Colour generally dark bluish grey.

Length of adult female about 0.75 mm.

Remarks.—In its general appearance this form somewhat resembles the preceding species, but is of much smaller size and has the body less robust. It moreover exhibits several well-marked differences in the structure of the antennæ and legs, as indicated in the above diagnosis. The *Cyclops pygmæus* of Rehberg is unquestionably identical with the present species.

Occurrence.—I have taken this form in similar localities to those in which the preceding species has been found. It also occurs occasionally at the borders of large lakes or in closed lagoons formed by the reflux of the water in these lakes during the dry season.

Distribution.—Throughout Europe, Turkestan (Uljanin), Australia (G. O. Sars).

48. Platycyclops fimbriatus (Fischer).

(Pl. L).

Cyclops fimbriatus, Fischer, Beiträge zur Kenntniss der Cyclopiden (Fortsetzung). Bull. Soc. Imp. Moscou 1853, p. 94, Pl. III, figs. 19—28, 30.

Syn: *Cyclops crassicornis*, G. O. Sars (vix Müller).

Specific Characters.—Female. Body comparatively robust, with the anterior division, as in the 2 preceding species, pronouncedly depressed and oval in outline. Cephalic segment large, considerably exceeding in length the 4 succeeding ones combined, and narrowly rounded in front. Last trunk-segment with the lateral parts slightly produced and clothed with stiff, posteriorly-curving hairs. Tail about equalling in length $^2/_3$ of the anterior division, and slightly tapered distally; genital segment longer than the 2 succeeding ones combined, and somewhat dilated in front; anal segment shorter than the preceding one, and nearly transversely truncated at the end. Caudal rami much more prolonged than in the 2 preceding species, almost attaining the length of the last 3 segments combined, and rather remote at the base, being narrowly linear in form and only slightly divergent; seta of outer edge attached at some distance from the end, and somewhat dorsally; upper face of each ramus exhibiting, just in front of this seta, a short transverse row of small denticles; middle apical setæ rather strong, and clothed in their median part with scattered, stiff hairs, the inner one being nearly twice as long as the outer and about the length of the tail; seta of inner corner a little longer than the spine of the outer. Eye large and conspicuous. Anterior antennæ scarcely more than half as long as the cephalic segment, and rather dilated at the base, being composed of only 8 joints, densely clothed with

strong, partly ciliated setæ. Posterior antennæ with all the joints well defined, the terminal one very short, scarcely more than half the length of the penultimate one. Maxillipeds short and stout, the posterior ones, however, somewhat more fully developed than in the 2 preceding species. Natatory legs resembling in structure those in *P. phaleratus:* apical spine of inner ramus in 1st pair, however, comparatively larger; those in 4th pair rather unequal, the inner one being about twice as long as the outer. Last pair of legs well defined, resembling in structure those in *P. affinis:* spine of inner edge, however, considerably shorter. Ovisacs in some cases rather large, oblong oval in form, and closely appressed to the tail. Seminal receptacle rather broad, transversely elliptical in form.

Colour whitish, with the ovarial tubes dark bluish; eggs in the ovisacs generally of a similar dark hue; eye bright red.

Length of adult female about 0.90 mm.

Remarks.—This form was at first identified by me with *Cyclops crassicornis* of O. Fr. Müller; but it is very questionable if the form so named can be assigned to the present species, or even to the genus *Cyclops*. Fischer's description, on the other hand, does not leave any doubt about the identity of his species with that here in question. It may be easily recognised from either of the 2 preceding species by the short and thick anterior antennæ, and the rather different shape of the caudal rami.

Occurrence.—I have met with this form only occasionally in small ponds and ditches, more frequently in larger lakes, where in some cases it descends to rather considerable depths. Thus in Lake Mjøsen I have taken it in depths down to 50 fathoms. Like the other species of this genus, it is a true bottom-form, always keeping close to the ground.

Distribution.—Sweden (Lilljeborg), British Isles (Brady), Germany (Schmeil), Poland (Lande), Russia (Fischer).

Section 2. Siphonostoma.

General Characters.—Anterior antennæ in male generally (but not always) geniculated. Posterior antennæ, as a rule, provided with a very small uniarticulate appendage as the rudiment of an outer ramus. Oral parts not adapted for mastication, the anterior and posterior lips being generally produced to form a prominent cone, terminating in some cases in a long siphon. Mandibles with

the masticatory part styliform. Maxillæ feeble, and generally divided into 2 setiferous lobes. Both pairs of maxillipeds subcheliform, adapted for prehension. Natatory legs, as a rule, well developed, with triarticulate rami.

Remarks.—The name "Siphonostoma" is here taken in a much more restricted sense than is done by its proposer, Thorell, viz., to designate only a section of semiparasitic Cyclopoida, in which the mouth, by the prolongation of the anterior and posterior lips, has assumed a more or less suctorial character, recalling that found in some of the true parasites, for instance in the *Caligoida*. Yet the characteristic Cyclopoid appearance in all of them has been preserved, and none of them are to be regarded as permanent parasites, as they have the power to leave their hosts at will, and to move freely through the water by the aid of their generally well developed natatory legs. Indeed, many of the forms have hitherto only been found in such a free condition, though the structure of the mouth organs evidently show them to be adapted for temporary parasitic habits.

In the restriction here adopted, the present section answers fairly well to the family *Asterocheridæ* of Giesbrecht. This family, which is included in his great division *Amphartbrandria*, comprises several types, which are so widely different, that in my opinion they cannot properly be combined within one and the same family. Giesbrecht himself has also been aware of this difference, and for this reason has established within the family *Asterocheridæ* a number of so-called sub-families. These I regard as true families, and their number will be still somewhat increased.

Fam. 4. Ascomyzontidæ.

Characters.—Body Cyclops-like, with the anterior division more or less dilated, the posterior narrow and attenuated. Anterior antennæ generally slender and composed of a great number of articulations, the outermost of which form a distinctly-defined terminal part, the joint preceding this part being constantly provided with a very fully developed sensory filament; same antennæ in male more or less distinctly hinged, with the number of joints somewhat reduced. Posterior antennæ moderately strong, 4-articulate, 1st, or coxal, joint short, the 2 succeeding ones more or less prolonged, and forming together a geniculate bend, last joint small, carrying on the tip a slender spine accompanied by 2 or 3 short bristles, one of which issues from a knob-like prominence of the anterior edge.

Oral cone more or less produced. Mandibles penetrating the cone up to its apex, and having outside at the base a slender, generally bisetose palp. Maxillæ with the inner lobe the larger. Anterior maxillipeds, as a rule, shorter and stouter than the posterior, and having the basal joint imperfectly defined, terminal claw uniarticulate or in some cases biarticulate; that of the posterior ones always 3-articulate. Natatory legs on the whole of normal structure. Last pair of legs biarticulate, with the proximal joint laminar and in most cases imperfectly defined from the segment, distal joint lamelliform, and extended laterally.

Remarks.—This family, established by Thorell, is here taken in a more restricted sense than is done by that author, who comprised within it also the genus *Dyspontius*, which ought to be referred to quite a distinct family. Nor does it fully answer to the sub-family *Asterocherinæ* of Giesbrecht, as I have found it necessary to remove the genus *Acontiophorus* in to a separate family.

Gen. 17. **Ascomyzon**, Thorell, 1859.

Syn: Asterocheres, Boeck.
„ Cyclopicera, Brady (part).
„ Artotrogus, Brady (part).

Generic Characters.—Body pronouncedly depressed, with the anterior division broad and expanded. Cephalic segment very large and having the rostral prominence more or less distinctly defined and incurved. Penultimate trunk-segment much smaller than the preceding one, and partly covered by it; last segment still smaller, and firmly connected with the genital segment. Tail not much prolonged, and composed in female of 3, in male of 4 segments; genital segment in female considerably dilated, and having the lateral edges clothed with stiff hairs; that of male still more tumefied, and provided at the end, on each side, with a prominent triangular lobe carrying a spiniform seta. Caudal rami comparatively short and without any seta on the outer edge; apical setæ of moderate length, the 2 mediate ones being, as usual, the largest, and distinctly jointed at the base. Anterior antennæ slender and elongated, exhibiting a proximal, somewhat thicker portion composed of 9 short articulations, and a much narrower, linear distal portion; terminal part, as a rule, composed of 3 articulations, which however in some cases may be more or less completely coalesced; same antennæ in male distinctly hinged. Posterior antennæ with the penultimate joint almost as long as the preceding one. Oral cone, as a rule, pyriform in shape, though in some cases abruptly narrowed to form a slender straight siphonal tube. Man-

dibles with the masticatory part very narrow and lancet-shaped at the end; palp biarticulate. Maxillæ with the lobes rather unequal, both carrying on the tip 4 setæ. Maxillipeds more or less powerfully developed, the posterior ones having in male a slight palmar projection near the base of the hand. Natatory legs of moderate size, terminal joint of outer ramus in 1st pair with only 2 seta inside, in the other pairs with 4 such setæ. Last pair of legs with the proximal joint imperfectly defined from the segment, but carrying outside the usual seta; distal joint somewhat tapered distally and ciliated on both edges, apex provided with 2 curved setæ, generally accompanied inside by a small bristle.

Remarks.—This genus, which is the type of the family *Ascomyzontidæ*, was established in the year 1859 by Thorell, to comprise a form found by him parasitic in the branchial cavity of Ascidians. In the very same year Boeck established his genus *Asterocheres*, which has turned out to be identical with Thorell's genus. Although Boeck's paper seems to have been published a little prior to Thorell's Monograph, it appears to me that the generic name proposed by Boeck can scarcely be admitted, because the species of this genus are by no means exclusively parasites of Asterids, but are found to infest many other invertebrate animals. For the same reason, of course, the family-name *Asterocheridæ*, proposed by Giesbrecht, ought to be rejected. Brady has confounded this genus with the genus *Artotrogus* of Boeck, which in reality belongs to quite a different family, and one of the species *(A. latum)* has moreover been referred by that author to his genus *Cyclopicera*. The present genus seems to be very rich in species. In the following pages will be described 6 different species belonging to the Fauna of Norway.

49. Ascomyzon asterocheres, Boeck.

(Pl. LI & LII).

Asterocheres Lilljeborgi, Boeck, Tvende nye parasitiske Krebsdyr. Chr. Vid. Selsk. Forh. f. 1859, p. 6, Pl. II.

Specific Characters.—Female. Anterior division of body very broad and flattened, its greatest width fully equalling the length. Cephalic segment exceedingly large, being more than twice as long as the 4 succeeding segments combined, and almost semicircular in outline; lateral edges not inflexed; rostrum imperfectly defined, and only represented by a slight convexity below the front. Epimeral parts of the trunk-segments expanded laterally and acutangular behind. Penultimate segment, as usual, much smaller than the preceding one; last segment still smaller. Tail comparatively short, not nearly attaining half the length of the anterior division, and

gradually attenuated behind; genital segment considerably tumefied; anal segment exceeding in length the preceding one. Caudal rami about twice as long as they are broad, and scarcely at all divergent, tip transversely truncated, with the setæ rather unequal, the innermost but one being, as usual, the longest, and considerably exceeding the tail in length. Anterior antennæ almost equalling in length the cephalic segment, and composed of only 18 articulations, the 3 joints of the terminal part being fused together to form a single joint. Posterior antennæ comparatively strongly built, with the penultimate joint fully as long as the preceding one and not much narrower; apical spine rather strong. Oral cone pyriform in shape, and only extending to the insertions of the posterior maxillipeds. Mandibles with the masticatory part of the usual narrow lancet-shaped appearance; palp rather fully developed. Maxillæ with the lobes less unequal than usual, apical setæ of both lobes rather strong and finely ciliated. Anterior maxillipeds very powerfully developed, with the claw exceedingly strong and curved like a hook at the end. Posterior maxillipeds likewise rather powerful, though somewhat less so than the anterior ones. Natatory legs less fully developed than in most other species, and more or less incurved: their structure, however, quite normal. Last pair of legs with the distal joint oblong in form, and provided, in addition to the 2 apical setæ, with a small bristle at some distance from the tip inside. Ovisacs of moderate size, oval in form, and somewhat divergent.

Male smaller than female, and having the body somewhat less broad. Tail composed of 4 well-defined segments, the anterior of which is greatly tumefied, to form the lateral hollows in which the rather large spermatophores are received. Anterior antennæ composed of 17 joints, the last 2 of which admit of being bent upon the preceding part. Posterior maxillipeds with a well-marked palmar prominence near the base of the hand.

Body in both sexes semipellucid, with a more or less distinct reddish tinge.

Length of adult female about 1.30 mm., of male scarcely 1 mm.

Remarks.—This form was described by Boeck in the year 1859 under the name of *Asterocheres Lilljeborgi*. As, however, the term *Asterocheres* cannot properly be admitted as a generic designation, I propose to use it here as a specific one, substituting it for the original name *Lilljeborgi*. Hereby two advantages are gained, 1stly, that the name *Asterocheres* may be reserved for the present species, though in a somewhat different sense, and 2ndly, that the specific name *Lilljeborgi* proposed by Thorell for his species may stand unchanged.

The present form is a well-marked and easily recognisable species, being especially distinguished by the very broad and flattened body and the unusually

powerful development of the maxillipeds. According to Giesbrecht, the *Ascomyzon Lilljeborgi* of Canu is not this species.

Occurrence.—Boeck found this form on a specimen of *Echinaster sanguinolentus* taken at Farsund, south coast of Norway. I myself, many years ago, collected some specimens off the west coast, and, as far as I remember, from our common *Asterias rubens*.

Distribution.—British Isles (Brady, Scott).

50. Ascomyzon Lilljeborgi, Thorell.

(Pl. LIII).

Ascomyzon Lilljeborgi, Thorell, Bidrag til kännedomen om Krustaceer, som levfa i arter af slägtet Ascidia, p. 78, Pl. XIV, fig. 21.

Syn: *Asterocheres siphonatus*, Giesbr.

