

AN ACCOUNT
OF THE
CRUSTACEA
OF
NORWAY

WITH SHORT DESCRIPTIONS AND FIGURES OF ALL THE SPECIES

BY

G. O. SARS

VOL. V

COPEPODA
HARPACTICOIDA

PARTS IX & X

THALESTRIDÆ (continued)

WITH 16 AUTOGRAPHIC PLATES



BERGEN

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Remarks.—This form has been erroneously identified by Prof. Brady with *T. rufoviola* of Claus, from which it differs conspicuously both as regards the general form of the body and some of the anatomical details. The figure of the animal given by Brady is somewhat misshapen, apparently owing to a strong pressure of the mounted specimen from which the drawing was made.

Occurrence.—Some few female specimens of this form were found, many years ago, off the west coast of Norway, at Molde and Christiansund.

Distribution.—British Isles (Brady).

69. *Thalestris purpurea*, G. O. Sars, n. sp.

(Pl. LXIV).

Specific Characters.—*Female.* General form of body very similar to that in *T. brunnea*, being conspicuously depressed throughout. Cephalic segment, however, seen dorsally, more regularly rounded in front, and having the lateral corners more produced. Rostral projection abruptly recurved, with the tip bluntly rounded. Penultimate segment of urosome forming a thin expansion behind, arching over the last segment and divided into 4 regularly rounded lobules. Caudal rami of much the same structure as in *T. brunnea*. Eye still larger than in that species, and on each side applied to a distinct lenticular thickening of the integument. Antennæ, mandibles, maxillæ and anterior maxillipeds almost exactly as in *T. brunnea*. Posterior maxillipeds, however, comparatively less powerfully developed, hand less curved outside, and not having the palm at all defined in front. First pair of legs resembling in structure those in *T. brunnea*, though having the apical claws of both rami somewhat more elongated. Last pair of legs likewise very similar, distal joint, however, more oblong in form, and the marginal spines of proximal joint less elongated.

Colour of body a deep crimson, dorsal face of cephalic segment somewhat lighter.

Length of adult female 0.96 mm.

Remarks.—This form is very closely allied to *T. brunnea*, and indeed preserved specimens of the two may be easily confounded. In the living state, however, the present form is at once recognized by the deep crimson colour of its body. On a closer comparison, some well-marked differences in the anatomical details are also found to exist, proving these 2 forms to be in reality specifically distinct. The shape of the rostrum is rather different, for instance, and the posterior maxillipeds are somewhat dissimilar in size. The regularly 4-lobate lamellar

expansion of the penultimate caudal segment is moreover very characteristic of the present species.

Occurrence.—I have only met with this form very occasionally, though in several places, on the west coast of Norway. It occurred in moderate depths, among algæ and Hydroïda.

Gen. 28. **Parathalestris**, Brady & Robertson, 1873.

Generic Characters.—Body more slender than in *Thalestris*, generally cylindrical in form, or somewhat compressed laterally, never depressed, nor exhibiting the marked curvature of the anterior division characteristic of that genus. Cephalic segment of moderate size, with the epimeral parts less deep than in *Thalestris*; rostrum forming a short triangular plate movably articulated to the cephalic shield. Urosome more elongated than in the said genus, with none of the segments lamellarly expanded. Caudal rami generally short, but with the apical setæ much elongated. Eye well developed. Antennæ and oral parts on the whole resembling in structure those appendages in *Thalestris*. First pair of legs likewise rather similar, with both rami more or less slender and subequal in length, 2 of the apical claws of the outer one generally well developed. Inner ramus of 2nd pair of legs in male transformed in a similar manner to that in *Thalestris*, its middle joint in female carrying 2 natatory setæ, that of the 2 succeeding pairs only a single such seta. Last pair of legs of moderate size, with both joints lamellar, those in female, as usual, much larger than in male. Ovisac large, pyriform.

Remarks.—This genus was established in the year 1873 by Messrs. Brady and Robertson, to include a species previously recorded by Norman as *Thalestris Clausi*. It was, however, subsequently withdrawn by Prof. Brady, who did not find sufficient evidence for the generic separation of the said species. In subdividing the old genus *Thalestris*, however, into several nearly-allied genera, I find it convenient to restore the present genus, which, in addition to the above-named species, also comprises a number of other related forms, some of which will be described below. The genus is chiefly distinguished from *Thalestris* (in the restriction here adopted) by the more slender form of the body, the inferior size of the cephalic segment, and especially by the nature of the rostrum, which is sharply defined from the cephalic shield, and to a certain extent mobile. To the Norwegian fauna belong 4 species referable to this genus.

70. *Parathalestris Clausi* (Norman).

(Pl. LXV & LXVI).

Thalestris Clausi, Norman, Brit. Assoc. Report 1868, p. 297.

* *Specific Characters.*—*Female.* Body moderately slender and conspicuously compressed, being rather strongly built, with the integuments highly chitinized. Cephalic segment about the length of the 4 succeeding segments combined, epimeral parts only slightly arched; rostrum very short and blunt at the tip. Urosome scarcely half as long as the anterior division, and without any distinct lateral rows of spinules on the segments, genital segment about the length of the remaining 3 segments combined. Caudal rami quadrangular and but slightly divergent, apical setæ of moderate length. Anterior antennæ comparatively short, 9-articulate, distal part about half the length of the proximal one. Posterior antennæ rather robust, with the distal joint considerably expanded at the end, spines of the anterior edge very strong and distinctly denticulate. Posterior maxillipeds powerfully developed, with the hand very broad, dactylus strong and curved. 1st pair of legs comparatively strongly built, with the outer ramus a little shorter than the inner but somewhat stouter, terminal joint lamellarly expanded and having the 2 innermost claws very strong and, like the much smaller 3rd one, finely pectinate on the concave edge; apical claws of inner ramus likewise distinctly pectinate and somewhat unequal, the inner one being the longer. Last pair of legs rather broad, foliaceous, distal joint rounded oval in form, inner expansion of proximal joint broadly triangular and extending as far as the distal one, marginal setæ of both joints comparatively short.

Male somewhat smaller than female, and exhibiting the usual sexual differences. Last pair of legs much smaller than in female, distal joint short and broad, cordate, with the marginal setæ more or less spiniform, inner expansion of proximal joint scarcely extending beyond the middle of the distal one, and carrying 3 marginal setæ, the outermost shorter than the others and spiniform.

Colour generally golden yellow.

Length of adult female 1.05 mm.

Remarks.—This form, first described by Norman, is closely allied to *P. harpacticoides* of Claus, but is of larger size, and on the whole of more robust build, both as regards the body itself and its appendages.

Occurrence.—I have met with this form rather abundantly along the whole Norwegian coast, from the Christiania Fjord to Vadsö, in the littoral zone among algæ, and, like other littoral forms, it is not infrequently left in tidal pools.

Distribution.—British Isles (Brady), coast of France (Cann).

71. *Parathalestris harpacticoides* (Claus).

(Pl. LXVII).

Thalestris harpacticoides, Claus, Die freilebenden Copepoden, p. 133, Pl. XIX, figs. 2—11.

Specific Characters.—*Female.* Very like the preceding species,* but of smaller size and on the whole less strongly built. Cephalic segment comparatively larger, considerably exceeding in length the 4 succeeding segments combined; rostrum somewhat more prominent. Urosome exceeding half the length of the anterior division and having the segments more sharply marked off from each other, all, except the last provided on each side with a very conspicuous oblique row of spinules. Caudal rami about as in *P. Clausi*. Anterior antennæ comparatively more slender, with the distal part exceeding half the length of the proximal one. Posterior maxillipeds far less powerful, with the hand oblong oval in form and the dactylus more slender. 1st pair of legs of a structure very similar to that in *P. Clausi*, though having the outer ramus comparatively narrower and scarcely shorter than the inner. Last pair of legs with the distal joint less broad, oblong oval in form, inner expansion of proximal joint likewise narrower and extending scarcely as far as the distal joint; marginal setæ of both joints more elongated than in *P. Clausi*.

Male exhibiting similar differences from the female to those in *P. Clausi*. Last pair of legs, however, conspicuously differing in shape from those in the male of that species, the distal joint being much narrower and scarcely at all dilated at the base, inner expansion of proximal joint very slight, with 3 marginal setæ, none of which are spiniform, innermost seta the shortest.

Colour generally dark olivaceous.

Length of adult female 0.73 mm.

Remarks.—As stated above, this form is closely allied to *P. Clausi*, exhibiting a very similar structure of the 1st pair of legs. On a closer comparison, however, some well-marked differences in the structural details are found to exist, proving these two forms to be in reality specifically distinct, though unquestionably congeneric. An easily recognizable external character is also found in the oblique rows of spinules on the sides of the caudal segments, of which scarcely any trace is found in *P. Clausi*.

Occurrence.—This is also a rather common form, being found along the whole south and west coasts of Norway in the littoral and sub-littoral regions among algæ. In the upper part of the Christiania Fjord this form is by far the most frequent.

Distribution.—Heligoland (Claus), British Isles (Brady), coast of Bohuslän (Coll. Cleve).

72. *Parathalestris hibernica* (Brady & Rob.).

(Pl. LXVIII).

Thalestris hibernica, Brady & Robertson, in Ann. & Mag. Nat. Hist., ser. 4, Vol. XII, p. 135, Pl. VIII, figs. 17—19.

Specific Characters.—Female. Body conspicuously compressed and very slender and elongated, with the integuments rather thin and pellucid. Cephalic segment scarcely exceeding in length the 4 succeeding segments combined, epimeral parts much curved in the middle, rostrum of moderate size. Urosome about half the length of the anterior division and having the segments quite smooth. Caudal rami short quadrangular, with the outermost of the apical setæ considerably thickened at the base. Eye very large and conspicuous in the living animal. Anterior antennæ rather slender, with the distal part exceeding half the length of the proximal one. Posterior antennæ less strongly built than in the 2 preceding species. Mandibular palp with the inner expansion of the basal part rather narrow and prominent, outer ramus small, with only a single apical seta. Posterior maxillipeds powerfully developed, with the hand large, sub-crescentic in shape, and irregularly angular, palmar edge deeply concaved and defined in front by a distinct projecting corner, dactylus very strong and curved. 1st pair of legs much feebler in structure than in the 2 preceding species, both rami slender and tapering distally, the outer one a little shorter than the inner, with the terminal joint scarcely at all expanded, claws slender and quite smooth, the innermost one very much elongated, equalling in length the 2 preceding joints combined; apical claws of inner ramus very unequal, the inner one much elongated, the outer very small. Last pair of legs considerably smaller than in the 2 preceding species, distal joint oval in form, inner expansion of proximal joint rather broad and extending considerably beyond the distal one. Ovisac generally very large, pyriform.

Male with the last pair of legs, as usual, less fully developed than in female, distal joint rather small and having only 5 marginal setæ, inner expansion of proximal joint not nearly extending as far as the distal one, and carrying 3 unequal setæ.

Body semipellucid, of a light greenish hue and generally filled with clear oil-bubbles.

Length of adult female 1.14 mm.

Remarks.—This is a very distinct and easily recognizable form, being especially distinguished by its slender and elongated body, as also by the structure of the posterior maxillipeds, and the 1st and last pairs of legs.

Occurrence.—I have met with this form occasionally in several places of the west coast of Norway, for instance at Kopervik, Aalesund and Christiansund, in the littoral region among algæ. It is, however, not nearly so common as the 2 preceding species.

Distribution.—British Isles (Brady).

73. *Parathalestris Jacksoni* (Scott).

(Pl. LXIX).

Thalestris Jacksoni, Th. Scott, Report on marine and fresh water Crustacea from Franz Josef Land, Linn. Soc. Journ. Vol. XXVII, p. 109, Pl. 8, figs. 3—9.

Specific Characters.—*Female.* Body elongated, but rather strongly built, with highly chitinized integuments and the segments very sharply marked off from each other. Cephalic segment about the length of the 4 succeeding segments combined, epimeral parts evenly curved, posterior edge, like that of the 3 succeeding segments, minutely crenulated; rostrum short and blunt, well defined at the base, tip minutely bifid. Urosome slender tapering distally, genital segment very distinctly divided in the middle. Caudal rami unusually prolonged, being more than twice as long as they are broad and slightly attenuated distally, apical setæ normal. Anterior antennæ of moderate length, with the distal part scarcely half as long as the proximal one. Anterior maxillipeds rather compact, with the claw of the outermost lobe unusually short. Posterior maxillipeds powerfully developed, hand large, oval fusiform, with the palmar edge slightly concave. 1st pair of legs moderately strong, outer ramus fully as long as the inner, 2 of the apical claws very strong and curved; apical claws of inner ramus very unequal, the inner one more than 3 times as long as the outer. Last pair of legs well developed, foliaceous, distal joint very large, ovate, inner expansion of proximal joint scarcely extending beyond the middle of the distal one, marginal setæ of moderate length.

Male exhibiting the usual sexual differences.

Colour yellowish brown, somewhat darker at the end of the segments, dorsal face of cephalic segment of a lighter hue.

Length of adult female 2.20 mm.

Remarks.—This form was first described by Th. Scott from Franz Josef Land. It is one of the largest Harpacticoida, and by its strongly built body, the sharp demarcation of the segments, and the unusually prolonged caudal rami, somewhat resembles certain species of the genus *Thalestris* (in the restriction here

adopted), for instance, *T. gibba* Krøyer. It is however a true *Parathalestris*, as proved both by the structure of the rostrum and that of the several appendages.

