs with both rami distinctly 3-articulate, the outer one a little shorter than the inner, with no seta inside the middle joint, its last joint the largest and armed with 3 spines and 2 curved setæ; inner ramus imperfectly prehensile, 1st joint somewhat dilated and, like the 2 succeeding joints, provided inside with a ciliated seta, last joint longer than the midle one and armed on the tip with a claw-like spine and a slender curved seta; both these joints combined considerably exceeding the length of the 1st. Natatory legs with the outer ramus long and slender, inner much shorter and only composed of 2 joints. Last pair of legs with the distal joint oblong conical in form and edged with 5 rather unequal setæ; inner expansion of proximal joint triangular and extending about to the middle of the distal joint, marginal setæ 5 in number, the outermost but one the longest.

Colour not yet ascertained.

Length of adult female 0.45 mm.

Remarks.—This form in some respects differs rather conspicuously from the other known species comprised within the genus *Mesochra* of Boeck. As however the structure of the natatory legs is that caracteristic of the said genus, I find it appropriate to describe it as a member of that generic group.

Occurrence.—Only 2 female specimens of this form have hitherto come under my notice. They were found in a sample taken some years ago at Farsund from moderate depth.

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Add the following species:

Nitocra pusilla, G. O. Sars, n. sp.

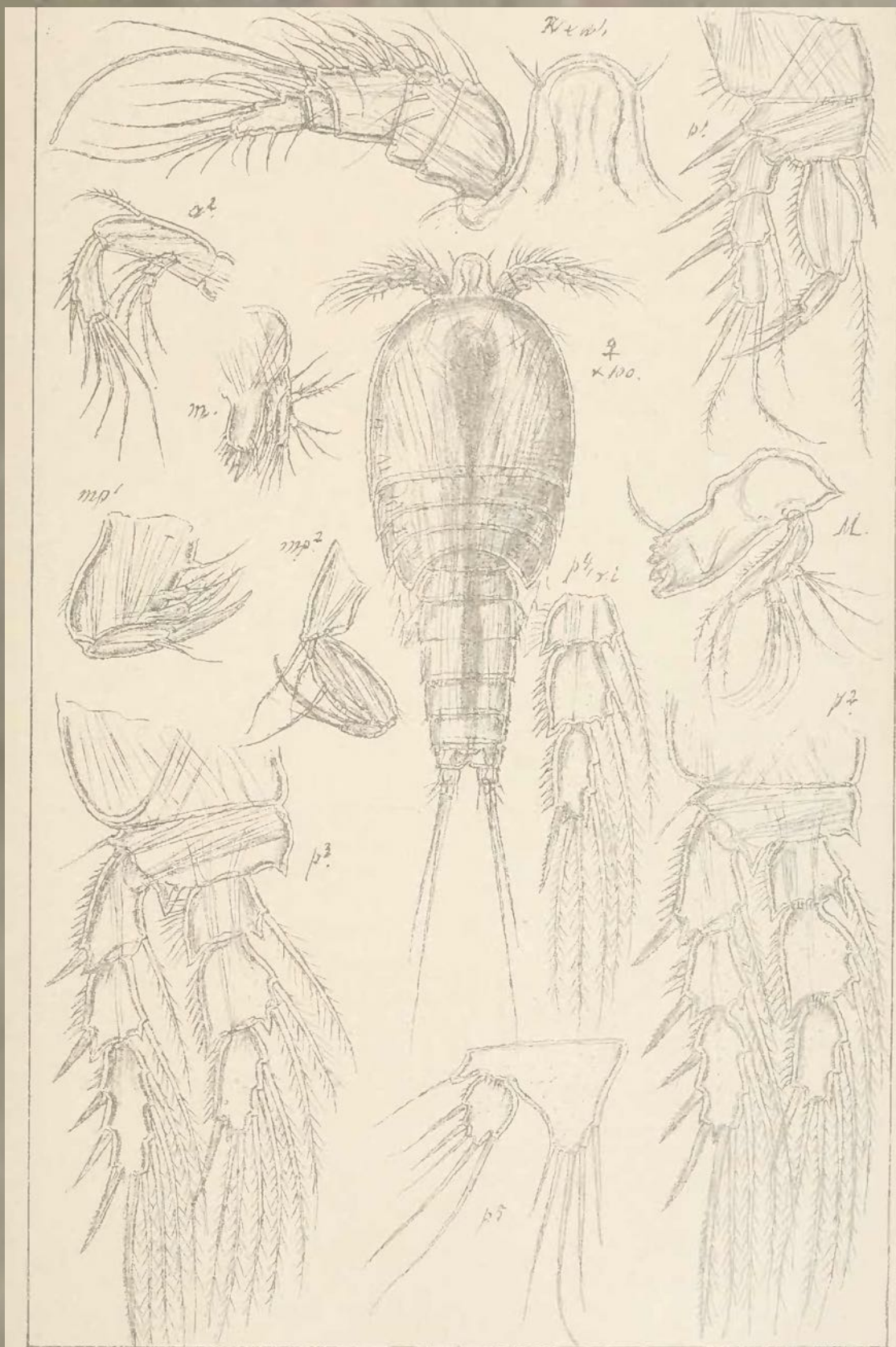
(Suppl. Pl. 26, fig. 2).

Specific Characters.—Female. Body less slender than in the other known species, gradually tapering behind. Rostral projection very small, nodiform. Urosome much shorter than the anterior division, last segment comparatively small and wanting the spinulose armature found in the other species, the anal opercle being quite smooth. Caudal rami of moderate size and quadrangular in form, with the setæ of the outer corner unusually long and pointing straight outwards, apical setæ rather slender and divergent. Anterior antennæ nearly as long as the cephalic segment, and composed of 8 sharply defined joint densely clothed with slender curved setæ and successively diminishing in size, terminal part exceeding half the length of the proximal one. Posterior antennæ with the outer ramus very small uniarticulate, carrying 3 ciliated setæ. Oral parts of normal structure. 1st pair of legs agreeing in structure with those in the other species, the inner ramus being distinctly prehensile, with the outer 2 joints incurved and combined scarcely more than half as long as the 1st; apical claw and setæ rather strong. Natatory legs with the inner ramus much shorter than the outer but distinctly 3-articulate. Last pair of legs with the distal joint rounded in form and edged with 6 setæ, the outermost of which is unusually long and slender; inner expansion of proximal joint narrow linguiform and extending somewhat beyond the middle of the distal joint, marginal setæ 5 in number, the outermost but one the longest. Ovisac of moderate size oval in form.

Colour not yet ascertained.

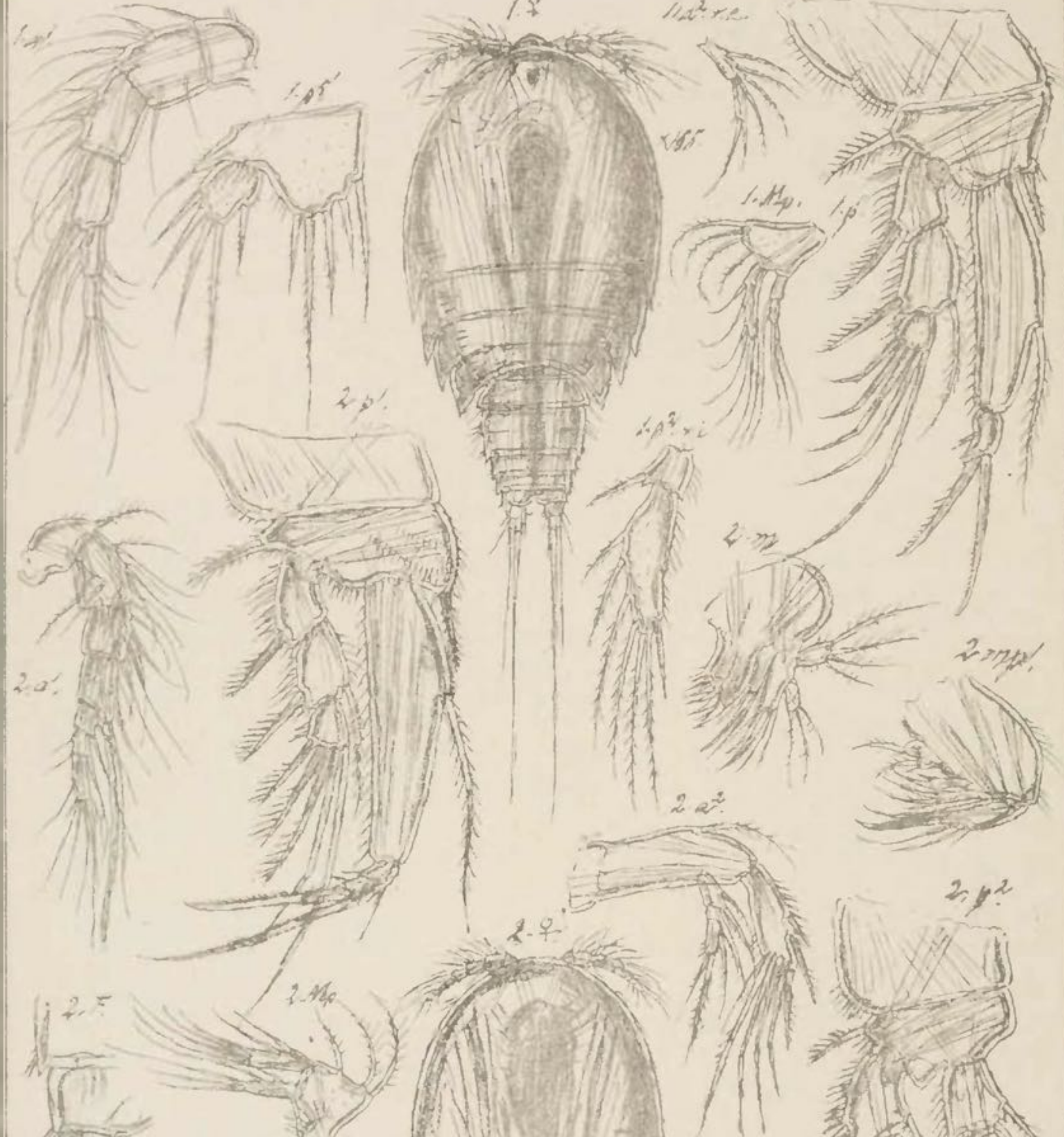
Length of adult female 0.50 mm.

Remarks.—This form differs from the other known species in the less slender form of the body and in the absolute want of the usual spinulous armature of the last caudal segment. Otherwise it agres pretty well in all essential characters assigned to the present genus. It is of smaller size than any of the hitherto known species.



G.O.Sars, autogr. Norsk Litogr. Officin.

Dactylopodopsis dilatata, G.O.Sars.


1.♀
1.p5
1.Mp.
1.p
2.p¹
2.a¹
2.m
2.mp¹
2.a²
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2.F
2.Mp
2.p5
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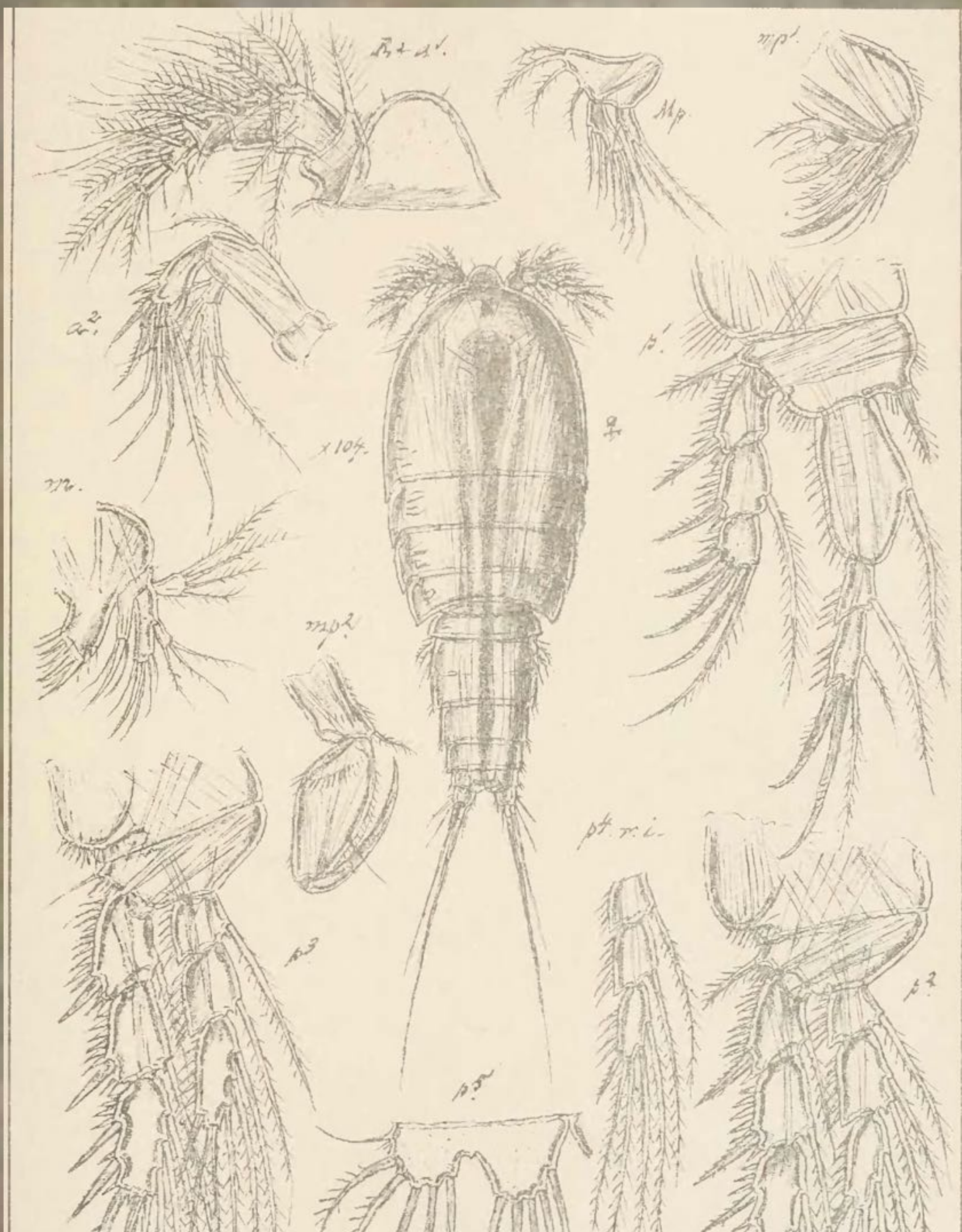

