AN ACCOUNT

OF THE

CRUSTACEA

OF

NORWAY

WITH SHORT DESCRIPTIONS AND FIGURES OF ALL THE SPECIES

BY

G. O. SARS

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HARPACTICOIDA

PARTS XVII & XVIII

CANTHOCAMPTIDÆ (continued)

WITH 16 AUTOGRAPHIC PLATES

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propriate for the present form, which in reality is much the largest of all the known species of this genus. It is for this reason that recent authors now generally apply to the present species the name *staphylinus,* proposed by Jurine, though it is of somewhat later date, the name *minutus* being confined to another species so named by Claus. In every case the present species must be regarded as the type of the genus *Canthocamptus* and at the same time as the type of the whole family *Canthocamptidæ*.

Occurrence.—This form is very common in the neighbourhood of Christiania, especially early in the spring, and in all probability is distributed over the greater part of the country. It generally occurs in shallow ponds and ditches together with other fresh-water Entomostraca, more rarely in larger lakes. Male and female specimens occur with almost equal frequency, and are often found tied together in copula, the female being grasped by the anterior antennæ of the male at the base of the caudal setæ. The swimming movements of the animal are not very rapid, and are effected in a somewhat reeling manner. It also moves with great dexterity on the bottom, or along the leafs and stems of aquatic plants, by curving and twisting its very flexible body, and applying its legs as levers.

Distribution.—British Isles, Sweden, Denmark, Central Europe, North America, Novaja Zemlja.

124. Canthocamptus minutus, Claus.

(Pl. CXXVIII).

Canthocamptus minutus, Claus, Die freilebenden Copepoden, p. 22, Pl. XII, fig. 1, Pl. XIII, fig. 2.

Syn: *Canthocamptus lucidulus,* Rehberg.

Specific Characters.—Female. Body slender and elongated, sublinear in form, being of almost equal width throughout. Urosome with the segments less sharply marked off than in the type species, genital segment scarcely longer than the 2 succeeding ones combined, last segment without any dentiform projections at the end outside, anal opercle somewhat less prominent and edged with about 12 spinules, which are all bifid at the end. Caudal rami scarcely as long as the anal segment, and conspicuously thickened in the middle, the outer edge being very convex and provided with 3 small denticles and 2 hair-like bristles, tip somewhat exserted and obliquely truncated, apical setæ rather slender, the innermost but one about twice as long as the adjacent seta on the outer side. Anterior antennæ much shorter than in *C. staphylinus*, otherwise of a very similar structure. Posterior antennæ and oral parts likewise of essentially the same structure

as in the typical species. 1st pair of legs with the outer ramus of moderate size, seta attached inside the middle joint of unusual length, last joint almost as long as the other 2 combined, and carrying at the tip 2 spines and 2 geniculated setæ; inner ramus only slightly exceeding in length the outer, and less distinctly prehensile than in the typical species, 1st joint much shorter than the other 2 combined, last joint somewhat longer than the middle one, and, as in *C. staphylinus*, carrying on the tip a slender spine, a still more slender seta, and a very small hair-like bristle. Natatory legs comparatively less slender than in that species, with the inner ramus shorter in proportion to the outer, though of the structure characteristic of the genus. Last pair of legs resembling in shape those of *C. staphylinus*, inner expansion of proximal joint, however, comparatively larger, extending beyond the middle of the distal joint and provided with 6 marginal spines, the 2 outermost ones much shorter than the others. Ovisac oblong oval in form, extending to the end of the urosome.

Male with the inner ramus of 2nd pair of legs conical in form, and having the outer 2 joints wholly confluent, sub-apical spine wanting; that of 3rd pair transformed in a similar manner to that in the male of *C. staphylinus*, the mucroniform process of 2nd joint, however, still longer, terminating in a very slender point; inner ramus of 4th pair not differing from that in the female, except in the smaller number of setæ, that of the 1st joint and the proximal one of the last joint being absent. Last pair of legs with the distal joint comparatively smaller than in the male of *C. staphylinus*, differing also somewhat in shape.

Colour whitish.

Length of adult female 0.56 mm.

Remarks.—This form was first recorded, though rather imperfectly, by Claus under the above name, and was subsequently described by Dr. Rehberg as a new species under the name of *C. lucidulus*. It is easily distinguished from the typical species by its much smaller size and shorter anterior antennæ. Another character by which this form differs from all other known species, and to which also Claus has called attention, is the peculiar structure of the spinules fringing the anal opercle, all of them being bifid at the tip.

Occurrence.— Only some few specimens of this form have hitherto come under my notice. They were taken in the neighbourhood of Christiania, from a shallow ditch in company with *Althegella pygmæa* G. O. Sars.

Distribution.—Sweden (Lilljeborg), Germany (Claus), Holland (v. Breemen), British Isles (Scott).

Gen. 43. **Attheyella**, Brady, 1880.

Generic Characters.—General form of body about as in *Canthocamptus*. Anterior antennæ comparatively short, 8-articulate, and distinctly hinged in the male. Posterior antennæ with the basal part not subdivided, outer ramus of moderate size and generally uniarticulate, with 4 setæ, 2 lateral and 2 apical. Oral parts scarcely different from those in *Canthocamptus*. 1st pair of legs imperfectly prehensile, with the inner ramus in most cases only consisting of 2 joints and scarcely longer than the outer, more rarely 3-articulate and somewhat more elongated. Inner ramus of the 3 succeeding pair of legs poorly developed, biarticulate, with the 1st joint, as a rule, very small; that of 3rd pair in male conspicuously transformed. Last pair of legs of somewhat varying shape in the different species.

Remarks.—This genus, established by Brady, is closely allied to *Canthocamptus*, and its validity may perhaps be disputed, especially as the structure of the 1st pair of legs, at least in 2 of the species, approaches rather nearly to that found in the above-named genus. Yet in all the species of the present genus the inner ramus of the 2 succeeding pairs differs conspicuously from that in *Canthocamptus*, being much shorter and, like that of the 4th pair, only consisting of 2 joints. The genus comprises several species, 5 of which belong to the fauna of Norway. They are all exclusively freshwater forms.

125. Attheyella crassa, G. O. Sars.

(Pl. CXXIX).

Canthocamptus crassus, G. O. Sars, Oversigt af de indenlandske Ferskvandscopepoder. Chr. Vid. Selsk. Forh. f. 1862, p. 23.

Syn: *Attheyella spinosa*, Brady.
„ *Paratachidius inermis*, Brady.

Specific Charakters.—Female. Body comparatively short and thick, cylindric of form, slightly tapered behind. Cephalic segment broadly rounded in front, with the rostral projection very small. Urosome much shorter than the anterior division, and having the segments fringed at the end ventrally and laterally with unusually long and closely set spinules; last segment somewhat shorter than the preceding one, anal opercle quite smooth. Caudal rami about the length of the anal segment, and of rather a peculiar appearance, being instricted at the base and sub-pyriform in shape, with the inner edge strongly convex and the end narrowed to an obtuse point, apical setæ more or less strongly twisted and bent

outwards, the 2 setæ of the outer edge rather slender and remote from the apex. Anterior antennæ much shorter than the cephalic segment and rather thick at the base, terminal part not attaining the length of the proximal one. Posterior antennæ with the outer ramus exceeding half the length of the terminal joint and uniarticulate. 1st pair of legs with the inner ramus distinctly 3-articulate and somewhat longer than the outer, 1st joint much shorter than the other 2 combined. Natatory legs rather strongly built, with the first 2 joints of the outer ramus considerably thickened and densely spinulose, spines of outer edge very coarse. Last pair of legs rather large, with very long and slender marginal setæ, distal joint narrow oblong, tapered towards the end and fringed with 5 setæ, inner expansion of proximal joint narrow linguiform, extending somewhat beyond the middle of the distal joint, marginal setæ 6 in number.

Male considerably smaller than female and of more slender form of body. Caudal rami rather unlike those in female and of quite normal appearance. Legs of 3rd pair with the spine of the middle joint of the outer ramus exceedingly strong and deflexed; inner ramus 3-articulate, with the middle joint produced inside to a slender deflexed stylet, last joint oblong oval in form, tipped with 2 unequal setæ. Last pair of legs rather small, with the inner expansion of proximal joint very slight and only provided with 2 denticulated spines.

Colour whitish grey.

Length of adult female 0.62 mm.

Remarks. This form was described (but not figured) by the present author as early as the year 1862 as a species of the genus *Canthocamptus*. It was subsequently observed by Prof. Brady, who regarded it as new, and described it in his well-known Monograph as the type of the genus *Attheyella*, under the name of *A. spinosa*. The form recorded by the same author at a later date as *Paratachidius inermis*, I am unable to distinguish from the present species. The peculiar shape of the caudal rami in the female will suffice at once to distinguish this species from any of the other forms of *Attheyella*.

Occurrence.—I have only met with this form in larger lakes, on a muddy bottom at a depth of some few fathoms. It was first observed in two lakes near Christiania, Sognsvand and Maridalsvand, and I have subsequently also found it in our largest lake, Mjösen, as also in some other lakes in the southern part of the country. It moves rather slowly, and more frequently keeps to the bottom, twisting its very flexible body between the loose mud, into which it is also enabled to bury itself with great dexterity.

Distribution.—Sweden (Lilljeborg), British Isles (Brady), Germany (Schmeil), Holland (v. Breemen).

126. Attheyella gracilis, G. O. Sars.

(Pl. CXXX).

Canthocamptus gracilis, G. O. Sars, l. c. p. 22.

Syn: *Canthocamptus inornatus*, Scott.

Specific Characters.—Female. Body exceedingly slender and elongated, linear in form, with the two chief divisions of almost equal length. Cephalic segment narrowly rounded in front, rostral projection very small. Caudal segments without distinct whorls of spinules at the hind edge; last segment of about same length as the penultimate one, and having the anal opercle finely ciliated at the edge. Caudal rami slender and narrow, being more than twice as long as they are broad, and slightly tapered distally, tip narrowly truncated, apical setæ of moderate length and only slightly divergent, setæ of outer edge remote from the apex. Anterior antennæ rather slender, being only very slightly dilated at the base, terminal part almost as long as the proximal one. Posterior antennæ with the outer ramus small, not attaining half the length of the terminal joint. 1st pair of legs with both rami narrow, the inner one the longer and 3-articulate, with the 1st joint a little shorter than the other 2 combined. Natatory legs with the outer ramus much narrower than in the preceding species, that of 4th pair very slender and elongated. Last pair of legs with the distal joint rather small, oblong in form, inner expansion of proximal joint very slight and provided with 4 slender setæ. Ovisac oblong in form, with a very limited number of ova arranged in a single layer. Spermatophore, attached to the genital segment, narrow lageniform.

Male much smaller than female and exhibiting the usual sexual differences. 3rd pair of legs of much the same structure as in the male of *A. crassa*, but less strongly built. Inner ramus of 4th pair with the number of setæ much reduced. Last pair of legs exceedingly small, proximal joint without any setiferous expansion inside.

Body semipellucid, of a light yellowish red colour.

Length of adult female 0.70 mm.

Remarks.—This form is at once distinguished from any of the other species of the present genus by its very slender and narrow body. The structure of the last pair of legs is also rather characteristic.

Occurrence.—I have met with this form occasionally in the neighbourhood of Christiania, as also in some other places of the southern part of the country. It is generally found near the edges of small lakes with rich vegetation.

Distribution.—Sweden (Lilljeborg), British Isles (Scott), Germay (Schmeil), Holland (v. Breemen), North America (Herrick).

127. Attheyella pygmæa, G. O. Sars.

(Pl. CXXXI).

Canthocamptus pygmæus, G. O. Sars, l. c. p. 21.

Syn: *Attheyella cryptorum*, Brady.
„ *Canthocamptus Borcherdingi*, Poppe.

Specific Characters.—Female. Body not much elongated, cylindric of form, being only slightly attenuated behind. Rostral projection almost obsolete. Urosome much shorter than the anterior division, its segments distinctly spinulose at the hind edge ventrally and laterally; last segment shorter than the preceding one, and having the anal opercle rather prominent and edged with about 10 coarse spinules. Caudal rami comparatively short and thick, being scarcely longer than they are broad, and armed, in addition to the setæ, with several small denticles both inside and outside, outer edge angularly curved in the middle, inner straight, tip transversely truncated; apical setæ rather elongated and distinctly spinulose, distal seta of the outer edge attached close to the apex. Anterior antennæ short, with the proximal joints rather dilated, terminal part fully as long as the proximal one. Posterior antennæ with the outer ramus of moderate size and distinctly biarticulate. 1st pair of legs rather short, with the rami subequal in length, the inner one composed of 2 joints only, both of about same length. Natatory legs rather strongly built and of a similar structure to that in *A. crassa*. Last pair of legs with the distal joint small, of rounded form, with 5 marginal setæ, the innermost of which is quite short, inner expansion of proximal joint rather large, broadly linguiform and extending beyond the distal joint, maginal setæ rather unequal and 6 in number.

Male exhibiting the usual sexual differences. 2nd pair of legs somewhat unlike those in female, the outer ramus being comparatively shorter and stouter, with the spines of the outer edge much coarser, inner ramus extending nearly as far as the outer and narrowly exserted at the tip, which carries a single slender seta. Inner ramus of 3rd pair of legs transformed in a similar manner to that in the 2 preceding species, though having only a single apical seta; that of 4th pair exceedingly small and apparently uniarticulate, with 2 unequal setæ on the tip. Last pair of legs, as usual, much smaller than in female, with the inner expansion of proximal joint less produced and only provided with 2 unequal spiniform setæ.