Occurrence.—Off the Finmark coast this form is by no means rare. I found it, for instance, many years ago in considerable abundance at Vadsö; and in some samples taken by Mr. Nordgaard at Repvaag (Porsanger Fjord), and kindly sent to me for examination, it was also rather common. Though undoubtedly a true arctic form, it also occurs occasionally far out of the arctic region, for instance in the outer part of the Trondhjem Fjord, at Bejan, and in the Storfjord, inside Aalesund. A single specimen of this form was even taken as far south as Grimstad, off the south coast of Norway.

Distribution.—Franz Josef Land (Scott), Polar Islands north of Grinnell Land (2nd Fram Exped.).

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

Generic Characters.—Body somewhat compressed in front, more flattened behind, with the cephalic segment very large and deep. Rostrum abruptly deflexed and apparently immobile, though defined from the cephalic segment by a well marked suture. Epimeral plates of the 3 succeeding segments rather fully developed. Urosome of moderate length, with the genital segment in female very large and flattened. Eye large and of rather complicated structure. Anterior antennæ slender, 9-articulate; posterior ones less strongly built than in *Parathalestris*, outer ramus biarticulate. Oral parts on the whole normal. 1st pair of legs of a structure similar to that in *Thalestris*. Natatory legs likewise rather similar, though having the terminal spine of the outer ramus shorter. Last pair of legs in female of enormous size, foliaceous, wholly obtecing the ovisac below.

Remarks.—The type of this new genus is the *Thalestris mysis* of Claus, a form which in some characters, and more particularly in the enormous development of the last pair of legs in the female, differs conspicuously from the other *Thalestridae*, so that it ought more properly to be generically separated. We do not at present know any other form that can be associated with it in the same genus.

74. *Phyllothalestris mysis* (Claus).

(Pl. LXX & LXXI).

Thalestris mysis, Die freilebenden Copepoden, p. 130, Pl. XVIII, figs. 12—16.

Specific Characters.—*Female.* Body moderately slender, with the anterior division slightly vaulted dorsally. Integuments rather thin, and exhibiting a finely squamous sculpture. Cephalic segment considerably exceeding in length the 4 succeeding segments combined, epimeral parts thin and pellucid, much curved in the middle, and almost wholly comprising between them the oral parts; rostrum very strong, acuminate, and pointing straight down. Epimeral plates of the 3 succeeding segments closely contiguous and acutangular behind. Last segment of metasome scarcely narrower than the preceding one, but much less deep. Urosome exceeding half the length of the anterior division, and having the genital segment very large and expanded, clypeiform. Caudal rami short, quadrangular, with the 2 middle apical setæ much elongated and somewhat divergent, the inner one about twice the length of the urosome. Eye very large and conspicuous in the living animal, with 2 successive pairs of lenticular bodies, anterior extremity, seen laterally, drawn out into 2 diverging lobules. Anterior antennæ with the distal part scarcely half as long as the proximal one. Posterior maxillipeds rather slender, with the hand narrow fusiform, palmar edge straight, outer edge angular in the middle, dactylus slender and elongated. 1st pair of legs with the rami slender and attenuated, the outer one somewhat longer than the inner, both having one of the apical claws strongly developed, falciform. Last pair of legs extending almost to the end of the penultimate caudal segment, both joints greatly expanded, foliaceous, the distal one oval or elliptical in form, with 6 short marginal setæ densely crowded together at the tip, the outermost but one very coarse, spiniform; inner expansion of proximal joint extending as far as the distal joint and carrying 5 short marginal setæ, 4 of which are attached close together at the bluntly rounded tip, the 5th at a considerable distance from these on the inner edge.

Male of smaller size than female, and exhibiting the usual sexual differences. Last pair of legs rather dissimilar and of much inferior size, distal joint narrow oval in shape, and provided with only 5 marginal setæ; inner expansion of proximal joint very slight, with only 2 unequal spines at the tip.

Body generally of a fine rosy or light carneous colour, with the tip of the urosome together with the caudal setæ very dark.

Length of adult female 1.40 mm.

Remarks.—This is an easily recognizable form and indeed one of our finest Harpacticoida, distinguishing itself both by its comparatively large size and the general form of the body, as also by its peculiar colour.

Occurrence.—I have met with this beautiful form in several places both on the south and west coasts of Norway, as also in the Trondhjem Fjord, but nowhere in any considerable number. It is generally found in depths ranging from 6 to 20 fathoms among *Laminariæ* and other algæ. The movements of the animal are particularly rapid and graceful.

Distribution.—British Isles (Brady), Mediterranean (Claus), Gulf of Suez (A. Scott), Ceylon (same author).

Gen. 30. **Halithalestris**, G. O. Sars, n.

Generic Characters.—Body elongated, subcylindrical in form, with no sharp demarcation between the 2 chief divisions. Cephalic segment comparatively small and somewhat depressed, rostrum short, but well defined at the base. Epimeral plates poorly developed. Urosome very large and massive, with the caudal rami unusually prolonged and divergent. Eye normal. Anterior antennæ of usual structure, 9-articulate. Posterior antennæ with the outer ramus rather narrow, biarticulate. Oral parts on the whole normal; posterior maxillipeds, however, unusually compact. 1st pair of legs resembling in structure those in *Thalestris*. Natatory legs likewise of a very similar structure. Last pair of legs of moderate size, with the distal joint the more prominent.

Remarks.—This new genus is founded upon the peculiar form first recorded by Krøyer as *Harpacticus Croni*, and subsequently described by Brady under the name of *Thalestris serrulata*. According to the structure of the 1st pair of legs, this form is indeed more nearly related to *Thalestris* than to *Harpacticus*, and unquestionably belongs to the family *Thalestridæ*. It cannot however properly be referred to the genus *Thalestris* in the restriction here adopted, and it also differs very markedly from the other *Thalestridæ*, both in its whole external appearance and more particularly in its habits, it being one of the few *Harpacticoida*, which leads a true pelagic life. The generic name here proposed refers to this latter peculiarity.

75. *Halithalestris Croni* (Kröyer).

(Pl. LXXII).

Harpacticus Croni, Kröyer, in Gaimard's „Voyage en Scandinavie“. Zool., Pl. 43, figs. 3, a—n.Syn: *Thalestris serrulata*, Brady.

Specific Characters.—*Female.* Body very slender and elongated, and of a peculiar smooth appearance, recalling that found in the forms belonging to the family *Ectinosomidae*. Cephalic segment scarcely exceeding in length the 3 succeeding ones combined, and tapering anteriorly to an obtuse point, epimeral parts but very slightly developed; rostrum short, somewhat deflexed. Epimeral plates of the 3 succeeding segments small, not covering laterally the basal parts of the legs. Last segment of metasome scarcely narrower than the preceding one. Urosome very greatly developed, exceeding the anterior division in length, and fully equal to it in depth, segments fringed along the posterior edge ventrally with delicate spinules, genital segment, as usual, the largest, though not attaining the length of the 2 succeeding segments combined, last segment rather short and deeply cleft at the end. Caudal rami very much elongated, almost attaining half the length of the urosome and more or less divergent, outer edge with 3 or 4 slight serrations, tip obliquely truncated, apical setæ not much elongated, the 2 middle ones distinctly denticulated. Eye rather large and conspicuous in the living animal. Anterior antennæ of moderate length, distal part somewhat exceeding half the length of the proximal one. Posterior maxillipeds of a very compact structure, hand much dilated, almost semicircular in outline, palmar edge straight and having inside a curved row of strong denticles, dactylus strong and curved. 1st pair of legs with the outer ramus fully as long as the inner, but much narrower, 3 of the apical claws well developed and finely denticulated on the concave edge; apical claws of inner ramus rather unequal, the inner one very strong and twice as long as the outer. Last pair of legs extending scarcely beyond the middle of the genital segment, distal joint oval in form, with 2 of the marginal setæ rather elongated, inner expansion of proximal joint triangular, extending somewhat beyond the middle of the distal one, the middle of the marginal setæ much longer than the others. Ovisac very large.

Body semipellucid of a light greenish hue, and generally filled with clear oil-bubbles of various sizes.

Length of adult female 2.30 mm.

Remarks.—As stated above, this form was first figured (but not described) by Kröyer in the well-known work by Gaimard, and referred to the genus *Harpacticus*. The *Thalestris serrulata* of Brady, described from a solitary male

specimen, is unquestionably identical with Krøyer's species. It is one of our largest Harpacticoida, and differs considerably in its outward appearance from the other Thalestridæ, a fact which may no doubt be accounted for by its very different habits.

Occurrence.—Only a very limited number of specimens of this peculiar form, all of them females, have hitherto come under my notice. They were taken partly off the Finmark coast, partly off the west coast of Norway, and in every instance in the open sea at a considerable distance from the shore and near the surface, together with other pelagic animals.

Distribution.—British Isles (Brady), coast of Spitsbergen (Scott).

Gen. 31. **Rhynchothalestris**, G. O. Sars, n.

Generic Characters.—Body more or less robust, with the 2 chief divisions rather sharply marked off from each other. Cephalic segment large and deep, with the rostrum very prominent and very mobile. Urosome comparatively short, with the anterior segments more or less expanded laterally. Caudal rami short, but with the apical setæ rather elongated. Eye well developed. Anterior antennæ of usual structure, 9-articulate. Posterior antennæ with the proximal part distinctly divided in the middle, outer ramus composed of 3 well-defined joints. Oral parts normal and rather fully developed. 1st pair of legs of a structure similar to that in *Thalestris*. Natatory legs with the spines of the outer ramus coarsely denticulate, middle joint of inner ramus in all the pairs carrying 2 setæ inside. Last pair of legs of moderate size, with the distal joint more prominent than the proximal one.

Remarks.—This new genus is chiefly characterised by the unusually sharp demarcation of the 2 divisions of the body, and more particularly by the strong development of the rostrum, a character which has given rise to the generic name here proposed. In the structure of the several appendages also some well-marked differences from the preceding genera are found to exist, especially as regards the posterior antennæ and the natatory legs. Two well-defined Norwegian species are referable to this genus, both having been previously described as species of the genus *Thalestris*.

76. *Rhynchothalestris rufocincta* (Norman).

(Pl. LXXIII & LXXIV).

Thalestris rufocincta Norman (M. S.), in Brady's Monograph of British Copepoda, Vol. 11, p. 125, Pl. LVII, figs. 1-9.

Specific Characters.—*Female.* Body somewhat robust, with the anterior division evenly vaulted dorsally. Cephalic segment considerably exceeding in length the 4 succeeding segments combined, epimeral parts evenly arched and rather deep; rostrum very long and slightly curved, narrow linguiform in shape and acuminate at the tip. Epimeral plates of the 3 succeeding segments rather large, acutangular. Last segment of metasome considerably narrower than the preceding ones. Urosome scarcely exceeding half the length of the anterior division, genital segment very large and expanded, sub-quadrangular in outline and distinctly divided in the middle, posterior corners acutely produced and fringed with delicate spinules; 2nd segment likewise produced at the posterior corners, the 2 posterior segments simple. Caudal rami quadrangular, broader than they are long, outermost of the apical setæ spiniform and scarcely half as long as the innermost, the 2 middle setæ very strong and elongated. Anterior antennæ with the 1st joint unusually prolonged, distal part not nearly attaining half the length of the proximal one. Posterior antennæ with the outer ramus rather fully developed, middle joint much shorter than the other 2. Posterior maxillipeds of moderate size, hand oblong fusiform, with the outer edge sub-angular in the middle, inner straight, dactylus slender. 1st pair of legs with the rami not very slender, the outer one a little longer than the inner, with 2 of the apical claws well developed, apical claws of inner ramus rather unequal. Natatory legs with the inner ramus shorter, but broader, than the outer. Last pair of legs with the distal joint broadly oval in form, inner expansion of proximal joint rather large, though not extending as far as the distal one.

Male with the inner ramus of both the 2nd and 3rd pairs of legs peculiarly transformed, that of 2nd pair having the 2 outer joints coalesced and carrying on the tip a remarkably strong somewhat hamiform spine, that of 3rd pair distinctly 3-articulate, with the last joint obliquely tapered and terminating in a small lamella provided inside with a short flexuose bristle, inner edge with a regular series of 5 strong setæ. Last pair of legs, as usual, smaller than in female, with the inner expansion of the proximal joint shorter and provided with only 3 spine-like setæ.

Body of a clear yellowish hue, more or less distinctly banded with dark reddish brown, sometimes, especially in male specimens, with the whole of the

1st free segment of the metasome and part of the 2nd dark red, anterior antennæ and basal part of the legs more or less tinged with chestnut brown.

Length of adult female slightly exceeding 1 mm.

Remarks.—This form was first detected by Normand and was described and figured under the MSname proposed by that author in Brady's well-known Monograf. It is a very fine and easily recognizable species, being especially distinguished by the very prominent rostrum, and in the living state also by the beautiful colouring of the body.

Occurrence.—I have met with this form occasionally in several places both off the south and west coasts of Norway, as also in the outer part of the Trondhjem Fjord. It generally occurs in depths ranging from 6 to 20 fathoms among Laminariæ and other algæ.

Distribution.—British Isles (Brady), coast of France (Canu).

77. *Rhynchothalestris helgolandica* (Claus).

(Pl. LXXV).

Thalestris helgolandica, Claus, Die freilebenden Copepoden, p. 131, Pl. XVII, figs. 12--21.

Syn: *Thalestris curticauda*, Boeck.