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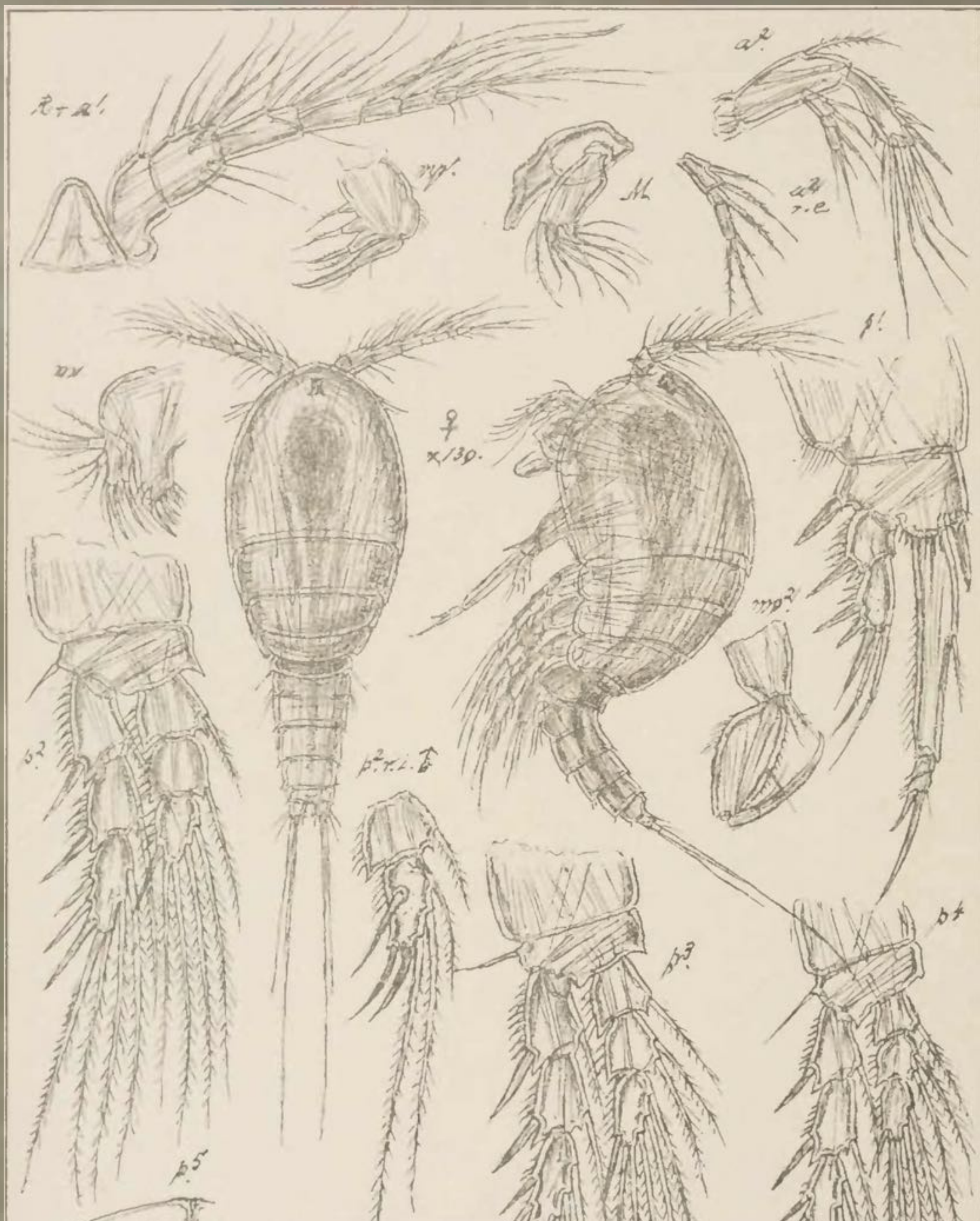
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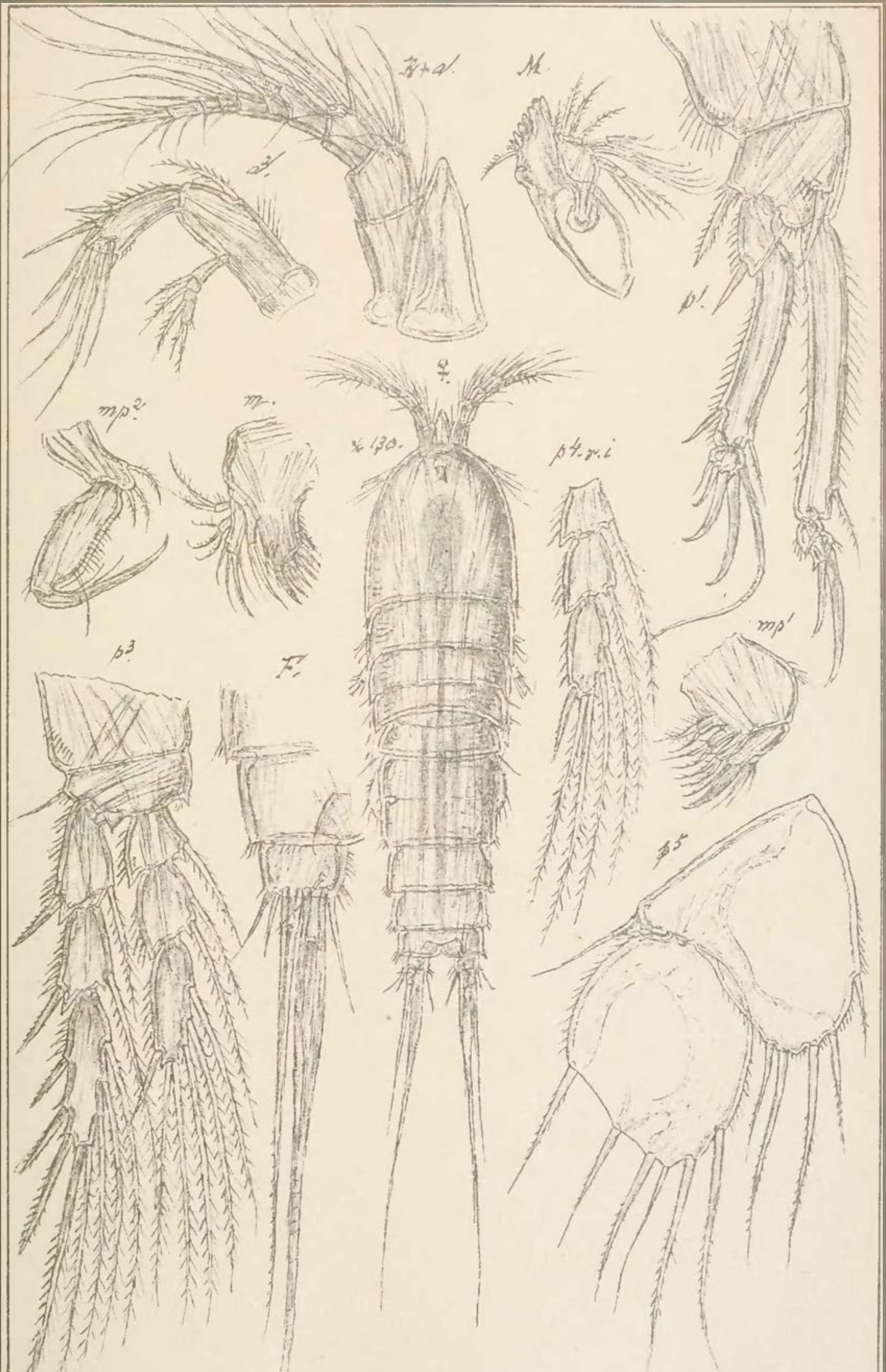
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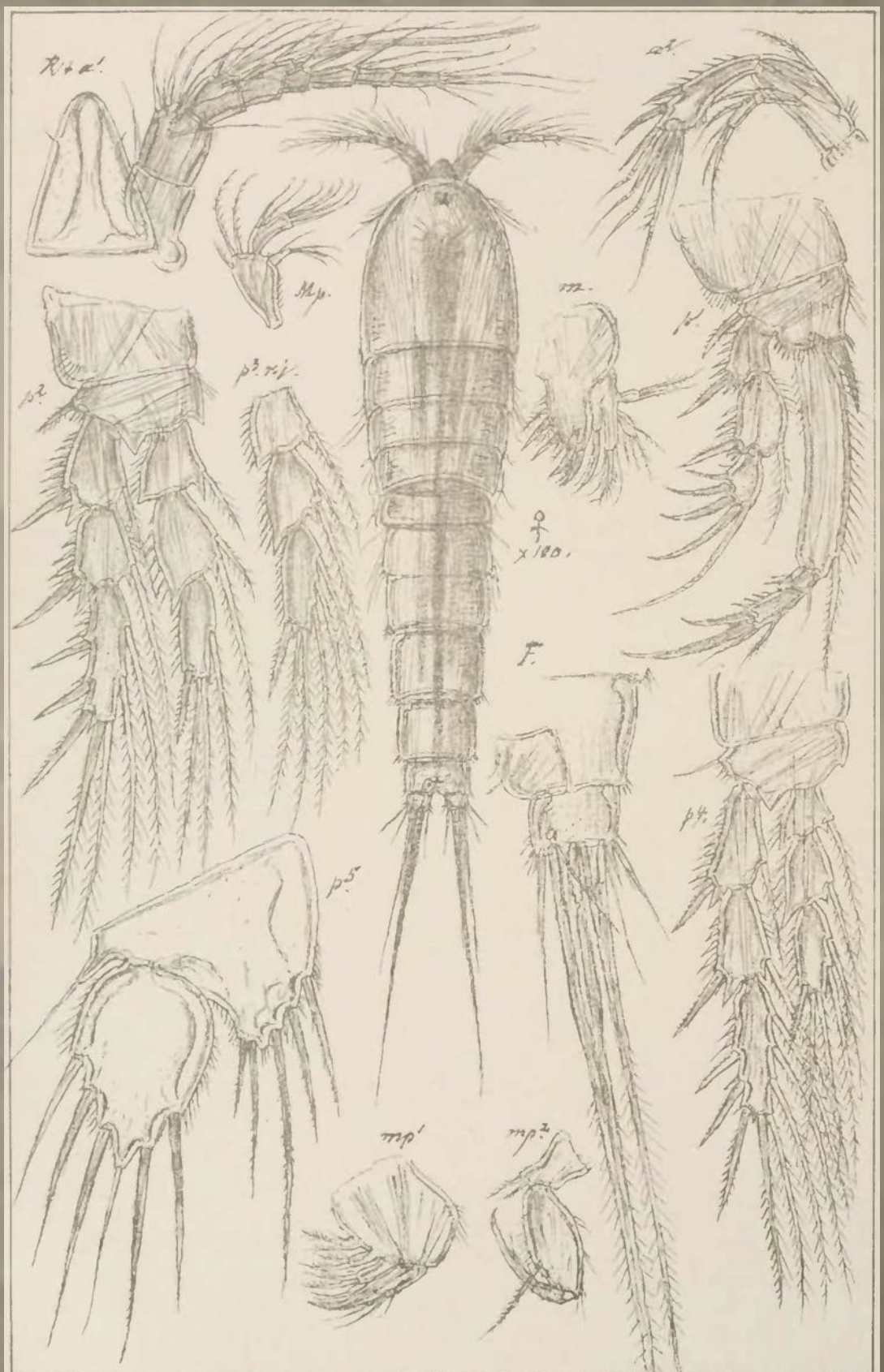

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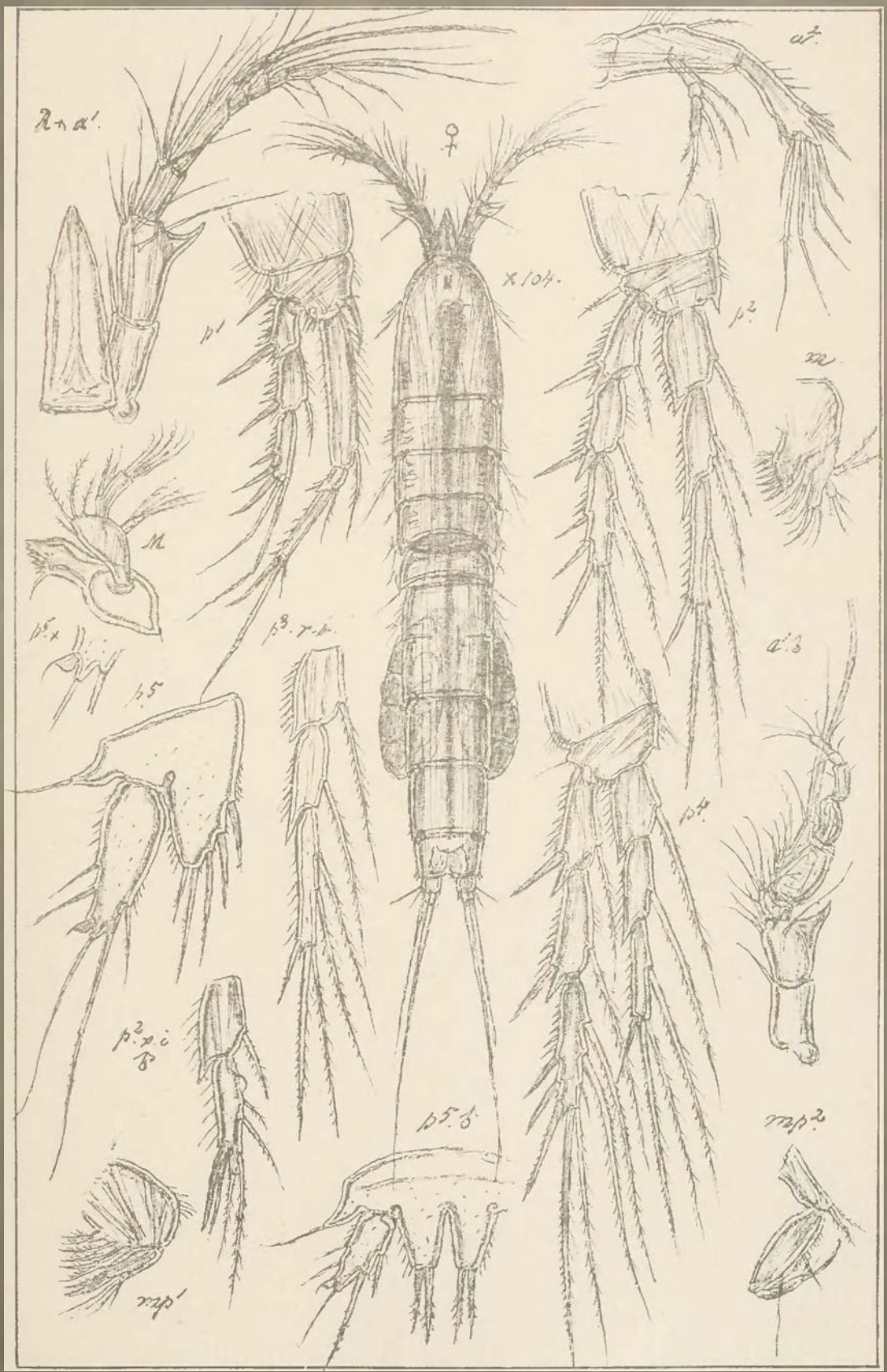
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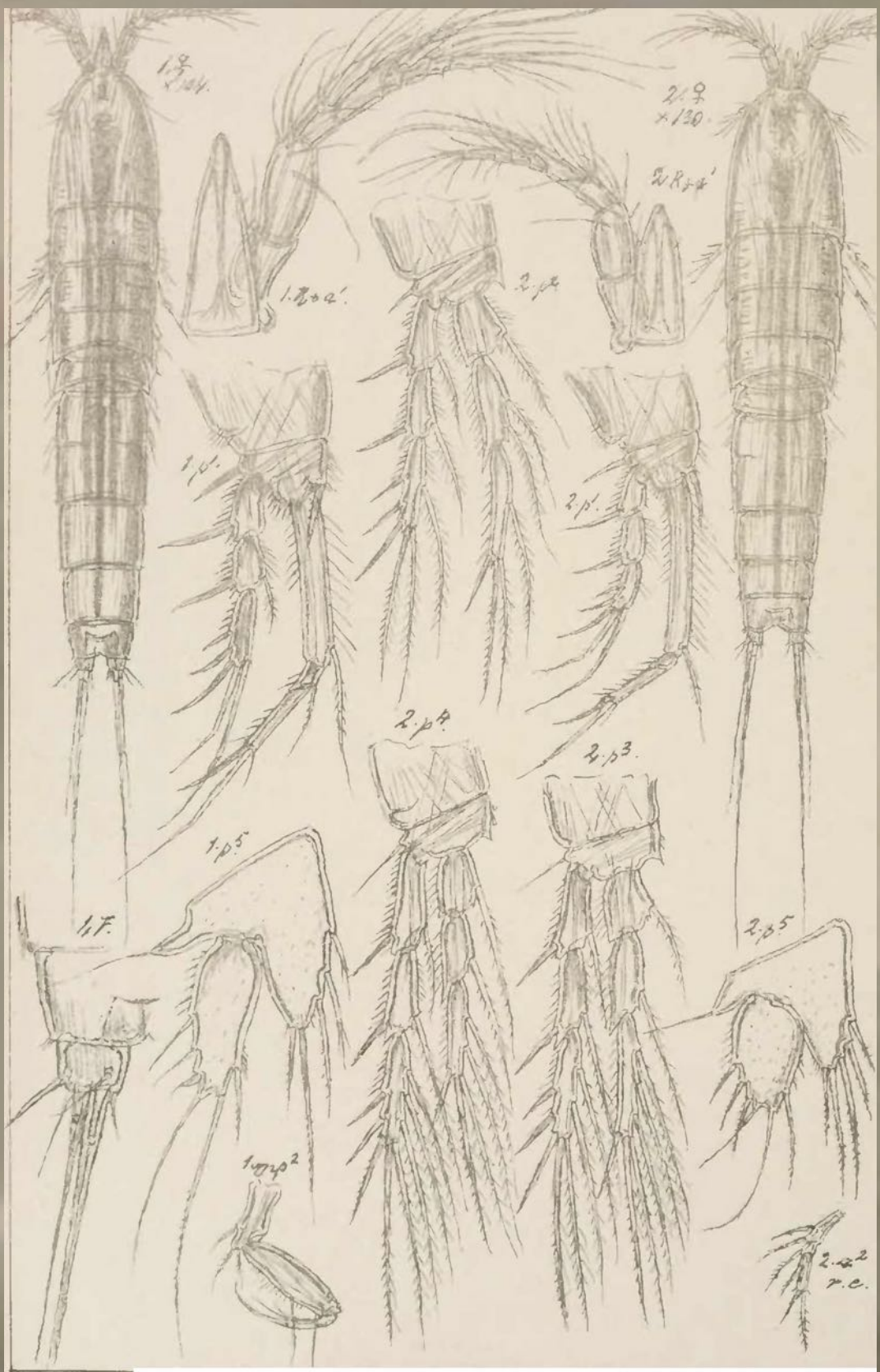
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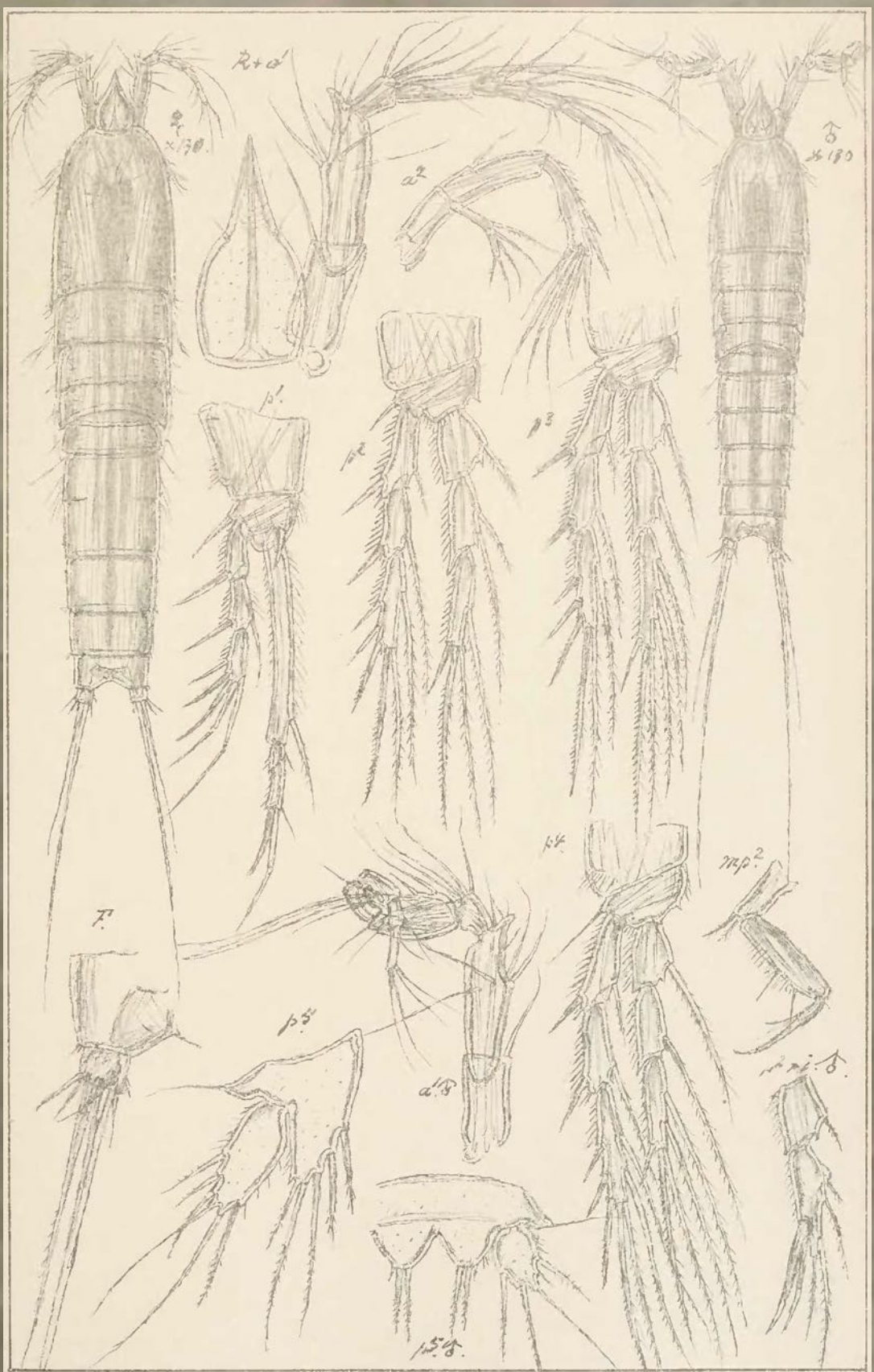