Colour whitish, sometimes with a slight reddish tinge.

Length of adult female 0.52 mm.

Remarks.—This is the smallest of the Norwegian species of the present genus, and is moreover easily recognised by the coarsely spinous anal opercle

and the short and broad caudal rami. The *Attheyella cryptorum* of Brady is unquestionably identical with the present species, and this is also the case with the form recorded by Poppe as *Canthocamptus Borcherdingi.*

Occurrence.—I have met with this form not unfrequently in the neighbourhood of Christiania, as also in some other places of the country. It is generally found in small ditches and shallow streams, more rarely in larger lake near the border.

Distribution.—Sweden (Lilljeborg), British Isles (Brady), Germany (Poppe), Holland (v. Breemen).

128. Attheyella arctica (Lilljeborg).

(Pl. CXXXII).

Canthocamptus arcticus, Lilljeborg, Synopsis Harpacticidarum aqvæ dulcis Sveciæ, Kgl. Svenska Vet. Akad. Handl. Bd. 36, p. 37, Pl. II, fig. 23, Pl. III, figs. 1—4.

Specific Characters.—Female. Body somewhat more slender than in *A. nygmæa* and gradually attenuated behind. Rostral projection small, but distinct. Urosome with the segments minutely spinulose at the hind edge ventrally and laterally, last segment about the length of the preceding one, anal opercle fringed with about 16 comparatively small denticles. Caudal rami of moderate size and somewhat divergent, broad at the base and slightly tapering distally, dorsal face exhibiting a rounded gibbosity fringed with a transverse series of thin setiform spinules, tip transversely truncated, apical setæ rather elongated, distal seta of outer edge attached close to the apex. Anterior antennæ of moderate length, with the proximal joints slightly dilated, terminal part rather narrow and fully as long as the proximal one. Posterior antennæ with the outer ramus comparatively small, uniarticulate. 1st pair of legs with the rami of about equal length, the inner one biarticulate, distal joint shorter than proximal. Natatory legs with the outer ramus very strongly built, that of 4th pair scarcely more slender than in the other 2 pairs and abruptly bent inwards. Last pair of legs comparatively large, distal joint oval in form, inner expansion of proximal joint broadly linguiform and extending beyond the distal joint, marginal setæ 6 in number and, except the outermost one, very long and curved.

Male with the inner rami of the natatory legs more or less differing in shape and armature from those in female, that of 3rd pair, as usual, the most conspicuously transformed, being composed of 3 joints, the middle one exserted inside to a deflexed lanceolate process, last joint terminating in a short spine, inside which a likewis short angularly bent seta is attached. Last pair of legs

very small, with the inner expansion of proximal joint not extending beyond the middle of the distal joint and armed with 2 spiniform setæ only.

Colour whitish.

Length of adult female 0.65 mm.

Remarks.—This form, recently described by Prof. Lilljeborg, is nearly allied to *A. pygmæa*, but of larger size, and moreover differs in the shape of the caudal rami, as also in the structure of some of the appendages.

Occurrence.—Only a few specimens of this form have hitherto come under my notice. They were taken many years ago from a shallow swamp in eastern Finmark, at some distance from Vardö.

Distribution.—Northern part of Sweden (Lilljeborg).

129. Attheyella Duthiei, Scott.

(Pl. CXXXIII).

Attheyella Duthiei, Scott, On some new and rare British Copepoda. Ann. Mag. Nat. Hist. ser. 6, Vol. XVIII, p. 4, Pl. II, figs. 1—13.

Syn: *Canthocamptus Duthiei*, Lilljeborg.

Specific Characters.—Female. Body moderately slender, slightly tapering behind. Cephalic segment comparatively large and produced in front to a rather prominent rostral projection obtusely rounded at the tip. Caudal segments fringed at the hind edge ventrally and laterally with small spinules; last segment shorter than the preceding one, anal opercle small, somewhat angular in the middle, and perfectly smooth. Caudal rami comparatively large and thick, slightly divergent and somewhat tapered distally, dorsal face exhibiting a slight carina terminating in a knob-like prominence outside which the dorsal seta issues; setæ of the outer edge very slender and elongated, the distal one remote from the apex. Anterior antennæ of moderate length, and gradually attenuated distally, terminal part not attaining the length of the proximal one. Posterior antennæ with the outer ramus uniarticulate. 1st pair of legs with the outer ramus a little shorter than the inner, middle joint wanting the usual seta inside; inner ramus biarticulate, with the distal joint fully as long as the proximal one, but much narrower and provided inside, in about the middle, with a slender seta not found in the other species. Natatory legs moderately strong, with the proximal joint of the inner ramus more fully developed than in the other species; outer ramus of 2nd pair of legs without any setæ inside. Last pair of legs with the distal joint rather large and oval in form, being finely ciliated inside, inner expansion of proximal joint narrow

linguiform, not extending as far as the distal one, marginal setæ rather elongated and 6 in number.

Male with the inner rami of the 2nd and 3rd pairs of legs peculiarly transformed; that of 2nd pair provided at the end of the proximal joint with 2 juxtaposed knob-like prominences, that of 3rd pair biarticulate, distal joint terminating in 2 slender spines forming together a kind of forceps. Last pair of legs, as usual, much smaller than in female, inner expansion of proximal joint with only 2 spiniform setæ.

Colour whitish.

Length of adult female 0.71 mm.

Remarks.—This form was first described under the above name by Th. Scott, and was subsequently recorded by Prof. Lilljeborg as a species of the genus *Canthocamptus*, the genus *Attheyella* being not accepted by that author. It is an easily recognizable form, being especially distinguished by the prominent rostral projection and the comparatively large and thick caudal rami, the 2 outer setæ of which are moreover unusually elongated.

Occurrence.—The only place where I have hitherto met with this species is in the "Songsvand", near Christiania. It occurred in the northern part of this lake, on a muddy bottom at a depth of about 3 fathoms.

Distribution.—Sweden (Lilljeborg), Scotland (Scott).

Gen. 44. **Moraria,** Scott, 1893.

Syn: *Ophiocamptus,* Mrázek.

Generic Characters.—Body slender, cylindric in form, and very flexible, with the segments rather sharply defined. Cephalic segment produced in front to a distinctly prominent rostral projection. Anal opercle smooth, angularly produced behind. Caudal rami rather large, oblong in form, with 2 slender bristles outside, apical setæ comparatively short. Anterior antennæ in female 7-articulate, the terminal part being only composed of 3 joints; those of male strongly hinged. Posterior antennæ rather stout, with the outer ramus very small and uniarticulate. Mandibular palp likewise small, biarticulate. Maxillæ and maxillipeds about as in *Canthocamptus*. Legs very short, with the natatory setæ imperfectly developed, 1st pair not much different in structure from the 3 succeeding ones, inner ramus of the latter biarticulate and much shorter than the outer, being only slightly

transformed in the male. Last pair of legs foliaceous, with the proximal joint more or less expanded inside.

Remarks.—This genus was established in the year 1893 by Th. Scott, and in the same year, though somewhat later, Mr. Mràzek established his genus *Ophiocamptus*, which undoubtedly is identical with Scott's genus. Prof. Lilljeborg did not, however, accept neither this nor the preceding genus, including the species of both in the old genus *Canthocamptus*. Yet, in spite of the near relationship of these 3 genera, I find it convenient to keep them apart, as there are some anatomical characters which seem to distinguish them pretty well from each other. As to the present genus, it is chiefly characterised by the reduced number of joints in the anterior antennæ, and more especially by the poor development of the natatory legs, which indeed seems to render the animal very little apt to move freely in the water. In addition to the type species described below, in recent time 3 other species have been recorded agreeing in all essential characters with the former, though evidently specifically distinct. They all are true fresh-water forms.

130. Moraria brevipes, G. O. Sars.

(Pl. CXXXIV).

Canthocamptus brevipes, G. O. Sars. Oversigt af de indenlandske Ferkvandscopepoder. Chr. Vid. Selsk. Forh. 1862, p. 24.

Syn: *Canthocamptus gracilis*, Poppe (not G. O. Sars).
„ *Moraria Anderson-Smithi*, Scott.
„ *Ophiocamptus Sarsii*, Mràzek.

Specific Characters.—Female. Body rather slender and elongated, with the anterior division scarcely broader than the posterior. Cephalic segment about the length of the 3 succeeding segments combined, rostral projection well marked and tipped with a small knob-like prominence. Urosome fully as long as the anterior division, segments sharply defined and finely spinulose at the hind edge ventrally and laterally, last segment scarcely shorter than the preceding one. Caudal rami exceeding somewhat in length the anal segment, narrow oblong in form and distinctly keeled dorsally, apical setæ comparatively short, setæ of outer edge remote from the apex. Anterior antennæ rather short and thickened at the base, terminal part nearly as long as the proximal one. 1st pair of legs with the inner ramus scarcely as long as the outer, and having the distal joint shorter and narrower than the proximal one. Last pair of legs with the terminal joint comparatively small, rounded oval in form, with 5 short marginal setæ, 3 of which

are spiniform, inner expansion of proximal joint rather produced, linguiform, extending far beyond the distal one, marginal setæ 6 in number, all short and spiniform.

Male with the inner ramus of 3rd pair of legs biarticulate, distal joint projecting inside to a strong deflexed spiniform process and carrying on the tip 2 short setæ. Last pair of legs poorly developed, with the inner expansion of proximal joint quite short and carrying 2 spiniform setæ.

Colour whitish grey.

Length of adult female 0.60 mm.

Remarks.—This form was described by the present author as early as the year 1862 as a species of the genus *Canthocamptus*, and was subsequently also observed in Germany by Dr. Poppe, who however erroneously identified it with *Canthocamptus gracilis* G. O. Sars. The *Ophiocamptus Sarsii* of Mràzek appears to be the present species, whereas that named by him *O. brevipes* is specifically distinct (= M. Mràzeki Scott). The form recorded by Th. Scott as the type of the genus *Moraria* and named *M. Anderson-Smithi*, is unquestionably identical with the present species. The most conspicuous distinguishing character of the latter is found in the structure of the last pair of legs.

Occurrence.—I have hitherto only met with very few specimens of this form. They were found many years ago in a small shallow lake in the neighbourhood of Christiania.

Distribution.—Sweden (Lilljeborg), Germany (Poppe), Scotland (Scott).

Gen. 45. **Mesochra**, Boeck, 1865.

Syn: *Paratachidius*, Brady & Robertson.

Generic Characters.—Body, as a rule, not much elongated, tapering behind. Cephalic segment comparatively large and produced in front to a more or less prominent flattened rostral projection. Anal opercle not spinulose. Caudal rami short, transversely truncated at the tip. Anterior antennæ comparatively short, with the number of articulations reduced, those in male hinged in the usual manner. Posterior antennæ with the basal part not subdivided, outer ramus very small and narrow, uniarticulate. Mandibular palp, as a rule, biarticulate, with the basal joint not expanded. Maxillæ and maxillipeds about as in the preceding genera. 1st pair of legs distinctly prehensile, with the inner ramus much longer

than the outer and more or less bent at the end. Natatory legs with the inner ramus biarticulate, but comparatively more fully developed than in *Attheyella;* that of 3rd pair slightly transformed in the male. Last pair of legs with the distal joint very small, inner expansion of proximal joint in female much produced, linguiform.

Remarks.—This genus also is very nearly allied to *Canthocamptus*, and has partly been confounded with it by other authors. It differs, however, in the reduced number of articulations in the anterior antennæ, and in the more pronounced prehensile character of the 1st pair of legs, as also in the inner ramus of the natatory legs being biarticulate, with the proximal joint well developed. Several species of this genus have been described by different authors, partly from the sea, partly from brackish water. None of them are, however, strictly fresh-water forms, as is the case with the species belonging to the 3 preceding genera. To the fauna of Norway belong 3 species, to be described below.

131. Mesochra Lilljeborgi, Boeck.

(Pl. CXXXV).

Mesochra Lilljeborgi, Boeck, Oversigt over de ved Norges Kyster iagttagne Copepoder. Chr. Vid. Selsk. Forh. 1864, p. 275.

Syn: *Canthocamptus Strömi*, Lilljeborg (not Baird).
„ *Paratachidius gracilis*, Brady & Robertson.

Specific Characters.—Female. Body moderately slender and gradually attenuated behind, with the cephalic segment about as long as the 3 succeeding segments combined. Rostral projection distinctly prominent, obtuse at the tip. Urosome much shorter than the anterior division and having the segments minutely spinulose at the hind edge ventrally and laterally; last segment about the length of the preceding one. Caudal rami scarcely longer than they are broad, apical setæ of moderate length. Anterior antennæ much shorter than the cephalic segment, 7-articulate, terminal part 3-articulate and shorter than the proximal one. 1st pair of legs with the outer ramus shorter than the 1st joint of the inner, middle joint with a small seta inside; inner ramus biarticulate, the 2 outer joints being coalescent and scarcely exceeding in length $^1/_3$ of the 1st joint, seta inside the latter joint attached considerably behind the middle. Last pair of legs with the distal joint rounded oval in form, inner expansion of proximal joint much produced, linguiform with 6 slender marginal setæ.

Male with the inner ramus of 3rd pair of legs biarticulate, last joint armed inside with a deflexed spine and at the tip with 2 unequal setæ. Last

pair of legs with the inner expansion of proximal joint extending scarcely beyond the distal joint and provided with 3 comparatively short setæ.