Specific Characters.—Female. Anterior division of body moderately expanded and rounded oval in outline, the greatest width not nearly attaining the length; epimeral parts of the segments less prominent than in the preceding species, and rounded at the end. Cephalic segment only slightly longer than the 4 succeeding segments combined, and narrowly rounded in front; rostrum distinctly defined, though not prominent, and blunt at the tip; lateral edges of the segment inflexed. Tail scarcely exceeding in length $^1/_3$ of the anterior division; genital segment less broad than in *A. asterocheres*, and exhibiting on each side, immediately behind the genital orifice dorsally, a knoblike projection; anal segment only slightly longer than the preceding one. Caudal rami very short, being scarcely longer than they are broad; apical setæ of moderate length. Anterior antennæ long and slender, even somewhat exceeding in length the cephalic segment, and composed of 19 joints, the outer 2 joints only of the terminal part being coalesced. Posterior antennæ less strongly built than in *A. asterocheres*, with the penultimate joint rather narrow. Oral cone produced to a long and narrow siphonal tube extending almost to the middle of the genital segment, the tube, for the greater part of its length, being finely striated transversally; tip slightly dilated, spoon-shaped. Mandibles with the masticatory part greatly prolonged in accordance with the great length of the siphon; palp comparatively smaller than in *A. asterocheres*. Maxillæ with the inner lobe moderately produced and rounded at the end, outer lobe scarcely more than half as long and much narrower; setæ of the lobes not particularly strong and rather unequal in length. Maxillipeds less powerfully developed than in the preceding species, the claw of the anterior ones comparatively short and only slightly curved at the end. Natatory legs resembling in structure those in the said species, but of somewhat larger size. Last pair

of legs with the distal joint oblong oval in form, and provided with only 2 apical setæ. Ovisacs of moderate size, oblong in form, and rather divergent.

Male much smaller than female, and exhibiting the usual sexual differences.

Body in both sexes highly pellucid and nearly colourless, with only a very faint yellowish tinge.

Length of adult female about 0.90 mm., of male 0.70 mm.

Remarks.—This form was described under the above name in the year 1859 by Thorell as the type of his genus *Ascomyzon*. Giesbrecht thought it necessary to change the specific name *Lilljeborgi*, because this name was given at a somewhat earlier date by Boeck to another species of this genus. If, however, my proposal to name Boeck's species as above, be accepted, a change in the name of Thorell's species will be avoided.

The most prominent character distinguishing the present species is undoubtedly the exceedingly long and slender siphon, for which reason Giesbrecht proposed to name it *A. siphonatus*. The species which comes nearest to it in this respect is the Neapolitan form *A. stimulans* Giesbr., in which the siphon is said to extend almost to the insertions of the 4th pair of legs.

Occurrence.—Thorell found this form in the branchial cavity of *Corella parallellogramma*, and I have myself taken it not infrequent at Risør, south coast of Norway, from the same Ascidian. Two female specimens were also found among dredged material procured at Grimstad, somewhat farther west.

Distribution.—Bohuslän (Thorell).

51. Ascomyzon Boecki, (Brady).

(Pl. LIV).

Artotrogus Boecki, Brady, Monograph of British Copepoda, Vol. III, p. 60, Pl. XCI, figs. 1—9.

Specific Characters.—Female. Anterior division of body rather broad and expanded, with the cephalic segment very large and evenly rounded in front; lateral parts of the succeeding segments rounded off at the end. Tail comparatively short, scarcely exceeding in length $^1/_3$ of the anterior division; genital segment moderately dilated and occupying more than half the length of the tail; anal segment scarcely longer than the preceding one. Caudal rami short, about as long as they are broad; apical setæ not much elongated. Anterior antennæ nearly as long as the cephalic segment, and composed of 20 articulations, all 3 joints of the terminal part being well defined. Posterior antennæ about as in *A. Lilljeborgi*. Oral cone, as in that species, terminating in a narrow siphonal tube, which however is considerably shorter, only extending a little beyond the

insertions of the 1st pair of legs, and does not exhibit any trace of a transverse striation. Maxillæ with the inner lobe considerably produced and tapered distally, the apical setæ being likewise unusually slender; outer lobe very small. Maxillipeds rather powerfully developed; claw of the anterior ones strong and much elongated, with the end evenly curved and the concave edge finely ciliated throughout. Natatory legs of normal structure. Last pair of legs nearly as in *A. Lilljeborgi*.

Male, as usual, smaller than female, and moreover easily recognisable by the distinctly hinged anterior antennæ and by the structure of the tail.

Colour not yet ascertained.

Length of adult female about 0.90 mm., of male 0.75 mm.

Remarks.—Brady erroneously considered this form to be identical with *A. Lilljeborgi* Thorell, and the change of the specific name was merely made to distinguish it from *Asterocheres Lilljeborgi* of Boeck. The species is however in reality quite distinct from both of those forms, though nearest allied to *A. Lilljeborgi* Thorell, from which it is distinguished by the much shorter siphon.

Occurrence.—A solitary female specimen of this form was taken, many years ago, at Bukken, SW coast of Norway, from some dredged material, and a few additional specimens were picked up recently from the bottom-residue of a large collecting-bottle containing a number of different invertebrate animals taken at Rauø, west coast of Norway. I am of course unable to decide from what hosts the specimens were derived nor is any information upon this point given by Brady.

Distribution.—British Isles (Brady), ? Gulf of Naples (Giesbrecht).

52. Ascomyzon simulans, Scott.

(Pl. LV).

Ascomyzon simulans, Scott, Sixteenth Ann. Rep. of the Fisheries Board for Scotland. Part III, p. 270, Pl. XIII, figs. 1—9, Pl. XIV, fig. 22.

Specific Characters.—Female. Anterior division of body less broad than in the preceding species, the greatest width being much smaller than the length. Cephalic segment of moderate size and evenly rounded in front. Lateral parts of the 2 succeeding segments obtusely rounded, those of the last 2 segments slightly angular. Tail very short, scarcely $^1/_3$ the length of the anterior division; genital segment considerably dilated, being even somewhat broader than it is long; anal segment about the length of the preceding one and somewhat contracted behind. Caudal rami exceedingly small, being broader than they are

long; apical setæ comparatively short. Anterior antennæ not quite as long as the cephalic segment, and composed of 20 articulations, all 3 joints of the terminal part being well defined; proximal portion of the antennæ rather thick and very sharply marked off from the slender distal portion. Posterior antennæ comparatively strong, with the penultimate joint somewhat shorter than the preceding one. Oral cone not much produced, pyriform, extending scarcely beyond the insertions of the posterior maxillipeds. Mandibles with the masticatory part moderately prolonged and terminating in a lancet-shaped point; palp normal. Maxillæ with the inner lobe of moderate size and the apical setæ comparatively short; outer lobe scarcely more than $^1/_3$ the length of the inner, and much narrower. Maxillipeds of normal structure. Natatory legs well developed, with the rami comparatively broader than in the preceding species. Last pair of legs with the distal joint oval in form and carrying, in addition to the 2 apical setæ, a small bristle attached inside the latter. Ovisacs of moderate size and oval in form, being only slightly divergent.

Male differing from female in a manner similar to that in the other species.

Body in both sexes rather pellucid, with a slight rosy tinge.

Length of adult female about 1 mm, of male 0.72 mm.

Remarks.—This form was referred by Scott with some doubt to the genus *Ascomyzon*. It is however certainly a genuine member of this genus, as defined here, though well defined from the other species.

Occurrence.—I have long been aware of this form, of which several specimens have been collected at different times off the south coast of Norway, and always on Sponges, for which reason I had noted it with the provisional name *A. spongiophilum*. It also occurred in great numbers in the bottom-residue of the same collecting-bottle from which *A. Boecki* was procured, and as this bottle contained, besides other invertebrate animals, also a number of sponges, it is most likely that they were in reality derived from the latter.

Distribution.—British Isles (Scott).

53. Ascomyzon latum, (Brady).

(Pl. LVI).

Cyclopicera lata, Brady, Monograph of British Copepoda, Vol. III, p. 56, Pl. LXXXIX, fig. 12, Pl. XC, figs. 11—14.

Syn: *Asterocheres Boecki*, Giesbrecht (part).

Specific Characters.—Female. Anterior division of body very broad and expanded, the greatest width being almost equal to the length. Cephalic segment large, with the frontal edge narrowly rounded. Epimeral parts of 2nd segment

simple and not projecting at all laterally; those of 3rd (antepenultimate) segment, on the other hand, terminating in a very conspicuous prominent corner. Penultimate segment, as usual, much smaller than the preceding ones. Tail considerably exceeding in length $^1/_3$ of the anterior division; genital segment rather dilated in its anterior part and, like the other species, having the lateral edges clothed with stiff hairs; posterior edge of this and the succeeding segment, moreover, finely denticulate; anal segment longer than the preceding one. Caudal rami somewhat produced, being about as long as the anal segment; apical setæ rather long and divergent. Anterior antennæ very slender, equalling about in length the cephalic segment, and composed of 20 articulations, all 3 joints of the terminal part being well defined; proximal portion of the antennæ comparatively short and very sharply marked off from the narrow distal one. Posterior antennæ more slender than in *A. simulans*, and having the penultimate joint about as long as the preceding one. Oral cone rather produced and gradually tapered, extending about to the insertions of the 1st pair of legs. Mandibles with the masticatory part long and slender; palp normal. Maxillæ resembling in structure those in *A. simulans*, though the setæ of the inner lobe are comparatively longer. Maxillipeds and natatory legs of normal structure. Last pair of legs with the distal joint oval in form, and provided with only 2 apical setæ.

Body pellucid, tinged in some places with light yellow.

Length of adult female 0.80 mm.

Remarks.—I cannot doubt that the above-described form is that recorded by Brady in his Monograph as *Cyclopicera lata*. Brady believed this form to be identical with Norman's *Ascomyzon echinicola*; but the form so named in Giesbrecht's work and figured on Pl. 2, II, is certainly a different species. On the other hand, it would seem that Giesbrecht has confounded the present species and *A. Boecki* Brady. In any case the coloured figure given on Pl. 1 is unquestionably referable to the present species and not to *A. Boecki*. The prominent lateral corners of the antepenultimate trunk-segment will suffice for an immediate recognition of the present species as distinct from any of the others.

Occurrence.—I have occasionally met with this form at Risør and Grimstad, south coast of Norway, in moderate depths among algæ, and a few additional specimens were picked up from the bottom—residue of the same collecting—bottle in which *A. Boecki* and *A. simulans* occurred.

Distribution.—British Isles (Brady), Gulf of Naples (Giesbrecht).

54. Ascomyzon parvum, (Giesbrecht).

(Pl. LVII).

Asterocheres parvus, Giesbrecht. Fauna und Flora des Golfes von Neapel; 25th Monographie, Die Asterocheriden, p. 100, Pl. 2, F.

Specific Characters.—Female. Anterior division of body less expanded than in *A. latum*, the greatest width not nearly attaining the length. Cephalic segment of moderate size and evenly rounded in front. Lateral parts of the trunk-segments rounded off at the end, the antepenultimate segment not differing in this respect from the others. Tail almost attaining half the length of the anterior division, and having the posterior edge of the segments perfectly smooth; genital segment less broad at the base than in *A. latum;* anal segment about the length of the preceding one. Caudal rami resembling in structure those in the said species. Anterior antennæ not fully as long as the cephalic segment and composed of 20 articulations. Posterior antennæ moderately strong with the penultimate joint about equal in length to the preceding joint. Oral cone shorter than in *A. latum*, only extending midway between the insertions of the posterior maxillipeds and those of 1st pair of legs. Mandibles, maxillæ, maxillipeds and natatory legs differing very little in structure from those parts in *A. latum*. Last pair of legs likewise very similar, though having on the distal joint a small bristle inside the 2 apical setæ. Ovisacs of moderate size, oblong oval in form, and somewhat divergent.

Colour light greenish.

Length of adult female scarcely attaining 0.70 mm.

Remarks.—This species is closely allied to *A. latum*, but is of smaller size, and moreover easily distinguishable by the less expanded anterior division of the body, and the evenly rounded lateral parts of the trunk-segments. Finally, the oral cone is considerably shorter than in *A. latum*.

Occurrence.—I collected this form, many years ago, in the upper part of the Christiania Fjord, and, on account of its peculiar colour, noted it with the provisional name *A. virescens*. I have also found it occasionally off the south coast, at Grimstad and Lillesand. All the specimens were taken in the free state among dredged material.

Distribution.—Gulf of Naples (Giesbrecht), coast of France (Canu).

Gen. 18. **Echinocheres**, Claus, 1889.

Generic Characters.—Body less depressed than in *Ascomyzon*, the dorsal face of the anterior division being rather strongly vaulted. Tail, as in that genus, composed in female of 3, in male of 4 segments. Anterior antennæ much shorter and stouter than in *Ascomyzon*, though composed of a similar number of articulations. Posterior antennæ of comparatively feeble structure. Oral cone very short. Mandibles with the palp uniarticulate. Maxillæ with one of the setæ of the inner lobe excessively developed. Maxillipeds comparatively short and stout. Natatory legs very fully developed, with the rami unusually broad; their armature about as in *Ascomyzon*. Last pair of legs with the proximal joint small and indistinctly defined from the segment, distal joint well developed, lamelliform.

Remarks.—This genus was established in the year 1889 by Claus, to include 2 species found by him as parasites on Echinids. Giesbrecht, however, did not admit this genus, but referred the species to the genus *Asterocheres* (= *Ascomyzon*), and this view was also adopted by Scott. On a closer examination of the type species, I find, however, that in some points it differs so conspicuously from the other species of the genus *Ascomyzon*, that in my opinion the Clausian genus ought to be supported. As to the term *Echinocheres*, the same objection could perhaps be urged against it as against the term *Asterocheres*; but as in fact both species have hitherto been found exclusively on *Echinids*, I do not find in the present case any imperious necessity for rejecting it. Only the type species is represented in the Fauna of Norway.

