

AN ACCOUNT  
OF THE  
**CRUSTACEA**  
OF  
**NORWAY**

WITH SHORT DESCRIPTIONS AND FIGURES OF ALL THE SPECIES

BY  
G. O. SARS

VOL. VII  
**COPEPODA**  
SUPPLEMENT

PARTS III & IV  
**HARPACTICOIDA** (continued)

WITH 16 AUTOTYPIC PLATES



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of the distal joint; marginal setæ shorter than in the preceding species and rather unequal.

*Male* much smaller than female, but exhibiting a very similar form of the body. Anterior antennæ transformed in the usual manner, but highly distinguished by the presence of a largely developed æsthetask attached by a short chitinous stalk to the upper face of the greatly tumefied median joint, and extending backwards along the side of the cephalic segment until its very end. Last pair of legs, as usual, much reduced in size.

Colour light yellowish.

Length of adult female 0.88 mm.; that of male 0.72 mm.

*Remarks.*—This form is nearest allied to *E. propinquum* Scott, but is of more slender form of body, and moreover at once distinguished by the very different shape of the rostral plate, which is far less prominent and not, as in that species, spoon-shaped, but distinctly angular in front.

*Occurrence.*—I have only met with this form in a single locality on the Norwegian coast, viz., at Risør, where several specimens, both males and females, were found in depths ranging from 30 to 60 fathoms, muddy sand.

#### 16. *Ectinosoma tenerum*, G. O. Sars, n. sp.

(Pl. XVI, fig. 1).

*Specific Characters.*—*Female.* Body exceedingly slender and narrow, seen dorsally, almost linear in form. All the integuments very thin and pellucid. Rostral plate somewhat prominent and, seen dorsally, narrowly truncated in front, the tip being abruptly recurved. Urosome scarcely exceeding in length the exposed part of the trunk, and very slightly tapered behind; genital segment about the length of the 2 succeeding segments combined; anal segment, as usual, the smallest. Caudal rami very short, being scarcely as long as they are broad; apical setæ of moderate length. Anterior antennæ more slender than in the 2 preceding species and rapidly tapering distally, being composed of 6 well-defined joints, the 2nd of which is somewhat dilated in front. Anterior lip, as in most other species of the present genus, projecting below in an acute recurved process. Anterior maxillipeds unusually powerfully developed, with the 2nd basal joint very large and muscular; apical claws much elongated and abruptly curved in their outer part, which is moreover finely denticulate inside. Posterior maxillipeds very slender and narrow. Natatory legs of the usual appearance. Last pair of legs resembling somewhat in shape those in *E. angulifrons*; outermost lobe of the distal joint, however, far remote from

the other 2, issuing close to the base of the joint; appendicular bristle attached immediately inside this lobe; inner expansion of proximal joint extending beyond the middle of the distal joint; marginal setæ of these legs rather unequal, none of them however of any considerable length.

Colour of the living animal not yet ascertained.

Length of adult female amounting to 0.82 mm.

*Remarks.*—The present species exhibits some points of affinity both to *E. angulifrons* G. O. Sars and to *E. Herdmani* Scott, differing however from both in the still more slender form of the body and in the powerfully developed anterior maxillipeds. From *E. Herdmani*, which it resembles in the thin and pellucid integuments, it is moreover distinguished by the different form of the anterior lip and by the less strong and rather unequal marginal setæ of the last pair of legs.

*Occurrence.*—Some specimens of this form, all of the female sex, were picked up from a bottom-sample taken at Korshavn from a depth of about 60 fathoms, coarse muddy sand.

#### 17. *Ectinosoma clavatum*, G. O. Sars, n. sp.

(Pl. XVI, fig. 2).

*Specific Characters.*—*Female.* Body comparatively robust, subclavate in form, being conspicuously dilated in its anterior part and rapidly tapering behind. Rostral plate not much prominent and obtusely blunted at the end. Urosome considerably exceeding in length the exposed part of the trunk; genital segment not attaining the length of the 2 succeeding segments combined; anal segment scarcely half the size of the preceding segment, and slightly incised behind in the middle. Caudal rami somewhat produced, being considerably longer than they are broad at the base, and only slightly divergent, each ramus exhibiting dorsally a well-marked longitudinal keel; apical setæ somewhat thickened in their proximal part and rather elongated. Anterior antennæ comparatively short, though, as in the preceding species, composed of 6 well-defined joints. Anterior maxillipeds far less robust than in the preceding species, exhibiting the structure usually met with in the species of the present genus. Last pair of legs comparatively large, with the distal joint oblong quadrangular in form and rather regularly trilobate at the end, middle lobe the most prominent; inner expansion of proximal joint extending almost as far as the distal joint; marginal setæ of these legs of rather unequal length, that issuing from the middle lobe of the distal joint being the longest

and extending beyond the genital segment; appendicular bristle attached close to the base of the joint and accompanied by a transverse row of small spinules.

Colour of preserved specimens dark corneous.

Length of adult female 0.78 mm.

*Remarks.*—This is a well defined and easily recognisable species, being especially distinguished by the comparatively robust, sub-clavate form of the body, as also by the structure of the caudal rami and of the last pair of legs.

*Occurrence.*—Some few specimens of this form, all of the female sex, were picked up from samples taken at Risør from a depth of about 30 fathoms, muddy sand. A solitary specimen was also obtained at Korshavn from about the same depth.

18. *Ectinosoma compressum*, G. O. Sars, n. sp.

(Pl. XVII, fig. 1).