Colour whitish, with a more or less distinct yellowish green tinge.

Length of adult female 0.67 mm.

Remarks.—This form was first described by Prof. Lilljeborg, but erroneously identified by him with *Canthocamptus Strömi* of Baird, for which reason Boeck proposed for it the above specific name, regarding it moreover as the type of his new genus *Mesochra*. The form subsequently recorded by Mrss. Brady and Robertson under the name of *Paratachidius gracilis* is the same species.

Occurrence.—This is a strictly littoral form, occurring rather plentifully in many places both of the south and west coasts of Norway, at least up to the Trondhjem Fjord. It is generally found close to the beach in shallow bays, where the water is more or less brackish. Like other littoral species, it is not seldom left in tidal pools, but is scarcely ever found in purely fresh water.

Distribution.—Coast of Sweden (Lilljeborg), British Isles (Brady), bay of Keel (Giesbrecht), coast of France (Canu), Novaja Zemlia (Scott).

132. Mesochra pygmæa (Claus).

(Pl. CXXXVI).

Dactylopus pygmæus, Claus, Die freilebenden Copepoden, p. 127, Pl. XVII, fig. 3.

Syn: *Canthocamptus parvus,* Scott.

Specific Characters.—Female. Body comparatively short and stout, attenuated behind. Cephalic segment rather large, exceeding somewhat in length the 3 succeeding segments combined, rostral projection less prominent than in the preceding species. Last segment of urosome shorter than the preceding one. Caudal rami very short, being scarcely as long as they are broad, and transversely truncated at the tip, apical setæ rather elongated and somewhat thickened at the base. Anterior antennæ rather small and only composed of 6 joints, the 3rd and 4th being coalescent, terminal part nearly as long as the proximal one. 1st pair of legs with the outer ramus scarcely more than half as long as the inner and somewhat curved at the base, middle joint without any seta inside; inner ramus distinctly 3-articulate, with the 1st joint somewhat dilated at the base and having the seta of the inner edge attached in front of the middle, last joint a little longer than 2nd, and both together not attaining half the length of the 1st. Natatory legs of a very similar structure to those in the type species. Last pair of legs likewise rather similar, though having the distal joint somewhat larger

and obliquely truncated at the end, inner expansion of proximal joint less broad and only provided with 5 marginal setæ. Ovisac generally rather large, though containing a limited number of ova.

Male with the inner ramus of 3rd pair of legs transformed in a similar manner to that in the type species. Last pair of legs with the inner expansion of proximal joint scarcely extending as far as the distal joint, and only provided with 2 spiniform setæ.

Colour dark yellowish grey.

Length of adult female 0.38 mm.

Remarks.—This form was rather imperfectly described by Claus as a species of the genus *Dactylopus*. Boeck justly removed it from that genus, and included it in his new genus *Mesochra*. Indeed, saving the distinctly 3-articulate inner ramus of the 1st pair of legs, it agrees in all essential characters closely with the type species, *M. Lilljeborgi*. The *Canthocamptus parvus* of Scott is unquestionably identical with the present species.

Occurrence.—I have met with this very small form not unfrequently along the whole south and west coast of Norway, at least up to the Trondhjem Fjord in moderate depths among algæ. It is a strictly marin form, being scarcely ever found in brackish water. In the living state it is readily observed by its dark colour.

Distribution.—Heligoland (Claus), Scottish coast (Scott), Franz-Josef Land (Scott).

133. Mesochra hirticornis (Scott).

(Pl. CXXXVII).

Canthocamptus hirticornis, Scott, Thirteenth Rep. Fishery Board for Scotland, Part III, p. 251, Pl. IX, figs. 13—26.

Syn: *Canthocamptus megalops*, Lilljeborg.

Specific Characters.—Female. Body comparatively short and somewhat depressed anteriorly, tapering gradually behind. Rostral projection well marked, obtusely rounded at the tip. Urosome much shorter than the anterior division, last segment scarcely as long as the preceding one. Caudal rami about as long as they are broad at the base and slightly contracted behind, apical setæ of moderate length. Eye unusually large. Anterior antennæ short, 7-articulate, resembling in structure those in *M. Lilljeborgi*. Posterior antennæ likewise almost exactly as in that species. Mandibular palp with the distal joint not defined from

the basal one. 1st pair of legs with the outer ramus much shorter than the inner, though extending about as far as the 1st joint of the latter, middle joint provided inside with a small seta; inner ramus distinctly 3-articulate, 1st joint with the seta of the inner edge attached near the end, the last 2 joints combined considerably exceeding half the length of the 1st. Natatory legs of the structure characteristic of the genus. Last pair of legs with the distal joint very small, inner expansion of proximal joint much produced, linguiform, and provided with 6 marginal setæ, one of which is much elongated. Ovisac of moderate size, oval in forme.

Colour, according to Prof. Lilljeborg, greyish white.

Length of adult female 0.50 mm.

Remarks.—This form, first described by Th. Scott as a species of the genus *Canthocamptus*, is unquestionably congeneric with the 2 preceding species, exhibiting, as it does, all essential characters of the gen. *Mesochra*. According to Th. Scott, the form recorded some years later by Prof. Lilljeborg as *Canthocamptus megalops* is identical with the present species. It is easily recognised by its comparatively short depressed body and by the structure of the 1st pair of legs, the inner ramus of which has the 2 outer joints considerably more fully developed than in the 2 other species.

Occurrence.—I have only met with this form in a single locality, viz., in a brackish tarn off the sout coast of Norway, "Ostravigtjernet", in which artificial cultivation of oysters was for the first time established by the late Prof. H. Rasch. It occurred here only quite occasionally. Only female specimens were found.

Distribution.—Scottish coast (Scott), Baltic coast of Sweden (Lilljeborg).

Gen. 46. **Nitocra**, Boeck, 1865.

Generic Characters.—Body of slender cylindric form, resembling somewhat that in the genus *Canthocamptus*. Segments of urosome coarsely spinulose at the hind edge ventrally and laterally, last segment exhibiting also a dorsal series of spinules, anal opercle regularly denticulated at the edge. Caudal rami short, more or less covered with spinules in addition to the usual setæ. Rostral projection very small, narrow conical in form. Anterior antennæ of moderate size, 8-articulate, and densely fringed with slender bristles; those in male transformed in the usual manner. Posterior antennæ with the basal part distinctly subdivided,

outer ramus short, uniarticulate, dilated distally, and carrying 3 strong setæ. Mandibular palp biarticulate, with the basal joint slightly dilated. Maxillæ with the exopodal and epipodal lobules well defined, accessory lobe wanting. Maxillipeds of the usual structure. 1st pair of legs rather strongly built and distinctly prehensile, inner ramus 3-articulate, with the outer 2 joints more or less bent upon the 1st. Natatory legs rather fully developed, with the inner ramus in all of them distinctly 3-articulate. None of these legs transformed in male. Last pair of legs with the distal joint comparatively large, inner expansion of proximal joint less produced than in the gen. *Mesochra*.

Remarks.—This genus was rather imperfectly characterised by Boeck, and indeed was not accepted by any of the British authors. Dr. Giesbrecht, however, supported the Boeckian genus, though confounding it partly with another genus established by Boeck, viz., *Ameira*. None of the 2 species originally recorded by Boeck as members of the present genus were recognized by subsequent authors. The genus is well characterised from any of the 4 preceding ones by the distinctly 3-articulate inner rami of the natatory legs, as also by some other structural differences mentioned in the above diagnosis. We know at least of 4 distinct species referable to this genus, 2 of which belong to the fauna of Norway.

134. Nitocra typica, Boeck.

(Pl. CXXXVIII).

Nitocra typica, Boeck, Oversigt over de ved Norges Kyster iagttagne Copepoder. Chr. Vid. Selsk. Forh. 1864, p. 274.

Syn: *Canthocamptus palustris*, Brady.
„ *Nitocra oligochæta*, Giesbrecht.
„ *Ameira amphibia*, Brady.

Specific Characters.—*Female*. Body very slender, sublinear in form, with the anterior division scarcely broader than the posterior. Cephalic segment not attaining the length of the 3 succeeding segments combined, rostral projection extremely small. Urosome very slightly tapered behind, last segment shorter than the preceding one and coarsely spinulose at the end both dorsally and ventrally; anal opercle fringed with about 12 coarse denticles. Caudal rami much broader than they are long and somewhat obliquely truncated at the end, apical setæ rather slender. Anterior antennæ almost as long as the cephalic segment and gradually attenuated distally, 3rd joint a little longer than 4th, terminal part not fully attaining the length of the proximal one. 1st pair of legs with the outer ramus much shorter than the inner, middle joint with a short seta inside, last

joint armed with 3 strong claw-like spines and 2 geniculated setæ; inner ramus with the last joint a little larger than the middle one, both together about half the length of the 1st. Natatory legs with the setæ on the terminal joints of the rami somewhat reduced in number. Last pair of legs not very large, distal joint oval in form and provided with 6 marginal setæ, inner expansion of proximal joint extending to about the middle of the distal joint, marginal setæ 5 in number.

Colour whitish.

Length of adult female 0.64 mm.

Remarks.—This is the form originally recorded by Boeck as the type of his genus *Nitocra*. The *Canthocamptus palustris* of Brady is unquestionably identical with Boeck's species, and I am quite unable to see any difference between it and the form recorded by the same author some years later as *Ameira amphibia*. Dr. Giesbrecht described the species under another name, viz., *Nitocra oligochæta*.

Occurrence.—I have met with this form in several places of the west coast of Norway, as also in the Trondhjem Fjord. It is a strictly littoral species, found in more or less brackish water and occasionally also in tidal pools.

Distribution.—British Isles (Brady), bay of Keel (Giesbrecht), Dutsh coast (v. Breemen), coast of France (Canu), Novaja Zemlia (Scott).

135. Nitocra spinipes, Boeck.

(Pl. CXXXIX).

Nitroca spinipes, Boeck, l. c. p. 274.

Syn: *Canthocamptus palustris*, var. *elongata*, Scott.

Specific Characters.—Female.—Very like the preceding species, but of larger size and still more slender form of body. Last segment of urosome, as in that species, coarsely spinulose at the end, and having the anal opercle edged with strong denticles. Caudal rami spinulose not only on the edge, but also dorsally. Anterior antennæ resembling in structure those of *N. typica*, but with the 2 basal joints comparatively more dilated and the 3rd joint shorter than 4th. 1st pair of legs with the inner ramus scarcely as long as the outer, the last 2 joints of about equal size and combined attaining almost the length of the 1st, the latter with a series of spinules outside its distal part. Natatory legs with the setæ of the terminal joints less reduced in number. Last pair of legs resembling in shape those in *N. typica*, distal joint however with only 5 marginal setæ,

and inner expansion of proximal joint extending beyond the middle of the distal joint; those in male, as usual, of smaller size, with the inner expansion of proximal joint less prominent and only provided with 3 short setæ.

Body of whitish colour, with a more or less distinct yellowish tinge.

Length of adult female 0.76 mm.

Remarks.—This species is closely allied to the preceding one, and may easily be confounded with it. On a closer comparison, it is however found to be well distinguished, not alone by its larger size and more slender form of body, but also by some well-marked structural differences mentioned in the above diagnosis. The form recorded by Th. Scott as *Canthocamptus lacustris*, var. *elongata*, is unquestionably identical with the present species.

Occurrence. –I have found this form rather abundantly in the upper part of the Christiania Fjord close to the beach of shallow bays near the town. Boeck records it also from the west coast of Norway (Karmöen).

Distribution.—Scottish coast (Scott).

Gen. 47. **Ameira**, Boeck, 1865.

Generic Characters.—Body, as a rule, rather slender and somewhat compressed in its anterior part. Rostral projection very small, almost obsolete. Segments of urosome less coarsely spinulose than in the genus *Nitocra;* anal opercle perfectly smooth. Caudal rami more generally short and scarcely spinulose. Anterior antennæ 8-articulate, with the last 2 joints very small and less perfectly defined. Posterior antennæ with the basal part distinctly subdivided, outer ramus narrow, uniarticulate. Mandibular palp more fully developed than in the preceding genera, biarticulate, with the basal joint more or less dilated, forming inside a well defined setiferous expansion. Maxillæ with the exopodal and epipodal lobules not defined, accessory lobe present. Anterior maxillipeds with only a single setiferous lobe inside the terminal claw-bearing part. 1st pair of legs distinctly prehensile, but more slender than in the genus *Nitocra,* inner ramus always much longer than the outer and distinctly 3-articulate. Natatory legs with both rami well developed, 3-articulate, the inner one not transformed in the male. Last pair of legs comparatively small, distal joint more or less contracted distally, inner expansion of proximal joint not much produced.

Remarks.—This is also one of the genera established by Boeck, the exact definition of which has proved to be rather difficult, on account of the imperfect

manner in which it was at first characterised. Thus Dr. Giesbrecht was quite unable to distinguish it from the genus *Nitocra*, and the form recorded by Prof. Brady as *Ameira longipes* Boeck, is not an *Ameira* at all, as clearly shown by the structure of the mandibular palp. Th. Scott also did not recognise the exact limits of this genus; for among the numerous species described by him there are some which unquestionably ought to be discarded and transferred to other genera. In the restriction here adopted the present genus is chiefly distinguished from *Nitocra* by the less coarsely spinulose caudal segments, the perfectly smooth anal opercle, as also by some well marked differences in the structure of the antennæ, oral parts and legs mentioned in the above diagnosis. Although, as above stated, several of the species referred to this genus by other authors must be discarded, there still remain a number of nearly-allied species, which may be regarded as true *Ameiras*. Some of these will be described in the following pages.