55. Echinocheres violaceus, Claus.

(Pl. LVII).

Echinocheres violaceus, Claus. Halbparasitische Copepoden; Arb. Zool. Inst. Wien, Voll. III.

Syn: *Asterocheres violaceus*, Giesbr.

„ *Ascomyzon Thompsoni*, A. Scott.

Specific Characters.—Female. Body robust, with the anterior division considerably tumefied and broadly oval in outline. Cephalic segment large and evenly arched in front; rostral prominence comparatively small, though well defined; lateral edges of the segment inflexed. Epimeral parts of the trunk-segments rounded off at the end; penultimate segment, as usual, much smaller than the preceding one; last segment still smaller. Tail comparatively short, with the genital segment gradually widening in front, and having the lateral edges very finely ciliated; anal segment smaller than the preceding one. Caudal rami about the length of the anal segment and slightly divergent; apical setæ comparatively short, the 2 middle ones rather thicker, but not much longer than the

others, and densely plumose. Anterior antennæ much shorter than the cephalic segment, and composed of 20 articulations, terminal part very short, though having all 3 joints well defined. Posterior antennæ with the penultimate joint somewhat shorter than the preceding one; terminal joint distinctly subdivided in the middle. Oral cone scarcely extending beyond the insertions of the anterior maxillipeds, and having the outer part abruptly narrowed. Mandibles with the masticatory part narrow styliform. Maxillæ with the inner lobe short and thick, transversely truncated at the end; principal seta very largely developed, extending far beyond the insertions of the maxillipeds, and densely plumose; outer lobe much smaller, and having the apical setæ comparatively short. Maxillipeds rather powerfull; claw of the anterior ones very strong and curved at the end in a hook-like manner. Natatory legs largely developed, with the middle joint of the inner ramus in 1st pair unusually broad and expanded. Last pair of legs with the distal joint oval in form and rounded at the extremity, which carries 2 setæ accompanied by a small bristle. Ovisacs comparatively small, oval in form.

Colour somewhat variable, in some cases dark violaceous, in other cases much paler.

Length of adult female 0.90—1.10 mm.

Remarks.—This form, as above mentioned, was first described by Claus as the type of his genus *Echinocheres*. Another species of smaller size was also recorded by the same author under the name of *Echinocheres minutus*, and this species has likewise been observed by Giesbrecht, who admits its specific difference. The very close relationship between these 2 species, both as to structural details and habits, would indeed seem to justify the opinion of Claus, that they should be kept apart under a separate genus. The *Ascomyzon Thompsoni* of A. Scott is unquestionably identical with the present species.

Occurrence.—I have taken this form occasionally from 3 different Echinids, viz., *Strongylocentrotus dröbachiensis* (small variety), *Echinus sphæra* and *Echinus elegans*, all collected off the west coast of Norway from different depths. The specimens found on the first-named Echinid were all of a very dark violaceous colour, like that indicated in the coloured figure given in Giesbrecht's work on Pl. 1; whereas those occurring on the other 2 Echinids were much paler, of a whitish grey hue, with a very slight rosy tinge. These specimens were also of a somewhat larger size, but otherwise fully agreeing with the dark-coloured variety. Giesbrecht also mentiones the variability of colour in the present species.

Distribution.—British Isles (Scott), Triest (Claus), Gulf of Naples (Giesbrecht).

Gen. 19. **Dermatomyzon**, Claus, 1889.

Syn: *Cyclopicera*, Brady (part).

Generic Characters.—General form of body resembling that in the preceding genus, the anterior division being rather tumid and evenly vaulted above. Tail, however, composed in female of 4, in male of 5 well-defined segments. Anterior antennæ not much elongated, though composed of a considerable number of joints; those in male imperfectly hinged and, at any rate in some cases, provided with supplementary sensory filaments. Posterior antennæ with the penultimate joint comparatively short. Oral cone very little produced. Mandibles with the masticatory part rather strong, knife-shaped; palp uniarticulate. Maxillæ with the inner lobe normal; outer lobe narrow linear. Maxillipeds of the usual structure; the posterior ones in male without any distinct palmar projection. Natatory legs strongly built, though not very different in structure from those in the preceding genera. Last pair of legs with the proximal joint well defined from the segment; distal joint lamelliform and provided with lateral spines in addition to the apical setæ.

Remarks.—This genus is also closely allied to *Ascomyzon*, though at once distinguished by the tail having one segment more in both sexes. The genus *Cyclopicera* of Brady, though of earlier date than *Dermatomyzon*, cannot properly be retained, because it was originally (in 1872) based upon a species that has turned out to be a true *Ascomyzon (A. latum)*. Two species of the present genus have been described; but their specific difference has not been admitted by Giesbrecht.

56. Dermatomyzon nigripes (Brady).

(Pl. LIX & LX).

Cyplopicera nigripes, Brady, Monogr. of British Copepoda, Vol. III, p. 54, Pl. LXXXIX, figs. 1—11.

Syn: *Ascomyzon Thorelli*, G. O. Sars.

Specific Characters.—Female. Anterior division of body rather tumid, broadly oval in outline, with the cephalic segment very large and evenly arched in front; lateral edges of this and the succeeding segment inflexed. Rostrum triangular, but not very prominent. Lateral parts of the trunk-segments obtusely rounded at the end. Tail nearly half the length of the anterior division and having the segments very sharply marked off from each other, each segment being produced at the end on each side to an acute corner; genital segment moderately broad and imperfectly subdivided in the middle, with the lateral edges perfectly smooth; anal segment smaller than the preceding one. Caudal rami comparatively short,

about the length of the anal segment, and slightly divergent, outer edge smooth, inner finely ciliated, tip obtusely rounded; apical setæ of moderate size and somewhat spreading, the innermost but one about equalling the tail in length. Anterior antennæ much shorter than the cephalic segment, and composed of 19 joints, terminal part bi-articulate. Posterior antennæ with the penultimate joint scarcely more than half as long as the preceding one; apical spine rather strong. Oral cone comparatively small, extending only slightly beyond the insertions of the anterior maxillipeds, and terminating in a sharp point apparently formed by the extremity of the posterior lip. Masticatory part of mandibles cultriform, with a very fine denticulation on the inner edge of the extremity. Maxillæ with the inner lobe somewhat curved and tapered distally, apical setæ comparatively short; outer lobe very narrow, linear, with the apical setæ longer than those on the inner lobe. Anterior maxillipeds rather powerful, with the claw very strong and slightly curved at the end. Posterior maxillipeds of the usual structure. Natatory legs differing a little in their armature from those in the preceding forms, the terminal joint of the outer ramus being provided inside in 1st pair with 3, in 2nd pair with 5 setæ; same joint of inner ramus in the last 2 pairs with only a single spine on the tip. Last pair of legs with the distal joint rounded oval in form, and armed on the hind edge with 2 blunt spines, the extremity carrying 2 setæ accompanied inside by a small bristle. Ovisacs comparatively small, rounded oval in form.

Male, as usual, smaller than female, and having the anterior division far less dilated. Tail with the segments still more sharply marked off from each other; genital segment greatly swollen. Anterior antennæ 17-articulate, and each provided with about 7 supplementary sensory filaments curving backwards.

Body in both sexes generally of a brownish grey hue, with the anterior antennæ and natatory legs very dark-coloured, almost black; tail also partly tinged with a dark brownish colour.

Length of adult female amounting to 1·55 mm., of male to 1.20 mm.

Remarks.—This form was recorded as early as the year 1875 by Brady & Robertson under the name of *Cyclopicera nigripes*, and was justly referred by Giesbrecht to the genus *Dermatomyzon*, as defined by Claus. It seems however very questionable to me, if Giesbrecht was right in identifying the form described by Claus under the name *Dermatomyzon elegans* with the present species, as the latter differs not only in its much larger size and peculiar coloration of the body, but also in the presence on the male anterior antennæ of greatly developed

supplementary sensory filaments. These filaments, according to Canu, are wholly absent in the male of *D. elegans*.

Occurrence.—I have met with this form not unfrequently along the whole Norwegian coast, from the upper part of the Christiania Fjord to Vadsø, in moderate depths. All the specimens have been taken in the free state among dredged material, and, though the parasitic habits of the animal are proved by the structure of the oral parts, we do not as yet posess any information as to what kind of invertebrate animals are at times infested by it.

Distribution.—British Isles (Brady), Spitsbergen (G. O. Sars), Franz Joseph Land (Scott), ? Gulf of Naples (Giesbrecht).

Gen. 20. **Rhynchomyzon**, Giesbrecht, 1895.

Generic Characters.—Body more slender than in the preceding genera, with the anterior division far less expanded, and some of the trunk-segments acutely produced laterally. Rostrum large and prominent, curved downwards. Tail comparatively slender, consisting in female of 4, in male of 5 segments. Caudal rami more or less produced. Anterior antennæ of moderate length, and composed of a varying number of articulations; those in male imperfectly hinged and without any supplementary sensory filaments. Posterior antennæ resembling in structure those in *Dermatomyzon*. Oral cone short and massive, not prolonged in any siphonal tube. Mandibles with the masticatory part more or less cultriform; palp very small, uniarticulate. Maxillæ and maxillipeds about as in *Dermatomyzon*. Natatory legs well developed, and on the whole normally built. Last pair of legs comparatively small, biarticulate, distal joint of somewhat different shape in the different species.

Remarks.—This genus, established by Giesbrecht, differs conspicuously, as to the external appearance of the body, from the preceding ones, though in the structural details approaching somewhat the genus *Dermatomyzon*. One of the most conspicuous external characters is the very large and prominent falciform rostrum, which indeed has given rise to the generic name proposed by Giesbrecht. The genus comprises as yet 3 well-defined species, 2 of which will be described below, the 3rd species, *R. falco* Giesbrecht, being hitherto only known from the Gulf of Naples.

57. Rhynchomyzon purpurocinctum, (Scott).

(Pl. LXI).

Cyplopicera purpurocincta, Scott. Eleventh Ann. Rep. of the Fishery Board for Scotland. Part III p. 209, Pl. III, figs. 29—40

Specific Characters.—Female. Anterior division of body rather strongly vaulted above, and oblong oval in outline, greatest width scarcely exceeding half the length. Cephalic segment large, being fully twice as long as the 4 succeeding segments combined, aud having the frontal edge narrowly arched, epimeral edges of the segment evenly curved in front and strengthened behind by a number of transverse chitinous stripes. Rostrum very conspicuous in the lateral aspect of the animal, and produced to a sharp point. Epimeral parts of the 2 succeeding segments terminating behind in acute corners. Tail about equalling in length $^2/_3$ of the anterior division; genital segment almost cylindric in form, with a very slight angular prominence on each side of the anterior part; 2nd segment almost as long as the 2 succeeding segments combined; anal segment the smallest. Caudal rami rather produced, somewhat exceeding in length the last 2 segments combined, and slightly divergent, outer edge smooth, inner finely ciliated; apical setæ comparatively short, the innermost but one scarcely exceeding twice the length of the corresponding ramus. Anterior antennæ rather narrow, but much shorter than the cephalic segment, and composed of 16 joints only, 2nd joint the largest and apparently formed by the fusion of 4 short joints; terminal part biarticulate. Posterior antennæ with the penultimate joint scarcely half as long as the preceding one; apical spine rather slender. Oral cone very massive and rather prominent below; anterior lip terminating in a somewhat curved point. Mandibles with the masticatory part pronouncedly knife-shaped and minutely denticulate inside the tip. Maxillæ with the outer lobe nearly as long as the inner, but much narrower, linear in form; setæ on both lobes comparatively short. Maxillipeds moderately strong. Natatory legs exhibiting a similar armature to that in *Dermatomyzon nigripes*. Last pair of legs with the distal joint oval in form and subtruncate at the extremity, which carries 2 thin bristles between which a somewhat larger lanceolate spine is attached; posterior edge of the joint finely ciliated and having on each side of the innermost bristle a slight dentiform projection.

Male much smaller than female, but not very different in the general form of the body. Tail, however, somewhat more slender and composed of 5 well-defined segments, the foremost of which (the genital segment) is comparatively smaller than in most other forms of the present section. Anterior

antennæ very imperfectly hinged and composed of only 14 joints. Last pair of legs differing from those in female by the presence on the distal joint of 3 additional spines attached to the inner edge.

Body in both sexes of a whitish colour, with a broad dark purplish, or almost black band across the posterior part of the trunk, occupying the whole of the 2nd, 3rd and 4th segments. Rostrum of a similar colour, and the anterior antennæ, the natatory legs, and the ends of the caudal rami also more or less dark in colour.

Length of adult female amounting to 1.03 mm., of male to 0.73 mm.

Remarks.—This is a very distinct and easily recognisable form. It was at first recorded by Scott as a species of the genus *Cyclopicera* Brady, but was subsequently justly removed from that genus by Giesbrecht, and referred to his new genus *Rhynchomyzon*. The present species may be regarded as the type of that genus.

Occurrence.—I have only met with this form quite occasionally at Aalesund and Christiansund, west coast of Norway. The specimens were found in moderate depths among dredged material.

Distribution.—British Isles (Scott), Gulf of Naples (Giesbrecht).

58. Rhynchomyzon rubrovittatum, G. O. Sars, n. sp.

(Pl. LXII).