Specific Characters.—*Female.* Body comparatively short and stout, with the anterior division somewhat depressed and very sharply marked off from the posterior. Cephalic segment large and deep, with the epimeral parts abruptly curved in front of the middle; rostrum somewhat smaller than in the preceding species but of a very similar structure. Last segment of metasome abruptly much narrower than the others, with the epimeral parts very small, acute. Urosome unusually short, not nearly attaining half the length of the anterior division, genital segment imperfectly divided in the middle, and much dilated, with the lateral edges lamellar and strongly arcuate; posterior corners of this and the succeeding segment slightly produced. Caudal rami very short, apical setæ of moderate length. Anterior antennæ rather slender and of a similar structure to that in *R. rufocincta*. Posterior antennæ likewise rather similar, though having the outer ramus less fully developed, with the terminal joint much shorter. Posterior maxillipeds unusually slender and elongated, with the hand rather narrow and almost crescent-like in shape, dactylus very long, falciform. 1st pair of legs much more slender than in the preceding species, with both rami rather narrow, the outer one being the longer and having the terminal joint scarcely at all expanded, one of the claws much longer than the others; inner ramus likewise with

one of the apical claws very slender and elongated. Natatory legs with the rami more slender than in *R. rufocincta* and nearly equal in length, middle joint of inner ramus considerably produced at the outer corner, terminal joint of same ramus rather elongated, with the outermost of the setæ of the inner edge transformed to a slender, coarsely denticulated spine. Last pair of legs with the distal joint much elongated, narrow oblong in form, inner expansion of proximal joint comparatively short, triangular, not nearly extending to the middle of the distal joint. Ovisac comparatively small, rounded.

Male with the inner ramus of the 2nd pair of legs only very slightly transformed. Last pair of legs with the distal joint considerably shorter than in female and having the marginal setæ spiniform; inner expansion of proximal joint very slight, almost obsolete, with only 2 unequal marginal spines.

Body of a dark yellowish hue, with the posterior half of the anterior division tinged, especially along the ventral face, with deep chocolate brown.

Length of adult female 0.74 mm.

Remarks.—This form, first described by Claus, may be easily recognized by its short, stout body, and especially by the unusual shortness of the urosome. Moreover the very sharp demarcation between the 2 chief divisions of the body is rather characteristic. Though differing rather conspicuously in some of the anatomical details from *R. rufocincta*, it ought in my opinion to be referred to the same genus, since in other respects these 2 forms exhibit a perfect agreement. The *Thalestris curticauda* of Boeck is unquestionably identical with Claus's species.

Occurrence.—I have taken this form occasionally off the south coast, more frequently off the west coast, of Norway, in localities similar to those in which *R. rufocincta* occurs.

Distribution.—Heligoland (Claus), British Isles (Brady), Spitsbergen (Scott), Franz Josef Land (same author).

Gen. 32. *Microthalestris*, G. O. Sars, n.

Generic Characters.—Body slender, subcylindrical in form, with no very obvious demarcation between the 2 divisions. Cephalic segment of moderate size, rostrum small, but well defined. Epimeral plates poorly developed. Urosome with none of the segments expanded laterally; caudal rami short. Anterior antennæ attenuated, 9-articulate. Posterior antennæ with the proximal joint not

divided, outer ramus small, biarticulate. Oral parts on the whole less fully developed than in the preceding genera. 1st pair of legs with the rami very narrow and rather unequal, the inner one being much the longer and only composed of 2 joints, the distal one very small; outer ramus with 3 well-developed claws at the tip. Natatory legs slender, with the outer ramus much longer than the inner, setæ of the inner edge in both rami poorly developed; inner ramus of 3rd pair of legs in male slightly transformed. Last pair of legs with the distal joint much more prominent than the proximal one.

Remarks.—This new genus is founded upon the form recorded by Claus as *Thalestris forficula*, a species which has proved to differ very markedly in several respects from the other Thalestridæ, not being referable to any of the genera treated of in the preceding pages. We do not know at present with certainty more than a single species, to be described below.

78. *Microthalestris forficula* (Claus).

(Pl. LXXVI).

Thalestris forficula, Claus, Die freilebenden Copepoden, p. 131, Pl. XVII, figs. 7—11.

Syn: *Thalestris karmensis*, Boeck.
 " — *forficuloides*, Scott.

Specific Characters.—*Female.* Body narrow and elongated, seen dorsally, almost linear in form, with rather thin and flexible integuments. Cephalic segment scarcely longer than the 3 succeeding ones combined, epimeral parts not very deep, but evenly curved; rostrum very narrow, lanceolate. Epimeral plates of the 3 succeeding segment small and rounded behind. Last segment of metasome scarcely narrower than the preceding ones. Urosome considerably exceeding in length half the anterior division, and cylindric in form, with the segments densely spinulose at the hind edge both ventrally and laterally, genital segment about the length of the 2 succeeding ones combined, and distinctly divided in the middle. Caudal rami very short, with the innermost but one of the apical setæ greatly developed, abruptly bent at the base, and about twice as long as the urosome. Anterior antennæ of moderate length and densely clothed with rather long setæ, distal part considerably exceeding half the length of the proximal one. Posterior antennæ with the distal joint but slightly dilated, apical setæ comparatively strong, spiniform, outer ramus small, with the 2 joints subequal in length. Mandibular palp with the basal part only slightly expanded, outer ramus very small. Posterior maxillipeds not very strong, hand oval in form, with the palmar

edge slightly convex and carrying in the middle a slender seta. 1st pair of legs with the outer ramus much shorter than the inner, spine of the middle joint attached close to the end, apical claws rather slender and gradually increasing in length inwards, inner ramus with the proximal joint very narrow and elongated, seta of the inner edge attached far in front of the middle, distal joint very small and slightly expanded outside, apical claws of moderate size, the inner one twice as long as the outer. Natatory legs with the terminal joint of the outer ramus fully as long as the other 2 combined, and of narrow linear form, setæ of the inner edge in both rami much reduced in number. Last pair of legs with the distal joint oblong hastate in form, densely spinulose on the edges, and provided with 8 marginal setæ, 3 of which issue from the inner edge; inner expansion of proximal joint triangular and not nearly extending to the middle of the distal one.

Male considerably smaller than female, and having the inner ramus of 3rd pair of legs (not that of 2nd pair) transformed, the terminal joint being produced at the tip to a long mucroniform spine. Last pair of legs very small, with the distal joint subdivided into 2 or 3 successive segments.

Colour pale yellow.

Length of adult female 0.58 mm.

Remarks.—This form was first described by Claus from the Mediterranean, at Messina, and has subsequently been found to occur also in the northern oceans. The *Thalestris karmensis* of Boeck is unquestionably identical with Claus's species, and the form recorded by Th. Scott under the name of *T. forficuloides* has also proved to be the same species. By its slender cylindrical and very flexible body this form differs conspicuously from the other Thalestridæ, and so far exhibits a pronounced similarity to certain forms belonging to the family *Canthocamptidæ*.

Occurrence.—I have met with this form not unfrequently in several places both on the south and west coasts of Norway, as also in the Trondhjem Fjord, in the littoral region among algæ. On account of its small size and inconspicuous colour, it is, however, easily overlooked.

Distribution.—Mediterranean (Claus), British Isles (Scott), ? Gulf of Guinea (same author), coast of Bohuslän (coll. Cleve), Spitsbergen (Scott), Franz Josef Land (do.), Polar Islands north of Grinnell Land (2nd Fram Exped.).

Gen. 33. **Dactylopusia**, Norman, 1903.Syn: *Nauplius*, Philippi (not Müller).,, *Dactylopus*, Claus (not Gill).

Generic Characters.—Body, as a rule, rather stout, tapering behind, with the anterior division more or less depressed and generally not sharply marked off from the posterior. Cephalic segment large, but not very deep, rostrum well defined at the base. Urosome with none of the segments expanded laterally; caudal rami short. Anterior antennæ comparatively short, with a somewhat varying number of joints. Posterior antennæ with the proximal joint not divided in the middle, outer ramus composed of 3 well-defined joints. Oral parts normal. 1st pair of legs with the outer ramus generally much shorter and stouter than the inner, terminal joint lamellar and armed with 4 strong outward-curving claws and a slender seta inside the latter; inner ramus distinctly 3-articulate, with the outer 2 joints quite short, the last carrying 2 strong claws. Natatory legs well developed, with the rami rather broad, the inner one somewhat shorter than the outer and having 2 setæ inside the middle joint; inner ramus of 2nd pair of legs in male conspicuously transformed, biarticulate, with a strong spine outside the distal joint. Last pair of legs in female with both joints generally broad and lamellar; those of male, as usual, much smaller.

Remarks.—This genus was established as early as the year 1840 by Philippi; but the name he applied to the genus, *Nauplius*, cannot properly be accepted, since it was used by O. Fr. Müller in a very different sense, and at present is in general use to distinguish the well-known earliest larval stage of lower Crustacea. Nor can the generic name proposed by Claus, *Dactylopus*, be employed, as it was appropriated some years previously by Gill for a genus of fishes. For this reason, the Rev. A. M. Norman has recently proposed the change of the Clausian name to *Dactylopusia*.¹⁾ The genus was taken by Claus in a much wider sense than here adopted, and Boeck had already called attention to the fact that some of the Clausian species of *Dactylopus* ought to be separated generically. Still, however, recent British authors refer to this genus forms, which, by the presence of 2 ovisacs, clearly show themselves to belong to quite a different family, viz., the *Diosaccidae*, to be treated of farther on. Even in the restriction here adopted, this genus seems to comprise a great number of species from different parts of the oceans. To the Norwegian fauna belong at least 5 well-defined species, to be described below.

¹⁾ Should perhaps more properly have been *Dactylopodia*.

79. *Dactylopusia thisboides* (Claus).

(Pl. LXXVII & LXXVIII, fig. 1).

Dactylopus thisboides, Claus, Die freilebenden Copepoden, p. 127, Pl. XVI, figs. 24—28.

Specific Characters.—Female. Body moderately slender, conspicuously dilated in front and gradually tapered behind. Cephalic segment rather broad, depressed, evenly arcuate in front, and scarcely longer than the 3 succeeding segments combined; rostrum of moderate size, obtuse at the tip. Epimeral plates of the 3 succeeding segments comparatively small and rounded at the posterior corners. Urosome exceeding half the length of the anterior division, genital segment of moderate size and considerably broader in front than behind. Caudal rami short and broad, apical setæ, however, rather elongated, the innermost but one almost twice as long as the urosome. Anterior antennæ rather short and densely setiferous, composed of 8 joints, 4 of which belong to the distal part, the latter about as long as the 3 preceding joints combined. Posterior antennæ with the outer ramus well developed, terminal joint about the length of the other 2 combined. 1st pair of legs moderately strong, outer ramus scarcely more than half as long as the inner, apical claws only slightly curved and finely spinulose on the concave edge; inner ramus scarcely narrower than the outer, with the apical claws strong and distinctly spinulose, the outer one exceeding half the length of the inner. Last pair of legs with the distal joint not very large, rounded oval in form and more or less exstant, so as to be generally wholly visible in the dorsal view of the animal, marginal setæ 6 in number, some of them very slender and elongated; inner expansion of proximal joint very large and broad, foliaceous, extending beyond the tip of the distal joint, and provided inside the inner edge with a regular row of short transverse chitinous stripes. Ovisac large, pyriform.

Male much smaller than female, and exhibiting the usual sexual differences. Inner ramus of 2nd pair of legs with the distal joint somewhat curved at the tip, which carries 2 rather unequal spines, spine of outer edge very strong and conspicuously expanded at the base. Last pair of legs much smaller than in female, distal joint short, cordate in form, with only 5 marginal setæ. 2 of them spini-form; inner expansion of proximal joint very slight, with 3 subequal marginal spines.

Body of a golden yellow hue, with a chestnut-coloured transverse band across the anterior part of the genital segment.

Length of adult female about 1 mm.

Remarks.—This form I regard as the type of the present genus. It is the largest and finest of the Norwegian species, and is moreover easily recognizable

by the general form of the body and more particularly by the structure of the last pair of legs in the female.

Occurrence.—Off the west coast of Norway this form is by no means of rare occurrence in the littoral region. I have taken it rather plentifully at Aalesund and Christiansund, as also in the outer part of the Trondhjem Fjord, and it is also recorded by Th. Scott from the Finmark coast.

Distribution—British Isles (Brady), coast of France (Canu), Mediterranean (Claus), the Red Sea (A. Scott), Bear Island (T. Scott), Franz Josef Land (same author).

80. *Dactylopusia neglecta*, G. O. Sars, n. sp.

(Pl. LXXVIII, fig. 2).

Dactylopus thisboides (brackish water variety). Brady, Monograph of British Copepoda, Vol. 11, p. 108, Pl. LIV, figs. 14—16.

Specific Characters.—*Female.* Body somewhat more slender than in *D. thisboides*, and less regularly tapered behind. Cephalic segment less broad, with the rostrum more prominent. Urosome with the segments more sharply marked off from each other, each with a very conspicuous transverse row of spinules near the hind edge ventrally and laterally. Anterior antennæ comparatively more slender and distinctly 9-articulate, distal part exceeding the length of the 3 preceding joints combined. Posterior antennæ with the outer ramus comparatively smaller. 1st pair of legs with the outer ramus considerably exceeding half the length of the inner, apical claws of moderate length and scarcely spinulose, apical claws of inner ramus very unequal, the inner one more than twice as long as the outer. Last pair of legs rather different in shape from those in *D. thisboides*, distal joint comparatively larger, oval cordate in form and edged with 7 not much elongated setæ, 2 of which issue from the inner edge; inner expansion of proximal joint much smaller than in *D. thisboides*, extending only slightly beyond the middle of the distal joint; none of the marginal setæ remarkably elongated.