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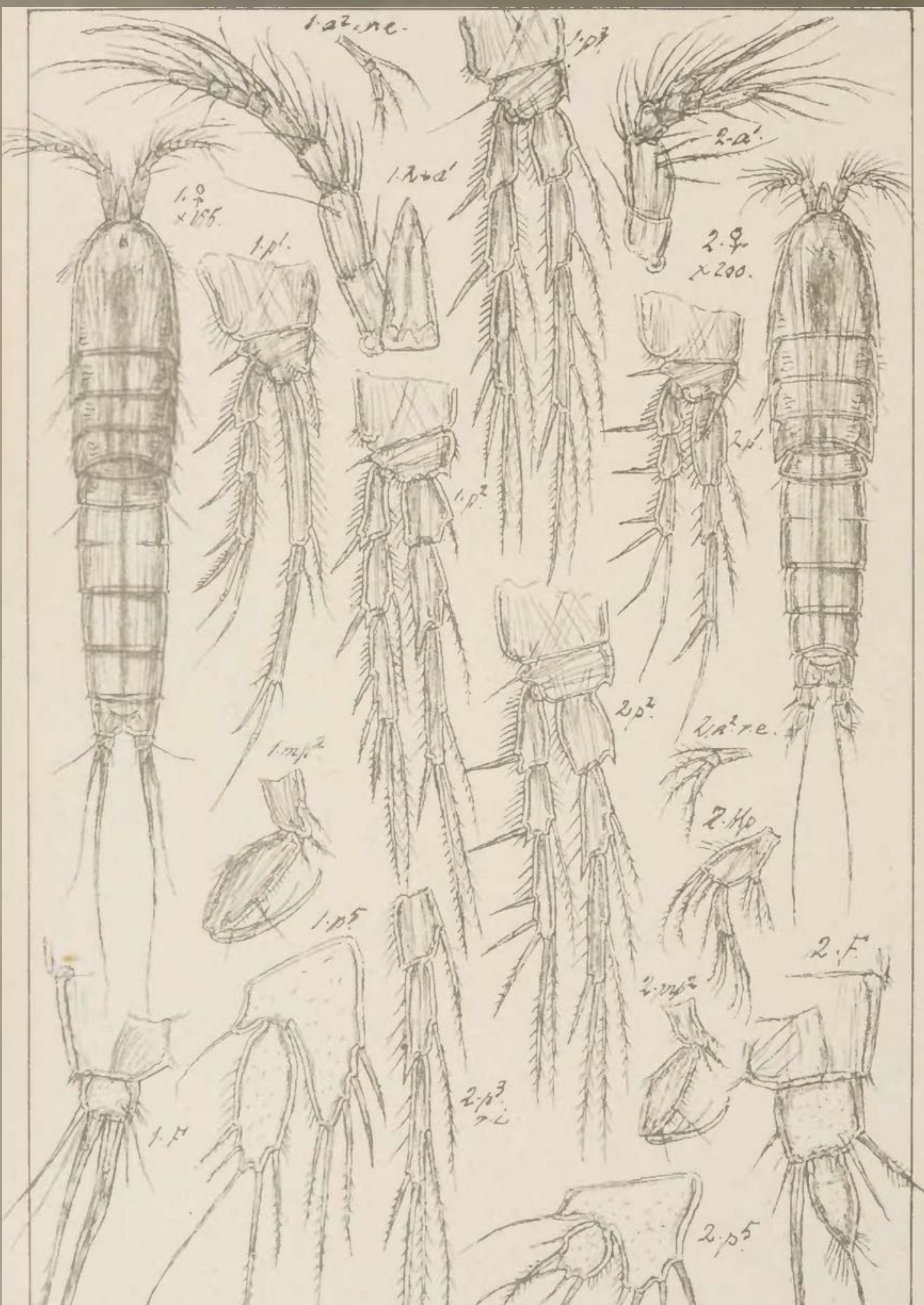
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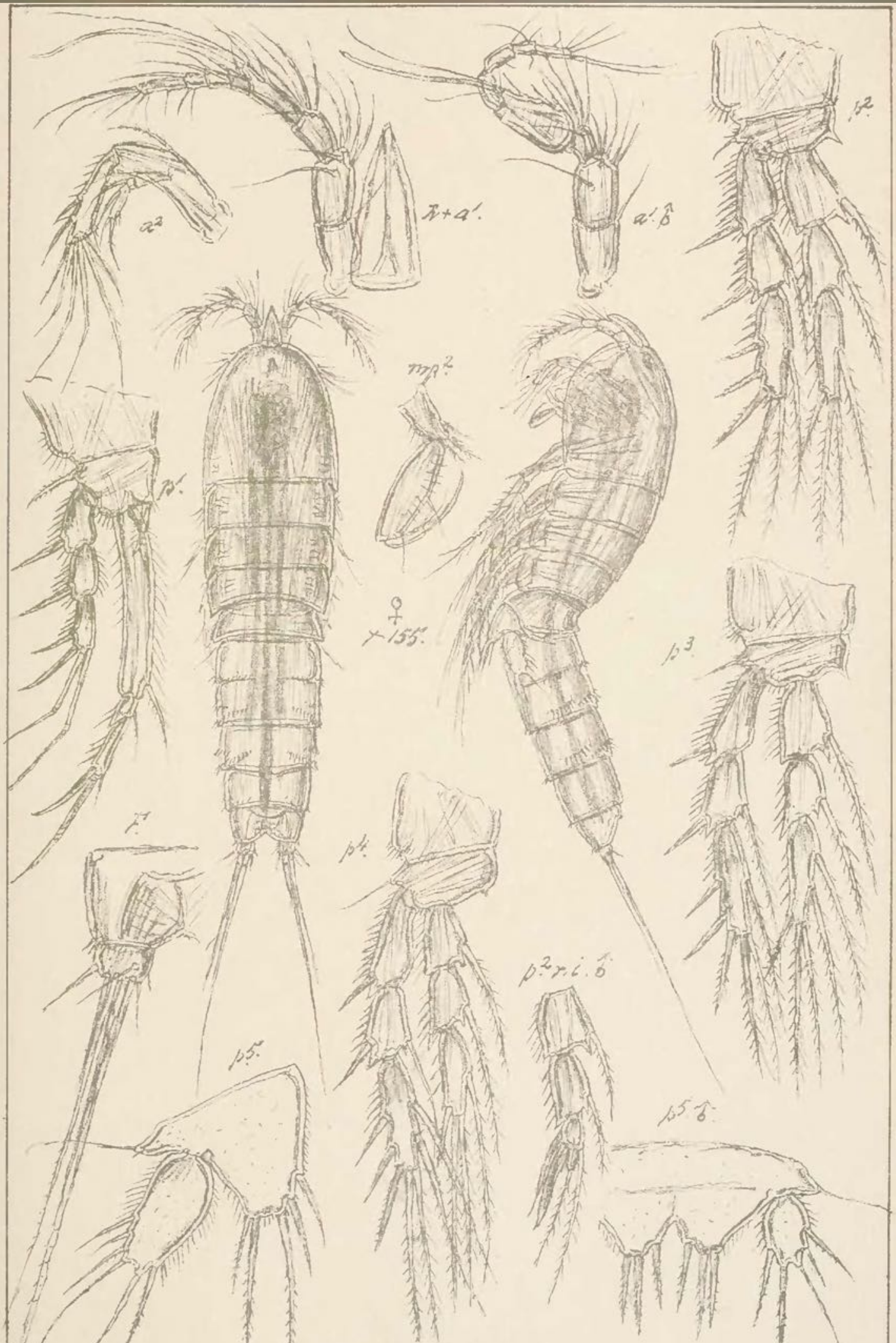