Specific Characters.—Female. Anterior division of body less strongly vaulted above than in the preceding species, and, viewed dorsally, of a somewhat irregular oblong oval form. Cephalic segment not quite twice as long as the 4 succeeding ones combined, and narrowly rounded in front, epimeral edges of the segment evenly curved. Rostrum very large, falciform, and terminating in an acuminate point. Antepenultimate trunk-segment produced on each side to a prominent acute process pointing obliquely backwards; penultimate segment, as usual, much smaller, with the lateral parts broadly rounded; last segment scarcely broader than the genital segment. Tail exceeding somewhat in length $^2/_3$ of the anterior division; genital segment slightly dilated in front and produced on each side to a spiniform, posteriorly pointing process; the succeeding segments gradually diminishing in size, and, combined, about the length of the genital one. Caudal rami rather produced, exceeding in length the last 2 segments combined, and somewhat divergent, outer edge perfectly smooth and produced at the end to a well-marked dentiform projection, inner edge finely ciliated; apical setæ com-

paratively short. Anterior antennæ very slender, almost attaining the length of the cephalic segment, and composed of 20 joints, terminal part comparatively small and, as in the preceding species, biarticulate. Posterior antennæ about as in that species. Oral cone very short and abruptly contracted at the extremity. Mandibles with the masticatory part less strong than in the type species, and scarcely denticulated at the tip. Maxillæ with both lobes comparatively shorter. Anterior maxillipeds with the claw imperfectly biarticulate. Posterior maxillipeds rather slender, with a thin bristle in the middle of the palmar edge. Natatory legs with the spines of the outer ramus rather broad, lancet-shaped and distinctly denticulated at the edges; terminal joint of this ramus in 1st pair with only 2 setæ inside, that of 2nd pair with 4 such setæ. Last pair of legs with the distal joint rather short and projecting into 2 unequal dentiform processes, between which 2 likewise unequal bristles are attached.

Colour rather peculiar: anterior division of body of a clear whitish hue, with a number of narrow transverse bands of a bright red colour, 3 of them occupying the hindmost part of the 3 anterior segments, 2 others, of a more irregular form, crossing the cephalic segment in front of the middle. Tail and anterior antennæ of a beautiful rosy hue.

Length of adult female about 1 mm.

Male unknown.

Remarks.—This form is at once distinguishable from both of the 2 hitherto recorded species, though evidently belonging to the same genus. The specific name is derived from the very peculiar and beautiful colour of the body, when alive.

Occurrence.—Only a solitary female specimen of this handsame form has come under my notice. It was taken, many years ago, at Kallevaag, west coast of Norway, from a depth of about 50 fathoms, among dredged material.

Gen. 21. **Collocheres,** Canu, 1893.

Syn: *Cyclopicera*, Brady (part).
„ *Clausomyzon*, Giesbrecht.

Generic Characters.—Body of very slender form, with the anterior division only slightly dilated and somewhat compressed in front; rostrum comparatively small, but acutely produced. Epimeral parts of the trunk-segments rounded off. Tail composed in female of 4, in male of 5 segments. Caudal rami long and

narrow, with the outermost seta more or less remote from the apex Anterior antennæ slender, resembling in structure those in the genus *Ascomyzon*, though having the proximal and distal portions less sharply marked off from each other; those in male distinctly hinged. Posterior antennæ of normal structure. Oral cone not much prolonged, pyriform in shape. Mandibles with the masticatory part moderately slender; palp small, uniarticulate. Maxillæ with the outer lobe much narrower than the inner, and tipped with only a single seta. Maxillipeds comparatively slender; claw of the anterior ones distinctly biarticulate. Natatory legs with the rami rather narrow; their armature about as in *Dermatomyzon*. Last pair of legs with the distal joint more or less prolonged.

Remarks.—This genus was established in the year 1893 by Canu, to include the species recorded by Brady as *Cyclopicera gracilicauda*. Another nearly-allied species has been described by Giesbrecht from the Gulf of Naples under the name of *C. Canui*, and a 3rd species, *C. elegans*, has been added by A. Scott. The last-named species differs however in some points so much from the other two, that I have felt justified in removing it to a separate genus To the Fauna of Norway only belongs the type species, to be decribed below.

59. Collocheres gracilicauda, (Brady).

(Pl. LXIII).

Cyplopicera gracilicauda, Brady, Monogr. British Copepoda, Vol. III, p. 58, Pl. LXXXIII, figs. 1—10.

Syn: *Ascomyzon comatulæ*, Rosoll.
„ *Clausomyzon gracilicauda*, Giesbr.

Specific Characters.—Female. Anterior division of body, viewed dorsally, regularly oblong oval in outline, with the greatest width about equalling half the length. Cephalic segment large and very deep, the epimeral edges being angularly curved in the middle; rostrum not very large, but distinctly prominent below, and acutely pointed. Last trunk-segment very small, scarcely broader than the genital segment. Tail slender and elongated, being not much shorter than the anterior division; genital segment large and somewhat dilated in the middle; the 3 succeeding segments gradually diminishing in size. Caudal rami exceedingly long and narrow, almost attaining half the length of the tail, and slightly divergent, both edges smooth; outermost apical seta short, spiniform, and, together with the dorsal bristle, somewhat remote from the apex, which projects outside to a short dentiform process; inner mediate seta scarcely exceeding in length the corresponding ramus. Anterior antennæ almost as long as the cephalic segment,

and composed of 20 joints, terminal part biarticulate. Posterior antennæ with the penultimate joint scarcely more than half as long as the preceding one; rudimentary outer ramus remote from the end of the latter joint, being attached nearly at the middle of its posterior edge. Oral cone extending only to the insertions of the posterior maxillipeds, and gradually tapered. Mandibles with the masticatory part moderately slender, and distinctly denticulated inside the tip; palp with only a single apical seta. Maxillæ with the outer lobe a little shorter than the inner, and much narrower, apical seta rather elongated and accompanied by a small hair. Claw of anterior maxillipeds very slender and distinctly subdivided in the middle, outer part evenly curved. Posterior maxillipeds, as usual, more elongated than the anterior ones. Natatory legs of rather feeble structure, the rami, especially in the 4th pair, being unusually narrow. Last pair of legs with the proximal joint well defined from the segment, and produced inside to an acuminate process; distal joint very long and slender, sabre like, and extending far beyond the middle of the genital segment, outer edge produced, at some distance from the end, to a dentiform projection, the apical part, beyond the process, being provided with 3 or 4 small bristles.

Male, as usual smaller than female, and of still more slender shape. Anterior antennæ composed of 19 joints, the last 2 of which admit of being bent upon the adjoining part. Last pair of legs differing somewhat from those in female, the distal joint being comparatively shorter and almost claviform in shape, and moreover provided with 2 additional blunt spines inside. Genital lobes bipartite.

Body in both sexes very pellucid and nearly colourless.

Length of adult female amounting to 0.85 mm., of male to 0.68 mm.

Remarks.—As mentioned above, this form was first described by Brady as a species of his genus *Cyclopicera*. It was subsequently justly removed from that genus by Canu and placed in the new genus *Collocheres* established by that author. According to the same author, the *Ascomyzon comatulæ* of Rosoll is identical with the present species.

Occurrence.—I have hitherto only met with this form in a single locality, viz., at Risør, south coast of Norway, where a few specimens were taken from a depth of about 30 fathoms among dredged material. Rosoll found this form parasitic on *Comatula mediterranea*.

Distribution.—British Isles (Brady), coast of France (Canu), Triest (Rosoll), Gulf of Naples (Giesbrecht).

Gen. 22. **Mesocheres**, Norm. & Scott, 1905.

Generic Characters.—Body slender and elongated, with the anterior division only slightly dilated. Cephalic segment less deep than in *Collocheres* with the rostrum comparatively small. Epimeral parts of the trunk-segments slightly produced. Tail slender, and composed in female of only 3 segments. Caudal rami long and narrow. Anterior antennæ slender, resembling in structure those in *Ascomyzon*. Posterior antennæ moderately strong, with the penultimate joint comparatively short. Oral cone very little produced. Mandibles with the masticatory part comparatively short, tapered and minutely denticulated inside the tip; palp small, uniarticulate. Maxillæ with the lobes likewise rather small, the inner one being the larger. Anterior maxillipeds distinguished by the presence of a secondary spine at the base of the claw. Posterior maxillipeds of normal structure. Natatory legs rather strongly built, with the spines unusually broad, dagger-like. Last pair of legs very small, biarticulate, distal joint triangular in shape.

Remarks.—With regard to the general form of the body and the long and narrow caudal rami, this genus somewhat recalls the preceding one, from which it is, however, at once distinguished by the different segmentation of the tail, in which respect it agrees with the genus *Ascomyzon*. In the other structural details also, several peculiarities are found to exist, fully justifying the establishment of the present genus. It comprises as yet only a single species, to be described below.

60. Mesocheres anglicus, Norm. & Scott.

(Pl. LXIV).

Mesocheres anglicus, Norm. & Scott, Crustacea Copepoda new to science, Ann. & Mag. Nat. Hist. Ser. 7. Vol. XV, p. 298.

Specific Characters.—Female. Anterior division of body oblong oval in outline, with the greatest width about equalling half the length. Cephalic segment large and narrowly rounded in front, epimeral edge gently curved; rostrum acutely produced below. Lateral parts of the 3 succeeding segments somewhat angular behind. Last segment very small, scarcely broader than the genital segment. Tail somewhat shorter than the anterior division, and very narrow; genital segment about the length of the other 2 combined, and slightly dilated

in its anterior part, which projects on each side to a hamiform, posteriorly-pointing process; anal segment much smaller than the preceding one. Caudal rami exceedingly long and slender, linear, attaining about the length of the remaining part of the tail, and only very slightly divergent; outer edge very finely ciliated, inner smooth, tip transversely truncated; apical setæ comparatively short, the innermost but one scarcely longer than the corresponding ramus. Anterior antennæ not quite as long as the cephalic segment, and composed of 21 well-defined joints, terminal part distinctly 3-articulate. Posterior antennæ with the penultimate joint scarcely half as long as the preceding one; rudimentary outer ramus attached close to the end of the latter joint. Oral cone very short, almost globular in form, its extremity being obtusely blunted and only extending to the insertions of the anterior maxillipeds. Mandibles and maxillæ pointing almost straight inwards. Anterior maxillipeds with the claw rather slender and evenly curved in its outer part, basal spine rather strong and likewise curved. Posterior maxillipeds comparatively slender. Natatory legs with the number of setæ about as in *Ascomyzon:* spines distinguished by their broad dagger-like form and the coarse denticulation of their edges. Last pair of legs with the proximal joint well defined and of the usual appearance, distal joint rounded triangular in form and provided with 2 small apical bristles and 2 lateral ones, that of the outer edge the longer. Ovisacs, in the specimen examined, very small, each containing only 3 ova, arranged in a single row.

Body of a clear whitish colour, partly tinged with reddish orange; ovarial tubes dark green.

Length of adult female about 1 mm.

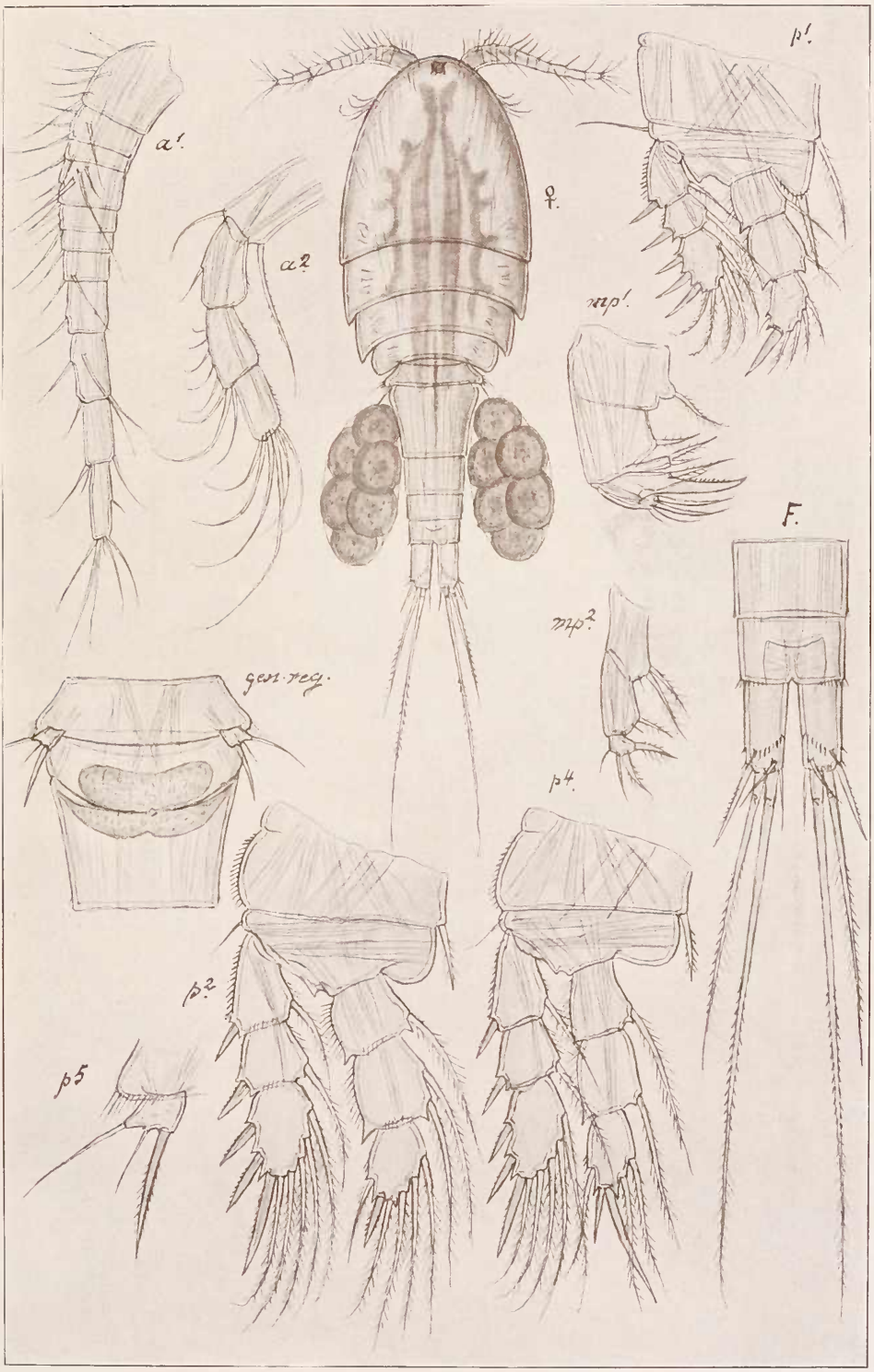
Male unknown.