*Specific Characters.*—*Female.*—Body rather slender and conspicuously compressed, exhibiting in the dorsal aspect of the animal a very narrow, almost linear form. Cephalic segment scarcely exceeding in length the exposed part of the trunk, and conspicuously contracted in front; rostral plate somewhat prominent and, seen from above, narrowly truncated at the end. Urosome scarcely exceeding in length the exposed part of the trunk and somewhat tapered behind, being covered on the ventral face with small spikes; genital segment fully as long as the 2 succeeding segments combined; anal segment small and deeply incised behind in the middle. Caudal rami quite short, being scarcely longer than they are broad, and somewhat divergent; apical setæ rather elongated. Anterior antennæ comparatively slender and attenuated, being composed of 6 well-defined joints. Anterior maxillipeds rather powerfully developed, though somewhat less so than in *E. tenerum*. Natatory legs with the rami comparatively slender, the outer one in 1st pair extending a little beyond the middle joint of the inner. Last pair of legs closely contiguous in the middle, with the proximal joint rather large and lamellar; distal joint broadly rounded in form, with the 2 outer marginal setæ very long and slender, the innermost one much shorter; appendicular bristle attached to a small digitiform process issuing from the edge between the 2 outermost setæ; inner expansion of proximal joint rather narrow, and extending considerably beyond the middle of the distal joint, its apical setæ very unequal, the inner one much elongated, the outer scarcely  $\frac{1}{3}$  as long.

Colour of the living animal not yet ascertained.



Length of adult female 0.75 mm.

*Remarks.*—The present species is allied to *E. melaniceps* Boeck, but of considerably larger size and more slender form. The pronounced compression of the body is also very characteristic, and has indeed given rise to the specific name here proposed. Finally, well-marked differences are found in the structure of the anterior maxillipeds and of the last pair of legs.

*Occurrence.*—Some few specimens of this form, all of the female sex, were picked up from samples taken at Korshavn from a depth of about 60 fathoms, coarse muddy sand.

### 19. *Ectinosoma tenuipes*, Scott.

(Pl. XVII, fig. 2).

*Ectinosoma tenuipes*, Scott, Revision of the British species belonging to the genera *Bradya* and *Ectinosoma*. Trans. Linn. Soc. of London. Vol. VI, Part 5, p. 436, Pl. 36, figs. 25, 32, 35; Pl. 37, figs. 9, 19, 30, 47; Pl. 38, figs. 12, 17, 36, 52.

*Specific Characters.*—*Female.* Body considerably shorter and stouter than in the preceding species, with the anterior division somewhat dilated in the middle. Cephalic segment about the length of the exposed part of the trunk and gradually narrowed in front; rostral plate only slightly prominent and, seen from above, obtusely blunted at the tip. Urosome about equalling in length  $\frac{2}{3}$  of the anterior division, and rapidly tapered behind; genital segment not fully as long as the 2 succeeding segments combined; anal segment a little shorter than the preceding segment, and deeply incised behind in the middle. Caudal rami short, quadrangular, and slightly divergent; apical setæ rather slender. Anterior antennæ, as in the preceding species, 6-articulate, but somewhat less slender. Anterior maxillipeds less powerful, and of the usual appearance. Natatory legs with the rami comparatively slender and narrow, some of the apical spines and setæ excessively elongated. Last pair of legs resembling in structure those in the preceding species, the distal joint exhibiting a similar broadly rounded form, though distinguished by the presence of a well-marked rounded prominence near the base inside, as also by the less elongated marginal setæ, the outermost of which is much shorter than the middle one; appendicular bristle, as in that species, attached to a narrow digitiform process issuing from the edge between the 2 outermost setæ; inner expansion of proximal joint scarcely extending beyond the middle of the distal joint, its outer apical seta about half the length of the inner and not spiniform.

Colour of the living animal not yet ascertained.

Length of adult female scarcely exceeding 0.60 mm.

*Remarks.*—This form, first described by Scott in the above-quoted treatise, is far inferior in size to those recorded in the preceding pages, and may moreover easily be recognised by its shorter and stouter body as also by the extraordinary length of some of the spines and setæ attached to the natatory legs. The last pair of legs are built on the same type as in the preceding species and in *E. melaniceps*, though exhibiting some well-marked differences from both of them.

*Occurrence.*—I have met with this small species in 2 different localities of the south coast of Norway, viz., at Risør and Korshavn. It occurred occasionally in depths ranging from 20 to 100 fathoms.

*Distribution.*—Scottish coast (Scott).

## 20. *Ectinosoma distinctum*, G. O. Sars, n. sp.

(Pl. XVIII, fig. 1).

*Specific Characters.*—*Female.* General form of body somewhat resembling that in *E. tenerum*, though comparatively less slender, the anterior division being slightly dilated in the middle. Cephalic segment exceeding somewhat in length the exposed part of the trunk, and rapidly contracted in front; rostral plate rather prominent and, seen from above, obtusely pointed at the end. Urosome exceeding in length  $\frac{2}{3}$  of the anterior division, and only slightly tapered behind; genital segment about the length of the 2 succeeding segments combined; anal segment, as usual, the smallest and only slightly incised behind in the middle. Caudal rami comparatively short, being scarcely longer than they are broad at the base; apical setæ rather slender. Anterior antennæ comparatively short and stout, though composed of 6 well-defined joints. Posterior antennæ with the outer ramus well developed, extending as far as the inner. Anterior maxillipeds with the 2 basal joints of about equal size. Natatory legs built on the usual type, the outer ramus being in 1st pair much smaller than the inner and scarcely extending beyond its middle joint. Last pair of legs, however, exhibiting a rather characteristic structure; distal joint narrow quadrangular in form, with the 2 outermost marginal setæ exceedingly strong and greatly thickened at the base, whereas the innermost seta is quite rudimentary; appendicular bristle rather fully developed and attached close to the base of the joint; inner expansion of proximal joint comparatively short and stout, not nearly extending to the middle of the distal joint, and coarsely ciliated inside, both apical setæ strongly developed and of a similar

appearance to the 2 outermost setæ of the distal joint. Ovisac comparatively small, with a very limited number of ova.

Colour of the living animal not yet ascertained.

Length of adult female 0.51 mm.