136. Ameira longipes, Boeck.

(Pl. CXL).

Ameira longipes, Boeck, Oversigt over de ved Norges Kyster iagttagne Copepoder. Chr. Vid. Selsk. Forh. 1864, p. 273 (not Brady).

Specific Characters.—Female. Body moderately slender, with the 2 chief divisions of almost equal length. Last caudal segment scarcely shorter than the preceding one. Caudal rami short, quadrangular, finely ciliated inside, apical setæ rather slender and elongated. Anterior antennæ scarcely as long as the cephalic segment, 2nd joint much the largest and rather dilated, terminal part about half the length of the proximal one. Mandibular palp with 2 setæ inside the basal joint, the outer one very delicate and fringed with long cilia. 1st pair of legs with the outer ramus rather narrow, and scarcely more than half as long as the inner, spines of outer edge comparatively slender and elongated; inner ramus with the 1st joint more than twice as long as the other 2 combined and having the seta of the inner edge somewhat remote from the end, last joint narrow linear in form and about twice as long as the preceding one. Natatory legs of normal structure, with the 2 proximal joints of inner ramus rather broad. Last pair of legs with the distal joint of moderate size, somewhat dilated at the base and narrowed towards the end, inner expansion of proximal joint extending somewhat beyond the middle of the distal joint and provided with 4 marginal setæ, the outermost but one much elongated.

Male much smaller than female and easily recognisable by the strongly hinged anterior antennæ. 1st pair of legs with the spine attached inside the 2nd

basal joint slightly transformed, being somewhat thickened in its outer part, with the tip obtusely pointed. Last pair of legs very small, with the distal joint quite short and the inner expansion of the proximal joint only provided with 3 small setæ.

Body semipellucid, with a slight reddish tinge.

Length of adult female 0.75 mm.

Remarks.—This is the form originally recorded by Boeck as the type of the genus *Ameira*. It is the largest of the Norwegian species and moreover recognizable by the comparatively less elongated anterior antennæ and by the structure of the 1st and last pairs of legs. As mentioned above, the form recorded by Prof. Brady in his well-known Monograph under this name, is quite certainly not Boeck's species, and even belong to a different genus, to be treated off farther on.

Occurrence.—I have met with this form occasionally off the west coast of Norway, at Haugesund and Kopervik, in moderate depths among algæ. It also occurs off the Finmark coast, several specimens being found in a sample taken by Mr. Nordgaard at Repvaag, Porsangerfjord, and kindly sent to me for examination.

Distribution.—Franz-Joseph Land (Scott), Novaja Zemlia (Scott), Polar Islands north of Elsemer Land (2nd Fram Expedition).

137. Ameira minuta, Boeck.

(Pl. CXLI).

Ameira minuta, Boeck, l. c. p. 273.

Syn: *Ameira ambigua*, Scott.

Specific Characters.—Female. Body very slender, sublinear in form, with the anterior division scarcely at all dilated. Last caudal segment shorter than the preceding one. Caudal rami about as in the preceding species, but with the apical setæ comparatively longer. Anterior antennæ rather slender and elongated, exceeding in length the cephalic segment, the first 2 joints much larger than the others. Mandibular palp with 3 setæ inside the basal joint, the middle one the longest. 1st pair of legs with the outer ramus somewhat exceeding half the length of the inner, the last 2 joint of the latter short, subequal, and combined scarcely attaining $^1/_3$ of the length of the 1st. Natatory legs almost exactly as in *A. longipes*. Last pair of legs with the distal joint of regular oval form, inner expansion

of proximal joint rather broad, but scarcely extending beyond the middle of the distal joint, marginal setæ 4 in number.

Body of whitish colour, with a more or less distinct bluish tinge.

Length of adult female 0.64 mm.

Remarks.—The specific name *minuta* proposed by Boeck for this species is somewhat inappropriate, since it in reality cannot properly be said to range among the smaller species of this genus, although being somewhat inferior in size to the type species. The form described by Th. Scott as *A. ambigua* agrees with the present species in the structural details and especially in the shortness of the last joint of the inner ramus of the 1st pair of legs, for which reason I am inclined to believe it to be identical with Boeck's species, though the habitus-figure (side-view of the animal) looks somewhat different by its more robust form. This may however be due to an accidental contraction of the specimen drawn.

Occurrence.—This species is not uncommon in the upper part of the Christiania Fjord in moderate depths among algæ, and I have also found it occasionally off the west coast of Norway, at Haugesund and Kopervik.

Distribution.—Scottish coast (Scott).

138. Ameira tenuicornis, Scott.

(Pl. CXLII).

Ameira tenuicornis, Scott, in 20th Ann. Report of the Fishery Board for Scotland. Part III, p. 549, Pl. XXIV, figs. 1—9.

Specific Characters.—Female. Body somewhat less slender than in the preceding species, with the cephalic segment rather large and deep. Last segment of urosome smaller than the preceding one. Caudal rami short, transversely truncated at the tip. Anterior antennæ very slender and considerably exceeding in length the cephalic segment, the 2 basal joints much less dilated than in the 2 preceding species, terminal part not attaining half the length of the proximal one. Mandibular palp with 2 setæ inside the basal joint, the outer one rather small and finely ciliated. 1st pair of legs with the outer ramus scarcely half as long as the inner, the latter very slender, with the last joint narrow linear in form and much longer than the very small 2nd joint, both together not attaining half the length of the 1st. Natatory legs normal. Last pair of legs with the distal joint oblong in form, distal seta of outer edge very small, inner expansion of proximal joint scarcely extending to the middle of the distal joint, marginal setæ 4 in number.

Body whitish, with a slight yellow tinge.

Length of adult female 0.44 mm.

Remarks.—In the slender form of the anterior antennæ and in the structure of the 1st and last pairs of legs, this species seems to agree exactly with the form described by Th. Scott under the above name. The size of the Norwegian specimens is however much inferior to that recorded by Th. Scott (0.67 mm.), and for this reason the identity of these 2 forms may perhaps appear somewhat doubtful.

Occurrence.—I have met with this small species not unfrequently in several places both off the south and west coasts of Norway in moderate depths among algæ.

Distribution.—Scottish coast (Scott).

139. Ameira tau (Giesbrecht).

(Pl. CXLIII).

Nitocra tau, Giesbrecht, Die freilebenden Copepoden des Kieler Föhrde, p. 117, Pl. I, figs 9, 13 &c.

Specific Characters.—Female. Body rather slender, sublinear in form, with the cephalic segment less deep than in the preceding species. Last caudal segment shorter than the preceding one. Caudal rami about as long as they are broad and transversely truncated at the tip, apical setæ of moderate length. Anterior antennæ shorter than the cephalic segment, and having the 2 basal joints rather dilated, terminal part not attaining half the length of the proximal one. Mandibular palp with a single thickish seta inside the basal joint. 1st pair of legs with the outer ramus about half the length of the inner, terminal joint of the latter very slender, linear in form, being about 3 times as long as the 2nd, both together nearly as long as the 1st. Last pair of legs resembling those in *A. tennicornis*, but with the distal joint comparatively smaller.

Colour whitish.

Length of adult female 0.50 mm.

Remarks.—The above-described form is unquestionably that recorded by Dr. Giesbrecht as *Nitocra tau*. It is however a true *Ameira*, exhibiting, as it does, all the essential characters of that genus. From the 3 preceding species it is especially distinguished by the structure of the inner ramus of the 1st pair of legs.

Occurrence.—I have met with this form occasionally both of the south and west coasts of Norway, as also in the Trondhjem Fjord. It is a strictly

littoral form, occurring, as a rule, close to the beach in shallow bays, sometimes also in rockpools or in more or less brackish water.

Distribution.—Bay of Keel (Giesbrecht).

140. Ameira simplex, Scott.

(Pl. CXLIV).

Ameira simplex. Norman and Scott, New Crustacea from Devon and Cornwall. Ann. Mag. Nat. Hist. ser. 7, Vol. XV, p. 291.

Specific Characters.—Female. Body moderately slender, with the 2 chief divisions of almost equal length. Cephalic segment scarcely longer than the 3 succeeding segments combined, and conspicuously narrowed in front. Last caudal segment about the length of the preceding one. Caudal rami somewhat longer than they are broad and transversely truncated at the tip. Eye apparently wanting. Anterior antennæ comparatively short, scarcely exceeding half the length of the cephalic segment, the 2 basal joints much the largest and combined almost as long as the remaining part of the antenna. Posterior antennæ with the basal part imperfectly subdivided. Mandibular palp comparatively small, with only a single seta inside the basal joint. 1st pair of legs with the outer ramus somewhat exceeding half the length of the inner, terminal joint of the latter very slender, about twice as long as the 2nd and scarcely shorter than the 1st, setæ inside these joints unusually long and distinctly ciliated. 3rd pair of legs with the terminal joint of inner ramus almost as long as the other 2 combined, and provided inside with 3 natatory setæ. Terminal joint of outer ramus in the 4th pair of legs likewise with 3 setæ inside, the outermost of which however is very small. Last pair of legs with the distal joint oval in form, slightly narrowed towards the end, inner expansion of proximal joint extending to about the middle of the distal joint and provided with 5 setæ, the outermost but one much the longest.

Colour whitish.

Length of adult female 0.60 mm.

Remarks.—This species has been recently described by Th. Scott in the above-quoted Journal, and the following year it was also figured in a separate work "On Crustacea from Devon and Cornwall". It is a somewhat anomalous form, differing in several respects conspicuously from the preceding species, and approaching the new genus *Parameira* (see below), to which it perhaps more properly should be referred. The shape of the last pair of legs however seems to agree better with that found in *Ameira*.

Occurrence.—I have hitherto only met with this form in the uppert part of the Christiania Fjord, at a short distance from the town. It occurred here not unfrequently in a depth of 3—6 fathoms on a muddy bottom covered with decaying algæ.

Distribution.—British Isles (Scott).

141. Ameira tenella, G. O. Sars, n. sp.

(Pl. CXLV).

Specific Characters.—Female. Body exceedingly slender, narrow linear in form, with the posterior division fully as long as the anterior. Last caudal segment about the length of the preceding one. Caudal rami unusually much produced, being about 3 times as long as they are broad, and slightly tapered distally, apical setæ much elongated. Anterior antennæ very slender, considerably exceeding in length the cephalic segment, and clothed in their outer part with exceedingly long setæ, 3rd and 4th joints of about equal length, terminal part scarcely longer than those 2 joints combined. Posterior antennæ with the outer ramus less narrow than in the other species. 1st pair of legs moderately slender, outer ramus somewhat exceeding half the length of the inner, terminal joint of the latter narrow linear, fully 3 times as long as the very small 2nd joint, both together a little shorter than the 1st. Natatory legs slender, with the setæ somewhat reduced in number. Last pair of legs with the distal joint very narrow, sublinear in form, densely ciliated along the outer edge and the proximal part of the inner, apical seta very slender and elongated, inner expansion of proximal joint comparatively short, with 4 marginal setæ.

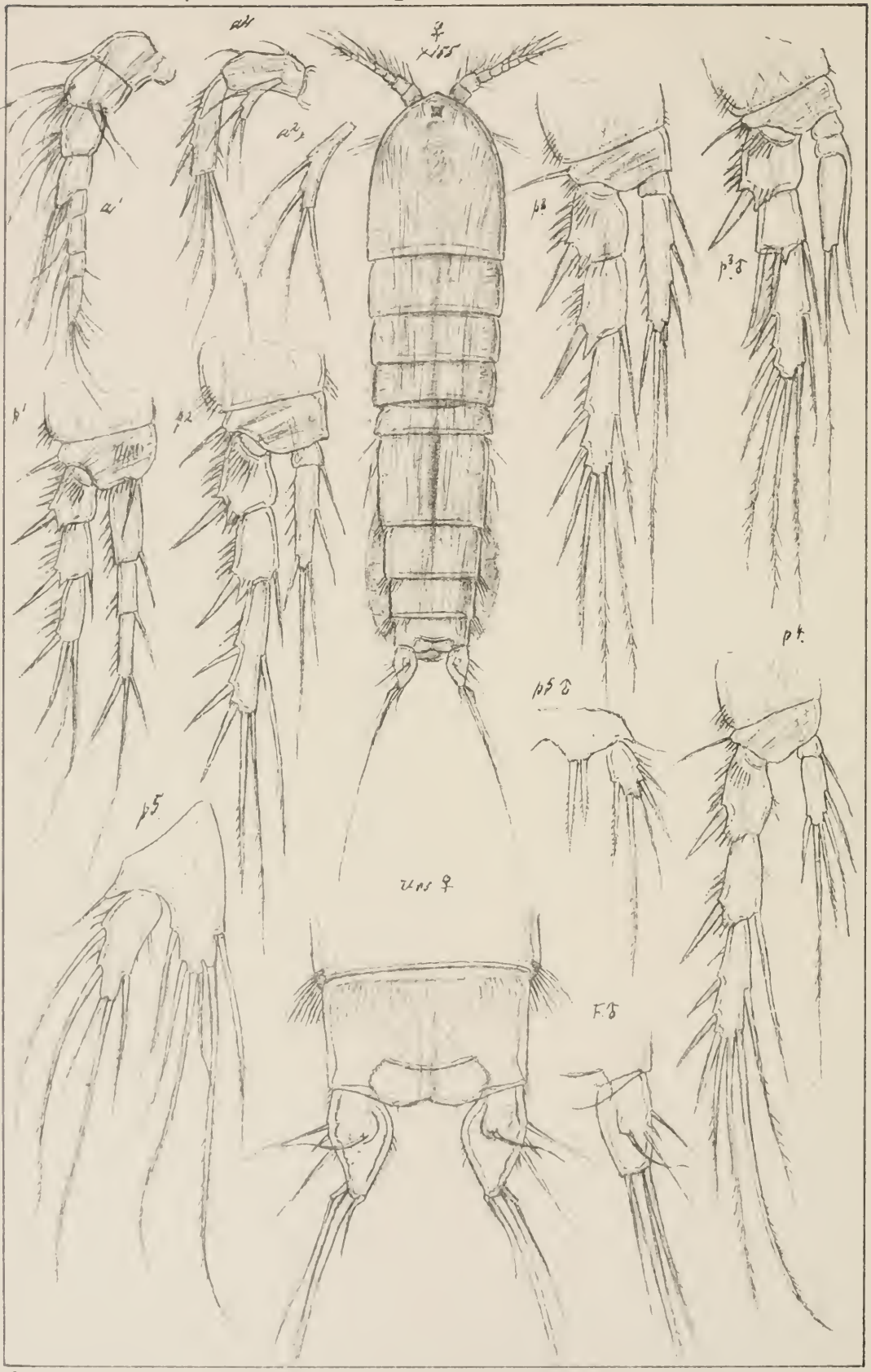
Colour not yet ascertained.