Remarks.—This form was first anounced under the above name by Norman & Scott in the year 1905 from a single female specimen taken in Plymouth Sound. In the following year this specimen was redescribed and figured in detail by the same authors in their work on the Crustacea of Devon and Cornwall.

Occurrence.—Only a few female specimens of this form have hitherto come under my notice. They were taken, many years ago, in the upper part of the Christiania Fjord from a depth of about 30 fathoms among dredged material.

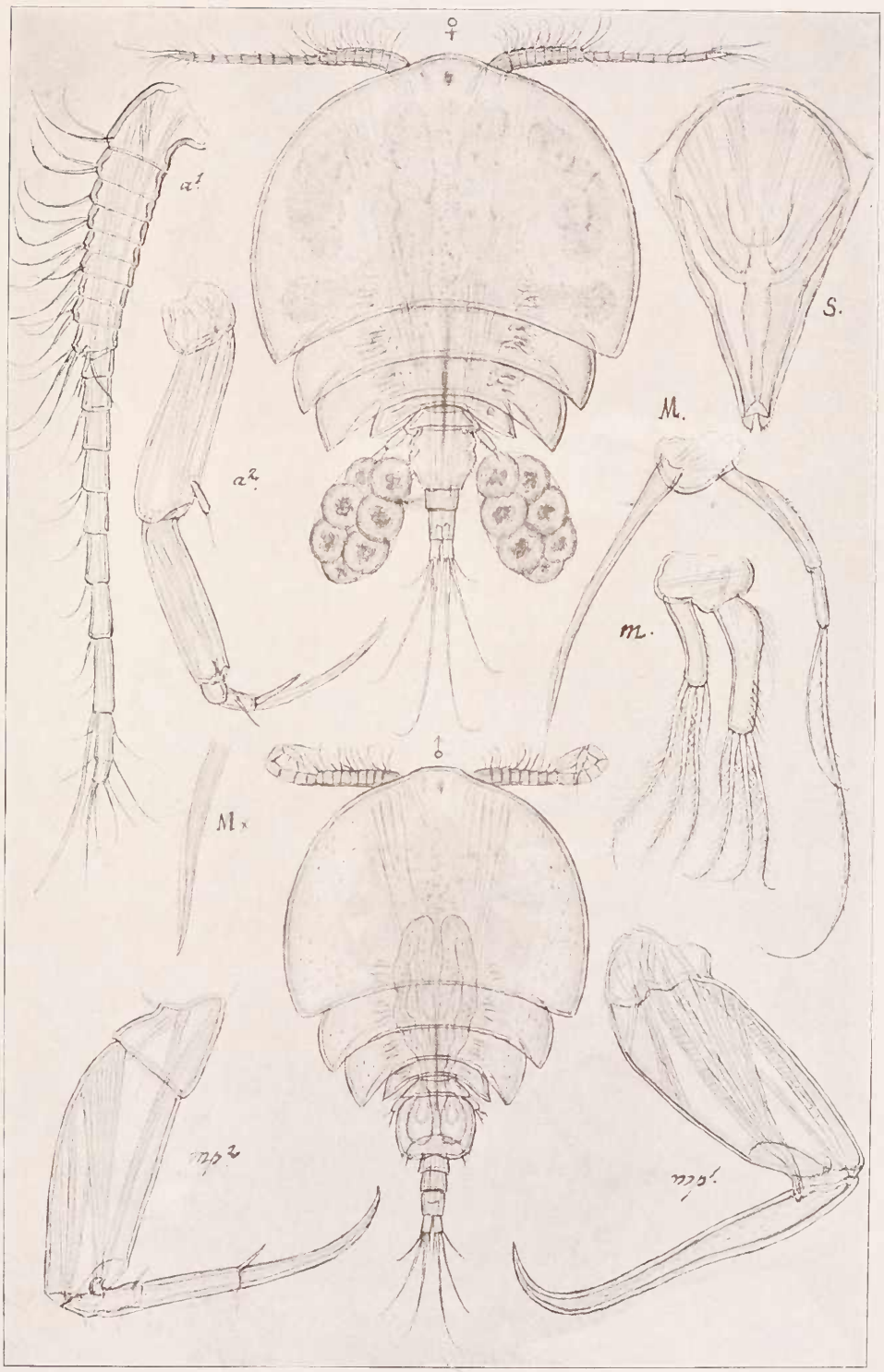
Distribution.—British Isles (Norman & Scott).

Copepoda



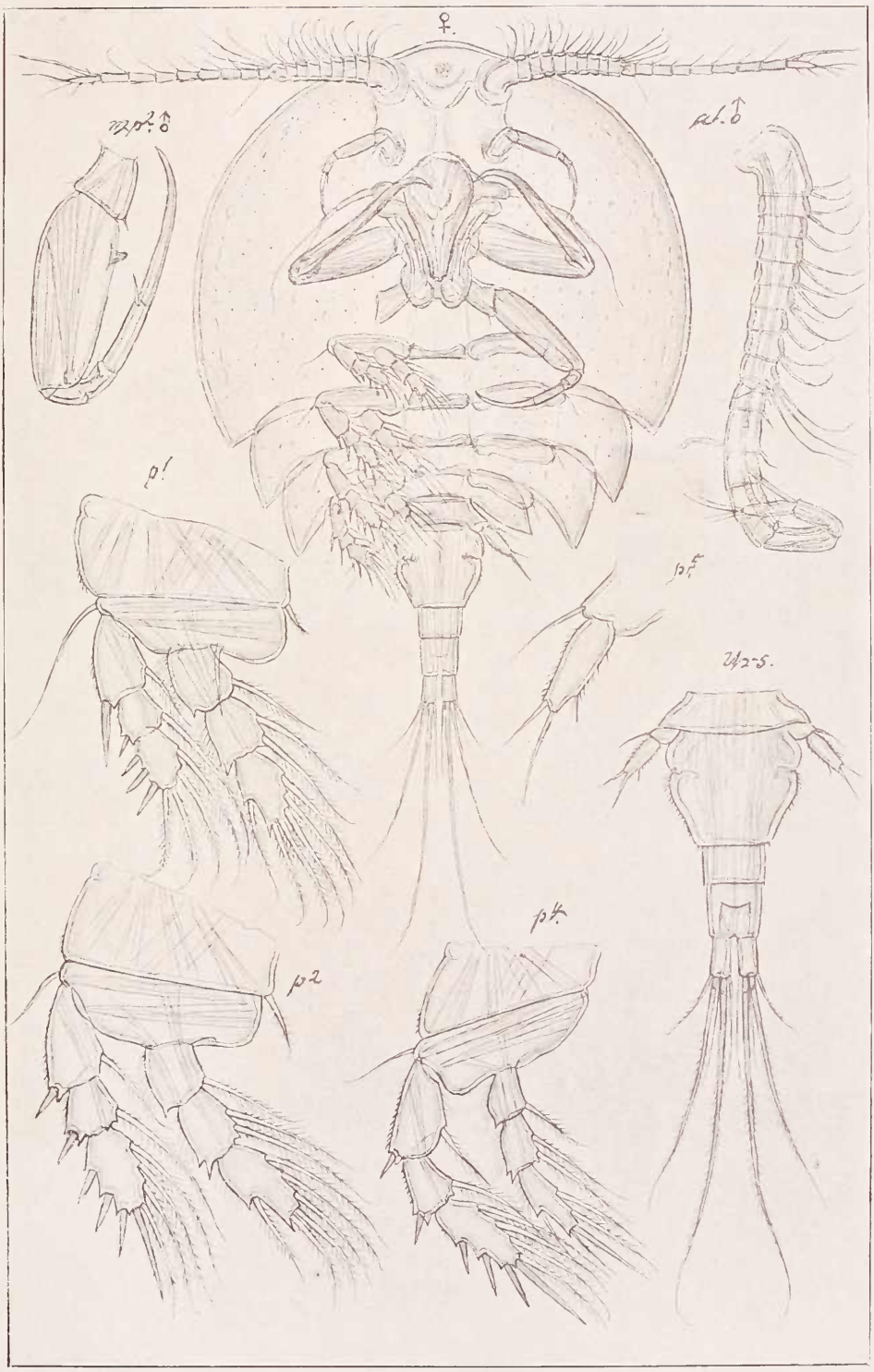
G. O. Sars, del.

Platycyclops affinis, G. O. Sars



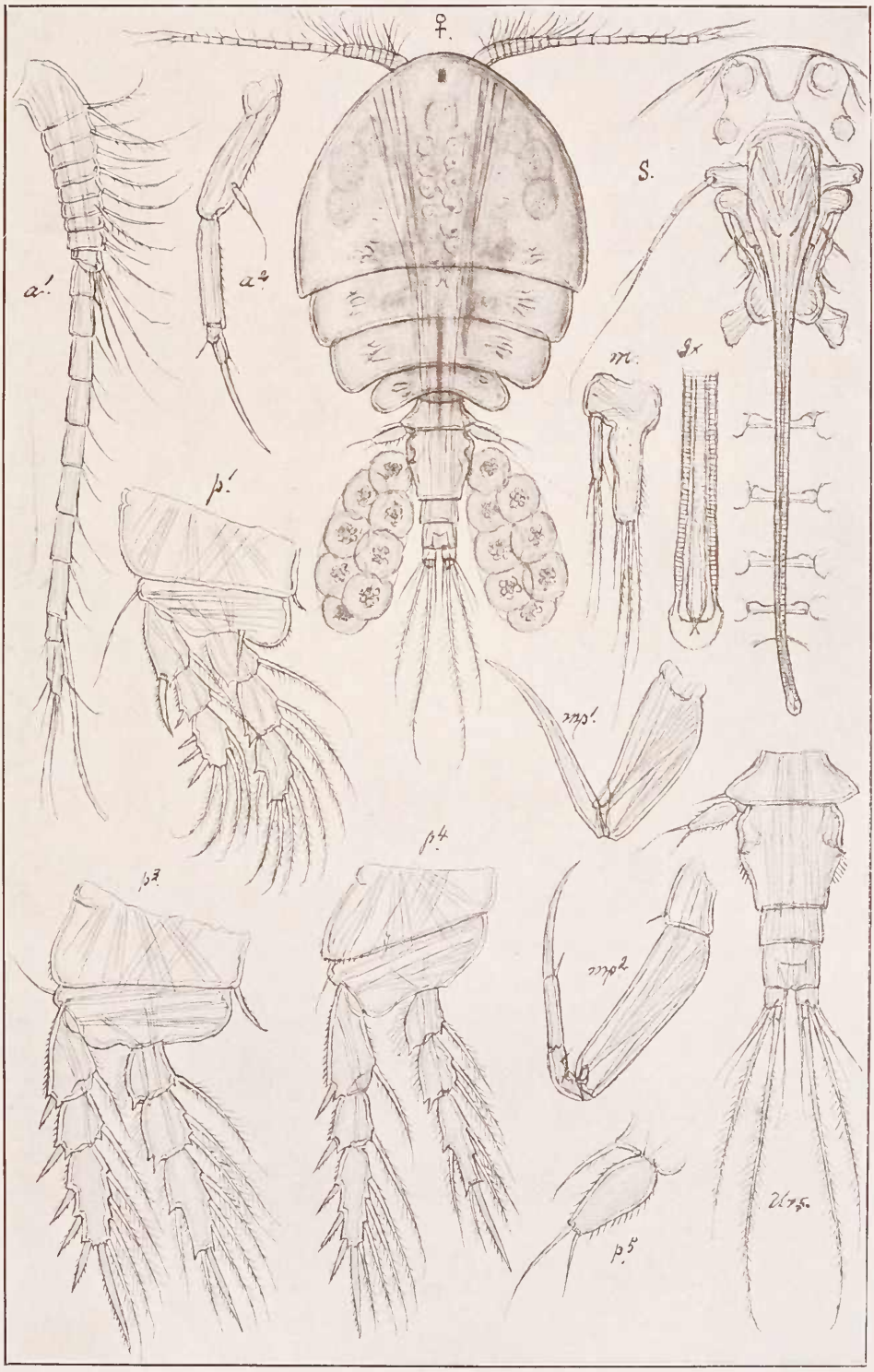
G. O. Sars, del.