*Remarks.*—The present species is especially distinguished by the peculiar structure of the last pair of legs, which is unlike that in any other known species, though by the strong development of some of the marginal setæ somewhat recalling that in *E. gothiceps* Giesbrecht. The rudimentary condition of the innermost seta in the distal joint is however very characteristic and quite peculiar to the present species.

*Occurrence.*—Two female specimens only of this form have as yet come under my notice. One of them was picked up from a sample taken at Korshavn from a depth of about 30 fathoms; the other specimen was found last summer at Hvalør, outside the Christiania Fjord.

## 21. *Ectinosoma obtusum*, G. O. Sars, n. sp.

(Pl. XVIII, fig. 2).

*Specific Characters.*—*Female.* Body comparatively short and stout, with the anterior division slightly dilated in the middle. Cephalic segment scarcely exceeding in length the 3 succeeding segments combined and, seen dorsally, obtusely rounded anteriorly, the rostral plate being abruptly deflexed and scarcely at all prominent in front. Urosome somewhat exceeding in length the exposed part of the trunk and gradually tapered behind. Caudal rami very short, scarcely as long as they are broad; apical setæ of moderate length. Anterior antennæ comparatively slender and attenuated, 7-articulate. Posterior antennæ with the outer ramus less fully developed than in the preceding species, and not nearly extending as far as the inner. Anterior maxillipeds with the 2nd basal joint somewhat larger than the 1st. Natatory legs of the usual structure. Last pair of legs built on the same type as in *E. melaniceps* and allied species; distal joint comparatively broad and somewhat oblique, with a small tuberculiform prominence inside the middle, terminal edge irregularly lobular, and exhibiting, somewhat outside the middle, a deep incision separating the outermost lobe from the other 2, which are closely juxtaposed and occupy the most prominent part of the joint; marginal setæ of moderate length and somewhat unequal, the innermost one being the shortest, but of rather coarse structure, almost spiniform; appendicular bristle very small and attached to a well defined lobule issuing from the edge immediately inside the outermost



marginal seta; inner expansion of proximal joint rather narrow and extending about to the middle of the distal joint, outer apical seta comparatively short and stout, spiniform.

Colour of the living animal not yet ascertained.

Length of adult female 0.47 mm.

*Remarks.*—In its general appearance this form looks not unlike *E. brevirostre* G. O. Sars, from which species it may however at once be distinguished by the much shorter caudal rami, and more particularly by the very different structure of the last pair of legs. It is also of rather inferior size.

*Occurrence.*—A solitary female specimen only of this form has as yet come under my notice. It was picked up from a sample taken at Korshavn from a depth of about 30 fathoms.

### Gen. *Pseudobradya*, G. O. Sars.

*Remarks.*—This genus was established in the year 1911 by the present author, to comprise some species referred by Scott to the genus *Bradya* of Boeck, but differing from that genus in several points, both as regards the outward appearance and the structure of some of the appendages. Seven species of this genus have been described in Vol. V of the present work, and I am now enabled to add no less than 10 species, all of them new to science. The total number of Norwegian species is thereby increased to 17 in all.

#### 22. *Pseudobradya digitata*, G. O. Sars, n. sp.

(Pl. XIX).

*Specific Characters.*—*Female.* Body moderately slender, with the anterior division only slightly dilated in the middle. Cephalic segment much shorter than the exposed part of the trunk, equalling about in length the 3 succeeding segments combined; rostral plate short and somewhat deflexed, with the end obtusely rounded. Urosome attaining in length about  $\frac{3}{4}$  of the anterior division and slightly tapered behind; genital segment, of moderate size; anal segment about half the length of the preceding segment and slightly incised behind in the middle. Caudal rami somewhat longer than they are broad at the base and only slightly divergent, apical setæ not much elongated. Anterior antennæ very short and stout, though apparently composed of 6 joints clothed with strong curved setæ. Posterior antennæ with the inner ramus rather strongly built, outer one extending almost as far as the inner, and distinctly

3-articulate. Oral parts, as in the other species of the present genus, rather feebly developed. Natatory legs with the rami moderately slender, the inner one in 1st pair somewhat longer than the outer, in the succeeding pairs of about same length, 1st joint of this ramus wanting the usual seta inside, but produced at the end to a sharp corner; 2nd joint of same ramus armed in the 2 middle pairs with a well-marked spine inside in addition to the seta. Last pair of legs largely developed, with the distal joint spatulate in form and divided at the end into 3 nearly equal, digitiform lobes separated by deep incisions and clothed with slender spinules, each lobe carrying a well developed seta, that of the middle lobe being, as usual, the longest and extending almost to the end of the 2nd caudal segment, innermost seta shorter than the other 2, but considerably coarser, almost spiniform; appendicular bristle well developed and attached near the base of the joint, being accompanied with a transverse row of small spinules; inner expansion of proximal joint scarcely extending to the middle of the distal joint and clothed with a number of small spinules, both apical setæ rather slender and nearly equal.

Colour of the living animal not yet ascertained.

Length of adult female somewhat exceeding 1 mm.

*Remarks.*—In size and general appearance this form looks not unlike *Ectinosoma neglectum* G. O. Sars, and may at the first sight easily be confounded with it. On a closer examination, however, it is found to be very different and unquestionably belonging to the present genus. It is the largest of the known species, and may moreover be recognised from any of them by the structure of the last pair of legs.

*Occurrence.*—Some few specimens of this handsome species were picked up from samples taken at Risør from a depth of about 50 fathoms, muddy sand. I have not met with it in any other place on our coast.

### 23. *Pseudobradya leptognatha*, G. O. Sars, n. sp.

(Pl. XX).