Male having the distal joint of the inner ramus of 2nd pair of legs scarcely curved at the tip, apical spines subequal in length, spine of outer edge more slender than in *D. thisboides* and attached rather in front of the middle. Last pair of legs resembling in shape those of female, but of smaller size and with only 3 marginal spines on the proximal joint.

Colour pale yellow.

Length of adult female 0.85 mm.

Remarks.—This form was considered by Prof. Brady as only a variety of *D. thisboides*. It is, however, certainly specifically distinct, as is clearly proved, both by the distinctly 9-articulate anterior antennæ and by the rather different structure of the last pair of legs. Moreover, the inner transformed ramus of the 2nd pair of legs in the male exhibits characteristic differences from that in the male of *D. thisboides*.

Occurrence.—I have hitherto only observed this form in a single locality, viz. in the immediate vicinity of Trondhjem, where some few specimens were taken from tidal pools.

Distribution.—British Isles (Brady).

81. *Dactylopusia vulgaris*, G. O. Sars (new name).

(Pl. LXXIX, fig. 1).

Dactylopus Strömi, Claus, Die freilebenden Copepoden, p. 126, Pl. XVI, figs. 1—6 (not = *Canthocamptus Strömi*, Baird).

Specific Characters.—*Female.* Body considerably shorter and stouter than in the 2 preceding species, and conspicuously depressed throughout. Cephalic segment fully as long as the 4 succeeding ones combined; rostrum well developed and somewhat curved. Urosome scarcely exceeding half the length of the anterior division, all the segments fringed at the hind edge ventrally with delicate spinules, genital segment scarcely broader in front than behind. Caudal rami about as in *D. neglecta*. Anterior antennæ of moderate length and distinctly 9-articulate, distal part about the length of the 3 preceding joints combined. 1st pair of legs resembling in structure those in *D. neglecta*, though having the apical claws of both rami somewhat stronger and distinctly denticulated. Last pair of legs with the distal joint broadly ovate or cordate in form, tip narrowly exerted and carrying 2 unequal bristles, outer edge with 3 subequal setæ, inner one with a single somewhat stronger seta; inner expansion of proximal joint rather large, though less broad than in *D. thisboides*, and extending about as far as the distal joint, both joints exhibiting inside the inner edge a row of short transverse chitinous stripes.

Male with the inner ramus of 2nd pair of legs resembling in shape that in *D. neglecta*, apical spines, however, less strong, and spine of outer edge attached to about the middle of the distal joint. Last pair of legs with the distal joint much shorter than in female and provided with an additional seta inside, inner expansion of proximal joint extending as far as the distal joint and carrying 3 marginal setæ.

Colour dark yellow changing to olivaceous brown.

Length of adult female 0.70 mm.

Remarks.—This form has been identified by Claus with the *Canthocamptus Strömi* of Baird, and all subsequent authors have followed Claus in this view. In my opinion, however, such an identification cannot properly be maintained, as the figures given by Baird clearly show his form to be not a *Dactylopusia* but without doubt a *Laophonte*, and in all probability the species recorded by Boeck as *Laophonte curticauda*. I have therefore found it necessary to give the present form a new specific name, and to transfer that proposed by Baird to the above-named species of *Laophonte*. The form here in question is nearly related to the 2 preceding species, though easily distinguishable by its much shorter and stouter body, as also by the structure of the last pair of legs in the female.

Occurrence.—This is by far the most common of our *Dactylopusiæ* and perhaps one of the commonest Harpacticoida, occurring along the whole Norwegian coast, everywhere in the littoral region among algæ, and often also found abundantly in tidal pools.

Distribution.—Heligoland (Claus), coast of Bohuslän (coll. Cleve), British Isles (Brady), coast of France (Canu).

82. *Dactylopusia micronyx*, G. O. Sars, n. sp.

(Pl. LXXIX. fig. 2).

Specific Characters.—*Female.* Body resembling in its general form that of *D. vulgaris*, though somewhat more slender and more tapered behind. Anterior antennæ very small, 9-articulate, penultimate and antepenultimate joints less distinctly defined. 1st pair of legs with the outer ramus short and stout, scarcely exceeding half the length of the inner, terminal joint lamellar, with the 2 outermost claws extremely small; apical claws of inner ramus very unequal, the inner one much elongated, 3 times as long as the outer. Last pair of legs with the distal joint comparatively smaller than in *D. vulgaris* and of a more regular oval form, marginal setæ 7 in number, 2 of them issuing from the inner edge; inner expansion of proximal joint large, triangular, extending as far as the distal joint, none of the joints with chitinous stripes inside the edge.

Male with the inner ramus of 2nd pair of legs similar to that in *D. vulgaris*, but having the apical spines more elongated and rather unequal, the outer one slender, setiform, the inner very strong and somewhat lamellar at the tip.

Last pair of legs, as usual, smaller than in female, with the inner expansion of the proximal joint shorter and provided with only 3 marginal setæ.

Colour pale yellow, with dark red intestine.

Length of adult female 0.65 mm.

Remarks.—This form may be easily distinguished from the preceding species by the small size of the anterior antennæ and by the structure of the 1st and last pairs of legs. The small size of the 2 outermost apical claws on the outer ramus of the 1st pair of legs is especially characteristic, and has given rise to the specific name here proposed.

Occurrence.—I have met with this form occasionally in the upper part of the Christiania Fjord, as also in the neighbourhood of Trondhjem, in depths ranging from 6 to 20 fathoms, muddy bottom.

83. *Dactylopusia brevicornis* (Claus).

(Pl. LXXX).

Dactylopus brevicornis. Claus, Die Copepodenfauna von Nizza, p. 29, Pl. III, figs. 20—25.

Syn: *Dactylopus latipes*, Boeck (not Scott).

Specific Characters.—*Female.* Body comparatively short and stout, with the 2 divisions more sharply defined than in most other species. Cephalic segment rather large and broad, about the length of the 4 succeeding segments combined; rostrum of moderate size, obtuse at the tip. Urosome considerably narrower than the anterior division and only very slightly attenuated behind. Caudal rami twice as broad as they are long, apical setæ rather slender and divergent, the innermost but one almost twice the length of the urosome. Anterior antennæ remarkably short and robust, densely setiferous, and consisting of only 5 distinctly defined joints, 2 of which belong to the distal part, 3rd joint rather expanded and exhibiting a slight indication of a subdivision into 2 segments. Posterior antennæ with the terminal joint of the outer ramus very short. 1st pair of legs rather strongly built, with both rami comparatively short and broad, the inner one being only slightly longer than the outer, apical claws of both rami remarkably strong and curved, minutely denticulated on the concave edge. Last pair of legs with the distal joint oblong oval, somewhat tapering distally, and more or less extant, being visible in the dorsal view of the animal, marginal setæ 6 in number and rather slender; inner expansion of proximal joint of moderate size, scarcely however extending as far as the distal joint, marginal setæ rather unequal, the middle one much longer than the others. Ovisac narrow oblong in form.

Male with the inner ramus of 2nd pair of legs rather unlike that in the other species, the distal joint being considerably shortened, and having the outer edge fringed with long delicate cilia, tip armed with a remarkably strong angularly bent spine. Last pair of legs with the distal joint of about same shape as in the female, but of smaller size and only provided with 5 marginal setæ; inner expansion of proximal joint, as usual, far less prominent and carrying 3 spiniform setæ.

Colour pale yellow, urosome and part of metasome tinged with orange. Length of adult female 0.63 mm.

Remarks.—This is a very distinct and easily recognizable form, differing in some points rather markedly from the other species. The *Dactylopus latipes* of Boeck is unquestionably identical with Claus's species. This is however not the case with the form described by Scott under the same name from the Gulf of Guinea.

Occurrence.—I have only met with this form quite occasionally in the upper part of the Christiania Fjord, as also in some places on the west coast of Norway. The specimens were found among algæ in the littoral region. Th. Scott also records this form from the Finmark coast.

Distribution.—Mediterranean (Claus), British Isles (Brady).

Gen. 34. **Dactylopodella**, G. O. Sars, n.

Generic Characters.—Body much dilated and slightly depressed in front, attenuated behind. Cephalic segment large and expanded, with the rostrum well developed and deflexed. Urosome much narrower than the anterior division; caudal rami short, apical setæ normal. Anterior antennæ comparatively small, with the number of articulations reduced. Posterior antennæ with the outer ramus of moderate size, biarticulate. Oral parts normally developed. 1st pair of legs with the outer ramus shorter than the inner and somewhat resembling that in the genus *Dactylopusia*, though having the apical claws much more slender and geniculate; inner ramus only composed of 2 joints, the proximal one only slightly dilated, distal joint armed with 2 very strong subequal claws. Natatory legs with the outer ramus much longer than the inner and densely spinulose outside; inner ramus of 2nd pair of legs with the 2 outer joints in both sexes confluent, in male tipped with a strong spine, outer edge unarmed. Middle joint of same ramus

in 3rd and 4th pairs with only a single natatory seta inside. Last pair of legs poorly developed, distal joint very small, with some of the marginal setæ spiniform.

Remarks.—This new genus is founded upon the form recorded by Claus as *Dactylopus flavus*, which on a closer examination has proved to differ in some of the anatomical details rather conspicuously from the other species of the old genus *Dactylopus*, so that it more properly ought to be generically separated.

84. *Dactylopodella flava* (Claus).

(Pl. LXXXI).

Dactylopus flavus, Claus, Die Copepoden-Fanna von Nizza, p. 28, Pl. III, figs. 13–16.

Specific Characters.—*Female.* Body short, pyriform in outline, with rather strongly chitinized integuments. Cephalic segment very large and broad, fully twice as long as the 3 succeeding segment combined, dorsal face evenly vaulted; rostrum rather strong, pointing straight below, tip blunted. Epimeral plates of the 3 succeeding segments small, rounded behind. Last segment of metasome considerably narrower than the preceding ones. Urosome scarcely attaining half the length of the anterior division and slightly tapered behind; posterior edge of the segments finely spinulose ventrally. Caudal rami broader than they are long, middle apical setæ rather elongated, innermost seta small and simple. Anterior antennæ composed of 6 joints only, 2 of which belong to the distal part. 1st pair of legs with the outer ramus shorter than the proximal joint of the inner, terminal joint lamellar, with the apical claws very slender and gradually increasing in length inwards, seta attached inside the claws much elongated; inner ramus with the seta of the proximal joint attached beyond the middle, distal joint short, slightly widening towards the tip, apical claws very strong, falciform, and distinctly denticulated on the concave edge. Spines of the outer ramus in all the legs densely pectinate outside. Last pair of legs with the distal joint very small, subcordate, with 5 very unequal and partly spiniform marginal setæ; inner expansion of proximal joint rather broad and likewise provided with 5 marginal setæ, the outermost but one much longer than the others. Ovisac comparatively small.

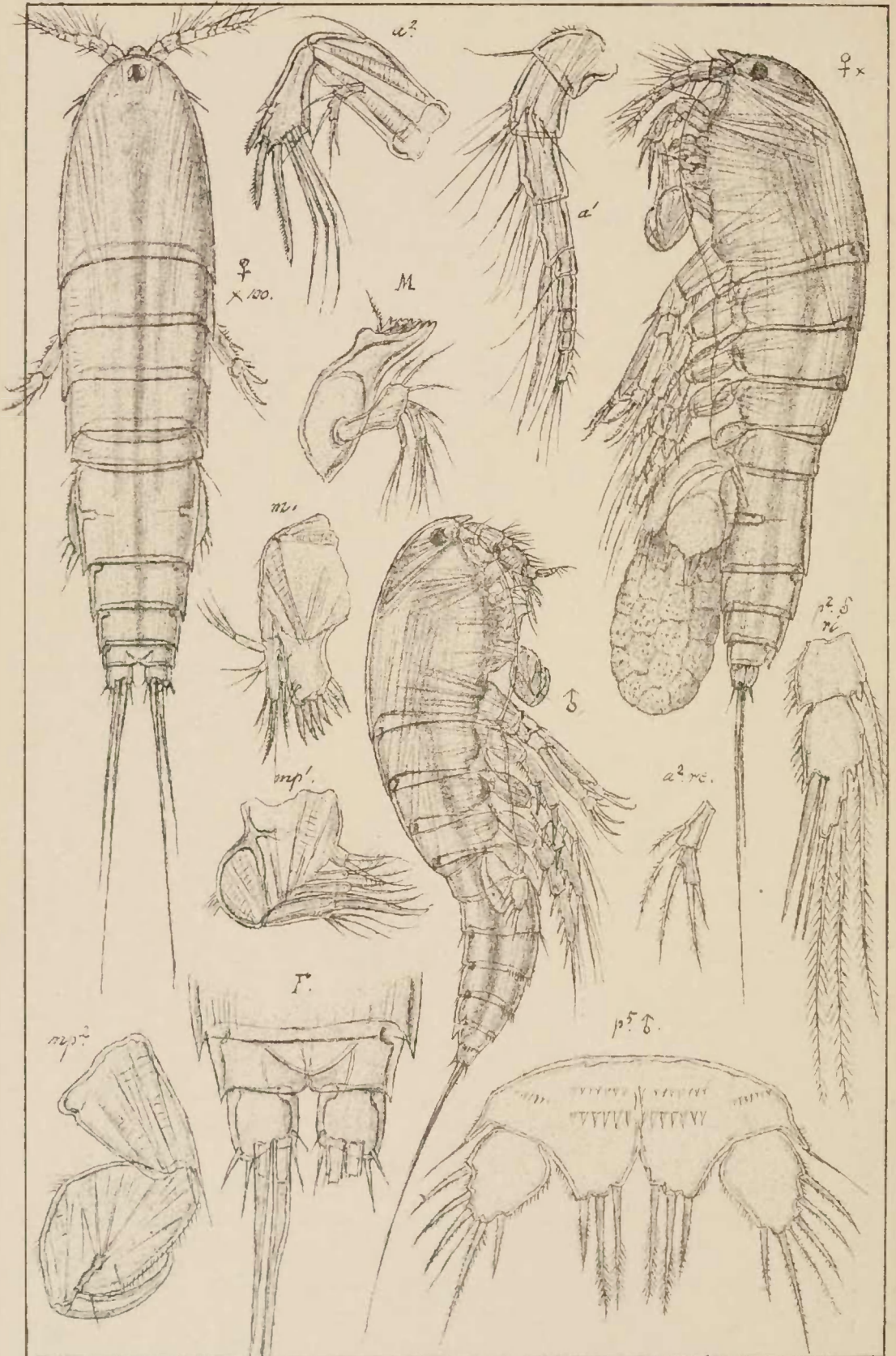
Male agreeing with the female both in general form and structure, though exhibiting the usual sexual differences. Anterior antennæ very stout and apparently only composed of 4 joints, the penultimate much dilated, vesicular, the last lamiform and very mobile. Inner ramus of 2nd pair of legs tipped with a strong spine. Last pair of legs resembling those in female, but having the inner expansion of the proximal joint much less prominent and only provided with 2 marginal setæ.