Ascomyzon asterocheres, Boeck



G. O. Sars, del.

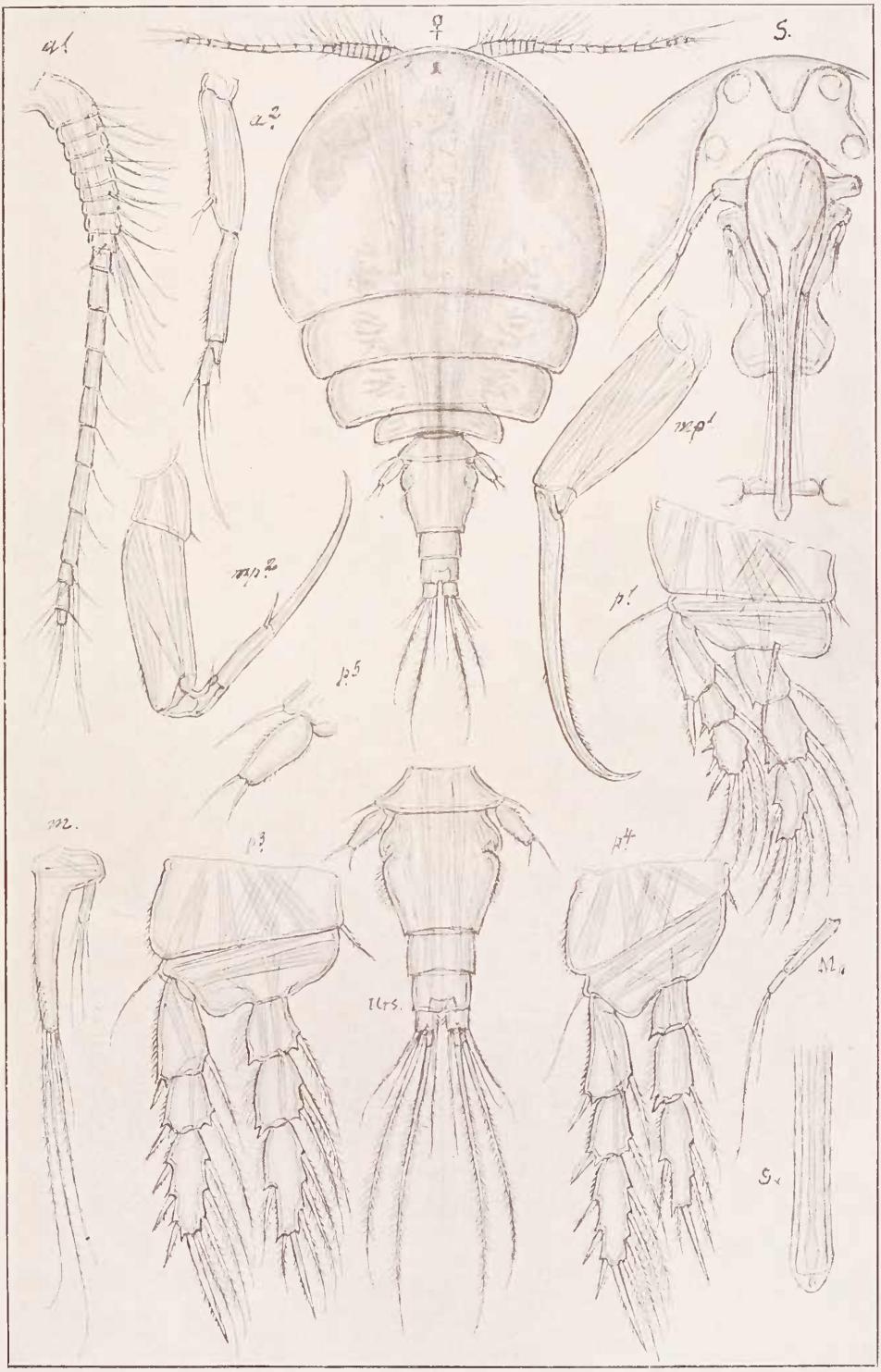
Ascomyzon asterocheres, Boeck
(continued)



G. O. Sars, del.

Ascomyzon Lilljeborgi, Thorell

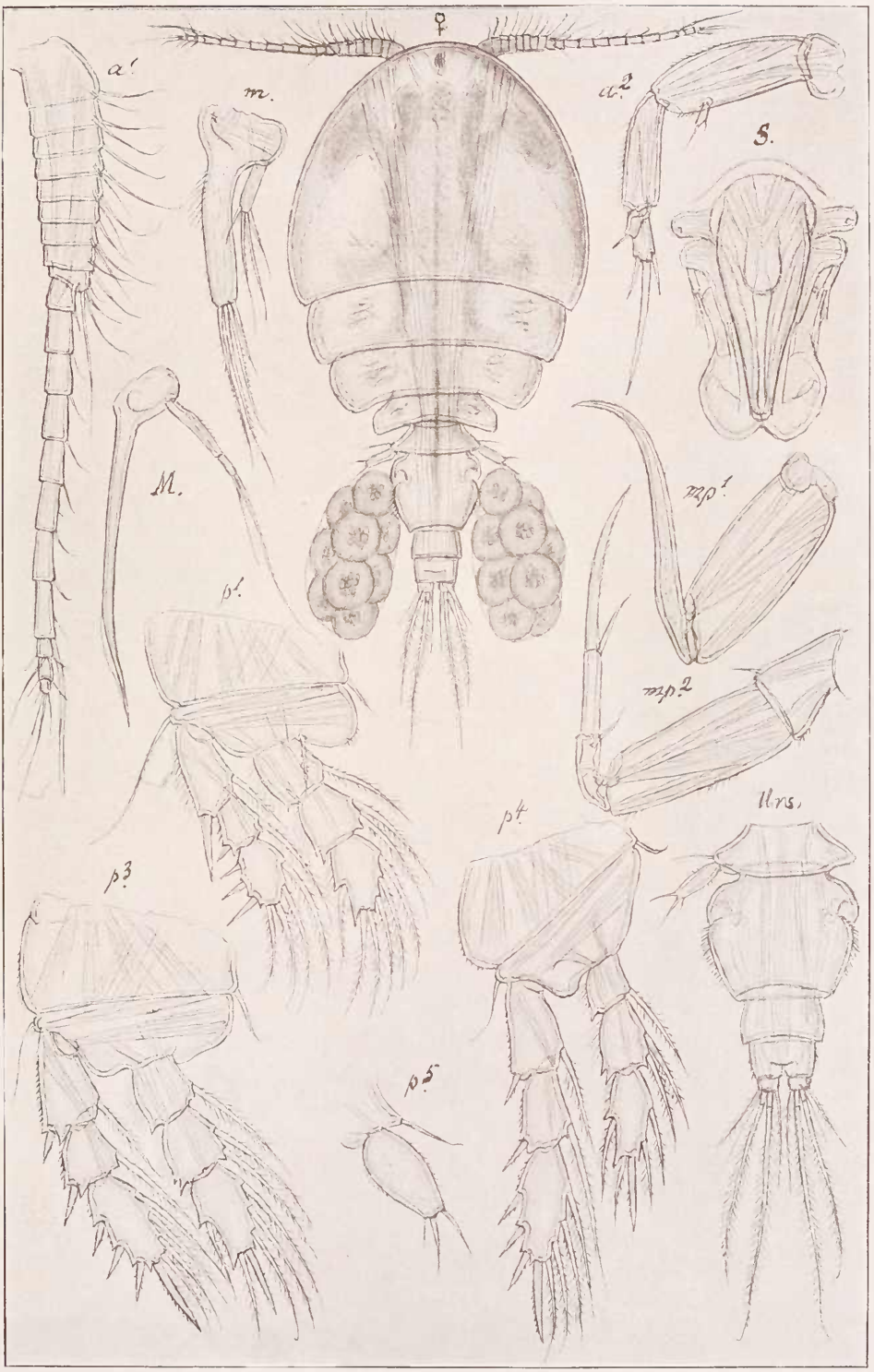
Copepoda



G. O. Sars, del.

Ascomyzon Boecki, (Brady)