*Specific Characters.*—*Female.* Body rather slender, with the anterior division somewhat dilated in the middle. Cephalic segment fully as long as the exposed part of the trunk and rapidly narrowed in front; rostral plate comparatively small and obtusely rounded at the end. Urosome about equalling in length  $\frac{3}{4}$  of the anterior division and rapidly tapered behind; genital segment rather large, though not fully attaining the length of the 2 succeeding segments combined; anal segment comparatively small and minutely incised

behind in the middle. Caudal rami about twice as long as they are broad and not at all divergent, each having a well-marked keel along the dorsal face; apical setæ comparatively short. Anterior antennæ very small, 5-articulate. Posterior antennæ considerably more slender than in the preceding species, with the outer ramus scarcely half as long as the inner and only composed of 2 joints, the proximal one very small. Mandibles and maxillæ of about same structure as in the preceding species. Anterior maxillipeds however rather different, being much reduced in size and simple cylindric in form, with none of the joints dilated. Posterior maxillipeds normally developed. Natatory legs comparatively more slender than in the preceding species, and not exhibiting any peculiarity in their structure. Last pair of legs comparatively large, with the distal joint oval in form, its terminal lobes far less sharply marked off from each other than in the preceding species and somewhat unequal, the outermost one being placed rather in front of the other 2; marginal setæ moderately slender, the innermost one the shortest and not spiniform; appendicular bristle well developed and attached at a short distance from the base of the joint; inner expansion of proximal joint rather narrow and extending somewhat beyond the middle of the distal joint, outer apical seta much shorter than the inner, which is attached somewhat more in front.

Colour of the living animal not yet ascertained.

Length of adult female, 0.78 mm.

*Remarks.*—The present form is especially distinguished by the peculiar rudimentary condition of the anterior maxillipeds, a character by which it differs from any of the other known species, and which indeed has given rise to the specific name here proposed. It also exhibits some other well-marked differences from the other species, as pointed out in the above diagnosis.

*Occurrence.*—A solitary female specimen only of this distinct species has hitherto come under my notice. It was found in a sample taken at Risør in the same place as the preceding species.

#### 24. *Pseudobradya scabriuscula*, G. O. Sars, n. sp.

(Pl. XXI).

*Specific Characters.*—*Female.* Body moderately slender, with the anterior division scarcely at all dilated in the middle. Cephalic segment slightly exceeding in length the exposed part of the trunk, and gradually narrowed in front; rostral plate somewhat prominent and obtusely pointed at the end. Urosome

about equalling in length  $\frac{3}{4}$  of the anterior division, and only slightly tapered behind, its segments successively diminishing in size and, like the trunkal segments, provided, in addition to the usual spinulation of the hind edge, with a transverse row of small spinules across the middle of the back. Caudal rami comparatively short, scarcely longer than they are broad at the base; apical setæ not much elongated. Anterior antennæ very small, 6-articulate. Posterior antennæ with the outer ramus rather slender, extending almost as far as the inner, and 3-articulate, the first 2 joints very small. Oral parts of normal structure. Natatory legs comparatively slender, with the rami somewhat unequal in length; the inner one being in 1st pair longer than the outer, in the succeeding pairs rather shorter; middle joint of this ramus in 3rd pair with 2 well-developed setæ inside. Last pair of legs somewhat resembling in shape those in *P. digitata*, the distal joint being rather large and spatulate in form, though having the surface nearly smooth and the terminal lobes less sharply marked off from each other, innermost marginal seta very slender and longer than the other 2, which are nearly equal; appendicular bristle well developed and attached close to the base of the joint; inner expansion of proximal joint extending nearly to the middle of the distal joint, apical setæ rather unequal, the outer one the shorter and spiniform.

Colour of the living animal not yet ascertained.

Length of adult female 0.75 mm.

*Remarks.*—The present species may be easily distinguished from the 2 preceding ones by the somewhat less slender form of the body and by the rather conspicuous spinulose armature of the segments, giving the body a somewhat scabrous appearance; hence the specific name here proposed. Moreover some well-marked differences are found in the structure of some of the appendages, as pointed out in the above diagnosis.

*Occurrence.*—Two female specimens only of this form have as yet come under my notice. They were found in a sample taken at Risør in about the same place, where the 2 preceding species occurred.

## 25. *Pseudobradya attenuata*, G. O. Sars, n. sp.

(Pl. XXII).

*Specific Characters.*—*Female.* Body very slender, elongate subfusiform in shape, being conspicuously attenuated both in front and behind. Cephalic segment occupying about half the length of the anterior division and rapidly narrowed in front; rostral plate somewhat prominent and obtusely acuminate at the end.

Urosome exceeding somewhat in length  $\frac{3}{4}$  of the anterior division and gradually tapered behind; genital segment much larger than the succeeding one; anal segment about half the length of the preceding one and slightly incised behind in the middle. Caudal rami a little longer than they are broad and not at all divergent; apical setæ of moderate length. Anterior antennæ remarkably short and stout, 5-articulate, with the 2nd joint considerably dilated and divided anteriorly into 2 sharply-defined setiferous lobes. Posterior antennæ with the outer ramus rather small, not nearly attaining the length of the 1st joint of the inner, and biarticulate. Oral parts normal. Natatory legs moderately slender, inner ramus in 1st pair considerably longer than the outer, in the remaining pairs of about same length. Last pair of legs well developed, and somewhat resembling in structure those in *P. leptognatha*, the distal joint being oval in form, with the terminal lobes short and rather unequal, the outermost one placed far in front of the other two, marginal setæ rather slender, the middle one the longest; appendicular bristle attached close to the base of the joint and accompanied by a transverse row of small spinules; inner expansion of proximal joint extending somewhat beyond the middle of the distal joint, apical setæ very unequal, the outer one being scarcely half as long as the inner.

*Male*, as usual, smaller than female and of still more slender form. Anterior antennæ very distinctly hinged and composed of 6 well defined joints, the 4th of which is considerably tumefied and provided outside, at some distance from the base, with a large sausage-shaped æsthetask. Last pair of legs, as usual, much smaller than in female.

Colour of the living animal not yet ascertained.

Length of adult female 0.74 mm.