Copepoda

Harpacticoida

Thalestridæ

Pl. LXV.



G. O. Sars, autogr.

Parathalestris Clausi, (Norman.)

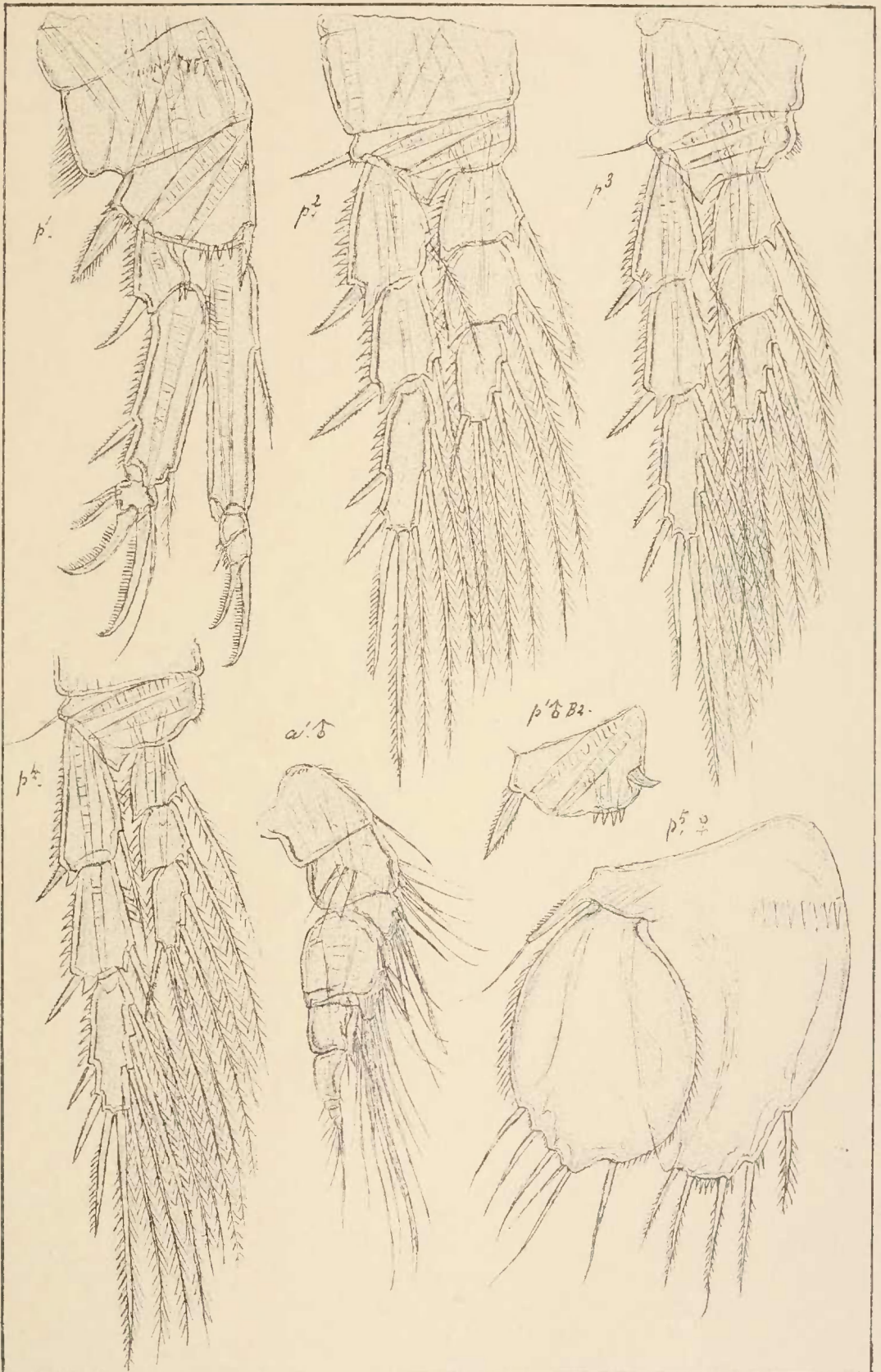
Norsk Lithgr. Officin.

Copepoda

Harpacticoida

Thalestridæ

Pl. LXVI.



G.O. Sars, autogr.

Norsk Lithgr. Officin.

Parathalestris clausi, (Norman.)
(continued)

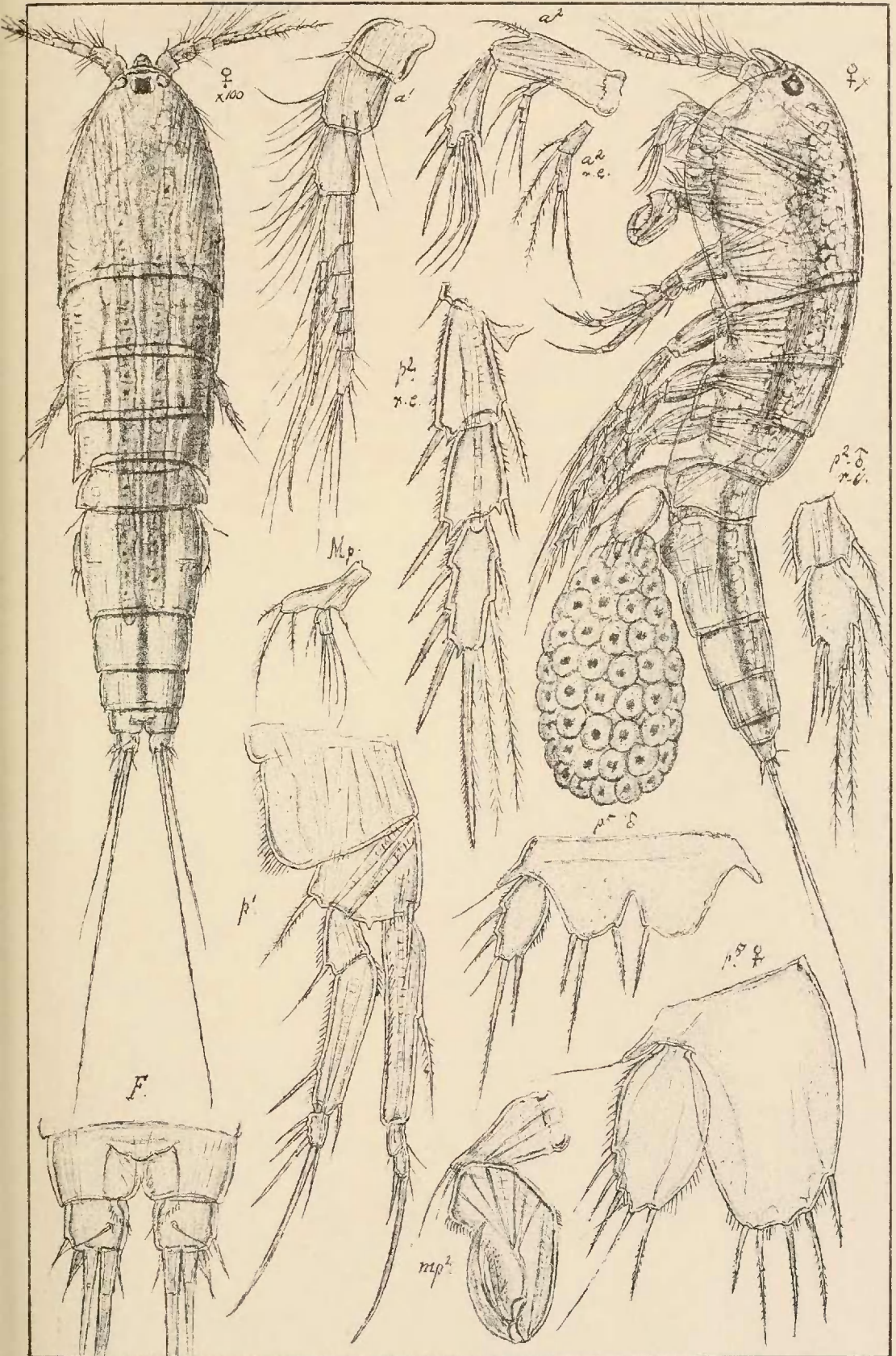


Copepoda

Thalestridæ

Harpacticoida

Pl. LXVIII.



G.O. Sars, autogr.

Parathalestris hibernica, (Brady & Rob.)

Norsk Lithgr. Officin.



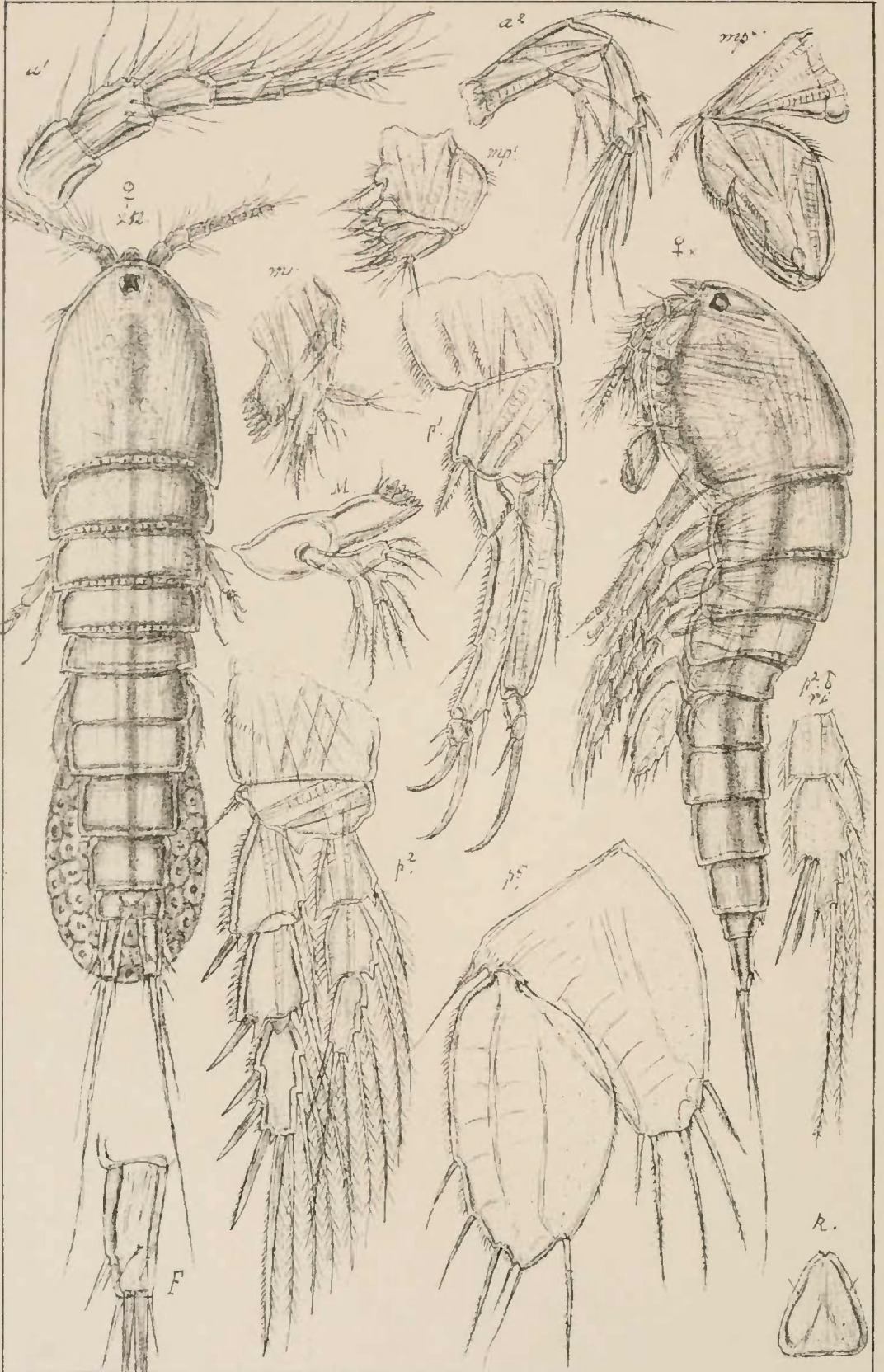


Copepoda

Harpacticoida

Pl. LXIX.