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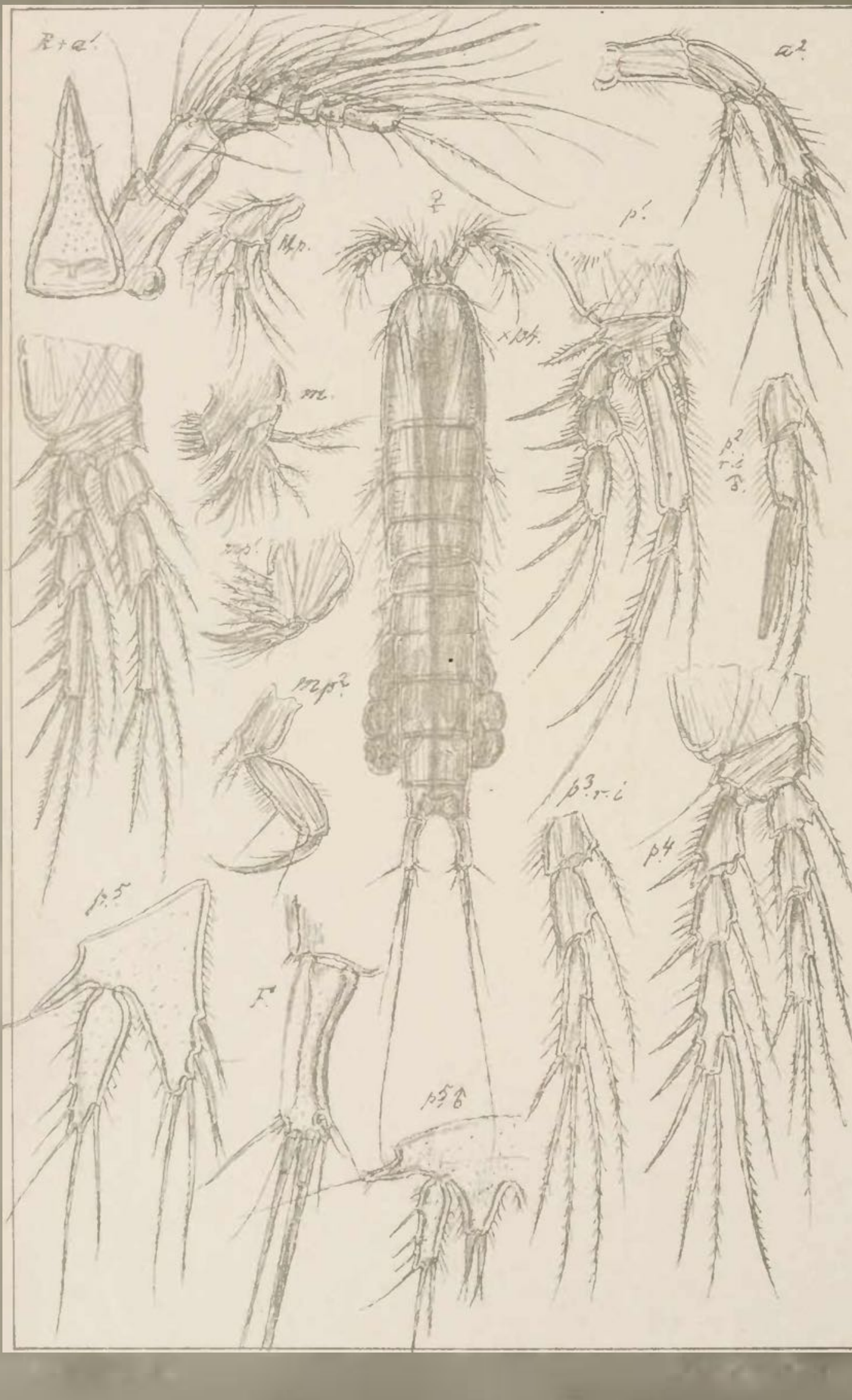
p5 ♂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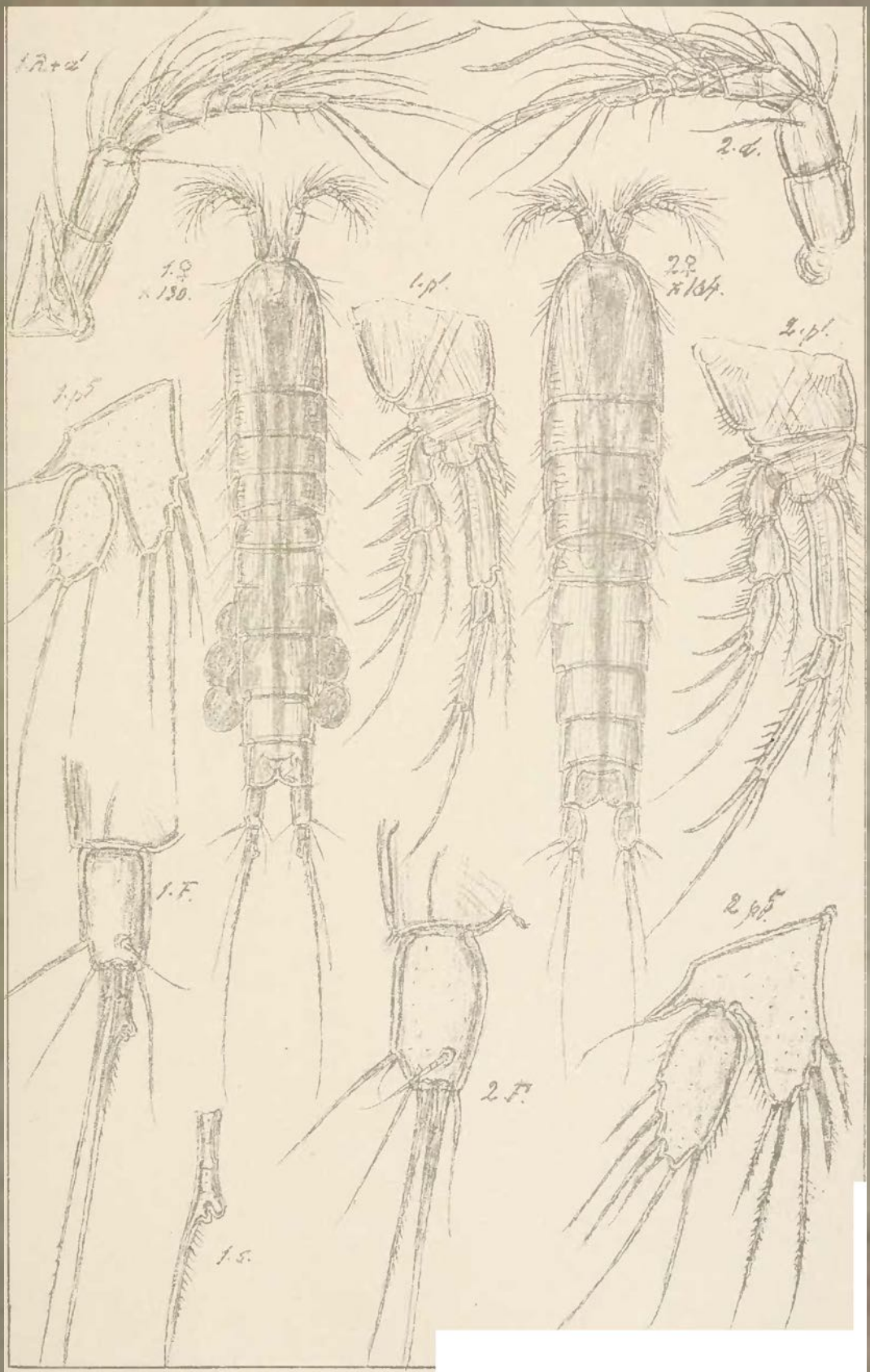
p5 ♂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2.F.

AN ACCOUNT

OF THE

CRUSTACEA

OF

NORWAY

WITH SHORT DESCRIPTIONS AND FIGURES OF ALL THE SPECIES

BY

G. O. SARS

VOL. V

COPEPODA
HAPACTICOIDA

PARTS XXXI & XXXII

SUPPLEMENT (continued)

WITH 16 AUTOGRAPHIC PLATES

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AN ACCOUNT

OF THE

CRUSTACEA

OF

NORWAY

WITH SHORT DESCRIPTIONS AND FIGURES OF ALL THE SPECIES

BY

G. O. SARS

PROFESSOR OF ZOOLOGY AT THE UNIVERSITY OF CHRISTIANIA

VOL. V

COPEPODA

HARPACTICOIDA

WITH 284 AUTOGRAPHIC PLATES

(TEXT)

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1911

PREFACE.

The elaboration of the present Volume has been connected with no small trouble and expenditure of time. Indeed, the group of Crustacea here treated of is undoubtedly one of the most difficult, both as regards the direct examination of the species, and the exact determination of the often very intricate mutual relation of the several types. The group has proved to be very richly represented in the Norwegian Fauna, as will appear from the extent of this Volume, (about 300 (291) different species, belonging to 99 genera, being treated of here); and yet I have every reason to believe that many other forms will be added in the future. As regards this statement, I will only point to the fact that during my last excursion, in the summer of 1910, no less than about 40 additional species, several new to science, were procured, and of these moreover by far the greater number were derived from a single locality at Korshavn, on the south coast of Norway.

The systematic arrangement of the genera adopted in this work can only be regarded as a quite provisional one. No doubt in the future essential improvements will be effected also in this respect. Although the present Volume cannot therefore lay any claim to being an exhaustive account of the group, I think that it will at least be found useful as a basis for further investigations.

As to the preparation of the plates accompanying this Volume, I have been anxious to give, besides analytical figures of the several appendages, also good habitus-figures of each species, drawn on a sufficiently large scale. The great advantage of such figures for an easy determination of the species is evident. In most cases it is found that earlier authors have contented themselves with giving only lateral figures of the species belonging to the present group. I find, however, that in many cases the dorsal view of the animal more clearly reveals the characteristic differences between nearly-related species than does the lateral view. In cases where only a single habitus-figure is given, I have therefore always preferred to represent the animal in a dorsal aspect. In most cases, however, the animal is

figured in both positions. The analytical figures have in all cases been associated in the same plates with the habitus-figures, an arrangement which is undoubtedly more convenient than that adopted by Th. Scott in some of his recent papers, where these figures are found scattered over many different plates.

I regret that in some few cases the figures on the plates have been less perfectly reproduced, owing to want of care on the part of the lithographer in the transfer of my drawings to the stone. In the great majority of cases, however, I hope that the plates will be found to suffice for an easy recognition of the species represented.

In concluding this Volume, I wish to express my most sincere thanks to those gentlemen who have assisted me in the work. To Canon A. M. Norman and Dr. Th. Scott I am much indebted for their kindness in sending me interesting specimens and in giving me other information useful to me. My hearty thanks are also due to Mr. O. Nordgaard, curator of the Trondhjem Museum, for his generosity in placing in my hands his whole material of *Harpacticoida*, as also for sending me several bottom-samples taken by him partly off the Finmark coast, partly off the Lofoten Islands and in the Skjærstad Fjord. Several interesting species, described and figured in the present Volume, were derived from these samples. Finally, I beg to thank the Direction of the Bergen Museum for the promptness with which it has attended to the printing and publishing of the several parts of this Volume, as soon as they left my hands.

G. O. Sars.

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Thompson, I. C. Revised Report on the Copepoda of Liverpool Bay. Trans. Liv. Biol. Soc. Vol. VII. 1893.

SYSTEMATIC LIST

OF THE SPECIES DESCRIBED IN THIS VOLUME.

Achirota.

Misophriidæ.

Misophria, Boeck.
- *pallida*, Boeck.

Logipediidæ.

Longipedia, Claus.
- *coronata*, Claus.
- *Scotti*, G. O. Sars.
- *minor*, Scott.
- *rosea*, G. O. Sars.

Sunaristes, Hesse.
- *paguri*, Hesse.

Canuella, Scott.
- *perplexa*, Scott.
- *furcigera*, G. O. Sars.

Cerviniidæ.

Cervinia, Norman.
- *Bradyi*, Norman.
- *synarthra*, G. O. Sars.

Cerviniopsis, G. O. Sars.
- *clavicornis*, G. O. Sars.
- *longicaudata*, G. O. Sars.

Eucanuella, Scott.
- *spinifera*, Scott.

Zosime, Boeck.
- *typica*, Boeck.
- *incrassata*, G. O. Sars.

Ectinosomidæ.

Ectinosoma, Boeck.
- *Sarsi*, Boeck.
- *neglectum*, G. O. Sars.
- *propinquum*, Scott.
- *elongatum*, G. O. Sars.
- *Herdmani*, Scott.
- *melaniceps*, Boeck.
- *Normani*, Scott.
- *curticorne*, Boeck.
- *gothiceps*, Giesbr.
- *mixtum*, G. O. Sars.
- *brevirostre*, G. O. Sars.
- *gracile*, Scott.
- *tenuireme*, Scott.

Microsetella, Brady & Rob.
- *norvegica*, Boeck.

Ectinosomella, G. O. Sars.
- *nitidula*, G. O. Sars

Pseudobradya, G. O. Sars.
- *minor*, Scott.
- *acuta*, G. O. Sars.
- *similis*, Scott.
- *hirsuta*, Scott.
- *fusca*, Scott.
- *robusta*, G. O. Sars.
- *elegans*, Scott.

Bradya, Boeck.
- *typica*, Boeck.

dilatata, G. O. Sars
armifera, Scott.
Neobradya, Scott.
petnifera, Scott.

Chirognatha.

Harpacticidæ.

Harpacticus, M. Edw.
chelifer, Müller.
uniremis, Kröyer.
gracilis, Claus.
flexus, Brady.
littoralis, G. O. Sars
Tigriopus, Norman
fulvus, Fischer.
Zaus, Goodsir.
spinatus, Goodsir.
abbreviatus, G. O. Sars.
Goodsiri, Brady.

Peltidiidæ.

Alteutha, Baird.
interrupta, Goodsir.
purpurocincta, Norm.
Peltidium, Philippi.
purpureum, Phil.

Tegastidæ.

Tegastes, Norman.
falcatus, Norman.
flavidus, G. O. Sars.
Clausi, G. O. Sars.
grandimanus, G. O. Sars.
nanus, G. O. Sars.
harpacticoides, Claus.
calcaratus, G. O. Sars.
longimanus, Claus.
Parategastes, G. O. Sars.
sphæricus, Claus.

Porcellidiidæ.

Porcellidium, Claus.
fimbriatum, Claus.

Idyidæ.

Aspidiscus, Norman.
littoralis, G. O. Sars.
fasciatus, Norm.
Psamathe, Philippi.
longicauda, Phil.
Machairopus, Brady.
minutus, G. O. Sars.
Idyæa, Philippi.
furcata, Baird.
minor, Scott.
ensifera, Fischer.
tenera, G. O. Sars.
longicornis, Scott.
elegantula, G. O. Sars.
gracilis, Scott.
angusta, G. O. Sars.
finmarchica, G. O. Sars.
tenella, G. O. Sars.
Idyanthe, G. O. Sars.
dilatata, G. O. Sars.
pusilla, G. O. Sars.
Idyella, G. O. Sars.
pallidula, G. O. Sars.
exigua, G. O. Sars.

Thalestridæ.

Thalestris, Claus.
longimana, Claus.
gibba, Kröyer.
rufoviolacens, Claus.
brunnea, G. O. Sars.
purpurea, G. O. Sars.
Parathalestris, Brady & Rob.
Clausi, Norman.
harpacticoides, Claus.
hibernica, Brady & Rob.
Jacksoni, Scott.
Phyllothalestris, G. O. Sars.
mysis, Claus.
Halithalestris, G. O. Sars.
Croni, Kröyer.

Rhynchothalestris, G. O. Sars.
rufocincta, Norm.
helgolandica, Claus.
Microthalestris, G. O. Sars.
forficula, Claus.
littoralis, G. O. Sars.
Dactylopusia, Norman.
thisboides, Claus.
neglecta, G. O. Sars.
vulgaris, G. O. Sars.
micronyx, G. O. Sars.
brevicornis, Claus.
latipes, Boeck.
Dactylopodella, G. O. Sars.
flava, Claus.
clypeata, G. O. Sars
Dactylopodopsis, G. O. Sars.
dilatata, G. O. Sars.
Idomene, Philippi.
forficata, Phil.
borealis, G. O. Sars.
Idomenella, Scott.
coronata, Scott.
Amenophia, Boeck.
peltata, Boeck.
pulchella, G. O. Sars.
Westwoodia, Dana.
nobilis, Baird.
assimilis, G. O. Sars.
minuta, Claus.
pygmæa, Scott.
monensis, Brady.

Diosaccidæ.

Diosaccus, Boeck.
tenuicornis, Claus.
Amphiascus, G. O. Sars.
cinctus, Claus.
obscurus, G. O. Sars.
similis, Claus.
nasutus, Boeck.
phyllopus, G. O. Sars.
latifolius, G. O. Sars.
thalestroides, G. O. Sars.
minutus, Claus.
varians, Scott.
Giesbrechti, G. O. Sars.
propinquus, G. O. Sars.
longirostris, Claus.
tenuiremis, Brady.
parvus, G. O. Sars.
debilis, Giesbr.
pallidus, G. O. Sars.
abyssi, Boeck.
nanus, G. O. Sars.
exiguus, G. O. Sars.
Blanchardi, Scott.
tenellus, G. O. Sars.
linearis, G. O. Sars.
sinuatus, G. O. Sars.
denticulatus, Thomps.
Normani, G. O. Sars.
amblyops, G. O. Sars.
lagenirostris, G. O. Sars.
nanoides, G. O. Sars.
bulbifer, G. O. Sars.
spinulosus, G. O. Sars
simulans, Scott.
attenuatus, G. O. Sars.
hispidus, Norman
affinis, G. O. Sars.
intermedius, Scott.
typhlops, G. O. Sars.
typhloides, G. O. Sars.
lamellifer, G. O. Sars
confusus, Scott.

Stenhelia, Boeck.
gibba, Boeck.
proxima, G. O. Sars.
æmula, Scott.
palustris, Brady.
reflexa, Brady.
Giesbrechti, Scott.
Normani, Scott.
longicaudata, Boeck.

Stenheliopsis, G. O. Sars.
divaricata, G. O. Sars.
latifurca, G. O. Sars.
media, G. O. Sars.

Canthocamptidæ.

Canthocamptus, Westw.
staphylinus, Jurine.
minutus, Claus.
Altheyella, Brady.
crassa, G. O. Sars.
gracilis, G. O. Sars.
pygmæa, G. O. Sars.
arctica, Lilljeb.
Duthiei, Scott.
Moraria, Scott.
brevipes, G. O. Sars.
Mesochra, Boeck.
Lilljeborgi, Boeck.
pygmæa, Claus.
hirticornis, Scott.
exigua, G. O. Sars.
Nitocra, Boeck.
typica, Boeck.
spinipes, Boeck.
pusilla, G. O. Sars.
Ameira, Boeck.
longipes, Boeck.
minuta, Boeck.
Scotti, G. O. Sars.
tau, Giesbr.
simplex, Scott.
attenuata, Thomps.
tenuicornis, Scott.
Parameira, G. O. Sars.
parva, Boeck.
major, G. O. Sars.
propinqua, Scott.
Pseudameira, G. O. Sars.
crassicornis, G. O. Sars.
furcata, G. O. Sars.
Ameiropsis, G. O. Sars.
brevicornis, G. O. Sars.
longicornis, G. O. Sars.
mirta, G. O. Sars.
nobilis, G. O. Sars.
angulifera, G. O. Sars.
abbreviata, G. O. Sars.
Stenocopia, G. O. Sars.
longicaudata, Scott.
spinosa, Scott.
setosa, G. O. Sars.
Malacopsyllus, G. O. Sars.
fragilis, G. O. Sars.
Leptomesochra, G. O. Sars.
attenuata, A. Scott.
tenuicornis, G. O. Sars.
confluens, G. O. Sars.
Phyllocamptus, Scott.
minutus, G. O. Sars.
Paramesochra, Scott.
dubia, Scott.
Tetragoniceps, Brady.
Scotti, G. O. Sars.
Phyllopodopsyllus, Scott.
Bradyi, Scott.
furciger, G. O. Sars.
Pteropsyllus, Scott.
consimilis, Scott.
Evansia, Scott.
incerta, Scott.
Leptastacus, Scott.
macronyx, Scott.