*Remarks.*—The above-described species is easily recognised by the slender subfusiform shape of the body in both sexes, and the unusually short and stout anterior antennæ. Some differences from the preceding species are also found in the other structural details, as pointed out in the above diagnosis.

*Occurrence.*—Solitary specimens of this elegant species have been taken in 3 different places on the southern coast of Norway, viz., at Risør, Flekkerø and Korshavn. It occurred in depths ranging from 20 to 60 fathoms.

## 26. *Pseudobradya tenella*, G. O. Sars, n. sp.

(Pl. XXIII, fig. 1).

*Specific Characters.*—*Female.* Body comparatively slender and narrow, subfusiform in shape, with rather thin and pellucid integuments. Cephalic segment considerably longer than the exposed part of the trunk and abruptly



contracted in front; rostral plate rather prominent and, seen from above, narrowly truncated at the end. Urosome about equalling in length  $\frac{2}{3}$  of the anterior division, and gradually tapered behind; genital segment much larger than the succeeding one; anal segment, as usual, the smallest and very slightly incised behind in the middle. Caudal rami comparatively short, being scarcely longer than they are broad; apical setæ rather slender and elongated. Anterior antennæ of moderate size and 6-articulate. Posterior antennæ with the outer ramus nearly as long as the inner and biarticulate, 1st joint very small, distal joint somewhat curved and provided inside with a row of slender spinules. Oral parts and natatory legs of the usual structure. Last pair of legs comparatively short, with the distal joint broadly quadrangular in form and having the terminal lobes densely spinulose and nearly equal, marginal setæ unusually short; appendicular bristle attached close to the base of the joint and accompanied inside by 4 small spinules; inner expansion of proximal joint extending almost as far as the distal joint, and provided across the middle with a row of delicate spinules, inner edge coarsely ciliated, apical setæ, as usual, rather unequal in length.

Colour of the living animal not yet ascertained.

Length of adult female 0.63 mm.

*Remarks.*—This is a much smaller species than any of the 3 preceding ones, and is moreover easily distinguished by the shape of the rostral plate and the structure of the last pair of legs. The specific name here proposed alludes to the very thin and pellucid integuments and the comparatively slender form of the body.

*Occurrence.*—Some few specimens of this form, all of the female sex, were picked up from samples taken partly at Risør, partly at Korshavn, the depth ranging from 20 to 60 fathoms.

## 27. *Pseudobradya parvula*, G. O. Sars, n. sp.

(Pl. XXIII, fig. 2).

*Specific Characters.*—*Female.* Body comparatively short and stout, with the anterior division somewhat dilated in the middle. Cephalic segment occupying about half the length of that division, and abruptly contracted in front; rostral plate less prominent than in the preceding species and, seen from above, obtusely truncated at the end. Urosome only slightly exceeding in length the exposed part of the trunk and not much narrowed behind; genital segment, as usual, the largest and nearly equalling in length the 2 suc-

ceeding segments combined; anal segment shorter than any of the preceding ones, and broadly emarginated behind in the middle. Caudal rami comparatively small, being scarcely longer than they are broad; apical setæ rather slender. Anterior antennæ comparatively shorter than in the preceding species, and only composed of 5 joints. Posterior antennæ with the outer ramus somewhat shorter than the inner and very narrow, being composed of 3 joints, the first 2 very small. Anterior lip with a very conspicuous, almost rectangular protuberance in front. The other oral parts, as also the natatory legs, of normal structure. Last pair of legs comparatively small; distal joint narrow quadrangular in form and divided at the end into 3 well-defined and nearly equal lobes without any spinulose clothing, marginal setæ rather slender and exhibiting the usual relation in length; appendicular bristle attached at some distance from the base of the joint and accompanied outside by a small spinule; inner expansion of proximal joint somewhat curved and not extending as far as the distal joint, apical setæ, as usual, rather unequal in length.

Colour of the living animal not yet ascertained.

Length of adult female 0.56 mm.

*Remarks.*—This species is of still smaller size than the preceding one, from which it moreover at once is distinguished by the much shorter and stouter body. The shape of the anterior lip and that of the last pair of legs are also rather different.

*Occurrence.*—Some few specimens of this form, all of the female sex, were obtained from samples taken at Risør and Korshavn from depths ranging from 30 to 60 fathoms.

## 28. *Pseudobradya pulchella*, G. O. Sars, n. sp.

(Pl. XXIV, fig. 1).

*Specific Characters.*—*Female.* Body comparatively short, subfusiform in shape, with the anterior division conspicuously dilated in the middle. Integuments rather firm and very glossy. Cephalic segment exceeding in length the exposed part of the trunk, and gradually narrowed in front; rostral plate not much prominent and, seen from above, obtusely rounded at the tip. Urosome slightly exceeding half the length of the anterior division and rapidly tapered behind; genital segment about the length of the 2 succeeding segments combined; anal segment small and narrowly incised behind in the middle. Caudal rami quadrangular in form, and scarcely longer than they are broad, each with a well-marked keel along the dorsal face; apical setæ of moderate length.

Anterior antennæ composed of 7 well defined joints, the 1st of which is much the largest, and exhibiting a very conspicuous patch of a dark pigment. Posterior antennæ with the outer ramus comparatively small, scarcely exceeding in length the 1st joint of the inner, though composed of 3 well defined joints. Oral parts somewhat more fully developed than in most other species of the present genus. 1st pair of natatory legs with the spine attached outside the 2nd basal joint remarkably strong and quite smooth, inner ramus of this pair considerably larger than the outer. Last pair of legs of moderate size; distal joint somewhat spatulate in form, with the terminal lobes well defined and nearly equal, inner edge of the joint distinctly ciliated; marginal setæ moderately slender and exhibiting the usual relation in length; appendicular bristle attached about in the middle of the joint and accompanied inside by 4 slender spinules; inner expansion of proximal joint comparatively short, not extending to the middle of the distal joint, and exhibiting at the base a transverse row of small spinules, inner edge distinctly ciliated, apical setæ rather unequal, the outer one scarcely exceeding half the length of the inner. Ovisac comparatively small.