Thalestridæ



G. O. Sars, autogr.

Parathalestris Jacksoni, (Scott)

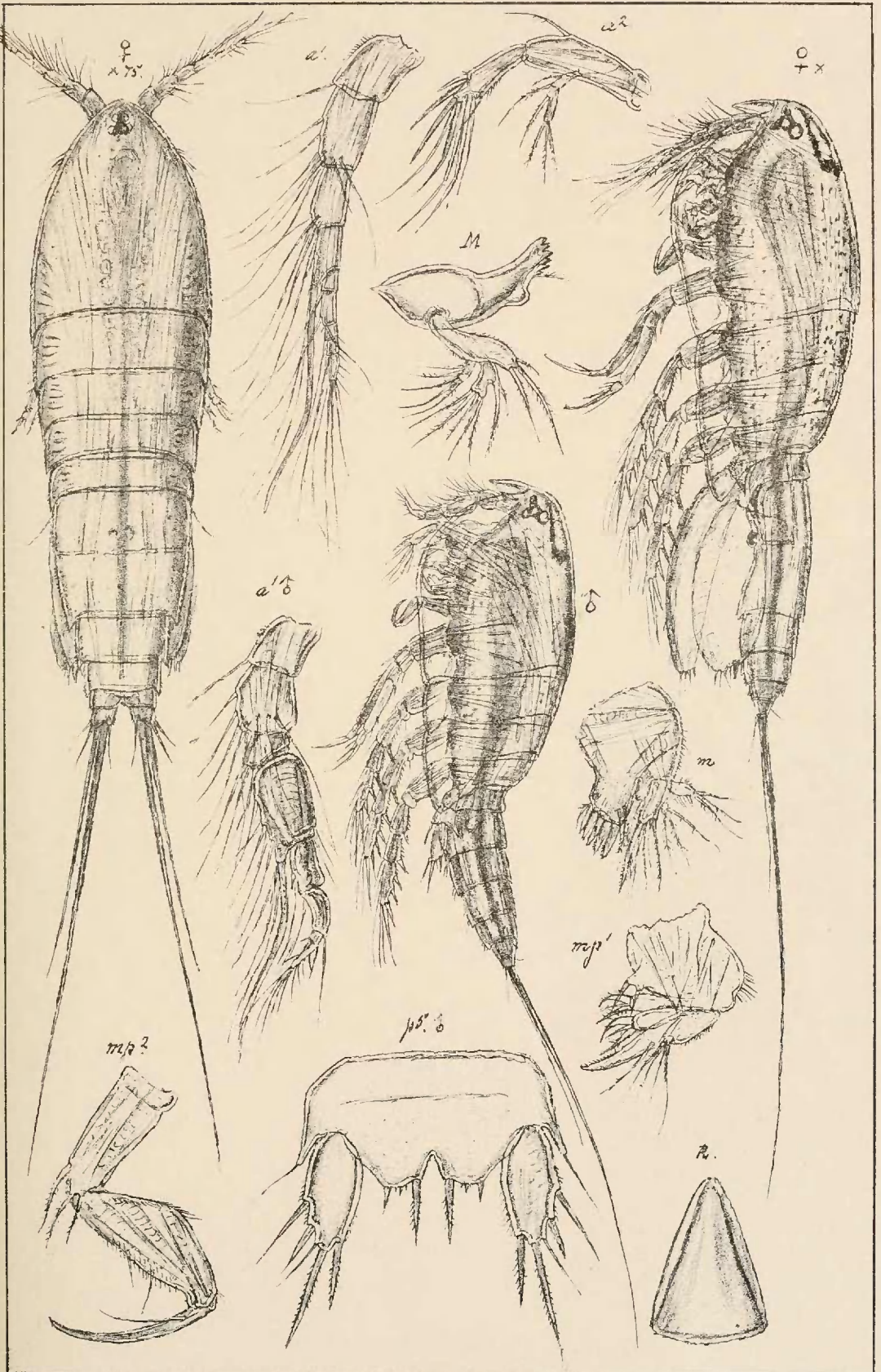
Norsk Lithgr. Officin.

Copepoda

Harpacticoida

Thalestridæ

Pl. LXX.



G.O. Sars, autogr.

Phyllothalestris mysis, (Claus)

Norsk Lithgr. Officin.



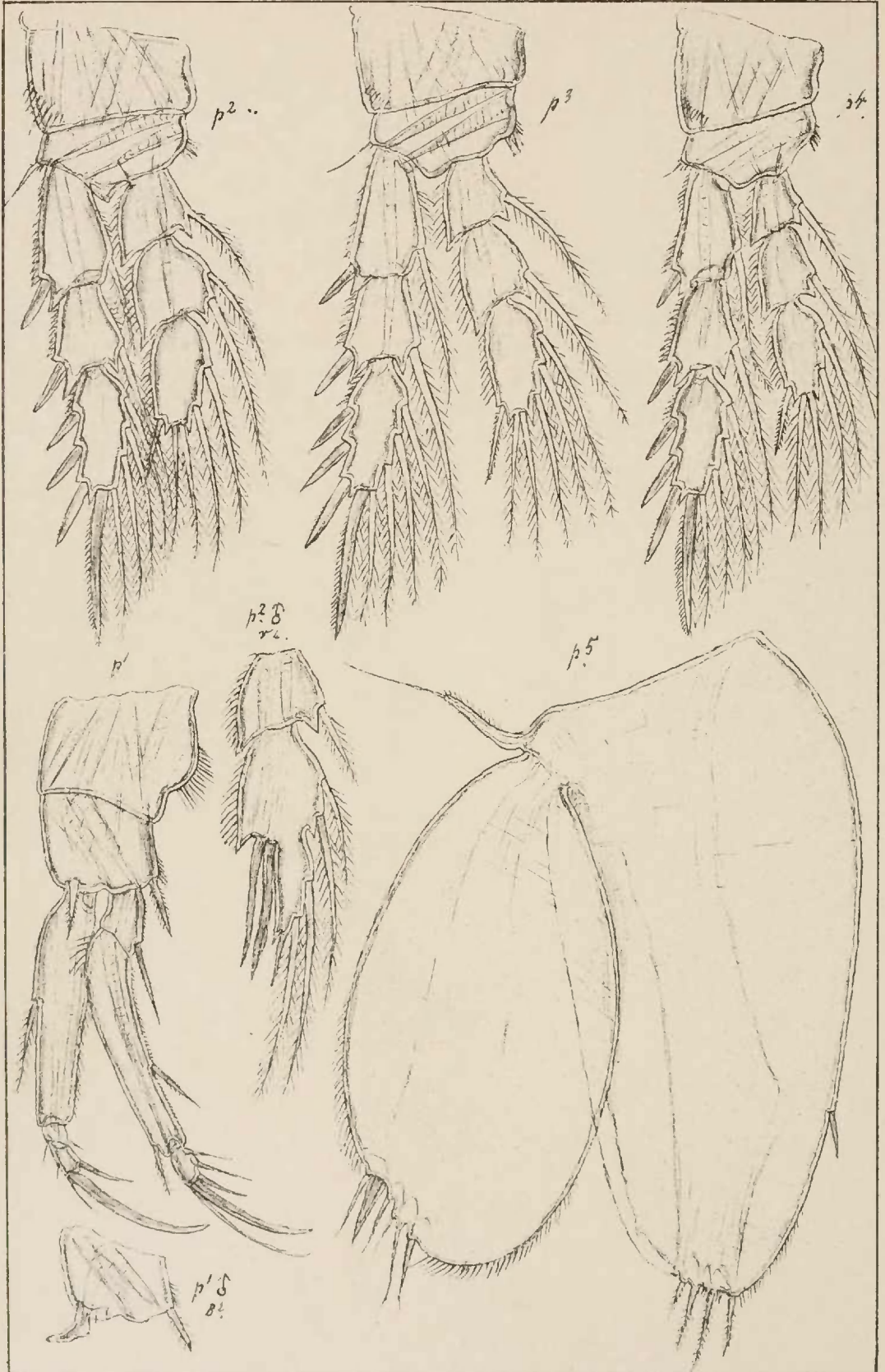


Copepoda

Thalestridæ

Harpacticoida

Pl. LXXI



G.O. Sars, autogr.

Norsk Lithgr. Officin.

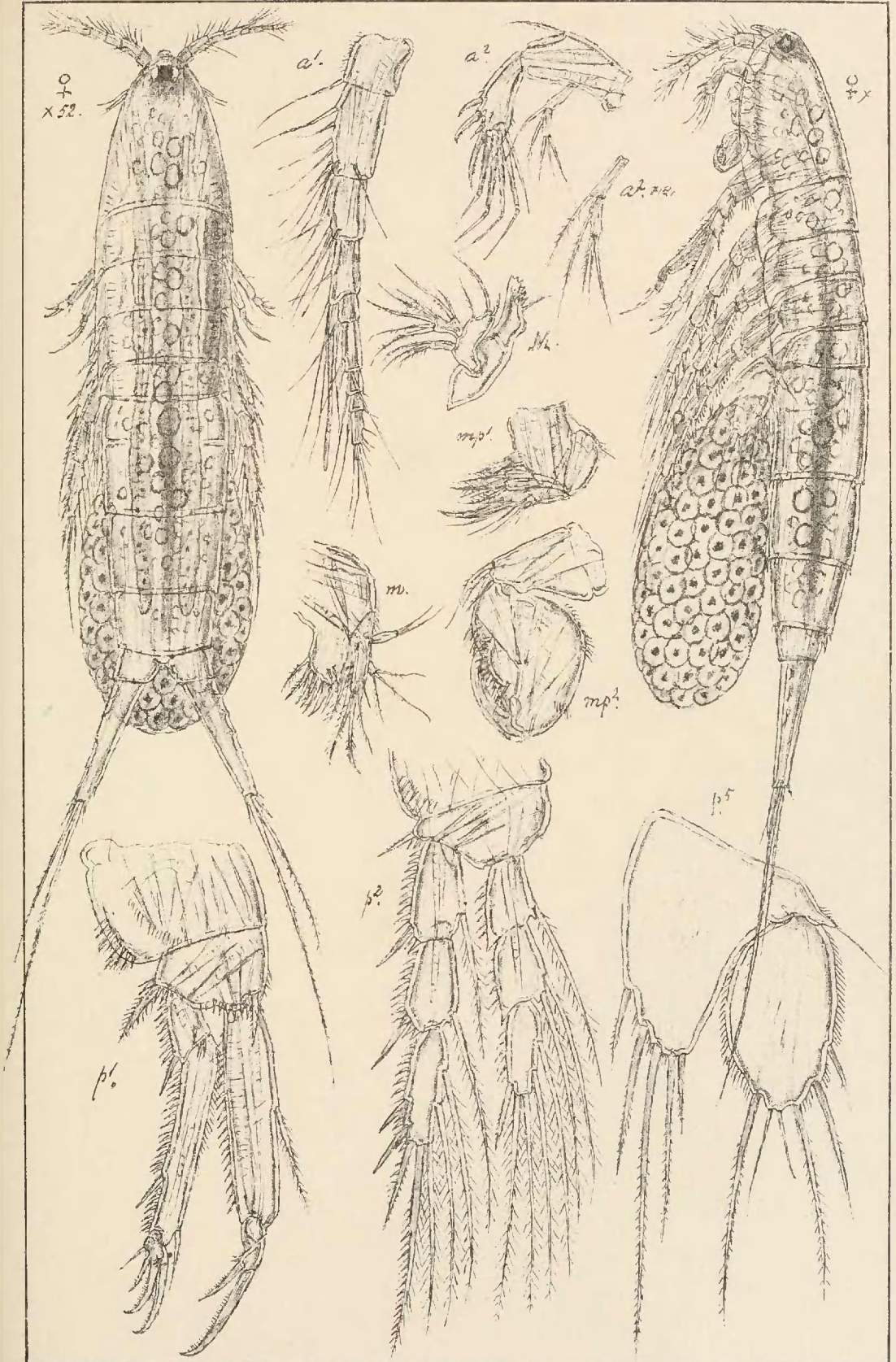
Phyllothalestris mysis, (Claus)
(continued)