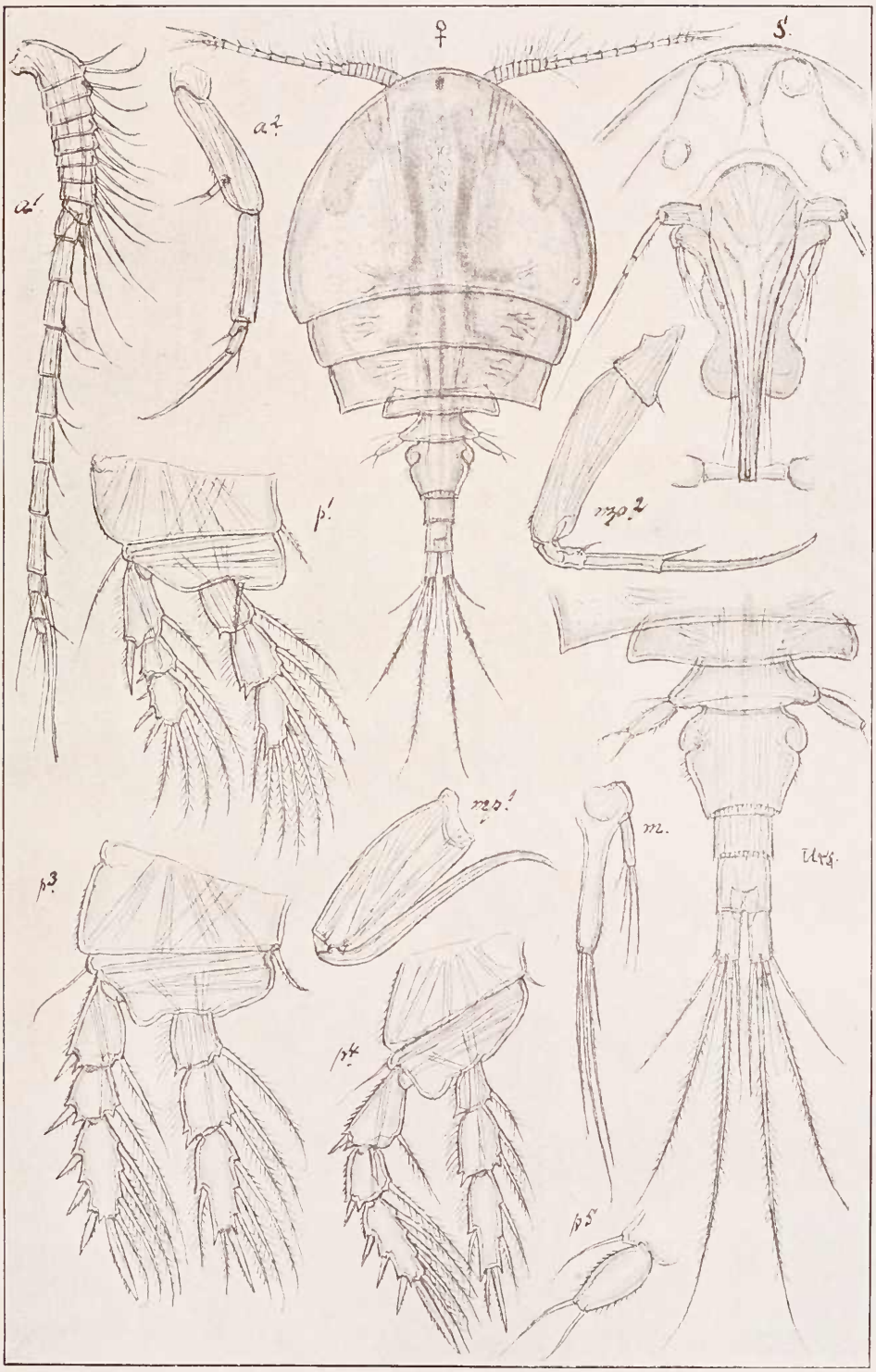
Copepoda



G. O. Sars, del.

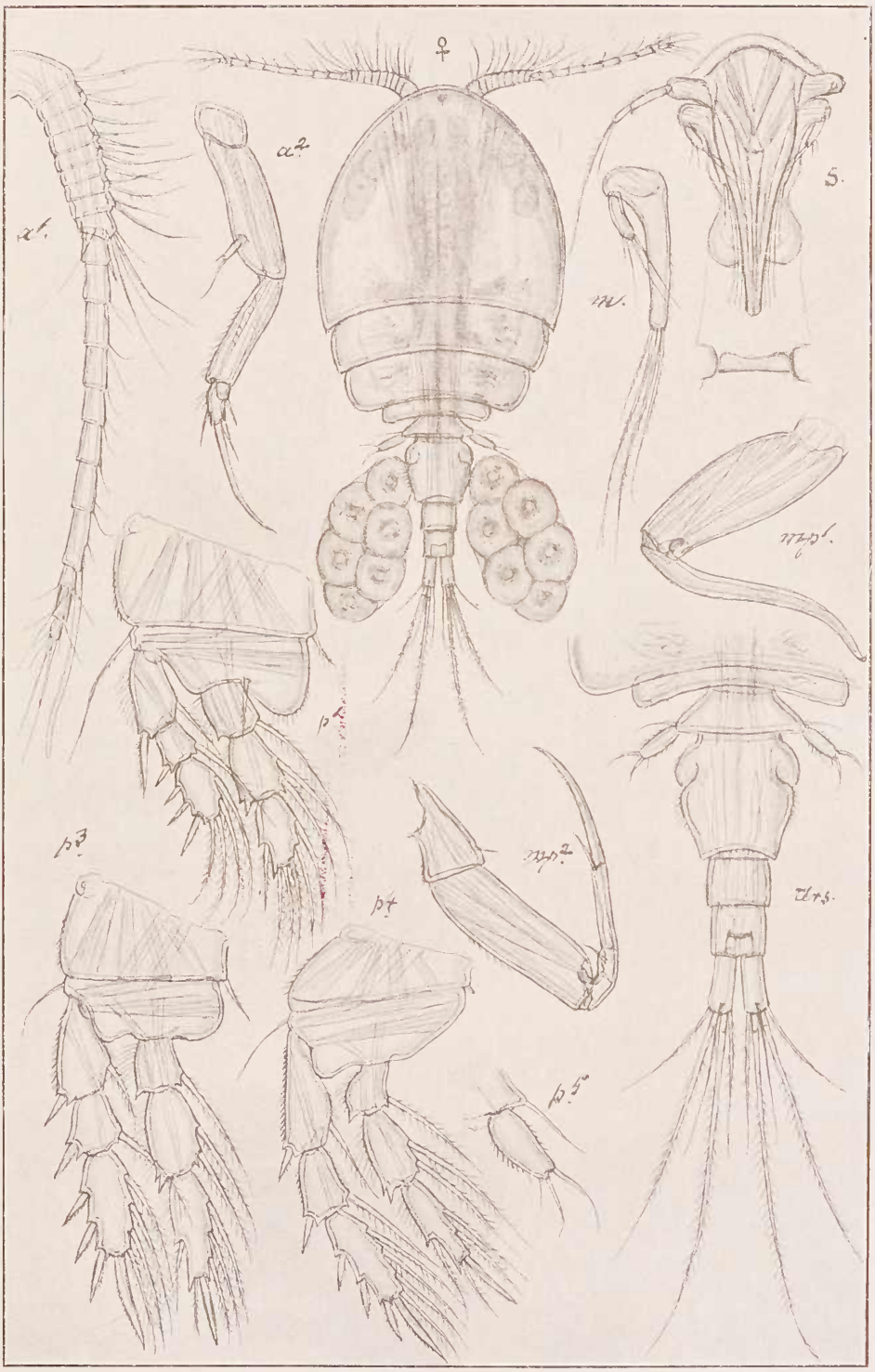
Ascomyzon simulans, Scott

Copepoda



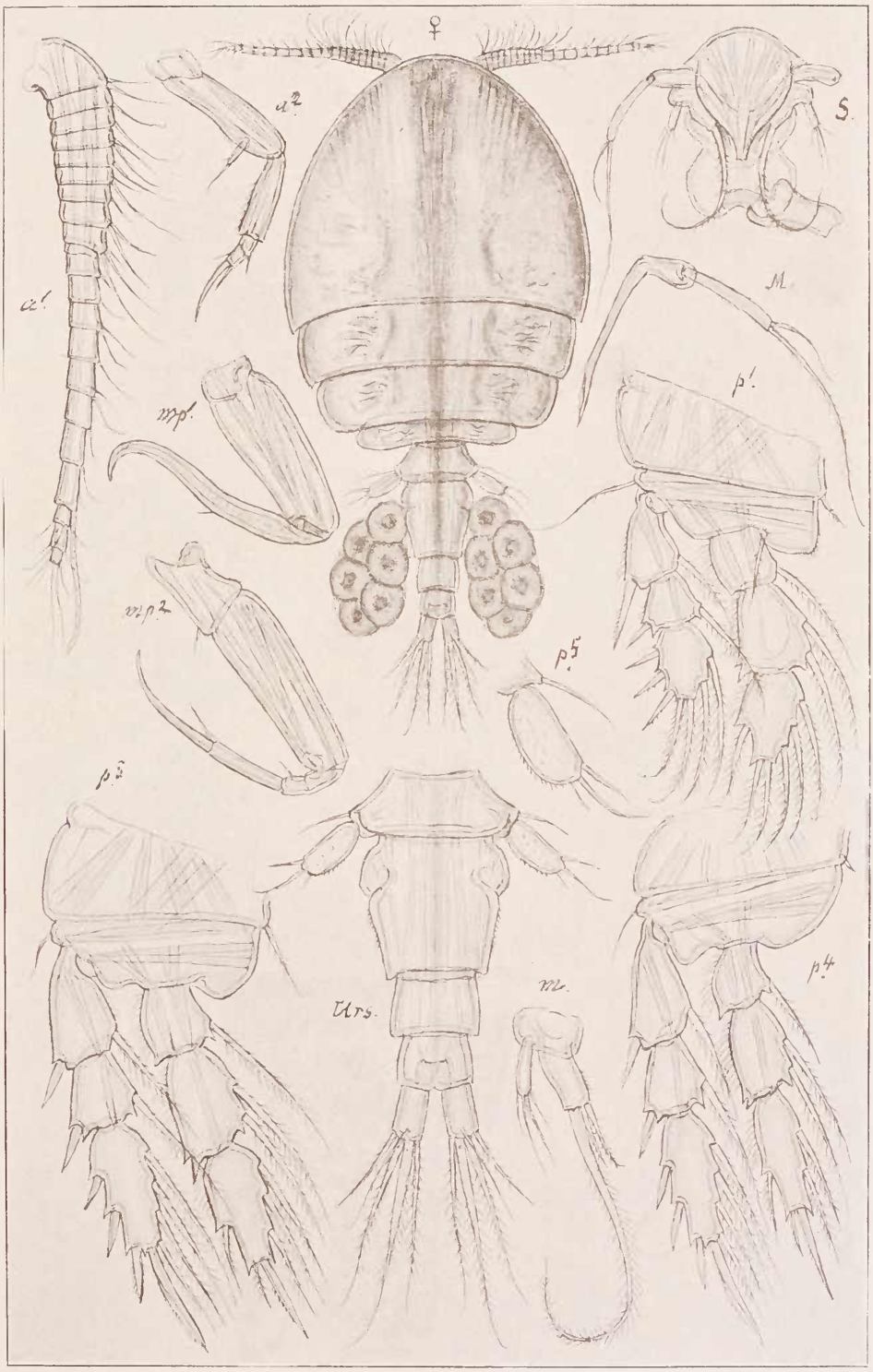
G. O. Sars, del.

Ascomyzon latum, (Brady)



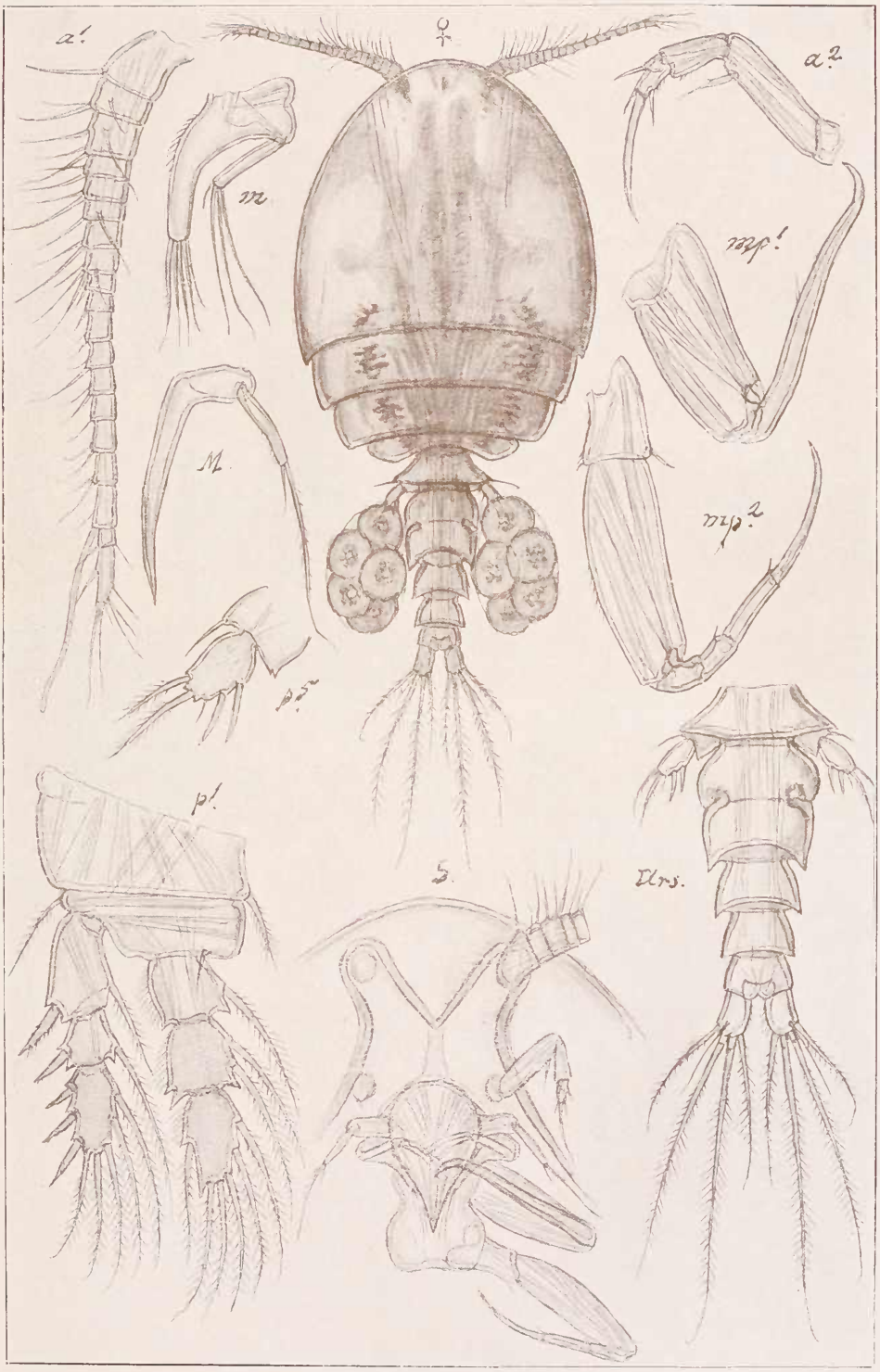
G. O. Sars, del.

Ascomyzon parvum, (Giesbrecht)



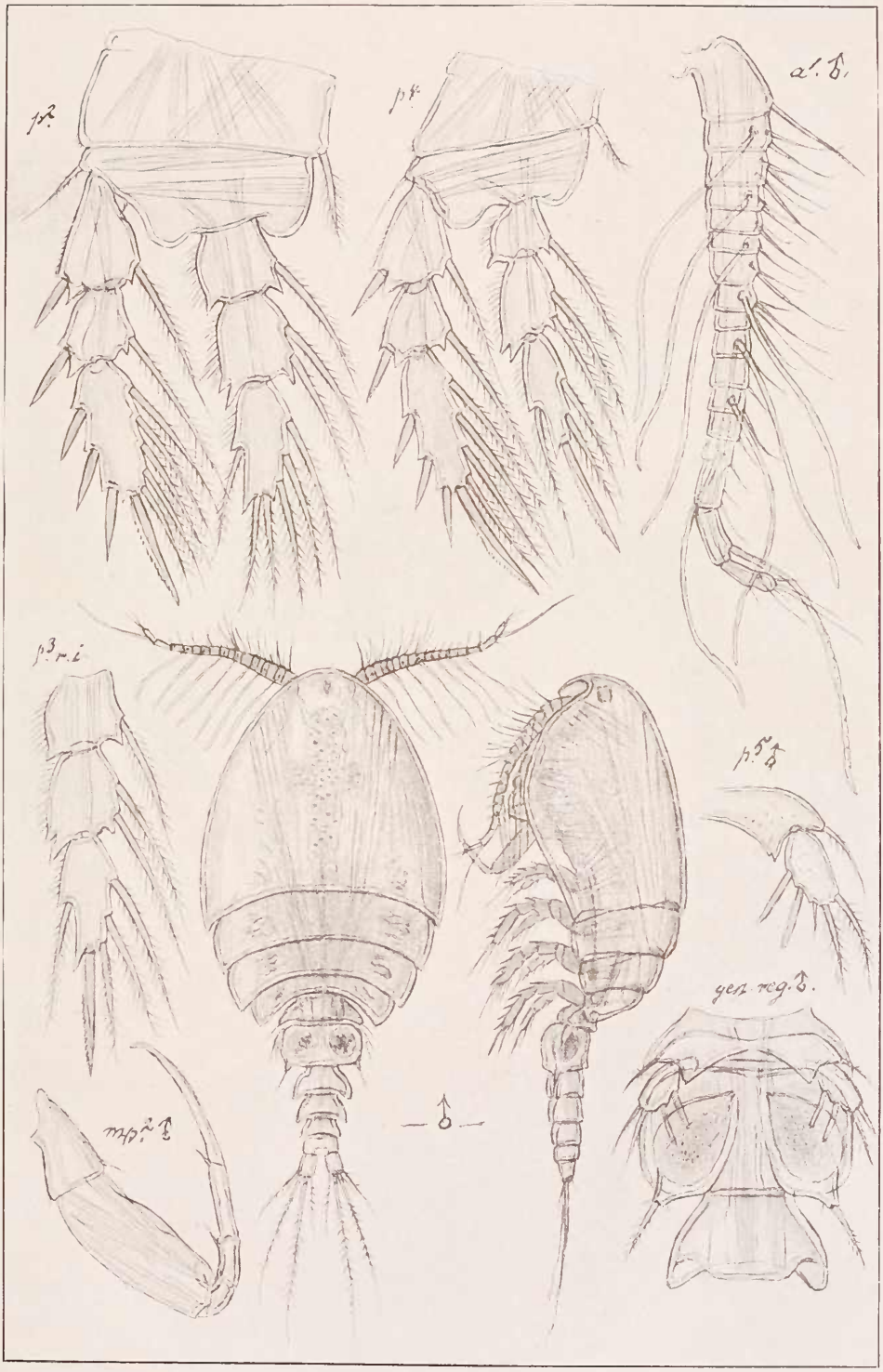
G. O. Sars, del.