Laophontidæ.

Laophonte, Philippi.
cornuta, Phil.
serrata, Claus.
depressa, Scott.
thoracica, Boeck.
elongata, Boeck.
typhlops, G. O. Sars.
longicaudata, Boeck.
similis, Claus.
horrida, Norm.
brevispinosa, G. O. Sars.
Koreni, Boeck.
proxima, G. O. Sars.
Strömi, Baird.
curticauda, Boeck.
minuta, Boeck.

littoralis, Scott.
brevirostris, Claus.
congenera, G. O. Sars.
karmensis, G. O. Sars.
perplexa, Scott.
macera, G. O. Sars.
Nordgaardi, G. O. Sars.
parvula, G. O. Sars.
nana, G. O. Sars.
inopinata, Scott.
denticornis, Scott.

Pseudolaophonte, A Scott.
spinosa, Thomps

Laophontopsis, G. O. Sars.
lamellifera, Claus.

Asellopsis, Brady.
hispida, Brady.

Laophontodes, Scott.
typicus, Scott.
bicornis, A. Scott.
expansus, G. O. Sars.

Platychelipus, Brady.
littoralis, Brady.
laophontoides, G. O. Sars.

Normanella, Brady.
minuta, Boeck.
tenuifurca, G. O. Sars.
mucronata, G. O. Sars.

Cletodidæ.

Cletodes, Brady.
limicola, Brady.
tenuipes, Scott.
curvirostris, Scott.
longicaudatus, Boeck.
Buchholtzi, Boeck.

Orthopsyllus, Brady.
linearis, Claus.

Mesocletodes, G. O. Sars.
irrasus, Scott.

Eurycletodes, G. O. Sars.
laticaudatus, Boeck.
latus, Scott.
similis, Scott.
major, G. O. Sars.

Enhydrosoma, Boeck.
curticaudatum, Boeck.
propinquum, Brady.
longifurcatum, G. O. Sars.

Rhizothrix, Brady.
curvata, Brady.
gracilis, Scott.

Huntemannia, Poppe.
jadensis, Poppe

Nannopus, Brady.
palustris, Brady.

Pontopolites, Scott.
typicus, Scott.

Fultonia, Scott
hirsuta, Scott.

Argestes, G. O. Sars.
mollis, G. O. Sars.

Anchorabolidæ.

Anchorabolus, Norman.
mirabilis, Norman.

Echinopsyllus, G. O. Sars.
Normani, G. O. Sars.

Ceratonotus, G. O. Sars.
pectinatus, G. O. Sars.

Arthropsyllus, G. O. Sars.
serratus, G. O. Sars.

Anoplosoma, G. O. Sars.
sordidum, G. O. Sars.

Cylindropsyllidæ.

Cylindropsyllus, Brady.
lævis, Brady.

Stenocaris, G. O. Sars.
gracilis, G. O. Sars.
minor, Scott.

D'Arcythompsonia, Scott.
fairliensis, Scott.

Tachidiidæ.

Tachidius, Lilljeb.
brevicornis, Lilljeb.
Pseudotachidius, Scott
coronatus, Scott.
Tachidiella, G. O. Sars.
minuta, G. O. Sars.
Tachidiopsis, G. O Sars.
cyclopoides, G. O. Sars.
Robertsonia, Brady.
tenuis, Brady.
Danielssenia, Boeck.
typica, Boeck.
fusiformis, Brady.
Psammis, G. O. Sars.
longisetosa, G. O. Sars.

Metidæ.

Metis, Philippi.
ignea, Phil.

Balænophilidæ.

Balænophilus, Aurivillius.
unisetis, Auriv.

AN ACCOUNT

OF THE

CRUSTACEA

OF

NORWAY

WITH SHORT DESCRIPTIONS AND FIGURES OF ALL THE SPECIES

BY

G. O. SARS

PROFESSOR OF ZOOLOGY AT THE UNIVERSITY OF CHRISTIANIA

VOL. V

COPEPODA

HARPACTICOIDA

(PLATES)

BERGEN

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1911

LIST OF PLATES

(WITH CORRECTIONS).

Letterings.—♀ female; ♂ male; *C.* cephalic segment; *Urs* urosome with the caudal rami; *gen. ar.* genital area; *F.* furcal joints; *R.* rostrum; $a.^1$ anterior antenna; $a.^2$ posterior antenna; *L.* anterior lip; *M.* mandible; *Mp.* mandibular palp; *m.* maxilla; $mp.^1$ anterior maxilliped; $mp.^2$ posterior maxilliped; $p.^1$—$p.^5$ legs of 1st to 5th pairs.; *gen. l.* genital lobe of male.

Pl. I.
Misophria pallida, Boeck.

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Longipedia coronata, Claus.

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2. — Herdmani, Scott.

Pl. XIX.
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Amenophia peltata, Boeck.

Pl. LXXXIV.
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Westwoodia nobilis, (Baird).

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Amphiascus similis, (Claus).

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Stenhelia gibba. Boeck.

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Attheyella crassa. G. O. Sars.

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Attheyella arctica. (Lilljeb.).

Pl. CXXXIII.
Attheyella Duthiei. (Scott).

Pl. CXXXIV.
Moraria brevipes. G. O. Sars.

Pl. CXXXV.
Mesochra Lilljeborgi. Boeck.

Pl. CXXXVI.
Mesochra pygmæa, (Claus).

Pl. CXXXVII.
Mesochra hirticornis, (Scott).

Pl. CXXXVIII.
Nitocra typica, Boeck.

Pl. CXXXIX.
Nitocra spinipes, Boeck.

Pl. CXL.
Ameira longipes, Boeck.

Pl. CXLI.
Ameira minuta, Boeck.

Pl. CXLII.
Ameira Scotti, G. O. Sars (see Supplmt.).

Pl CXLIII.
Ameira tau, (Giesbrecht).

Pl. CXLIV.
Ameira simplex, Norm. & Scott.

Pl. CXLV.
Ameira attenuata, Thomps. (see Supplmt.).

Pl. CXLVI.
Parameira parva, (Boeck).

Pl. CXLVII.
Parameira major, G. O. Sars.

Pl. CXLVIII.
Ameiropsis brevicornis, G. O. Sars.

Pl. CXLIX.
Ameiropsis longicornis, G. O. Sars.

Pl. CL.
Ameiropsis mixta, G. O. Sars.

Pl. CLI.
Stenocopia longicaudata, (Scott).

Pl. CLII.
Stenocopia longicaudata, (Scott) (continued).

Pl. CLIII.
Stenocopia setosa, G. O. Sars.

Pl. CLIV.
Stenocopia setosa, G. O. Sars (continued).

Pl. CLV.
Phyllopodopsyllus Bradyi, Scott.

Pl. CLVI.
1. Phyllopodopsyllus Bradyi, Scott (contin.).
2. — furcifer, G. O. Sars.

Pl. CLVII.
Laophonte cornuta, Philippi.

Pl. CLVIII.
Laophonte cornuta, Phil. (continued).

Pl. CLIX.
Laophonte serrata, (Claus).

Pl. CLX.
Laophonte depressa, Scott.

Pl. CLXI.
Laophonte thoracica, Boeck.

Pl. CLXII.
Laophonte elongata, Boeck.

Pl. CLXIII.
Laophonte typhlops, G. O. Sars.

Pl. CLXIV.
Laophonte longicaudata, Boeck.

Pl. CLXV.
Laophonte similis, (Claus).

Pl. CLXVI.
Laophonte horrida, Norm.

Pl. CLXVII.
Laophonte horrida, Norm. (continued).

Pl. CLXVIII.
Laophonte brevispinosa, G. O. Sars.

Pl. CLXIX.
Laophonte Koreni, Boeck.

Pl. CLXX.
Laophonte proxima, G. O. Sars.

Pl. CLXXI
Laophonte Strömi, (Baird).

Pl. CLXXII.
Laophonte Strömi, (Baird) (continued).

Pl. CLXXIII.
Laophonte curticauda, Boeck.

Pl. CLXXIV.
Laophonte minuta, Boeck.

Pl. CLXXV.
Laophonte littoralis, Scott.

Pl. CLXXVI.
Laophonte brevirostris, (Claus).

Pl. CLXXVII.
Laophonte congenera, G. O. Sars.

Pl. CLXXVIII.
Laophonte perplexa, Scott.

Pl. CLXXIX.
Laophonte macera, G. O. Sars.

Pl. CLXXX.
Laophonte Nordgaardi, G. O. Sars.

Pl. CLXXXI.
Laophonte parvula, G. O. Sars.

Pl. CLXXXII.
Laophonte nana, G. O. Sars.

Pl. CLXXXIII.
Laophonte inopinata, Scott.

Pl. CLXXXIV.
Laophonte denticornis, Scott.

Pl. CLXXXV.
Laophontepsis lamellifera, (Claus).

Pl. CLXXXVI.
Asellopsis hispida, Brady.

Pl. CLXXXVII.
Laophontodes typicus, Scott.

Pl. CLXXXVIII.
Laophontodes bicornis, A. Scott.

Pl. CLXXXIX.
Laophontodes expansus, G. O. Sars.

Pl. CXC.
Platychelipus littoralis, Brady.

Pl. CXCI.
Platychelipus littoralis, Brady (continued).

Pl. CLCII.
Platychelipus laophontoides, G. O. Sars.

Pl. CXCIII.
Normanella minuta, (Boeck).

Pl. CXCIV.
1. Normanella tenuifurca, G. O. Sars.
2. — mucronata, G. O. Sars.

Pl. CXCV.
Cletodes limicola, Brady.

Pl. CXCVI.
1. Cletodes tenuipes, Scott.
2. — curvirostris, Scott.

Pl. CXCVII.
Cletodes longicaudatus, (Boeck).

Pl. XCVIII.
Cletodes Buchholtzi, Boeck.

Pl. CXCIX.
Orthopsyllus linearis, (Claus).

Pl. CC.
Mesocletodes irrasus, (Scott).

Pl. CCI.
Eurycletodes laticaudatus, (Boeck).

Pl. CCII.
Eurycletodes latus, (Scott).

Pl. CCIII.
Eurycletodes similis, (Scott).

Pl. CCIV.
Eurycletodes major, G. O. Sars.

Pl. CCV.
Enhydrosoma curticaudatum, Boeck.

Pl. CCVI.
1. Enhydrosoma propinqvum, (Brady).
2. — longifurcatum, G. O. Sars.

Pl. CCVII.
Rhizothrix curvata, Brady & Rob.

Pl. CCVIII.
Huntemannia jahdensis, Poppe.

Pl. CCIX.
Nannopus palustris, Brady.

Pl. CCX.
Pontopolites typicus, Scott.

Pl. CCXI.
Anchorabolus mirabilis, Norman.

Pl. CCXII.
Echinopsyllus Normani, G. O. Sars.

Pl. CCXIII.
Ceratonotus pectinatus, G. O. Sars.

Pl. CCXIV.
Arthropsyllus serratus, G. O. Sars.

Pl. CCXV.
Cylindropsyllus lævis, Brady.

Pl. CCXVI.
Stenocaris gracilis, G. O. Sars.

Pl. CCXVII.
D'Arcythompsonia fairliensis, Scott.

Pl. CCXVIII.
Tachidius brevicornis, Lilljeborg.

Pl. CCXIX.
Tachidius brevicornis, Lilljeb. (continued).

Pl. CCXX.
Pseudotachidius coronatus, Scott.

Pl. CCXXI.
Tachidiella minuta, G. O. Sars.

Pl. CCXXII.
Robertsonia tenuis Brady.

Pl. CCXXIII.
Danielssenia typica, Boeck.

Pl. CCXXIV.
Danielssenia fusiformis, (Brady).

Pl. CCXXV.
Psammis longisetosa, G. O. Sars.

Pl. CCXXVI.
Fultonia hirsuta, Scott.

Pl. CCXXVII.
Argestes mollis, G. O. Sars.

Pl. CCXXVIII.
Metis ignea, Philippi.

Pl. CCXXIX.
Balænophilus unisetis, Auriv.

Pl. CCXXX.
Balænophilus unisetis, Auriv. (continued).

Supplm. Pl. 1.
Cervinia Bradyi, Norman.

Supplm. Pl. 2.
1. Eucanuella spinifera, Scott.
2. Zosime typica, Boeck.

Supplm. Pl. 3.
Zosime incrassata, G. O. Sars.

Supplm. Pl. 4.
1. Pseudobradya hirsuta, (Scott).
2. — fusca, (Scott).

Supplm. Pl. 5.
Pseudobradya robusta, G. O. Sars.

Supplm. Pl. 6.
1. Pseudobradya elegans, (Scott).
2. Bradya armifera, (Scott).

Supplm. Pl. 7.
Ectinosomella nitidula, G. O. Sars.

Supplm. Pl. 8.
Harpacticus littoralis, G. O. Sars.

Supplm. Pl. 9.
1. Tegastes harpacticoides, (Claus).
2. — calcaratus, G. O. Sars.
3. — longimanus, (Claus).

Supplm. Pl. 10.
Idyæa tenella, G. O. Sars.

Supplm. Pl. 11.
1. Microthalestris littoralis, G. O. Sars.
2. Dactylopusia latipes, Boeck.

Supplm. Pl. 12.
Dactylopodopsis dilatata, G. O. Sars.

Supplm. Pl. 13.
1. Dactylopodella clypeata, G. O. Sars.
2. Idomene borealis, G. O. Sars.

Supplm. Pl. 14.
Idomenella coronata, Scott.

Supplm. Pl. 15.
Westwoodia monensis, (Brady).

Supplm Pl. 16.
Amphiascus latifolius, G. O. Sars.

Supplm. Pl. 17.
Amphiascus thalestroides, G. O. Sars.

Supplm. Pl. 18.
Amphiascus denticulatus, (Thompson).

Supplm. Pl. 19.
1. Amphiascus Normani, G. O. Sars.
2. — amblyops, G. O. Sars.

Supplm. Pl. 20.
Amphiascus lagenirostris, G. O. Sars.

Supplm. Pl. 21.
1. Amphiascus nanoides, G. O. Sars.
2. — bulbifer, G. O. Sars.

Supplm. Pl. 22.
Amphiascus spinulosus, G. O. Sars.

Supplm. Pl. 23.
Amphiascus confusus. (Scott).

Supplm. Pl. 24.
1. Amphiascus typhloides. G. O. Sars
2. — lamellifer, G. O. Sars.

Supplm. Pl. 25.
1. Stenheliopsis latifurca. G. O. Sars.
2. — media. G. O. Sars.

Supplm. Pl. 26.
1. Mesochra exigua. G. O. Sars.
2. Nitocra pusilla. G. O. Sars.

Supplm. Pl. 27.
Ameira tenuicornis. Scott.

Supplm. Pl. 28.
Parameira propinqva, (Scott).

Supplm. Pl. 29.
Pseudameira crassicornis. G. O. Sars.

Supplm. Pl. 30.
Pseudameira furcata. G. O. Sars.

Supplm. Pl. 31.
Ameiropsis nobilis. G. O. Sars.

Supplm. Pl. 32.
Ameiropsis angulifera. G. O. Sars.

Supplm. Pl. 33.
Ameiropsis abbreviata. G. O. Sars.

Supplm. Pl. 34.
Stenocopia spinosa, (Scott).

Supplm. Pl. 35.
Malacopsyllus fragilis. G. O. Sars.

Supplm. Pl. 36.
Tetragoniceps Scotti, G. O. Sars.