Copepoda

Thalestridæ

Harpacticoida

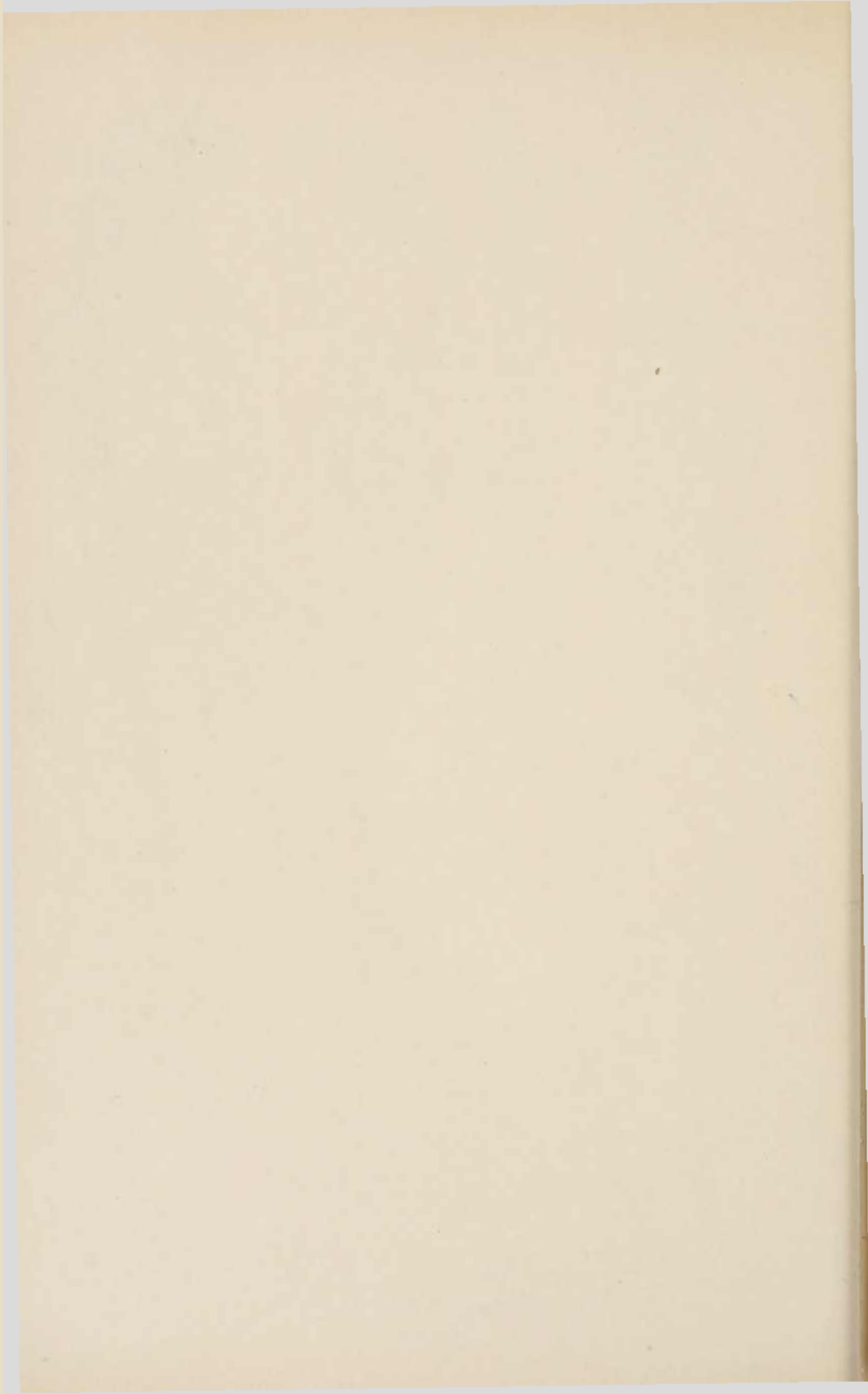
Pl. LXXII.



G. O. Sars, autogr.

Halithalestris Croni, (Krøyer)

Norsk Lithgr. Officin.



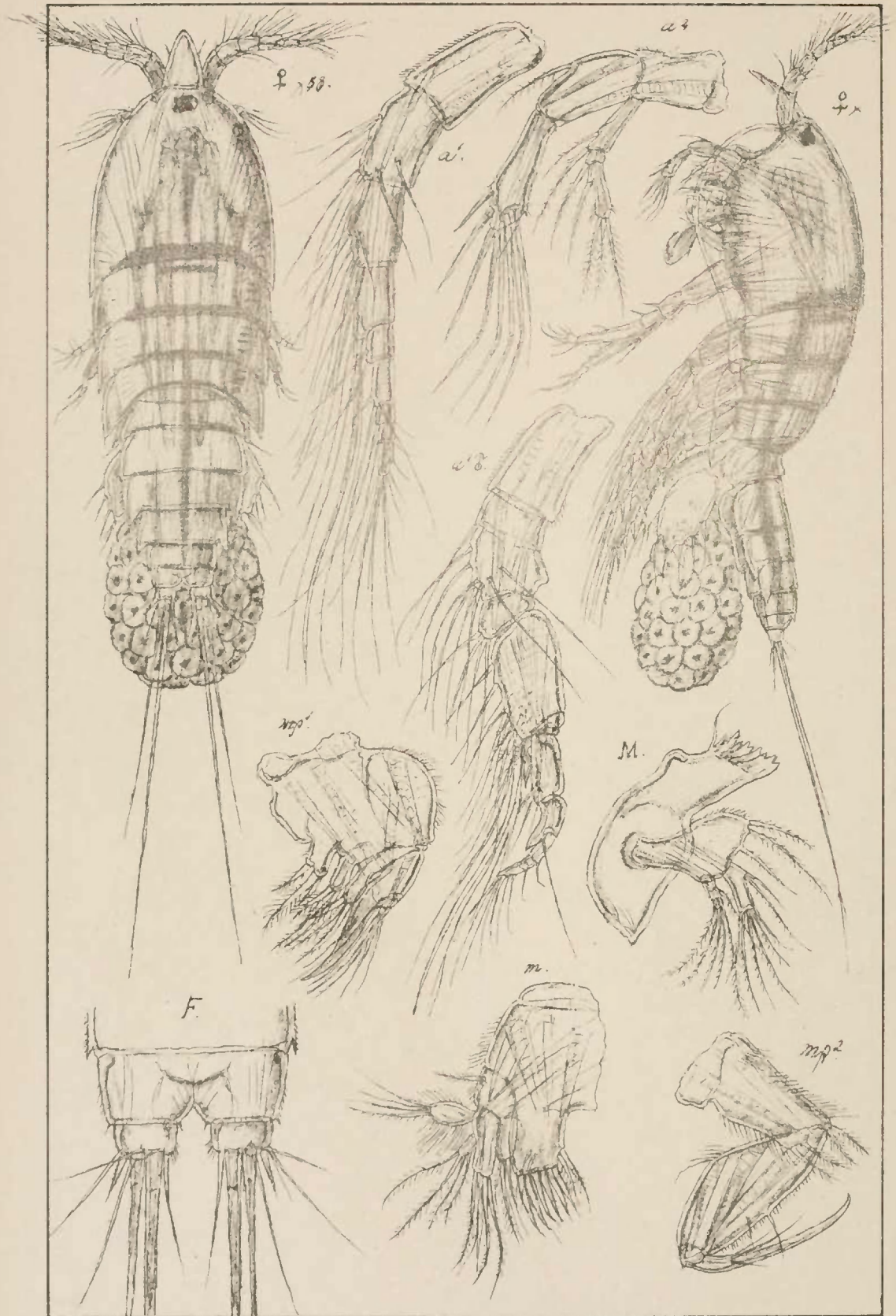


Copepoda

Thalestridæ

Harpacticoida

Pl. LXXIII.



G. O. Sars, autogr.

Norsk Lithgr. Officin.

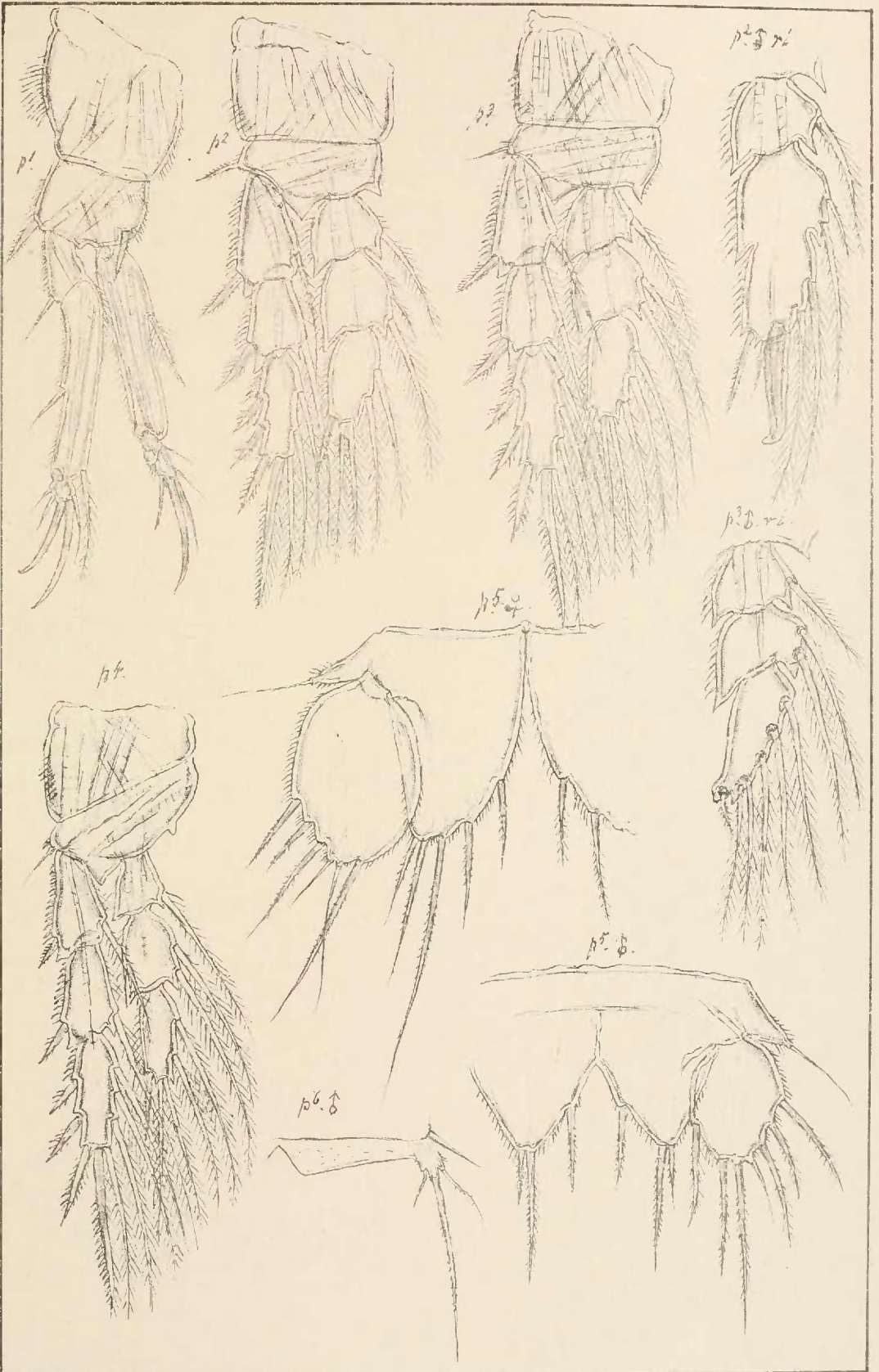
Rynchothalestris rufocincta, (Norm.)

Copepoda

Thalestridæ

Harpacticoida

Pl. LXXIV.



G.O. Sars, autogr.

Norsk Lithgr. Officin.

Rhynchothalestris rufocincta, (Norm.)

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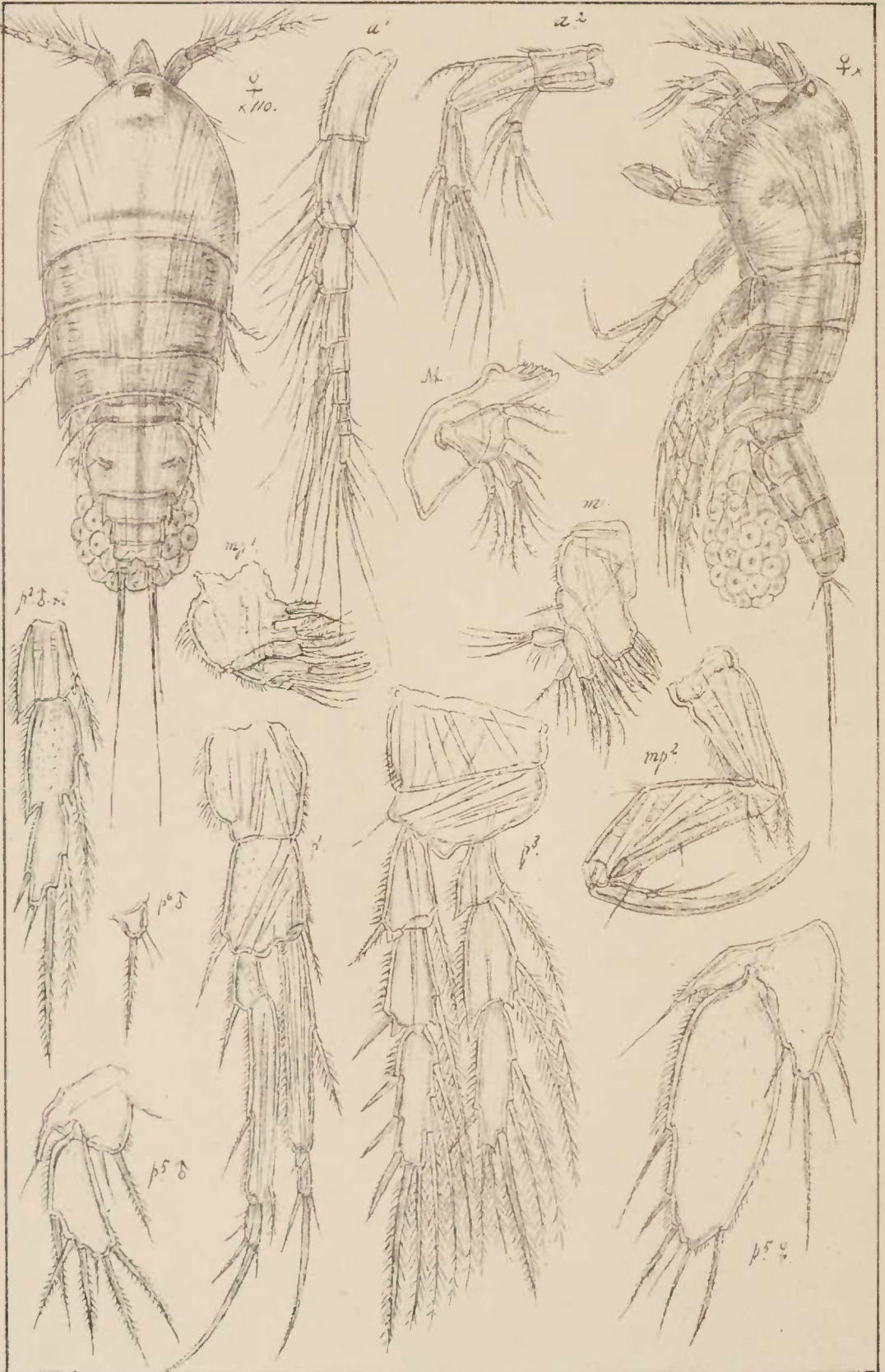


Copepoda

Thalestridæ

Harpacticoida

Pl. LXXV.