Length of adult female 0.53 mm.

Remarks.—By the very slender form of the body, the elongated anterior antennæ and the unusually much produced caudal rami, this form exhibits a perplexing similarity to a species described by Mr. A. Scott under the name of *Ameira gracilis*, and indeed at first I believed both to be identical. On a closer examination of the specimens, I have however found some very striking differences in the structure of the appendages, which seem to forbid such an identification. Thus the shape of the last pair of legs is totally different, and also the mutual relation in length of the articulations in the anterior antennæ appears to be very unlike.

Copepoda

Canthocamptidæ Harpacticoida Pl.CXXIX

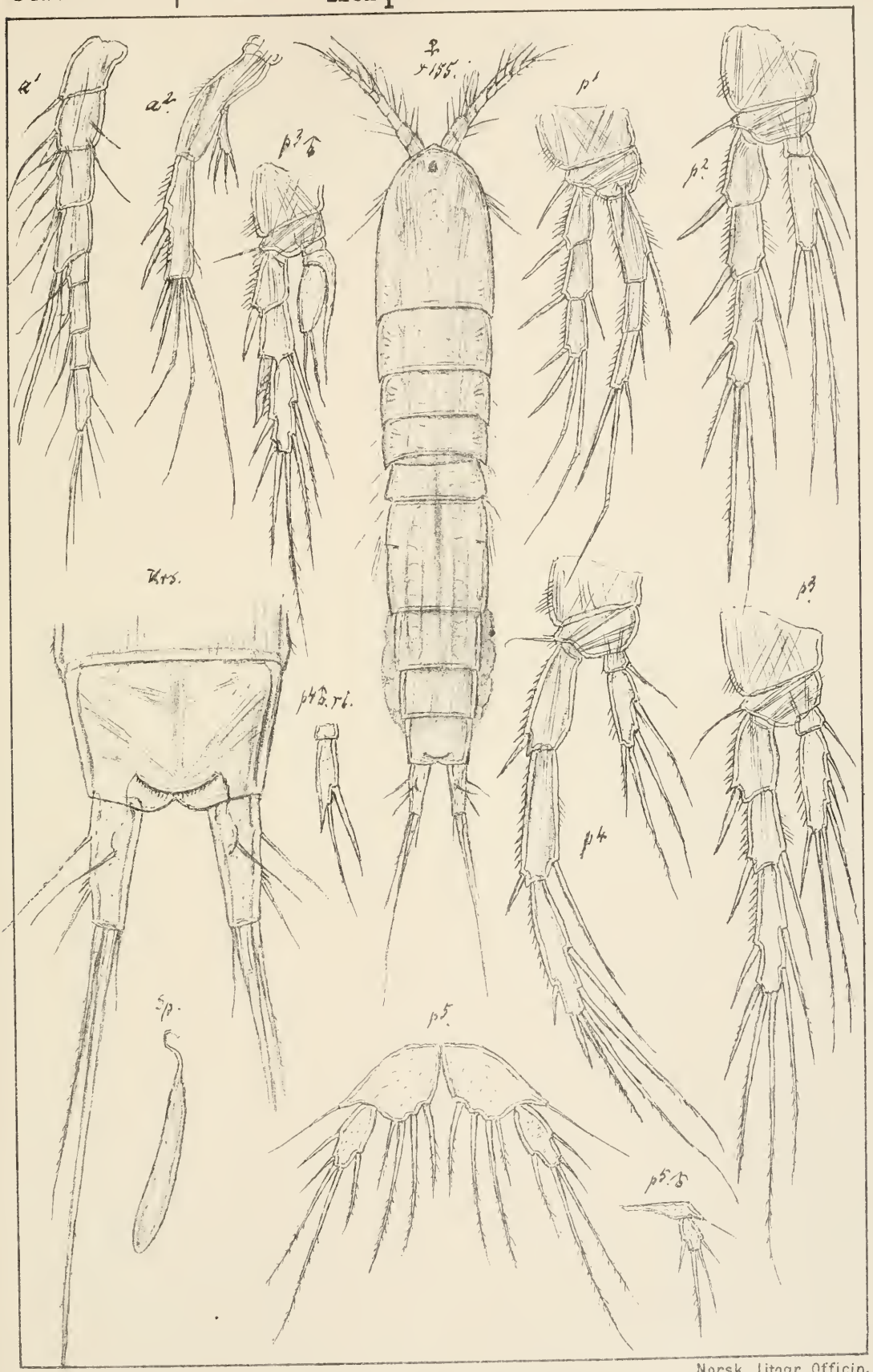


G.O Sars, autogr Norsk Litogr. Officin.

Attheyella crassa G.O.Sars

Copepoda

Canthocamptidæ — Harpacticoida — Pl.C.XXX.



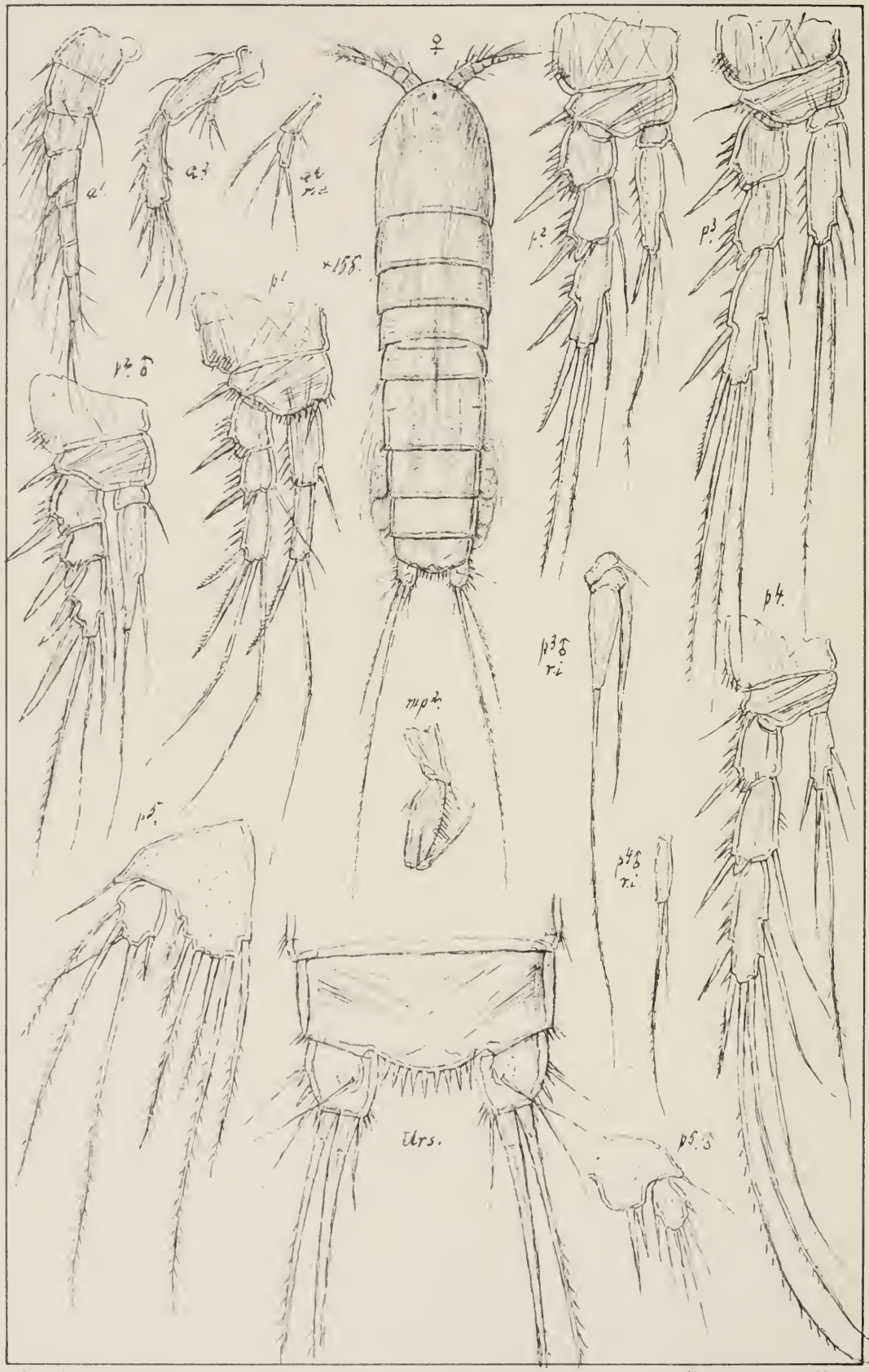
G.O. Sars, autogr.

Norsk Litogr. Officin.

Attheyella gracilis, G.O.Sars.

Copepoda

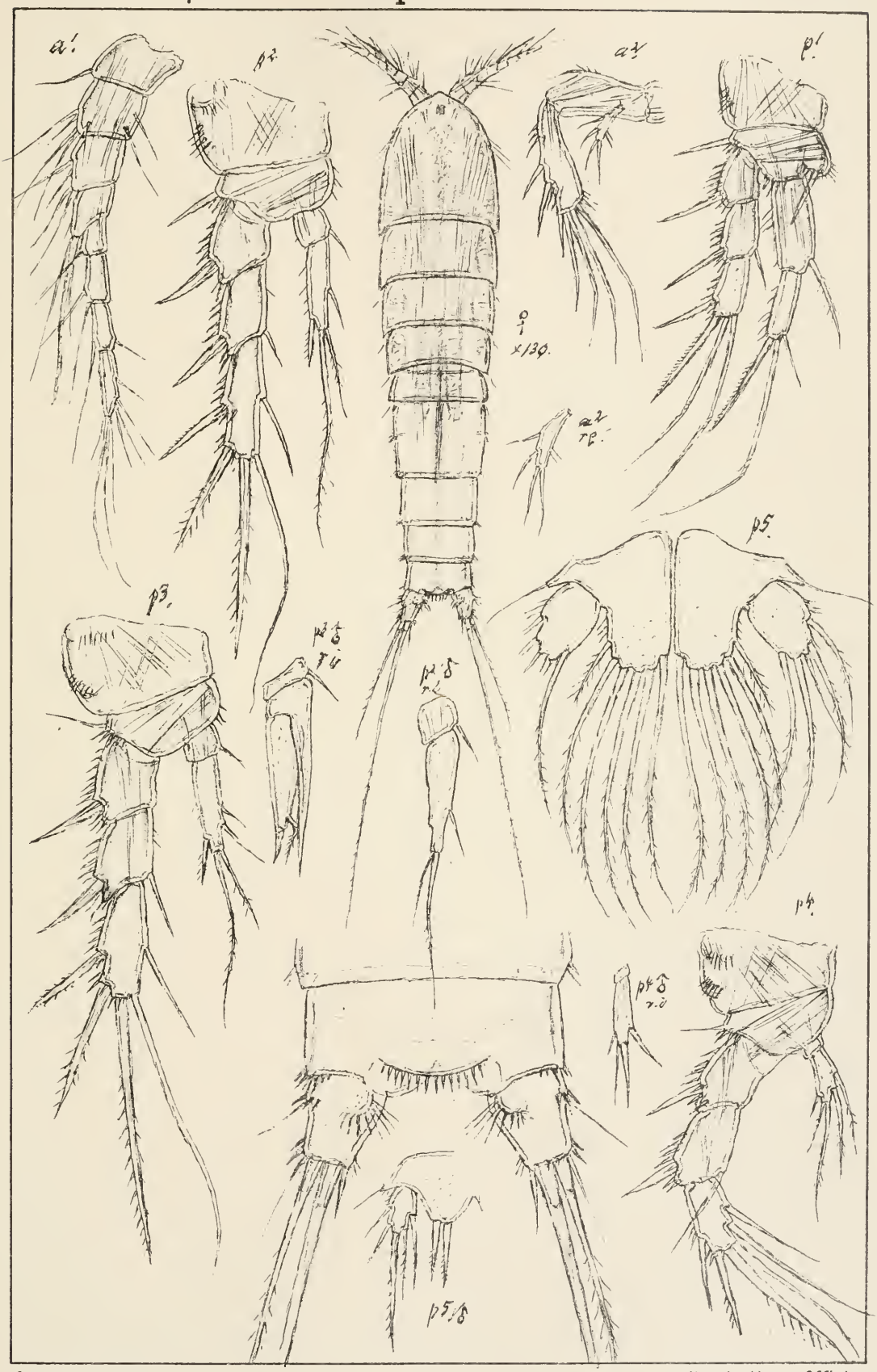
Canthocamptidæ — Harpacticoida — Pl. CXXXI