Colour of preserved specimens dark corneous.

Length of adult female 0.55 mm.

*Remarks.*—The present species is easily recognised from those described in the preceding pages, and is especially distinguished by the dark corneous and glossy integuments and by the very conspicuous dark pigmentary patch on the base of the anterior antennæ. In the latter respect it agrees with *P. minor* of Scott, which however otherwise is rather different.

*Occurrence.*—Two female specimens of this handsome species were picked up from a sample taken at Risør from a depth of about 40 fathoms.

## 29. *Pseudobradya exilis*, G. O. Sars, n. sp.

(Pl. XXIV, fig. 2).

*Specific Characters.*—*Female.* Body exceedingly slender and narrow, with the anterior division scarcely at all dilated in the middle. Cephalic segment exceeding in length the exposed part of the trunk and rapidly tapered in front; rostral plate strongly prominent and acuminate at the end. Urosome slightly exceeding half the length of the anterior division and considerably tapered behind; genital segment fully as long as the 2 succeeding segments combined; anal segment very small and scarcely incised behind in the middle. Caudal rami short, about as long as they are broad, and rather approximate; apical setæ very slender. Anterior antennæ comparatively small, 6-articulate.

Posterior antennæ with the outer ramus unusually fully developed, exceeding considerably in length the inner, and composed of 3 well defined joints, the middle one the smallest, apical spines rather elongated and coarsely spinulose at the one edge. Posterior maxillipeds of simpler structure than in the other species, being only composed of 2 joints, the distal one the longer and carrying at the tip 2 unequal setæ. The remaining oral parts apparently normal. Natatory legs powerfully developed, with the basal part thick and muscular, rami comparatively slender. Last pair of legs rather unlike in shape those in the other known species, the distal joint being considerably produced, with the outer part narrow sublinear in form and distinctly ciliated inside, outermost lobe far remote from the other 2 and occurring near the base of the joint; marginal setæ comparatively slender, the middle one being, as usual, the longest; appendicular bristle attached close to the base of the joint and accompanied by a transverse row of small spinules; inner expansion of proximal joint rather produced, extending beyond the middle of the distal joint and distinctly ciliated inside, apical setæ slender and somewhat unequal in length.

Colour of the living animal not yet ascertained.

Length of adult female 0.50 mm.

*Remarks.*—This is a very distinct and easily recognisable species, especially distinguished by the unusually large size of the outer ramus of the posterior antennæ and the peculiar shape of the last pair of legs. The structure of the posterior maxillipeds also is rather unlike that found in the other species of the present genus.

*Occurrence.*—A solitary female specimen only of this interesting species has as yet come under my notice. It was found in a sample taken, many years ago, at Bejan, outside the Trondhjem Fjord, from a depth of about 30 fathoms.

30. *Pseudobradya pygmæa*, G. O. Sars, n. sp.

(Pl. XXIV, fig. 3).

*Specific Characters.*—*Female.* Body moderately slender and of the usual subfusiform shape. Cephalic segment about occupying half the length of the anterior division and gradually tapered in front; rostral plate not much prominent and acute at the tip. Urosome about equalling in length  $\frac{2}{3}$  of the anterior division and rapidly tapered behind; genital segment comparatively large, equalling in length the 2 succeeding segments combined. Caudal rami scarcely longer than the anal segment; apical setæ rather slender. Anterior antennæ short and stout, 6-articulate. Posterior antennæ with the outer ramus

comparatively small, scarcely longer than the 1st joint of the inner, and biarticulate. Oral parts and natatory legs of normal structure. Last pair of legs with the distal joint oval in form and quite smooth, terminal lobes somewhat unequal, the outermost one being placed a little in front of the other 2, which are closely juxtaposed, marginal setæ rather slender and exhibiting the usual relation in length; appendicular bristle attached close to the base of the joint and not accompanied by any spinules; inner expansion of proximal joint extending a little beyond the middle of the distal joint and quite smooth inside, apical setæ of the usual appearance. Ovisac comparatively small.

Colour of the living animal not yet ascertained.

Length of adult female 0.42 mm.

*Remarks.*—This is the smallest of the known species of the present genus and perhaps also of the whole family *Ectinosomidae*, and may thereby easily be recognized, though not exhibiting any more prominent peculiarity in its structure.

*Occurrence.*—Of this dwarfed species also only a solitary female specimen has hitherto come under my notice. It was found in a sample taken at Farsund, south coast of Norway, from a depth of about 30 fathoms.

### 31. *Pseudobradya ambigua*, G. O. Sars, n. sp.

(Pl. XXV).

*Specific Characters.*—*Female.* Body of a rather robust appearance, with the anterior division not at all broader than the posterior and gradually attenuated anteriorly. Cephalic segment exceeding somewhat in length the exposed part of the trunk and greatly contracted in front, terminating in a strongly prominent rostral projection acuminate at the tip. Trunkal segments of about equal size, with the epimeral plates well developed and acutangular behind, each segment exhibiting a transverse row of small spinules in the middle of the back. Urosome unusually massive, equalling in length about  $\frac{3}{4}$  of the anterior division and, seen from above, only slightly narrowed behind, its segments successively diminishing in size and fringed behind with slender and delicate spinules; anal segment rather short and somewhat flattened, projecting behind in the middle into 2 juxtaposed acuminate lappets. Caudal rami very short, being considerably broader than they are long; apical setæ not much elongated, but rather strong. Anterior antennæ very small, 5-articulate. Posterior antennæ with the inner ramus normally developed; outer ramus comparatively small, 3-articulate, and, as in most other species, very narrow