Echinocheres violaceus, Claus



G. O. Sars, del.

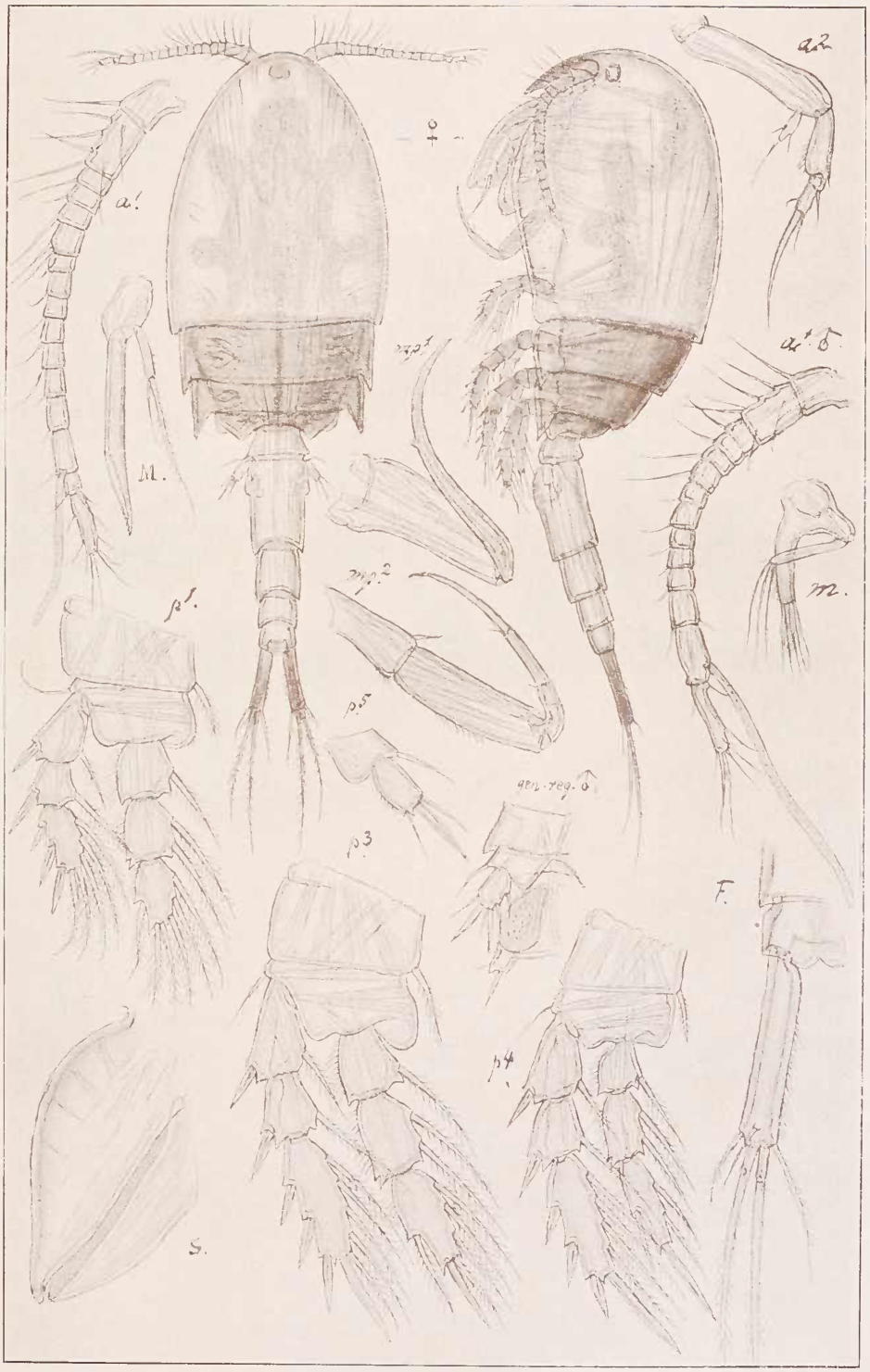
Dermatomyzon nigripes, (Brady)



G. O. Sars, del.

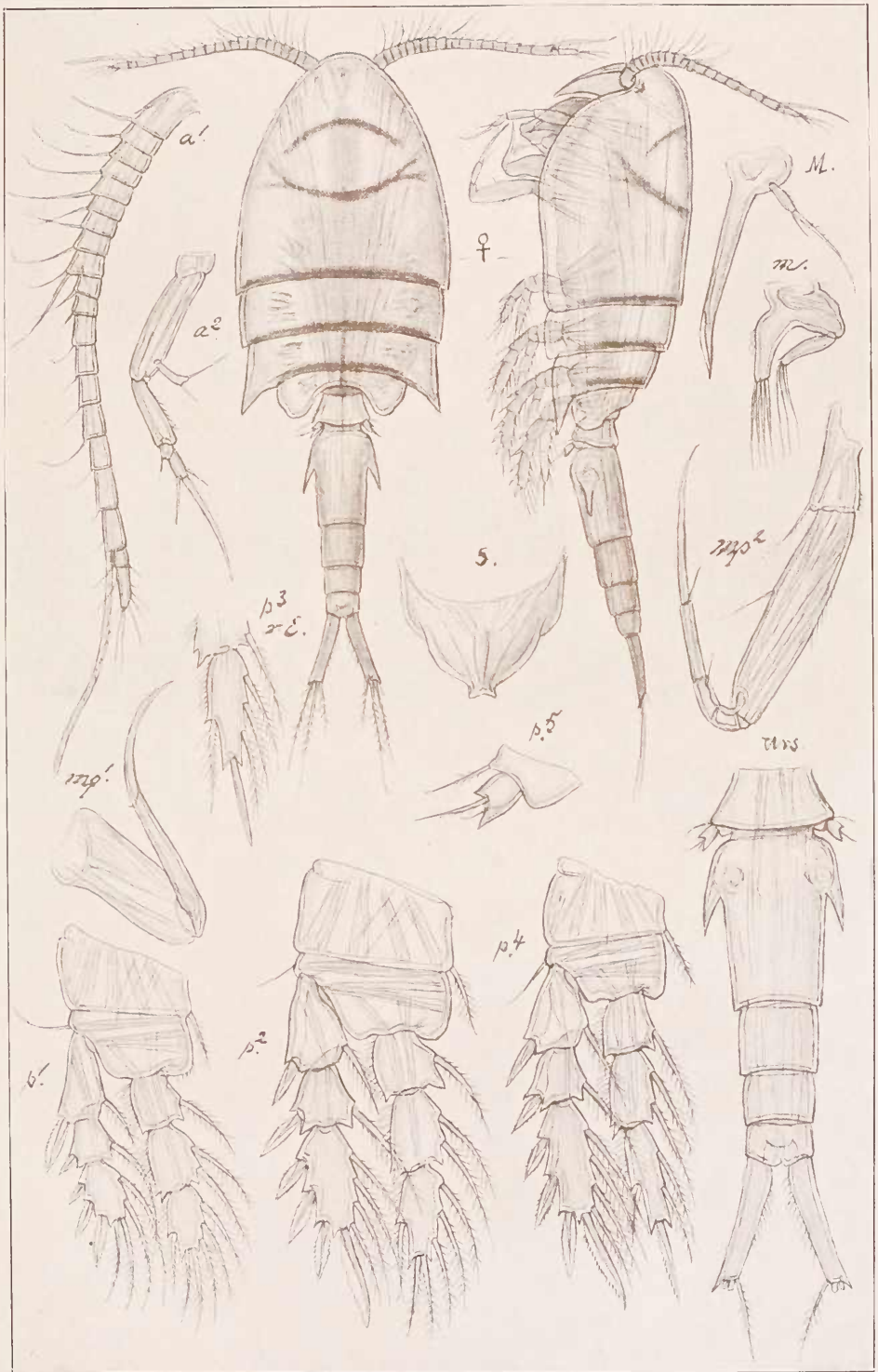
Dermatomyzon nigripes, (Brady)

(continued)



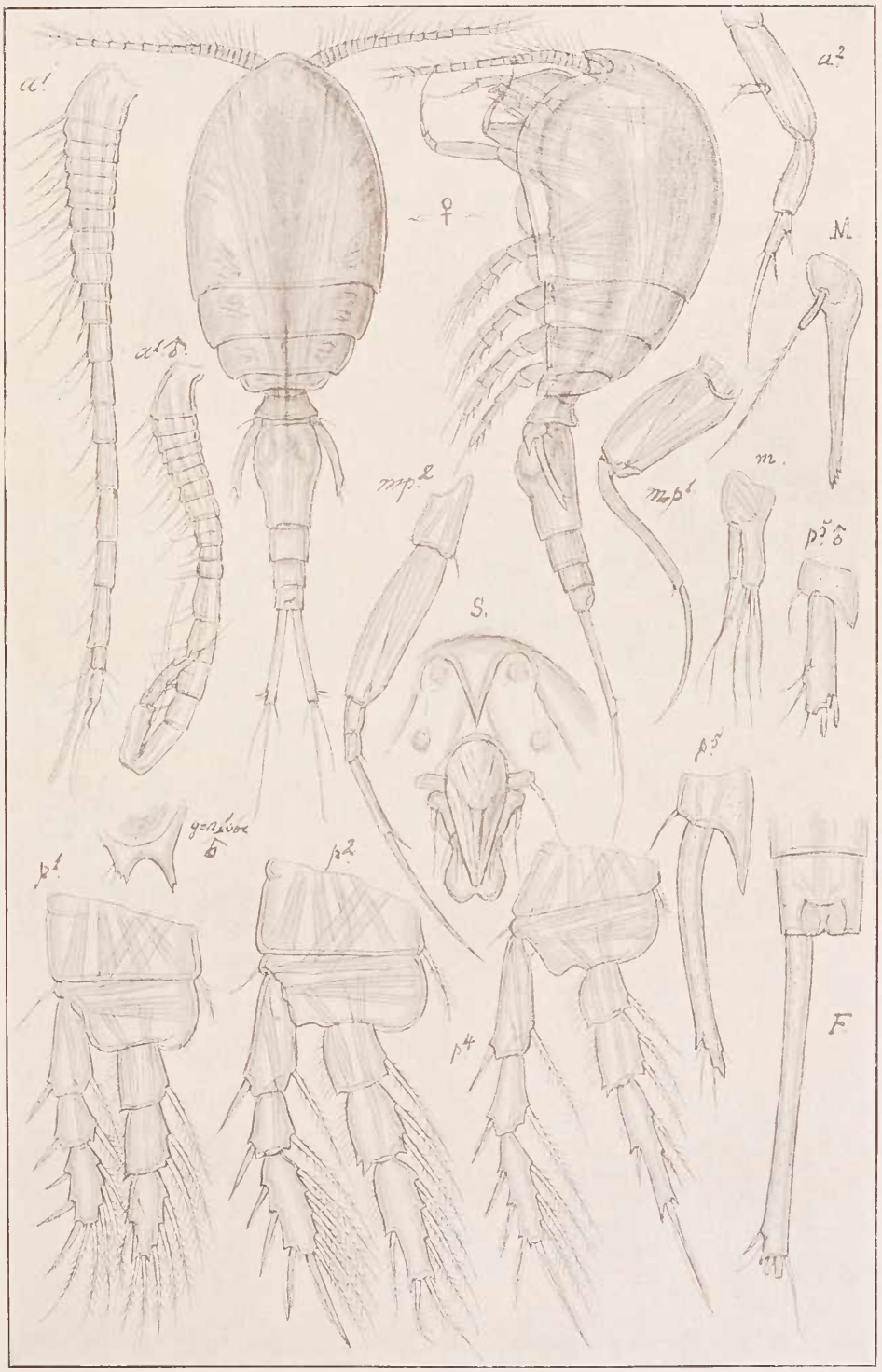
G. O. Sars, del.

Rhynchomyzon purpurocinctum, (Scott)



G. O Sars, del.

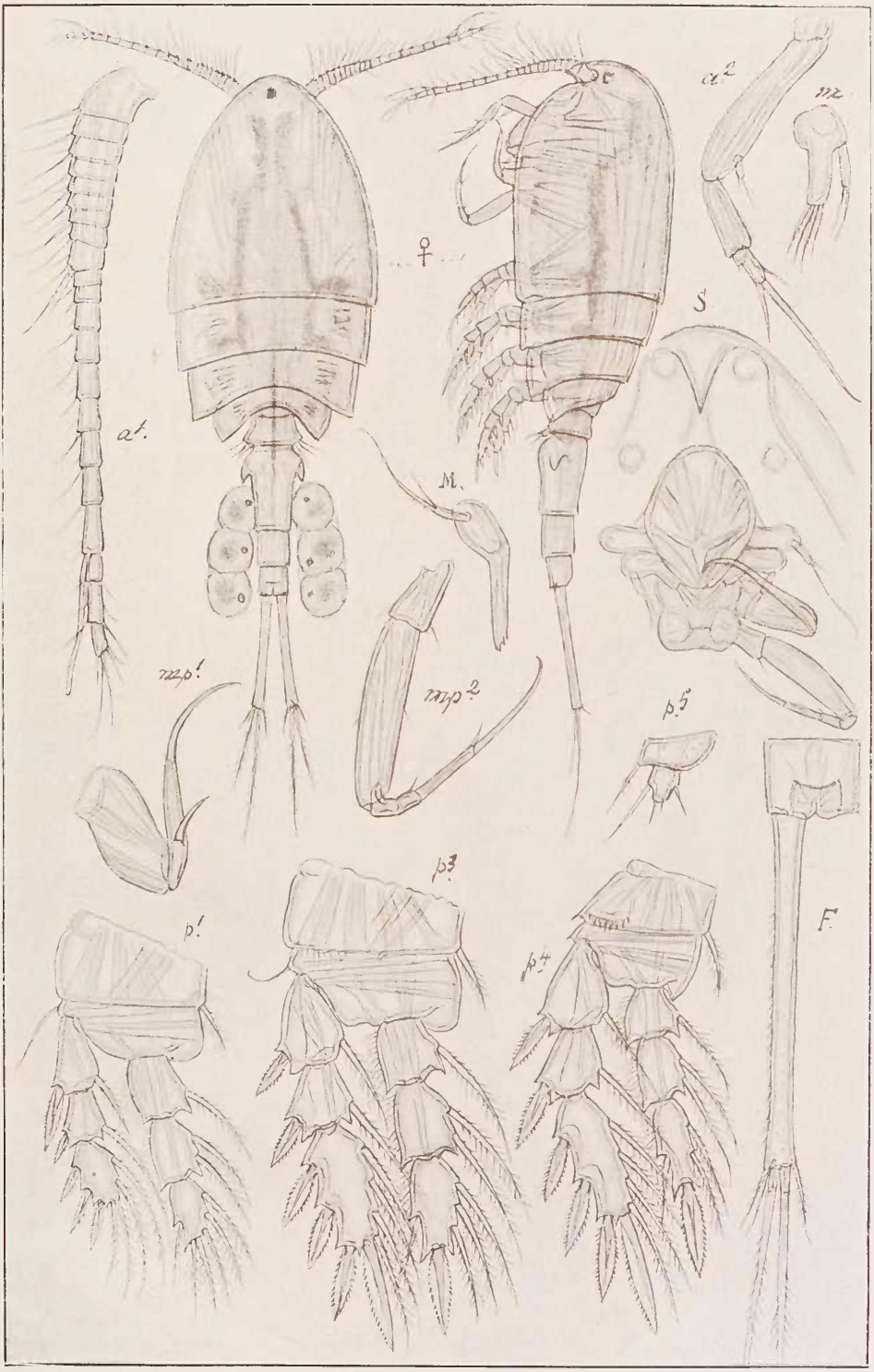
Rhynchomyzon rubrovittatum, G. O. Sars



G. O. Sars, del.

Collocheres gracilicauda (Brady)

Copepoda



G. O. Sars, del.

Mesocheres anglicus. Norm. & Scott