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

Attheyella pygmæa, C. O. Sars

Copepoda



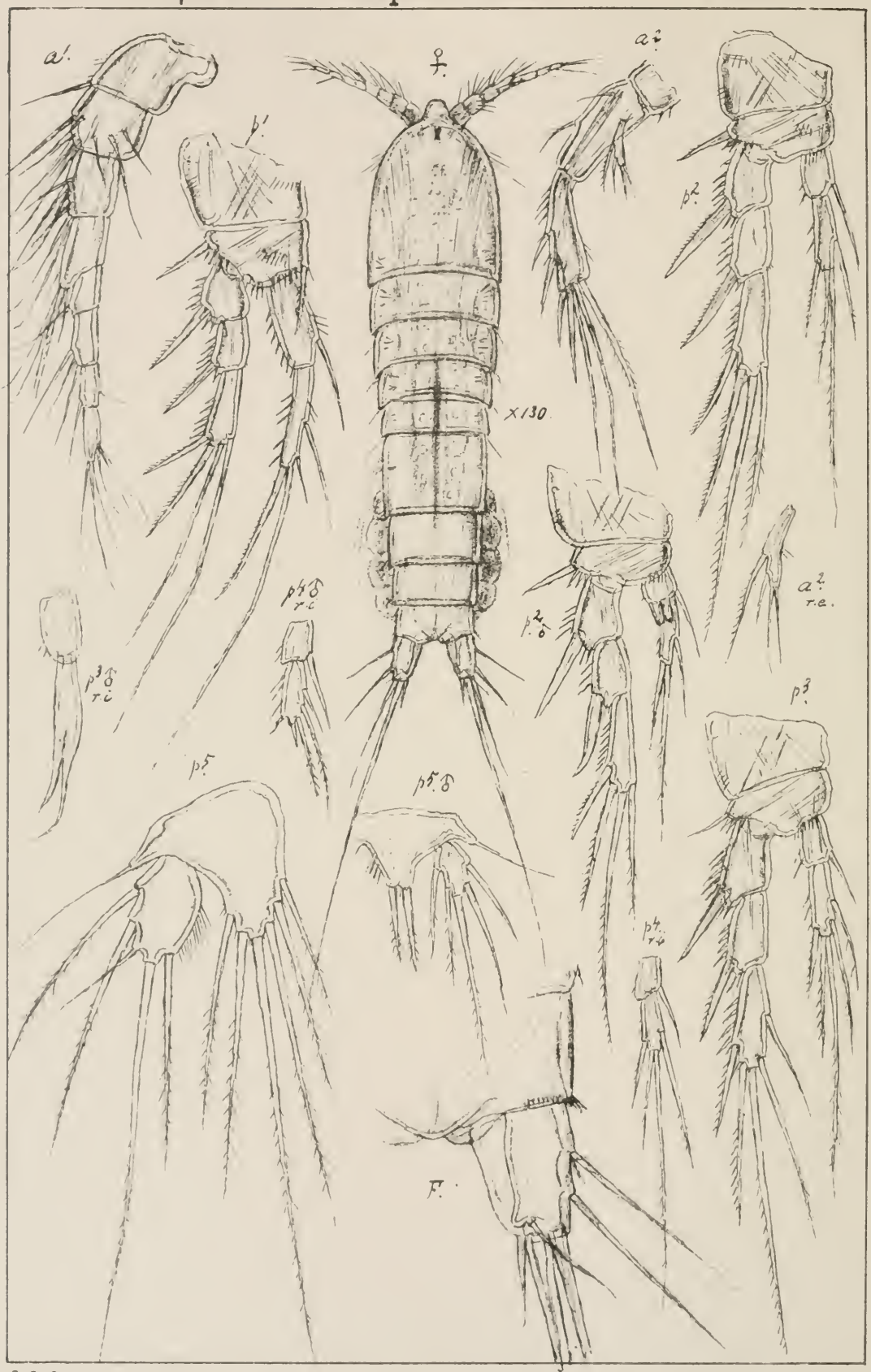
G. O. Sars, autogr.

Norsk Litogr. Officin.

Attheyella arctica (Lilljeborg).

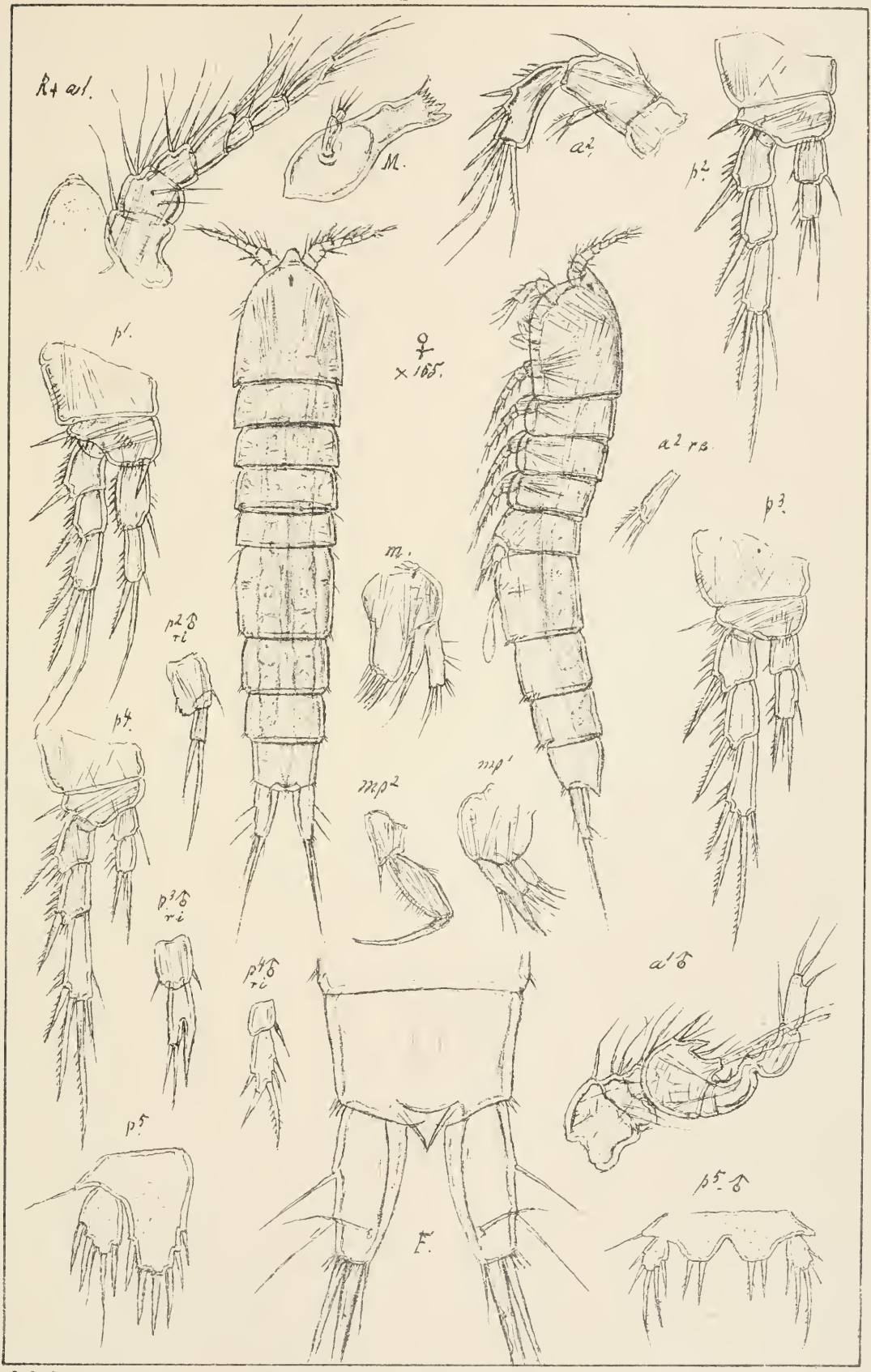
Copepoda

Canthocamptidæ — Harpacticoida — Pl. CXXXIII



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

Attheyella Duthieri, (Scott).

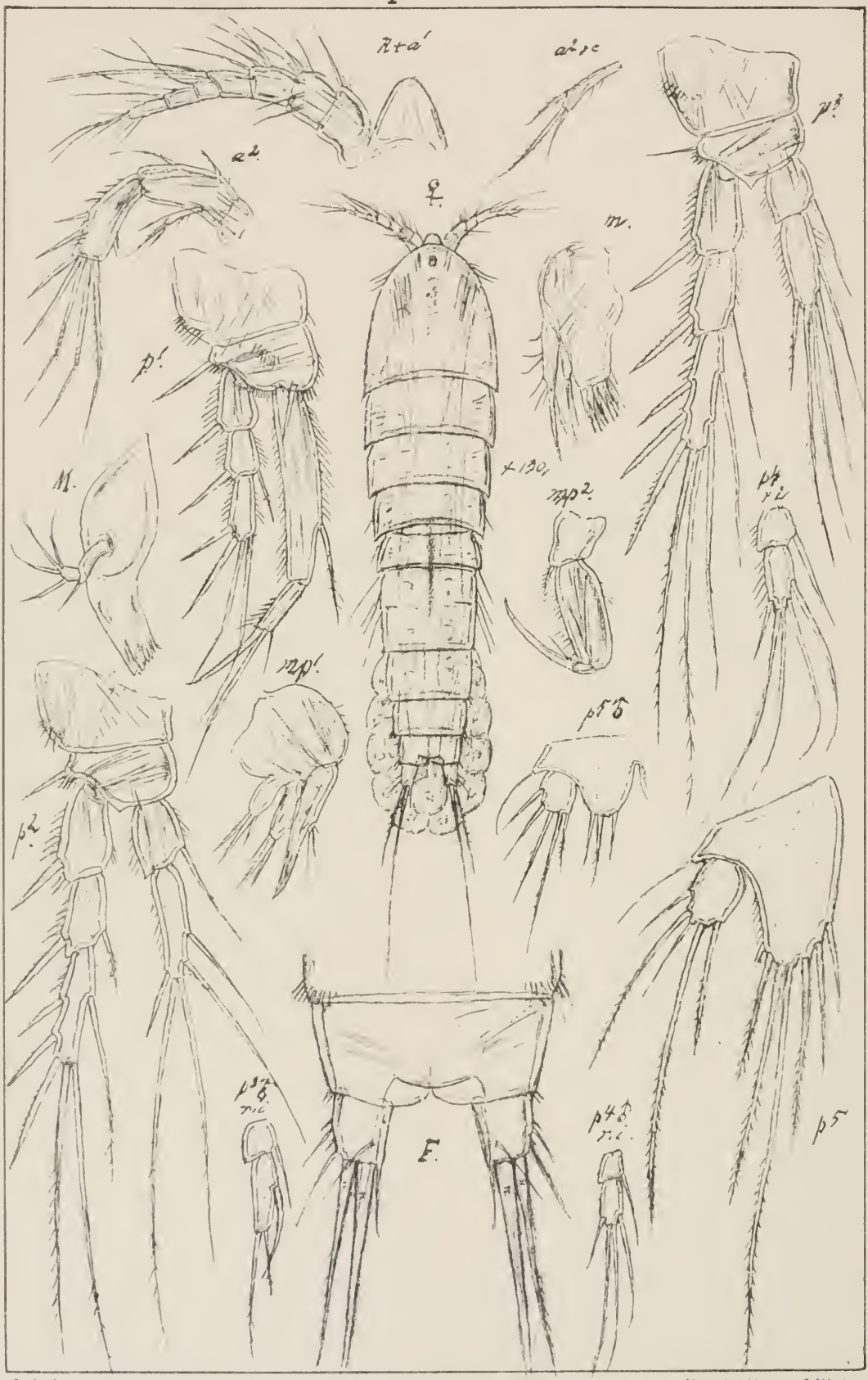


G.O. Sars, autogr. Norsk Litogr. Officin.