Supplm. Pl. 37.
1. Tetragoniceps Scotti, G. O. Sars, (continued).
2. Phyllopodopsyllus Bradyi. Scott (male).

Supplm. Pl. 38.
Pteropsyllus consimilis, Scott.

Supplm. Pl. 39.
Evansia incerta. Scott.

Supplm. Pl. 40.
Leptastacus macronyx, Scott.

Supplm. Pl. 41.
Leptomesochra attenuata, (A. Scott).

Supplm. Pl. 42.
Leptomesochra tenuicornis, G. O. Sars.

Supplm. Pl. 43.
Leptomesochra confluens, G. O. Sars.

Supplm. Pl. 44.
Phyllocamptus minutus. G. O. Sars.

Supplm. Pl. 45.
Paramesochra dubia, Scott.

Supplm. Pl. 46.
Laophonte karmensis, G. O. Sars.

Supplm. Pl. 47.
Pseudolaophonte spinosa, (Thompson).

Supplm. Pl. 48.
Rhizothrix gracilis, (Scott).

Supplm. Pl. 49.
Anoplosoma sordidum, G. O. Sars.

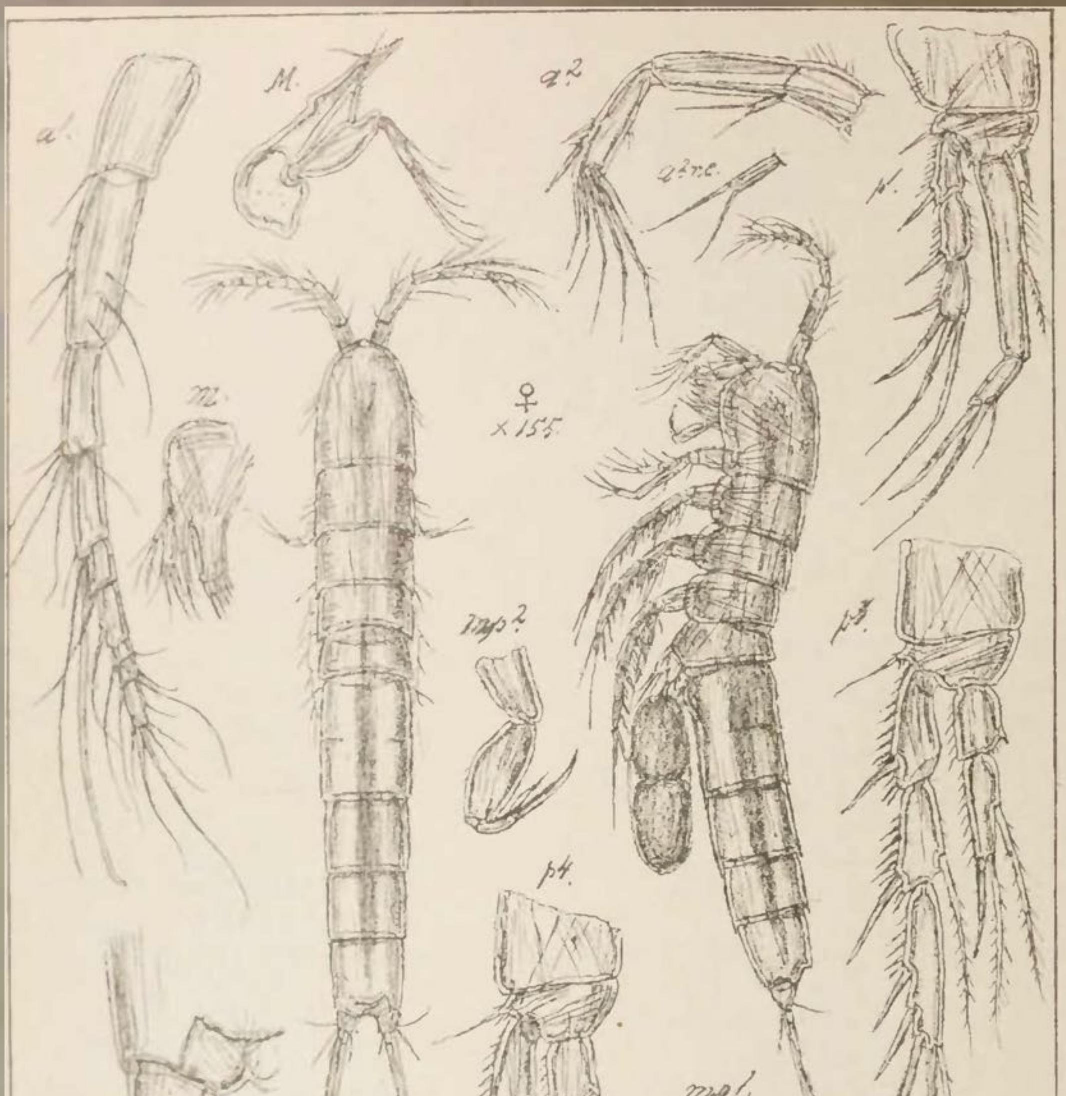
Supplm. Pl. 50.
Stenocaris minor, (Scott).

Supplm. Pl. 51.
Tachidiopsis cyclopoides, G. O. Sars.

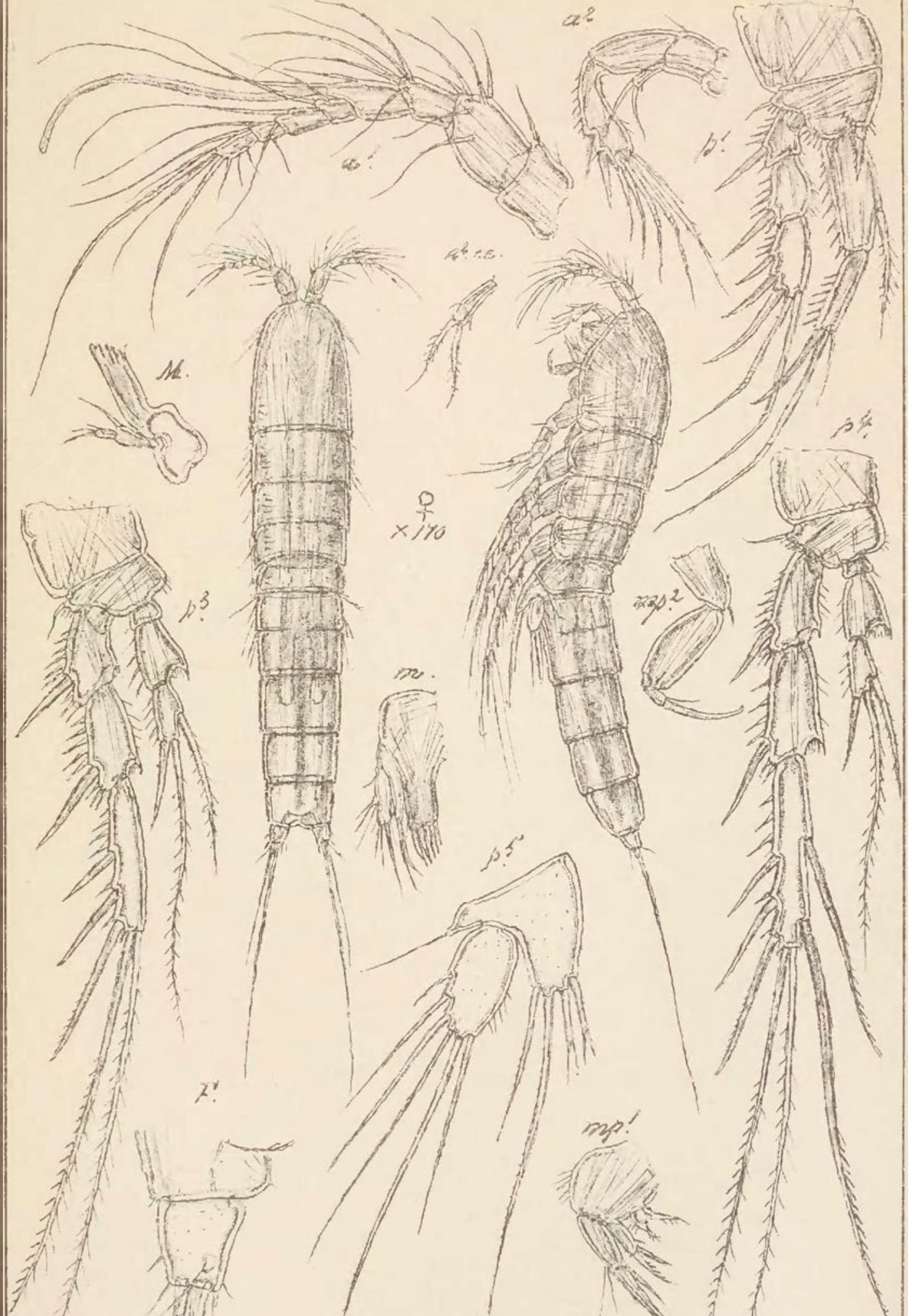
Supplm. Pl. 52.
Ectinosoma tenuireme, Scott.

Supplm. Pl. 53.
Neobradya pectinifera, Scott.

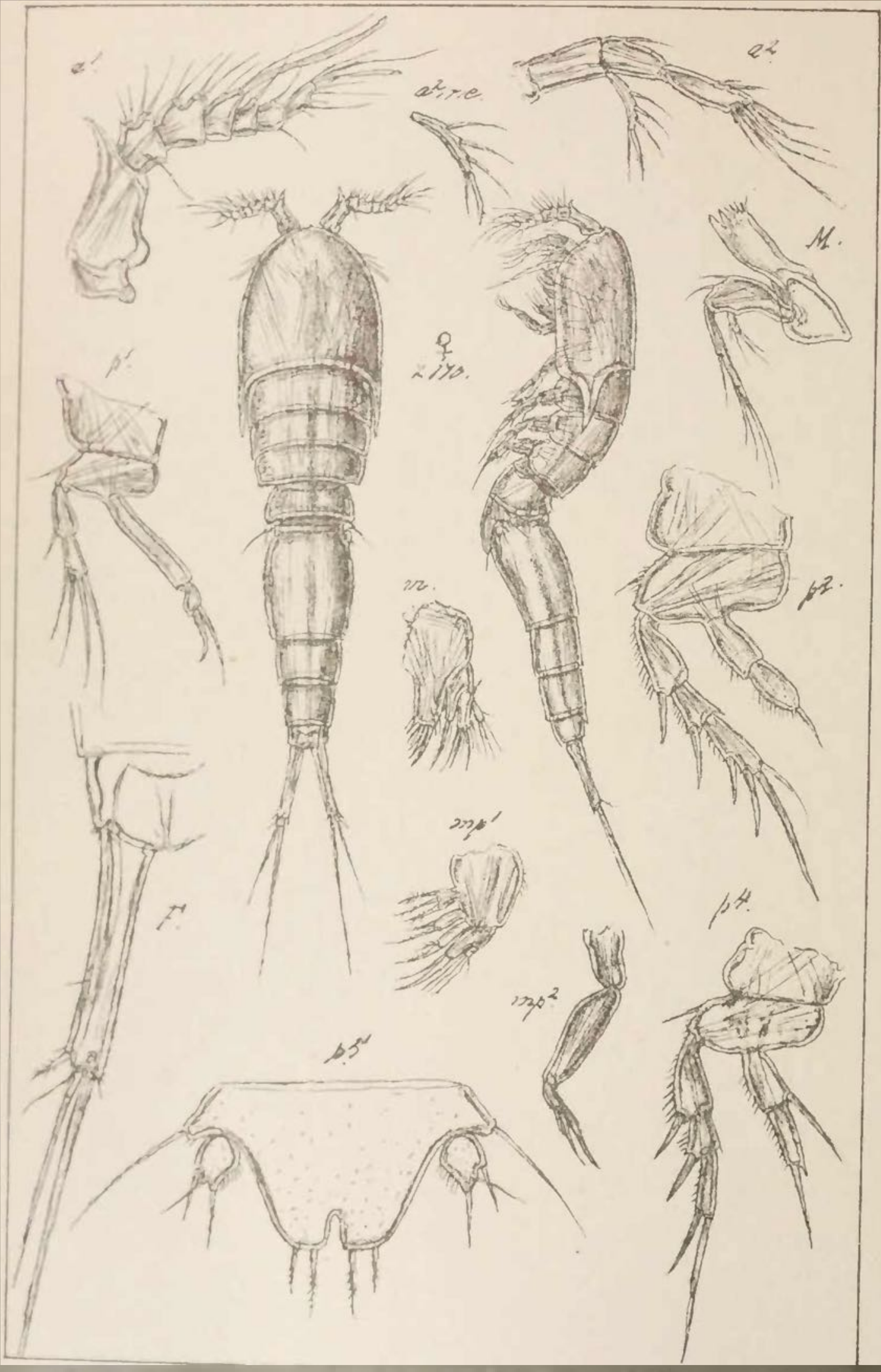
Supplm. Pl. 54.
Amphiascus simulans, (Scott).



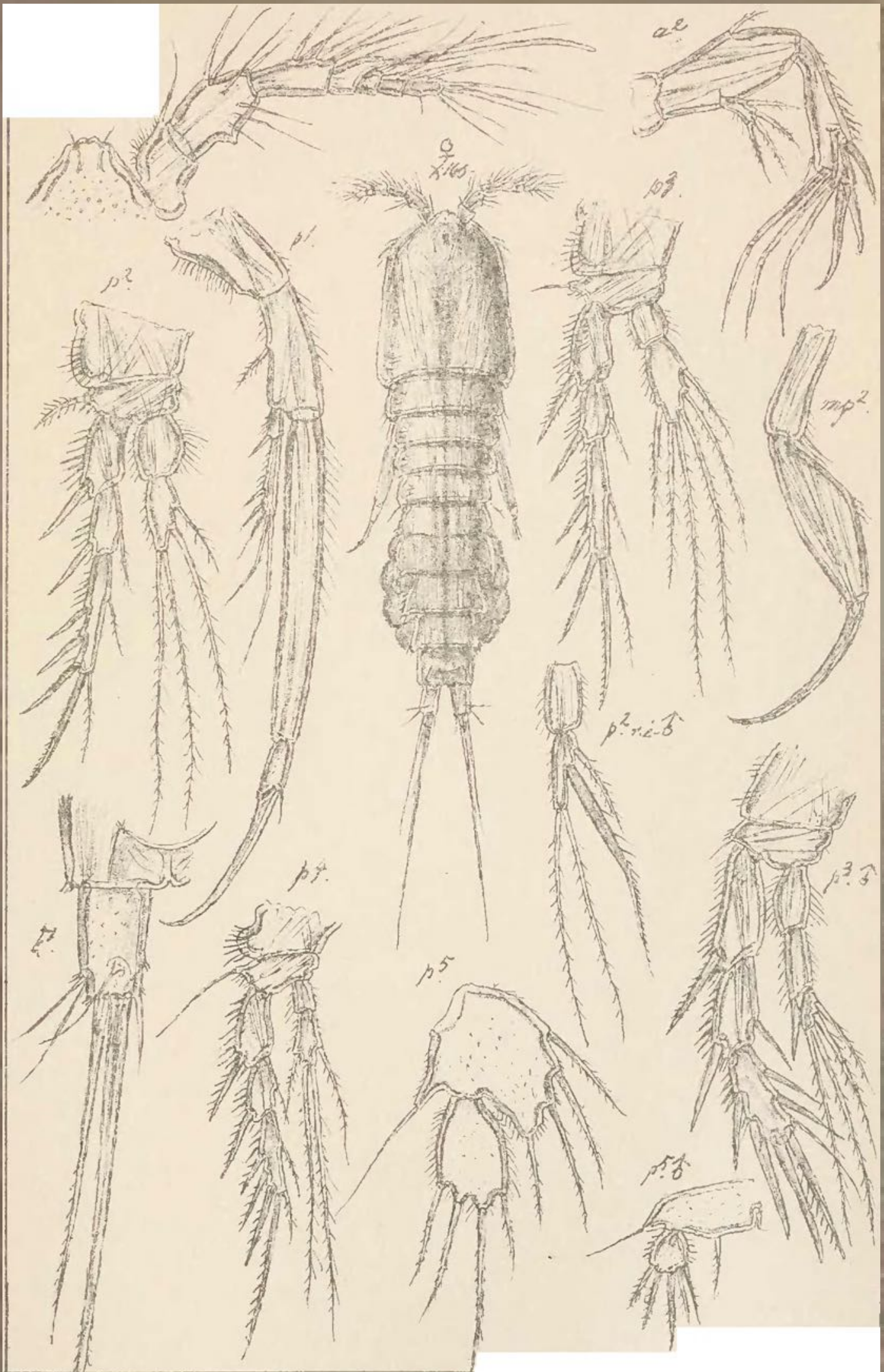
M.
♀
× 155
p4.
p5.