G.O. Sars autogr.

Norsk Lithgr. Officin.

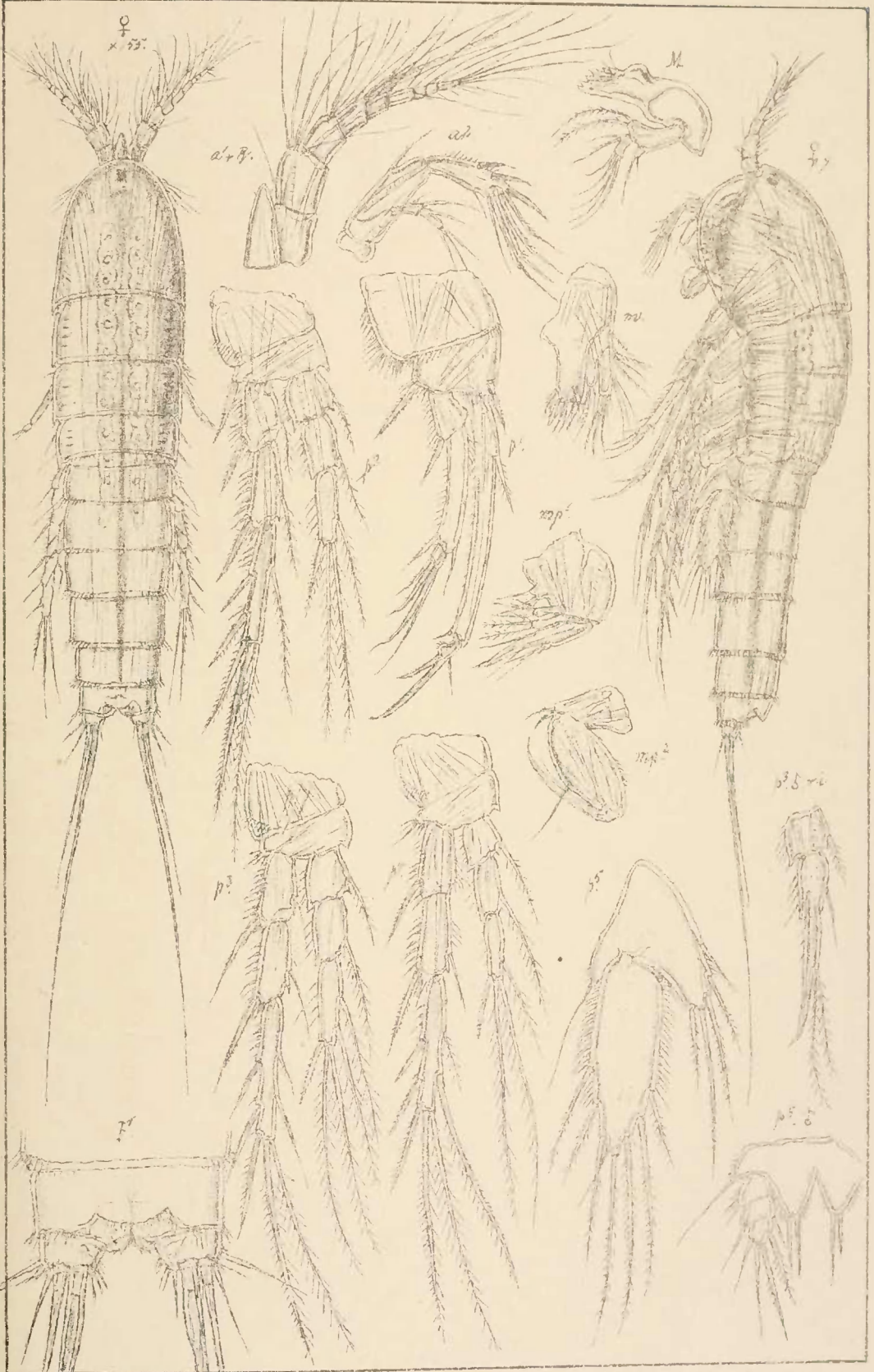
Rhynchothalestris helgolandica, (Claus)

Copepoda

Harpacticoida

Thalestridæ

Pl. LXXVI



G.O. Sars, autogr.

Norsk Lithgr. Officin.

Microthalestris forcicula, (Claus)

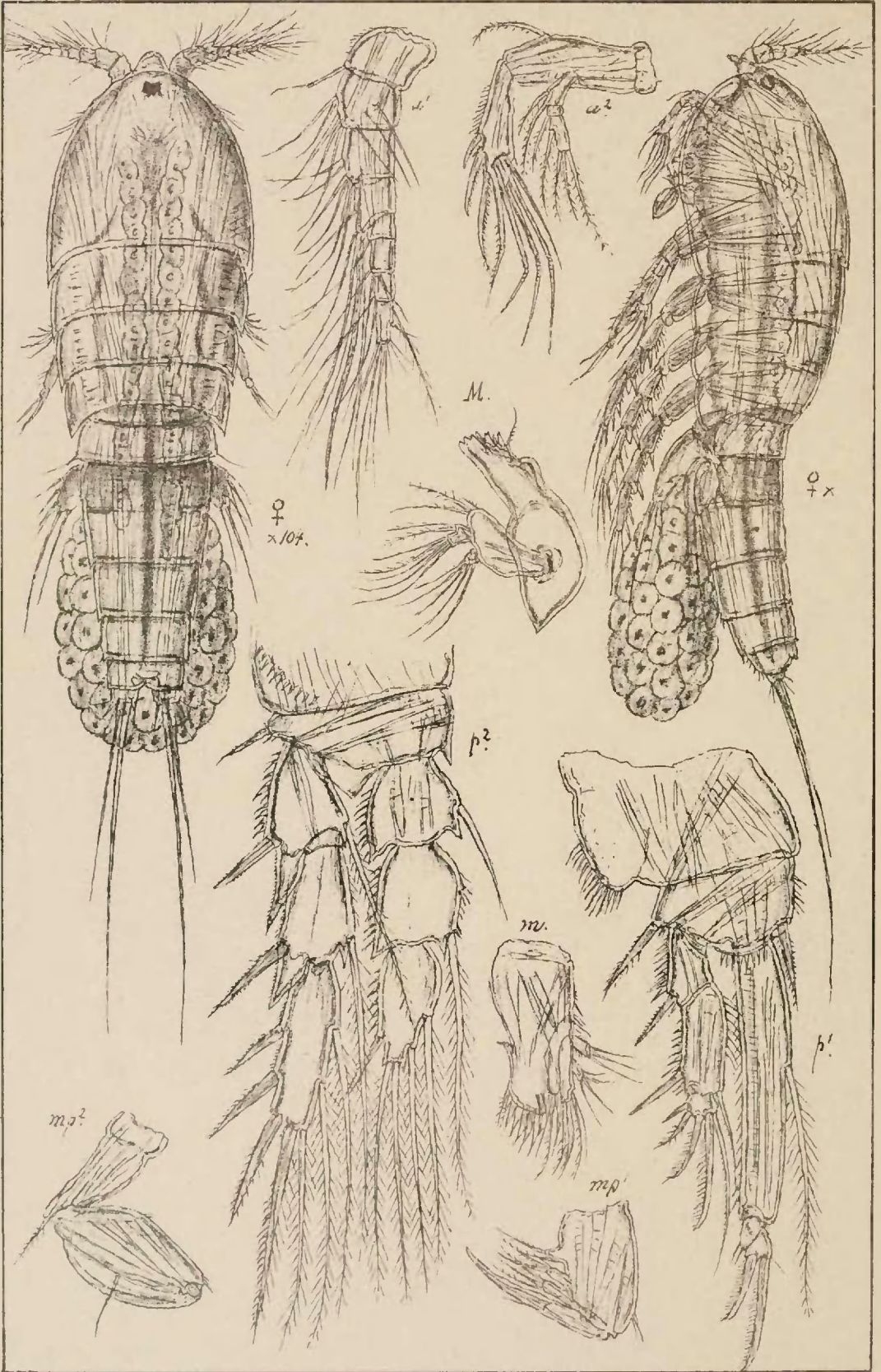


Copepoda

Thalestridæ

Harpacticoida

Pl. LXXII



G.O. Sars. autogr.

Dactylopusia thisboides (Claus.)

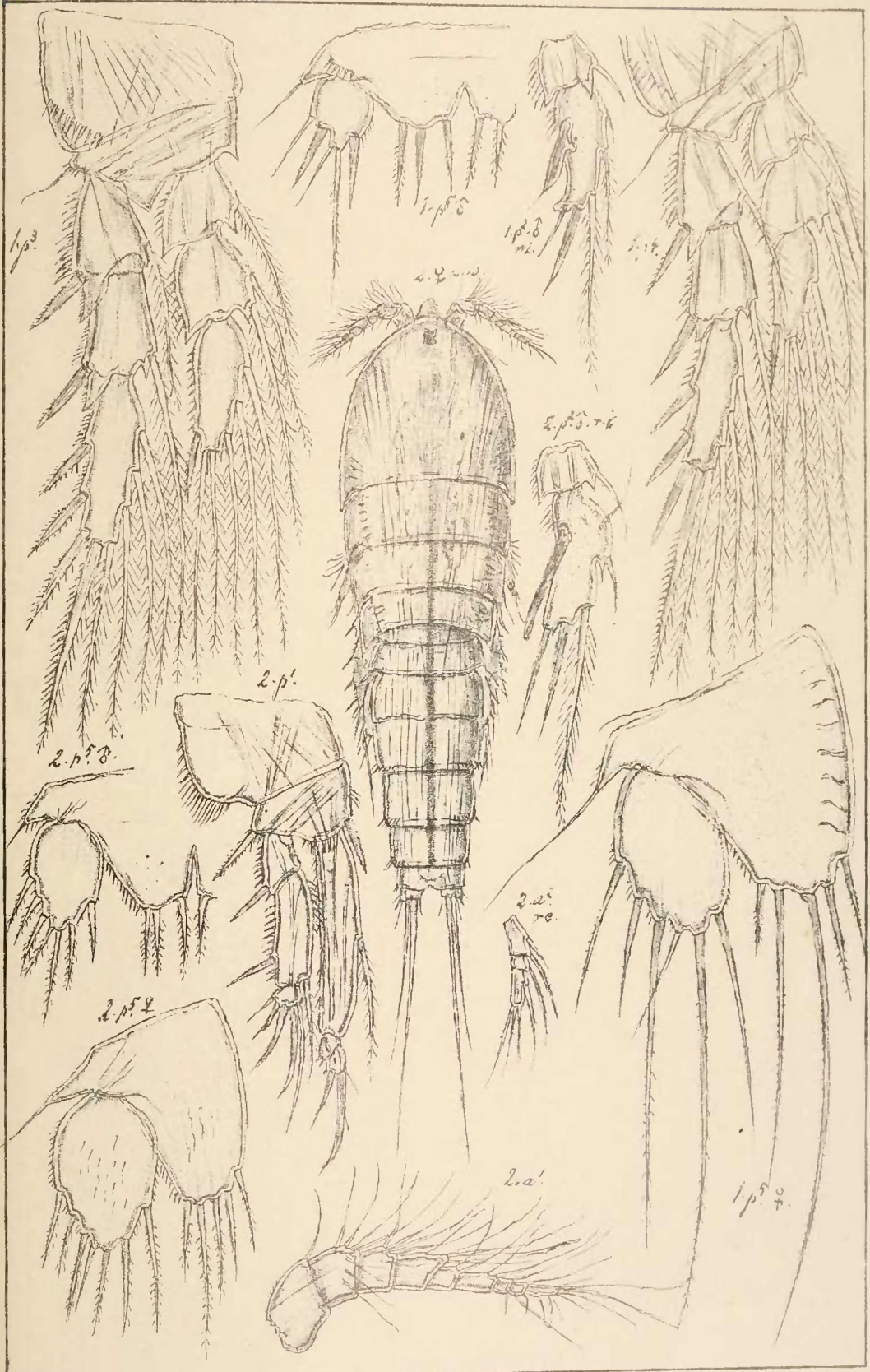
Norsk Lithgr. Officin.

Copepoda

Thalestridæ

Harpacticoida

Pl. LXVIII.



G.O. Sars, autogr.

Norsk Litogr. Officin.

Dactylopusia thisboidea (Claus.)
(continued)

Dactylopusia neglecta, G.O. Sars