Moraria brevipes G.O.Sars

Copepoda

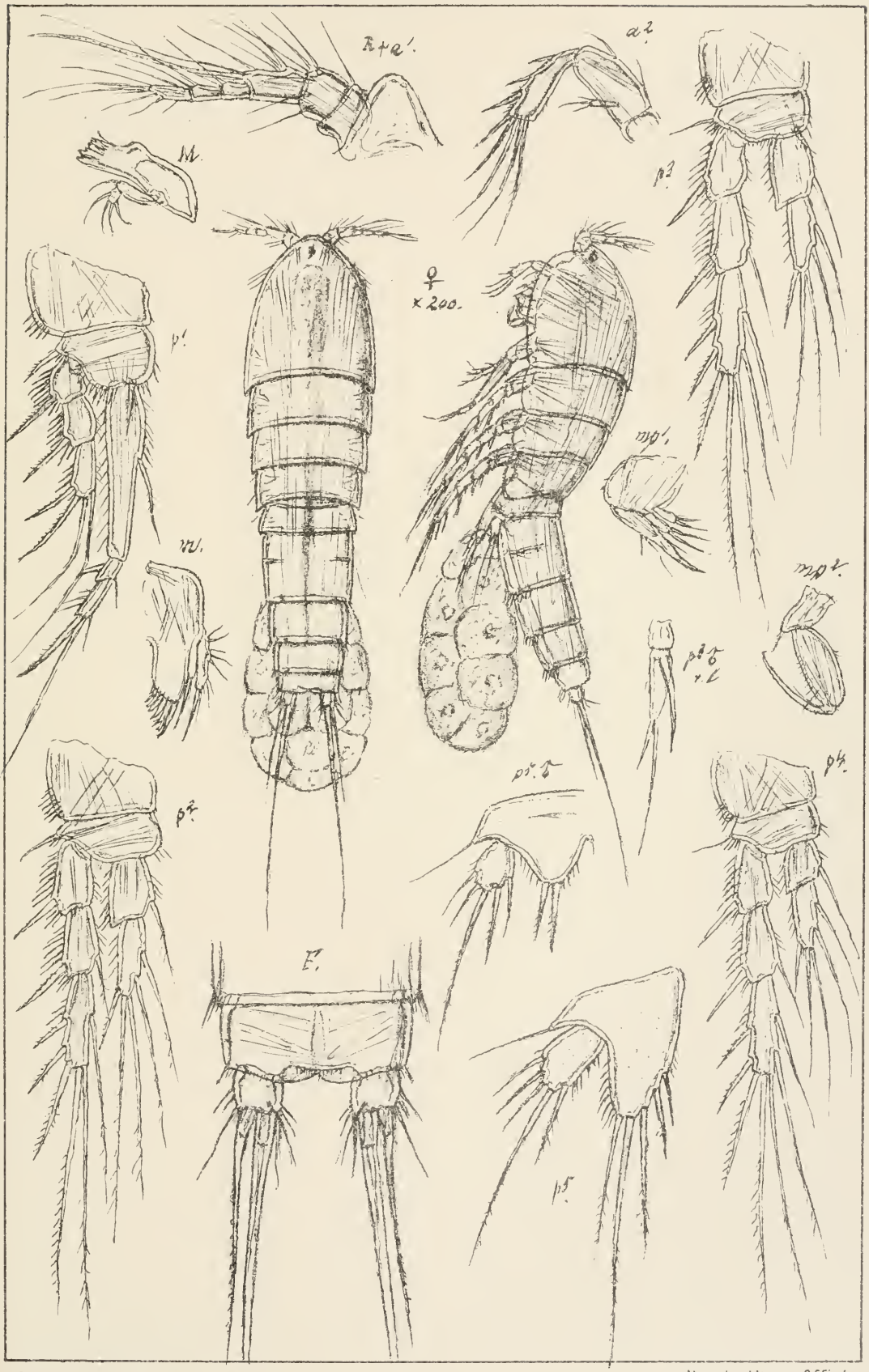
Canthocamptidæ — Harpacticoida — Pl. CXXXV



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

Mesochra Lilljeborgi, Boeck

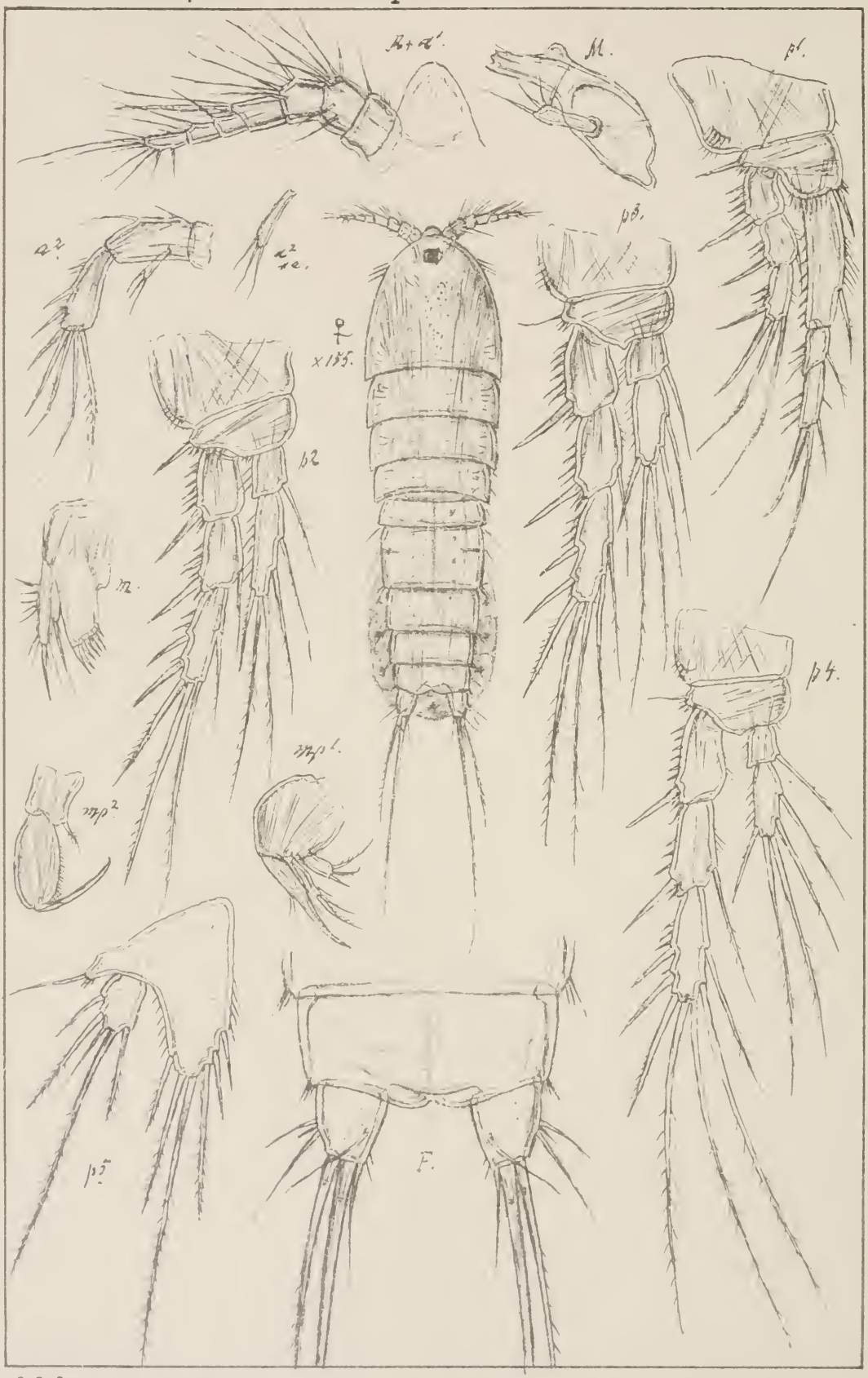
Copepoda



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

Mesochra pygmæa, (Claus).

Copepoda

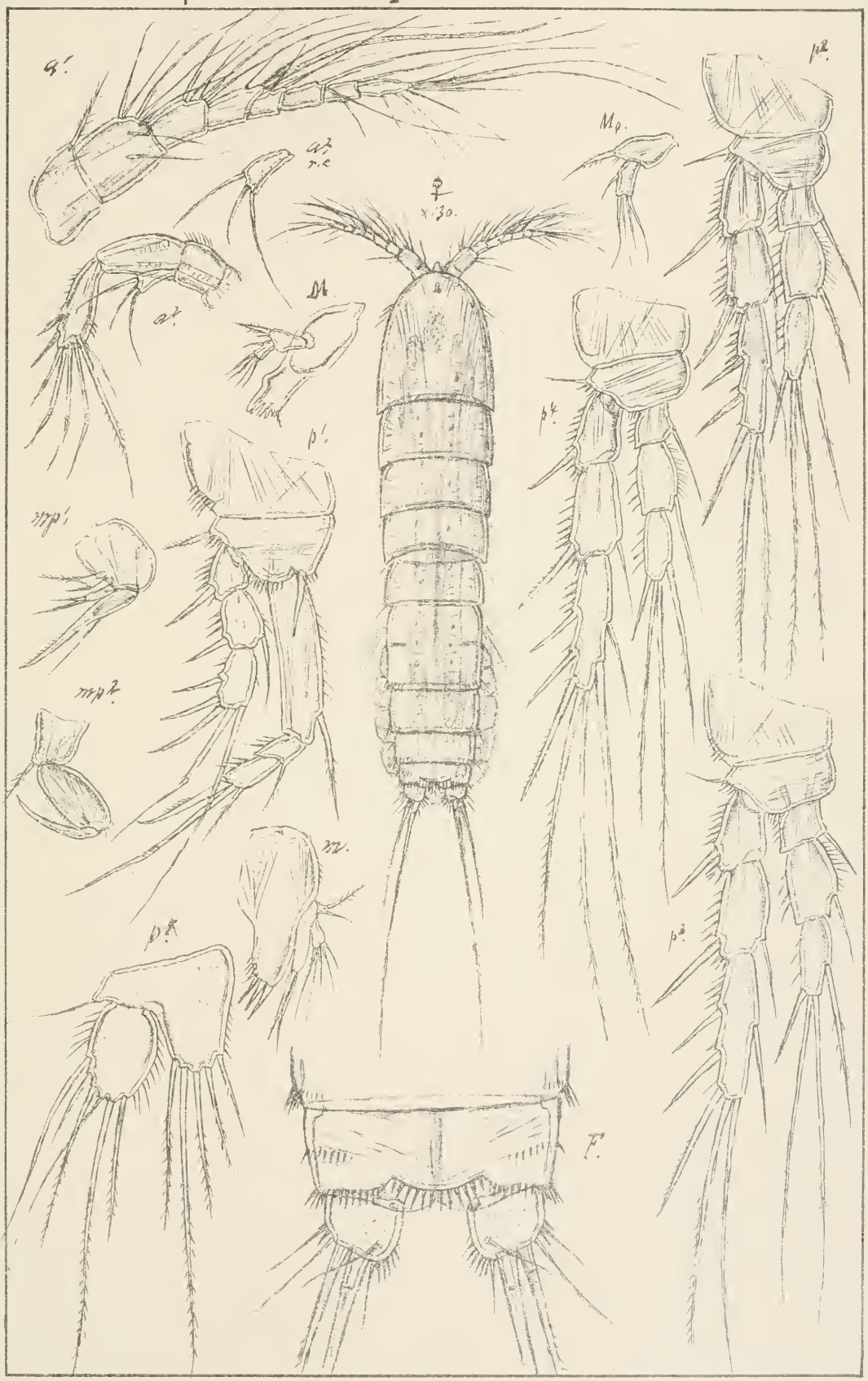


G.O. Sars. autogr

Norsk Litogr Otticin.

Mesochra hirticornis, (Scott)