linear in form, being however not, as usual, attached to the posterior distal corner of the basal part, but to a quadrangular piece firmly connected with the anterior corner and armed below with 2 strong, coarsely spinulose setæ curving downwards in front of the inner ramus. Oral parts very small and scarcely extending beyond the edges of the epimeral plates, being however apparently built on the type characteristic of the present genus. Posterior maxillipeds distinctly 3-articulate, with the middle joint comparatively broad, sub-lamellar, and densely spinulose inside, last joint provided with 4 somewhat unequal setæ. Natatory legs well developed, with the basal part comparatively broad and muscular, rami rather slender, the inner one being in 1st pair somewhat longer than the outer, in the remaining pairs of about same length. Last pair of legs broad, foliaceous, and closely contiguous along the middle; distal joint oval in form, with the terminal lobes somewhat unequal, the outermost one occurring rather in front of the other 2; marginal setæ very strong and coarsely ciliated, the 2 outermost ones distinctly defined at the base, whereas the innermost one forms the immediate continuation of the joint; appendicular bristle well developed and attached near the base of the joint; inner expansion of proximal joint quite short, but rather broad, with both setæ remarkably strong and not defined by any suture at the base.

*Male* nearly of same size as female and very like it in its outward appearance, though having the urosome, as usual, distinctly 5-articulate. Anterior antennæ much larger than in female, and distinctly hinged, with the 3rd joint considerably enlarged and provided outside, at some distance from the base, with a large sausage-shaped æsthetask extending backwards along the side of the cephalic segment. 2nd pair of legs with the inner ramus slightly transformed, being comparatively longer than in female, with the terminal joint narrowly produced and quite smooth on both edges, tip carrying a short, somewhat flexuous spine and a slender seta. Last pair of legs much smaller than in female, with the marginale setæ shorter and all of them distinctly defined at the base.

Colour of the living animal not yet ascertained.

Length of adult female 0.82 mm.

*Remarks.*—This is a rather anomalous species, distinguished both by the peculiar outward appearance of the body and by the structure of some of the appendages. Especially is the structure of the posterior antennæ very peculiar and unlike that found in any of the other known species.

*Occurrence.*—3 specimens of this remarkable form, 2 females and 1 male, have been examined by me. One of the female specimens was taken,

many years ago, at Selven, Trondhjem Fjord, from a depth of about 7 fathoms; the other 2 were picked up from a sample taken at Korshavn, south coast of Norway, from a considerably greater depth, viz., 50 fathoms.

### Gen. **Bradya**, Boeck.

*Remarks.*—In the restriction here adopted, only 3 species of this genus have hitherto been recorded, viz., *B. typica* Boeck, *B. dilatata* G. O. Sars, and *B. armigera* (Scott). I am now enabled to add 5 new species, to be described in the sequel, increasing the number of Norwegian species to 8 in all.

#### 32. **Bradya Scotti**, G. O. Sars, n. sp. (Pl. XXVI).

*Specific Characters.*—*Female.* Body resembling in shape that of *B. typica*, though comparatively somewhat more robust, with the anterior division more tumid. Cephalic segment equalling about in length the exposed part of the trunk, and only slightly contracted in front; rostral plate somewhat deflexed and, seen from above, obtusely rounded at the end. Epimeral plates of the 3 succeeding segments well developed and acutangular behind. Last trunkal segment comparatively small and without any distinct epimeral plates. Urosome considerably narrower than the anterior division and exceeding somewhat half its length; genital segment about equalling in length the 2 succeeding segments combined; anal segment much the smallest and only slightly incised behind in the middle. Caudal rami about the length of the anal segment and somewhat divergent; apical setæ moderately slender. Antennæ, oral parts, and natatory legs of a structure very similar to that in *B. typica*. Last pair of legs, however, exhibiting some well-marked differences; distal joint comparatively larger and more regularly quadrangular in form, with the innermost marginal seta considerably shorter than the middle one; appendicular bristle well developed and attached at some distance from the base of the joint; inner expansion of proximal joint comparatively narrower than in *B. typica*, with the apical setæ very unequal, the inner one much stronger than the outer and nearly 3 times as long.

Colour of the living animal not yet ascertained.

Length of adult female 0.88 mm.

*Remarks.*—The present species is closely allied to *B. typica* and about of same size, but of somewhat more robust form of the body, and more particularly distinguished by the shape of the last pair of legs and the rather different mutual relation of the setæ attached to the distal joint of that pair. According to the figures of these legs given by Brady and Scott, it would seem that the British form recorded as *B. typica* Boeck is more properly referable to the present species.

*Occurrence.*—Specimens of this form have been obtained at Risør together with the typical species, and it is very probable that on a closer investigation it also will be found to occur in many other places on the Norwegian coast.

33. *Bradya macrochæta*, G. O. Sars, n. sp.

(Pl. XXVII, fig. 1).

*Specific Characters.*—*Female.* Body exhibiting the usual somewhat obpyriform shape, the anterior division being considerably broader than the posterior, with the greatest width somewhat in front of the middle. Cephalic segment comparatively large, exceeding in length the exposed part of the trunk, and only slightly contracted in front; rostral plate strongly deflexed. Epimeral plates of the 3 succeeding segments bluntly angular behind. Urosome but little exceeding half the length of the anterior division, and gradually tapered behind; genital segment fully as large as the 2 succeeding segments combined; anal segment, as usual, the smallest and slightly incised behind in the middle. Caudal rami about the length of the anal segment and somewhat divergent; apical setæ very slender. Antennæ, oral parts, and natatory legs of quite normal structure. Last pair of legs, however, distinguished by the excessive length of the marginal setæ, some of them extending almost to the end of the tail; distal joint of those legs comparatively small, with the middle seta the longest; inner expansion of proximal joint not much produced, but with the apical setæ very slender and elongated, the inner one nearly attaining the length of the middle seta of the distal joint.

Colour pale whitish grey.

Length of adult female 0.60 mm.