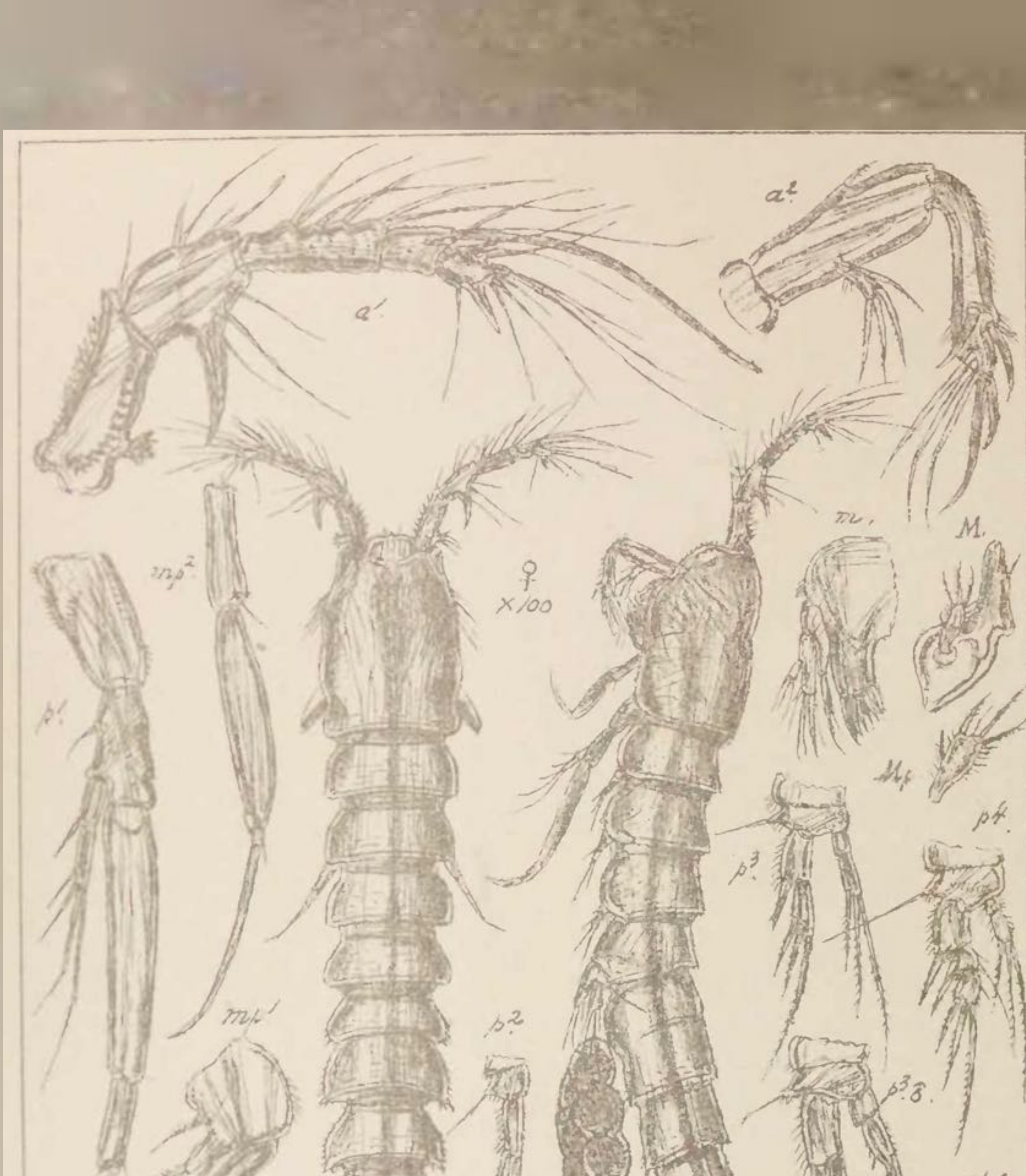


a^2
a^1
p^1
M.
♀
× 170
p^3
m.
mp^2
p^4
p^5
F.
mp^1

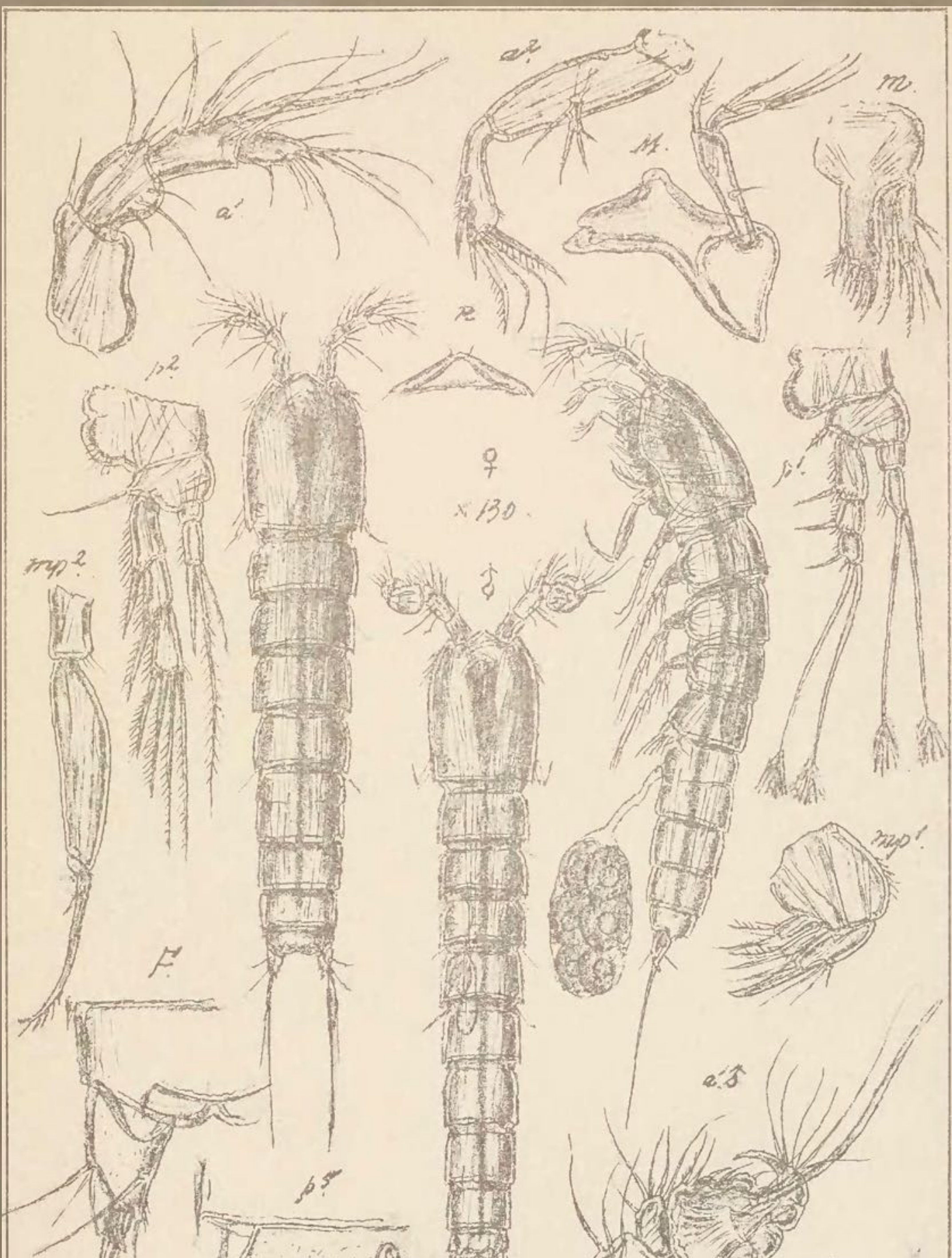


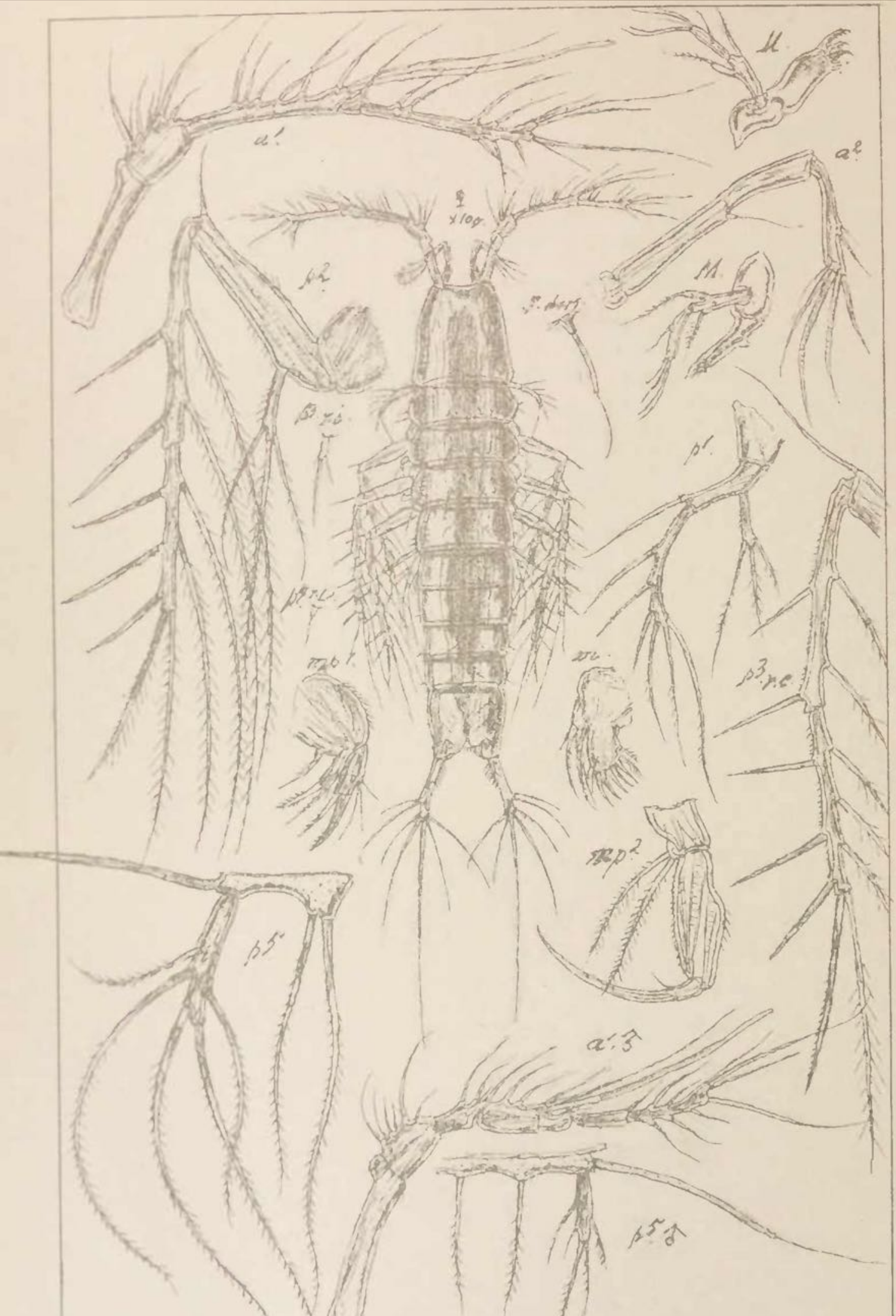
a¹
a² r.e
a²
M.
♀
×170.
p¹
p2.
m.
mp¹
F.
p4.
mp²
p5