Copepoda

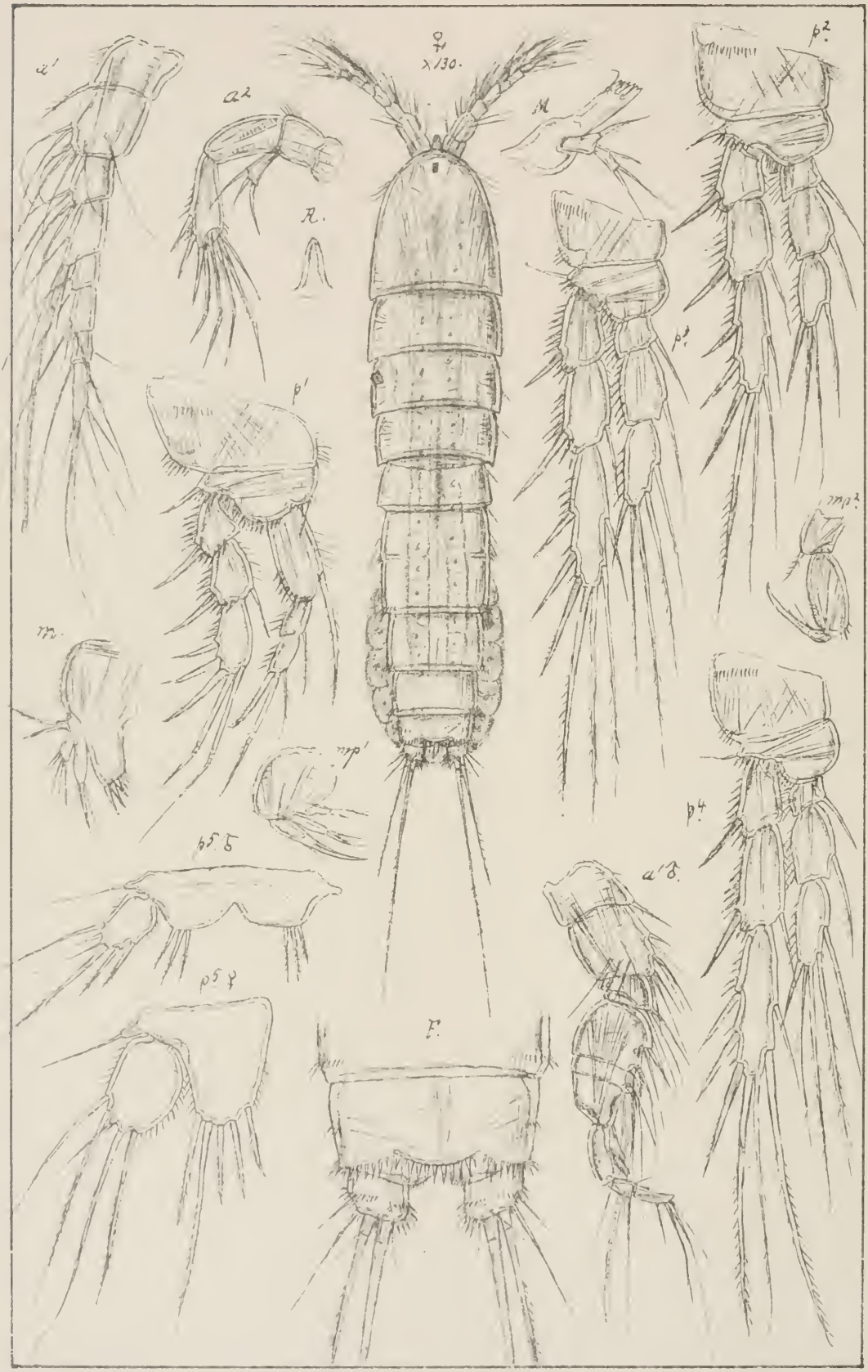


G. O. Sars, autogr. Norsk Litogr. Officin.

Nitocra typica Boeck

Copepoda

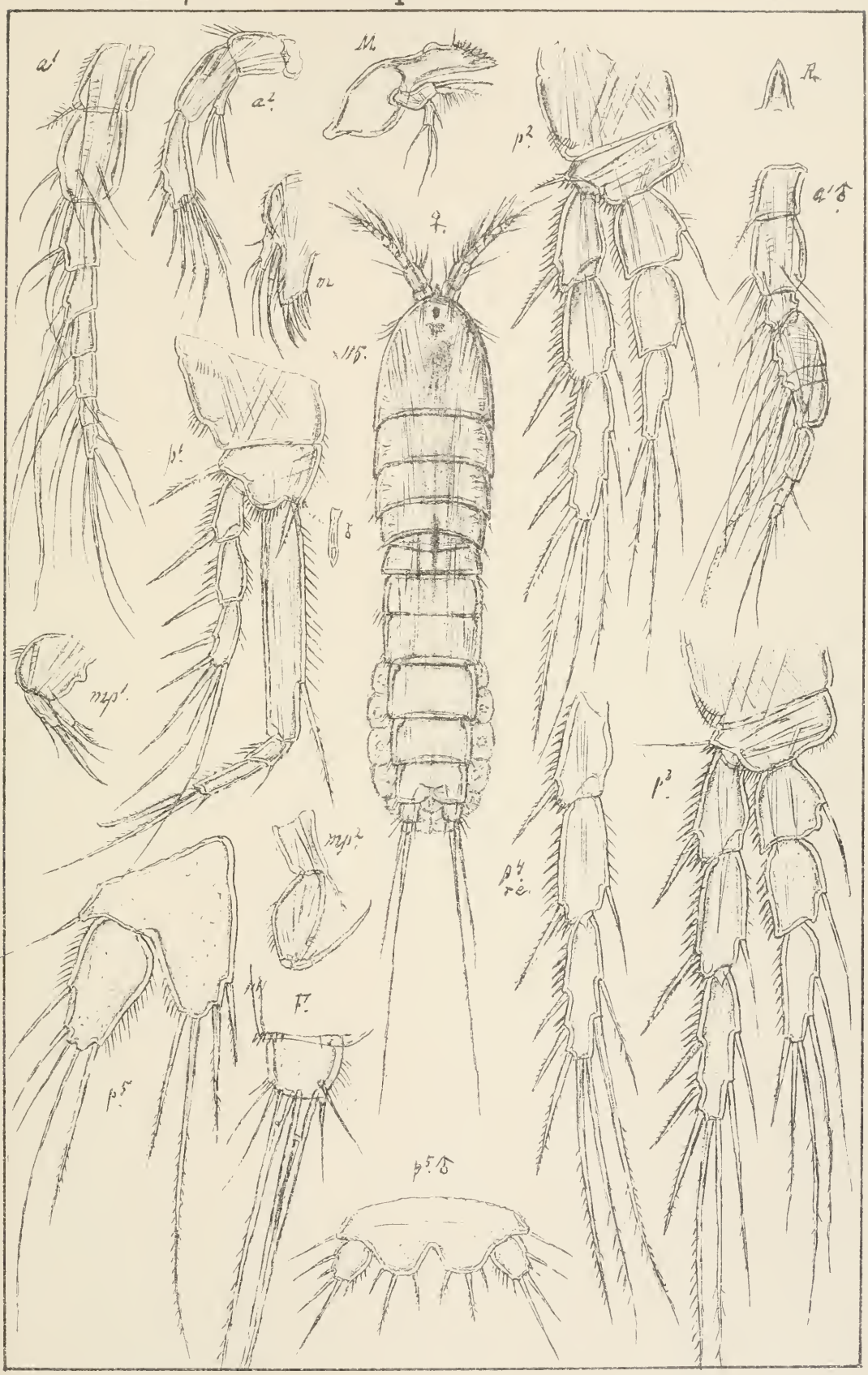
Canthocamptidæ — Harpacticoida — Pl. CXXXIX



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

Nitocra spinipes, Boeck

Copepoda

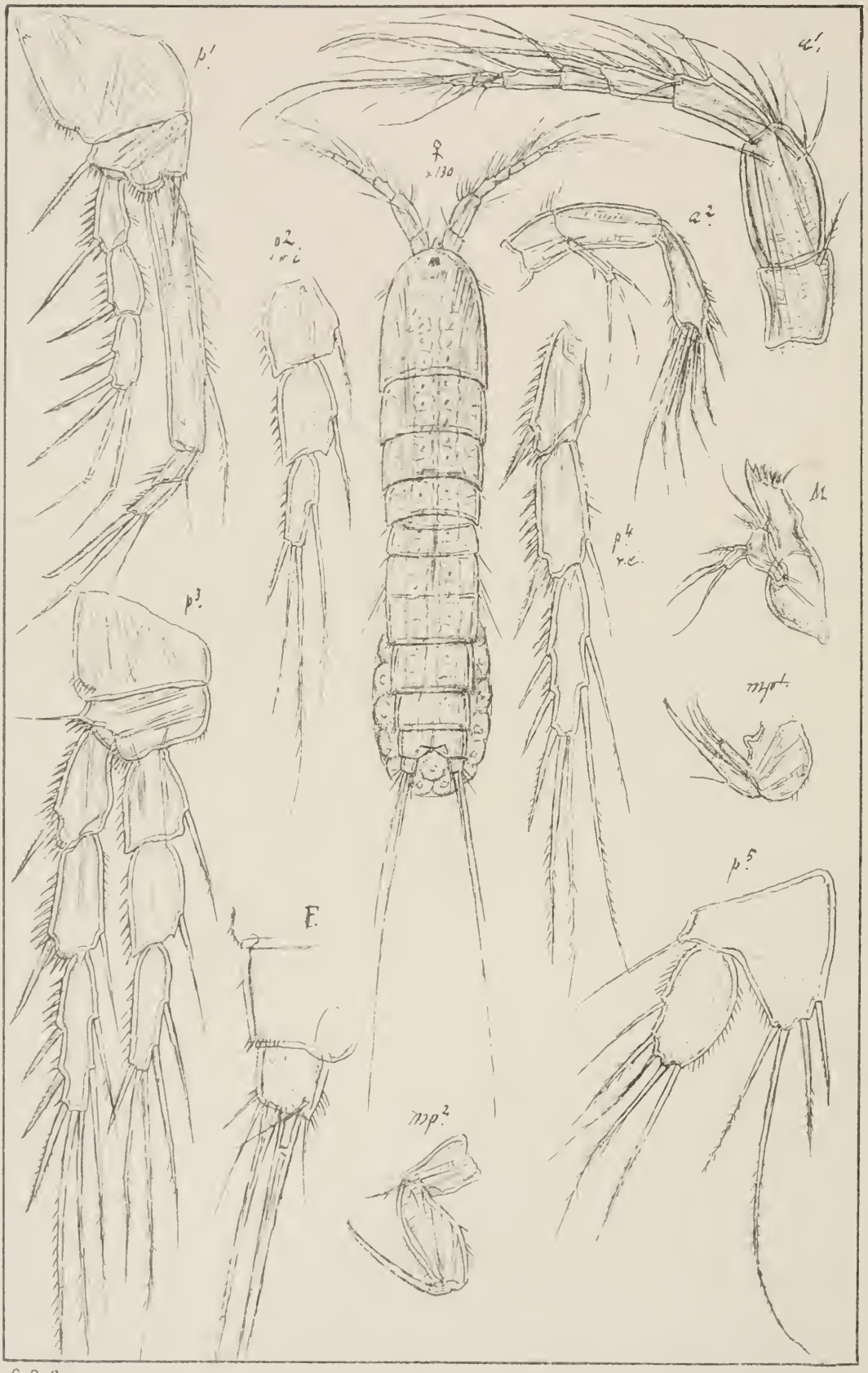


G. O. Sars, autogr. Norsk Litogr. Officin.

Ameira longipes, Boeck

Copepoda

Canthocamptidæ Harpacticoida Pl. CXLI



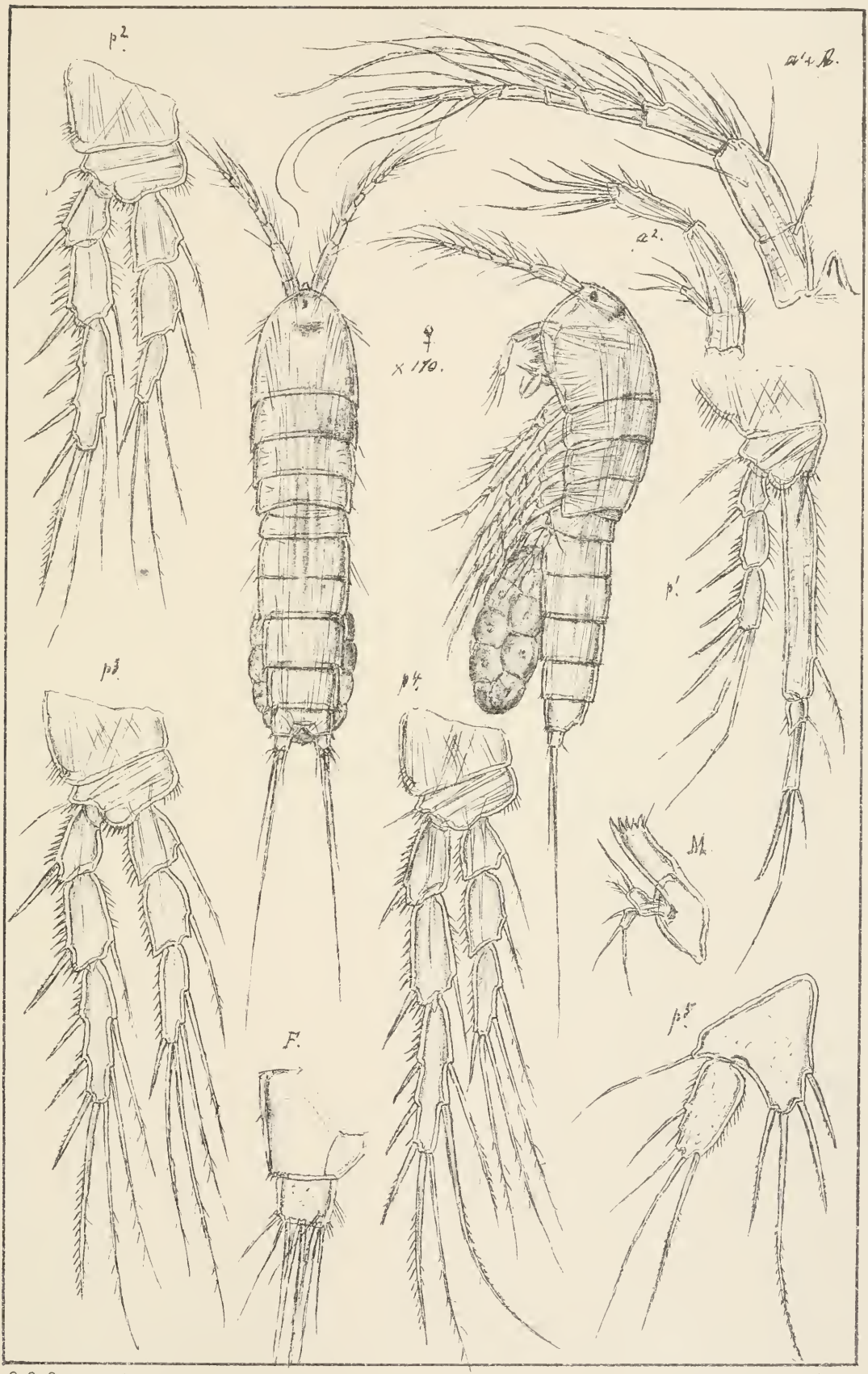
G.O. Sars, autogr

Norsk. Litogr. Officin.

Ameira minuta, Boeck

Copepoda

Cantho camptidæ — Harpacticoida — Pl. CXLII



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Ameira tenuicornis, Scott