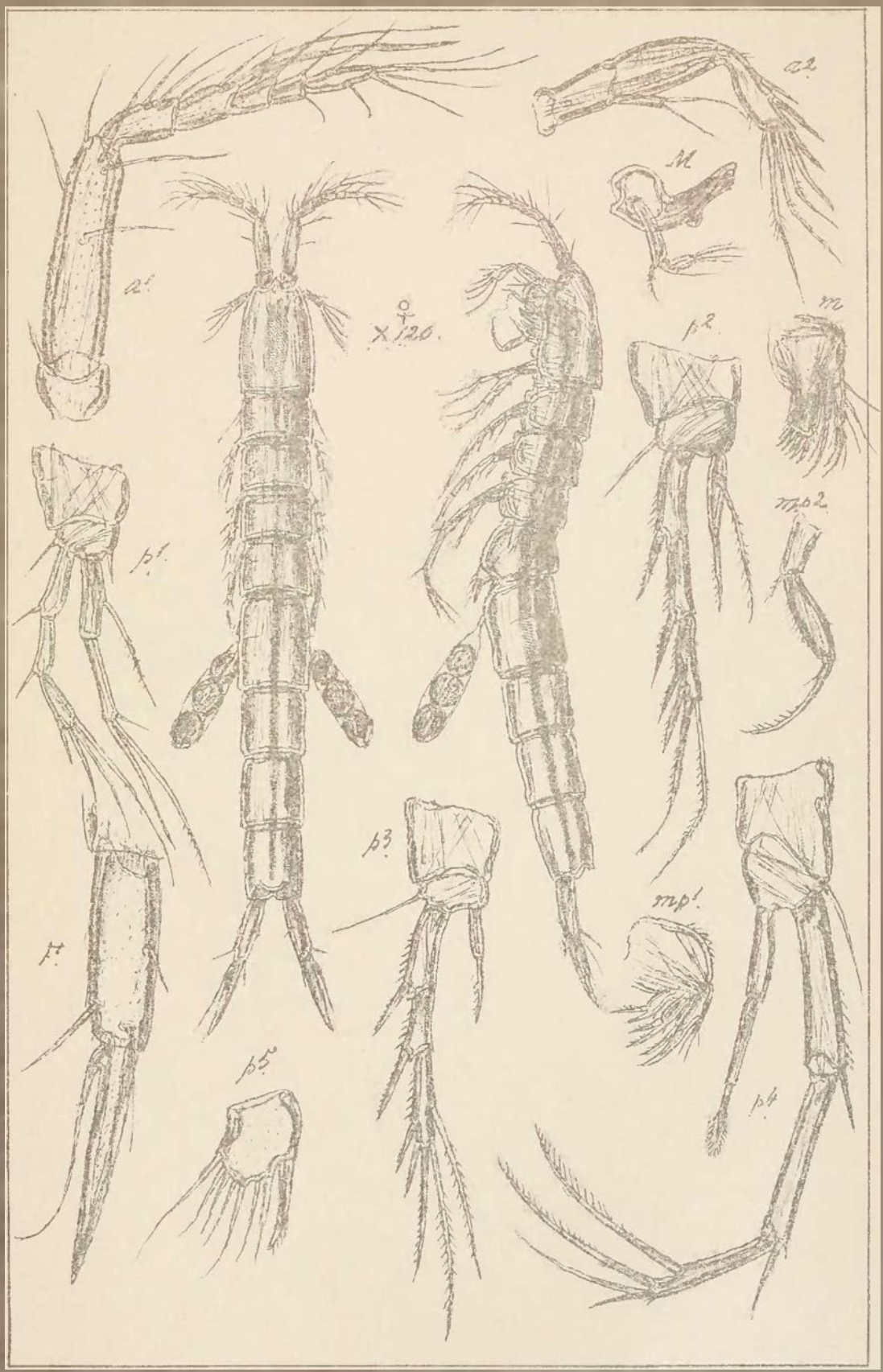

a2
♀
p3.
p1.
p2
mp2.
p2.r.i.♂
p4.
p3.♂
p5
p5♂

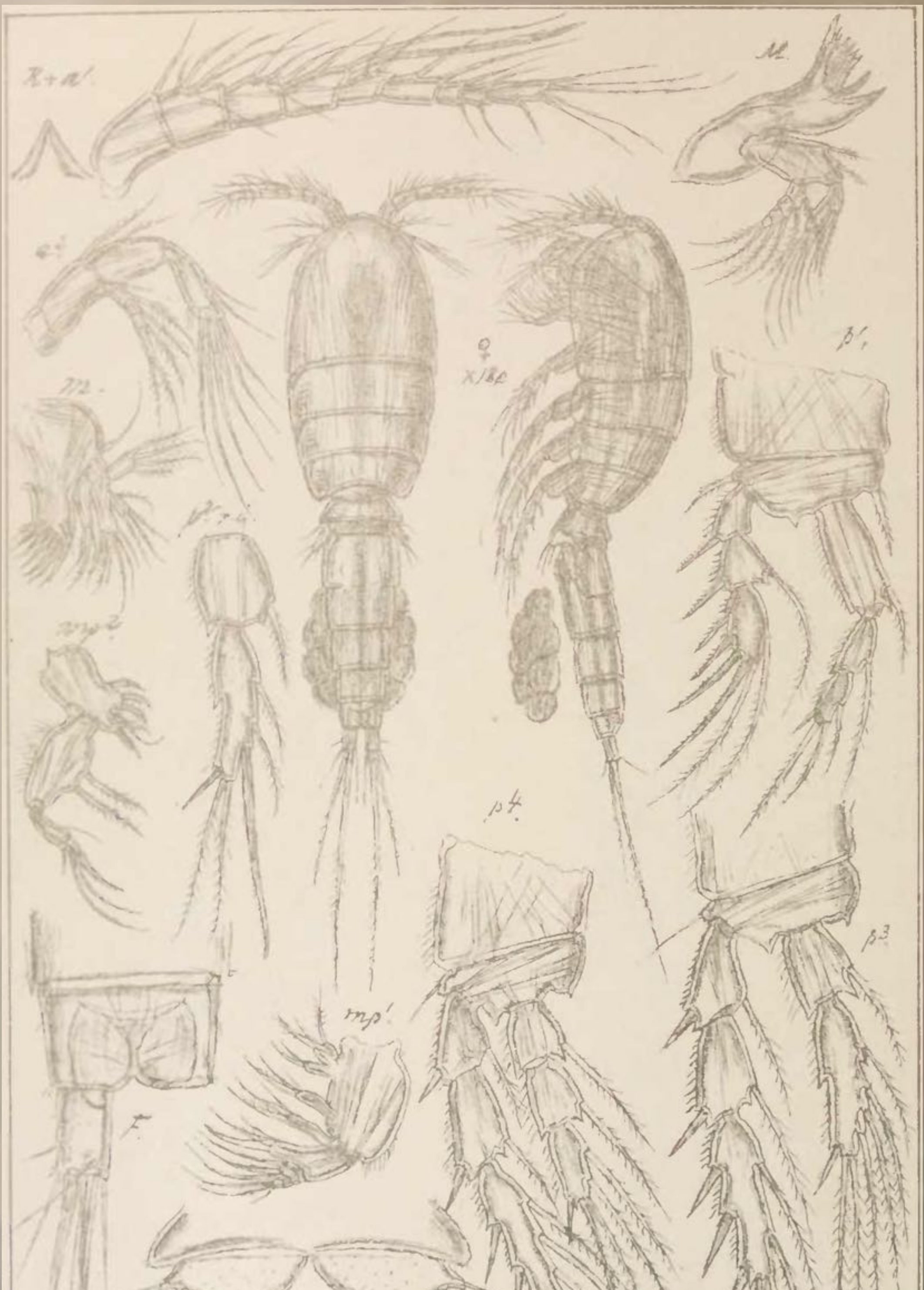


a1.
a2.
♀
×100
mp2.
p1.
m.
M.
p4.
p3.
p2.
mp1
p3. ♂.
p4. ♂.
p5.
p5. ♂.
a1. ♂


a¹
a²
M.
m.
R
p².
♀
× 130.
♂
p¹.
mp².
mp¹.
F.
p⁵
a.♂
p5.♂.

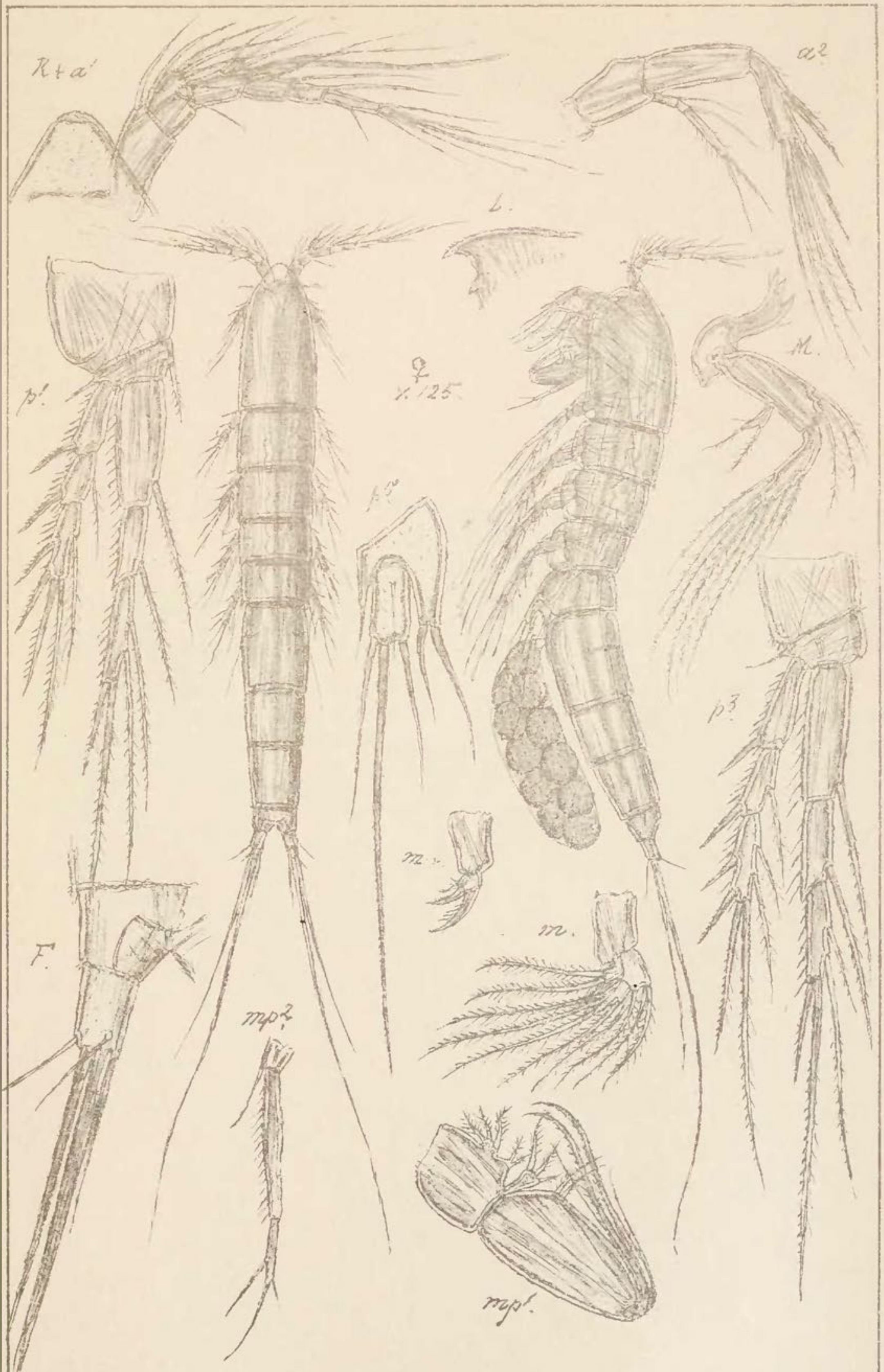

a1
a2
×100
p2
p1
mp1
p3 re
mp2
p5
a1 ♂
p5 ♂

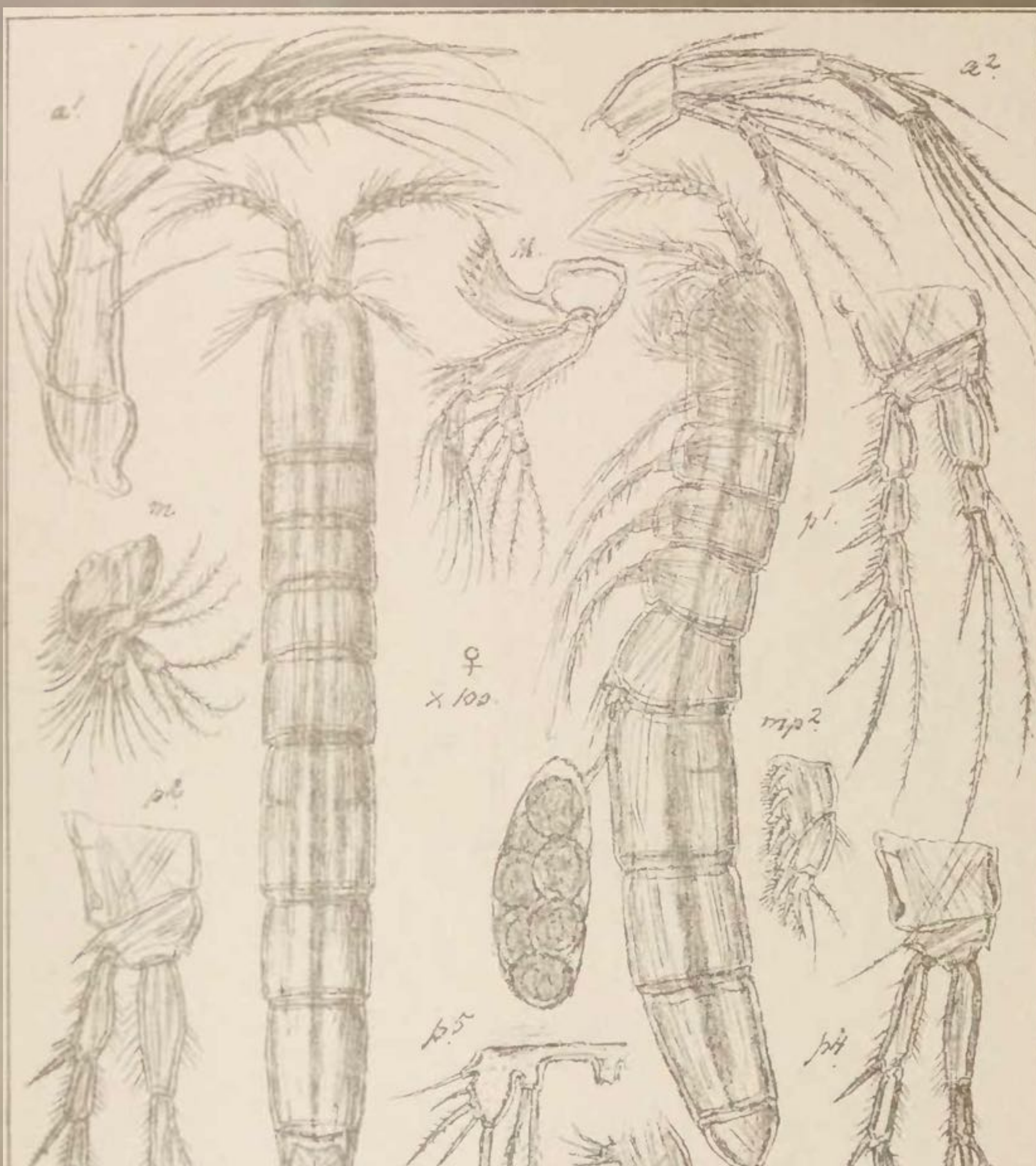

a2
M
a1
♀
×120.
m
p2
mp2
b1
b3
mp1
F
b5
b4


M.
p1
♀ x182
p4.
p3
mp1
F.
p5

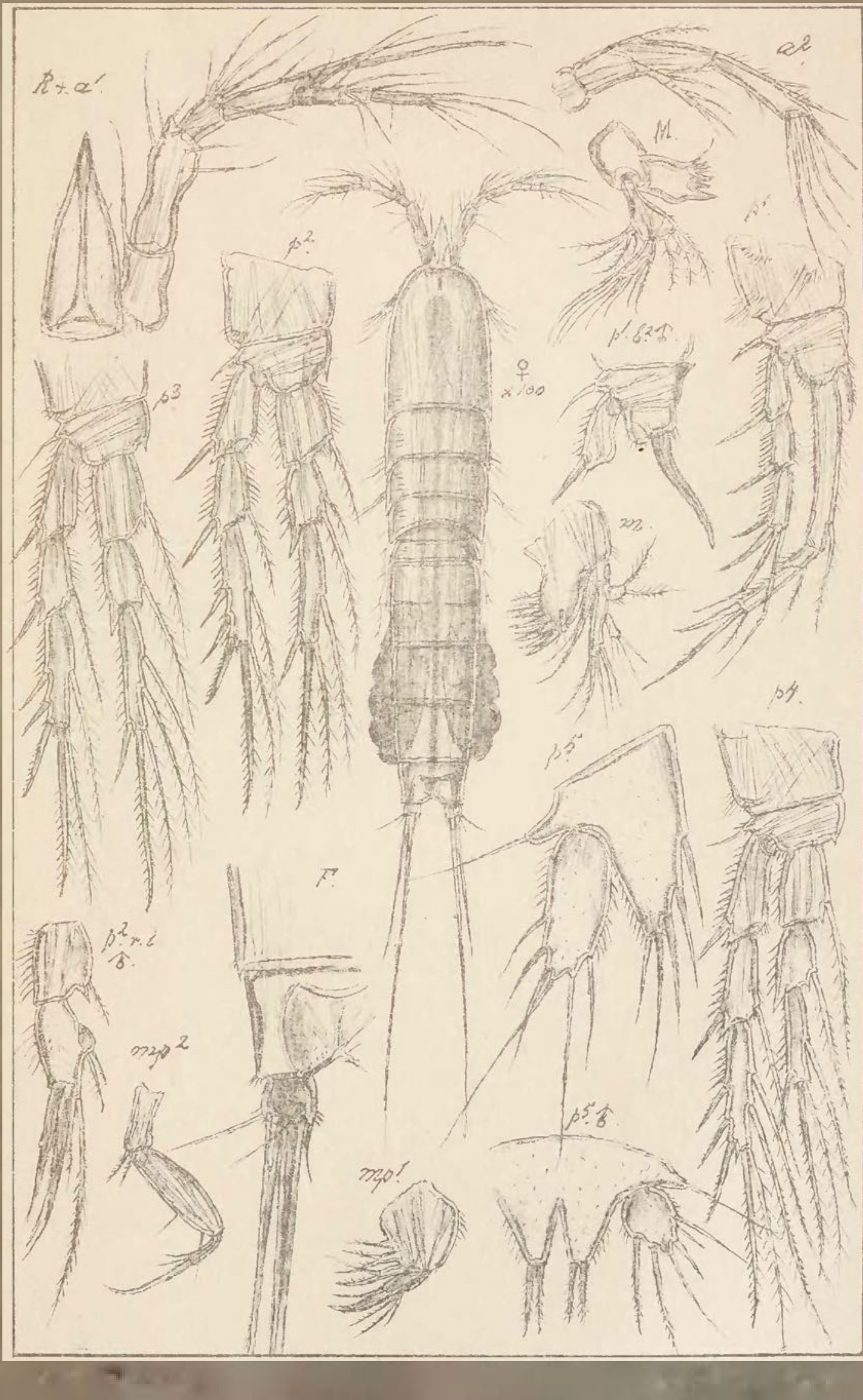
Copepoda

Ectinosomidæ | Harpacticoida | Suppl. Pl. 52





a¹
a²
M.
m
p¹
♀
× 100
mp²
p5
p4
mp¹


R+a¹.
a².
M.
p².
p³
♀
×100
p¹.b.r.i.
m.
p⁴.
p⁵
F.
p².r.i.
mp²
mp¹
p⁵.b.