*Remarks.*—The present species is of much smaller size than the preceding one, and may moreover at once be distinguished both from this and the other known species by the excessive length of the setæ clothing the last pair of legs, a character which indeed has given rise to the specific name here proposed.

*Occurrence.*—Some few specimens of this form, all of the female sex, were obtained some years ago at Risør in depths ranging from 50 to 100 fathoms, muddy bottom.

34. *Bradya furcata*, G. O. Sars, n. sp.

(Pl. XXVII, fig. 2).

*Specific Characters.*—*Female.* Body comparatively short and stout, with the anterior division regularly elliptical in outline, the greatest width occurring about in the middle. Cephalic segment about the length of the exposed part of the trunk, and conspicuously contracted in its anterior part, with the extremity, seen from above, narrowly truncated; rostral plate rather deflexed. Urosome much narrower than the anterior division and about equalling  $\frac{2}{3}$  of its length, tapering rapidly behind, posterior edges of the segments distinctly spinulose. Caudal rami unusually produced, attaining the length of the last 2 segments combined, and rather divergent; apical setæ moderately slender. Anterior antennæ short and stout, 6-articulate. Posterior antennæ and oral parts normal. Natatory legs with the rami rather unequal, the inner one being much the longer, middle joint of this ramus fully as large as the terminal one, and in the 2nd pair armed inside with a strong spine in addition to the usual seta. Last pair of legs somewhat unlike those in the other species, the distal joint being comparatively large and rounded oval in form, with both the innermost and outermost setæ very short; inner expansion of proximal joint extending beyond the middle of the distal joint, and having the 2 apical setæ of nearly equal length.

Body rather pellucid and of a whitish grey colour.

Length of adult female 0.64 mm.

*Remarks.*—This is a well defined species, and may at once be recognised by the unusually long and narrow caudal rami, a character which indeed has given rise to the specific name here proposed. It also exhibits some well-marked differences from the other species in the structural details, especially as regards the structure of the last pair of legs.

*Occurrence.*—Two female specimens only of this form have as yet come under my notice. They were taken at Risør from a depth of about 60 fathoms.

35. *Bradya congenera*, G. O. Sars, n. sp.

(Pl. XXVIII, fig. 1).

*Specific Characters.*—*Female.* Body of the usual obpyriform shape, the anterior division being somewhat broader in front than behind. Cephalic segment about the length of the exposed part of the trunk, and slightly contracted at the anterior extremity, with the front, seen from above, obtusely truncated; rostral plate rather deflexed. Urosome somewhat exceeding half the length of the anterior division, and gradually tapered behind; genital segment fully as long as the 2 succeeding segments combined; anal segment, as usual, the smallest, though not much shorter than the preceding segment, and broadly emarginated behind in the middle. Caudal rami comparatively short, not nearly attaining the length of the anal segment and somewhat divergent; apical setæ very slender. Anterior antennæ of moderate size and composed of 8 well defined joints. Posterior antennæ, oral parts, and natatory legs resembling in structure those parts in *B. typica*. Last pair of legs likewise very similar, the mutual relation in length of the setæ attached to the distal joint being the very same. Ovisac comparatively small.

Body of the usual whitish grey colour.

Length of adult female scarcely exceeding 0.67 mm.

*Remarks.*—The present form is closely allied to *B. typica*, exhibiting a very similar structure of the several appendages. It is however of much smaller size, and may, on a closer examination, be distinguished by the comparatively shorter caudal rami and the distinctly 8-articulate anterior antennæ.

*Occurrence.*—Several specimens of this form have been collected at Risør together with the other species, and it probably also occurs in many other places of the Norwegian coast. As however its specific difference from *B. typica* has not formerly been recognised, the exact localities cannot at present be stated.

36. *Bradya simulans*, G. O. Sars, n. sp.

(Pl. XXVIII, fig. 2).

*Specific Characters.*—*Female.* Body resembling in shape that of *B. furcata*, being rather short and stout, with the anterior division elliptical in outline. Cephalic segment comparatively large, exceeding somewhat in length the exposed part of the trunk, and gradually contracted anteriorly, with the front, seen from above, narrowly rounded; rostral plate small, deflexed. Urosome about equalling in length  $\frac{2}{3}$  of the anterior division and rapidly



tapered behind; genital segment, as usual, much the largest; anal segment deeply incised behind in the middle. Caudal rami somewhat produced, exceeding in length the anal segment, and rather divergent; apical setæ moderately slender. Anterior antennæ comparatively smaller than in the preceding species and only composed of 6 joints. Posterior antennæ, oral parts, and natatory legs exhibiting the usual structure. Last pair of legs likewise quite normally developed; distal joint of moderate size and quadrangular in form, with the marginal setæ rather unequal, the middle one being much the longest, the outermost the smallest; inner expansion of proximal joint not much produced, and having the apical setæ moderately slender and rather unequal. Ovisac comparatively small.

Colour whitish grey.

Length of adult female 0.61 mm.

*Remarks.*—The present species exhibits in the general shape of the body a perplexing resemblance to *B. furcata*, and may at the first sight easily be confounded with that species. On a closer examination, it is however found to differ in the somewhat less produced caudal rami, as also in the structure of some of the appendages, especially that of the last pair of legs.

*Occurrence.*—One or two specimens only of this form have as yet come under my notice. They were taken at Risør in a depth of about 60 fathoms, muddy sand.

### Gen. *Halophytophilus*, A. Brian, 1918.

*Generic Characters.*—Body somewhat resembling in its general shape that in the genus *Bradya*, though having the two chief divisions less sharply marked off from each other. Cephalic segment produced in front to a strongly chitinised recurved rostrum. Urosome very slender and attenuated. Anterior antennæ comparatively strong, 6-articulate, with the terminal joint unusually prolonged. Posterior antennæ with the outer ramus very small, inner one well developed, with the distal joint coarsely spinous. Mandibles with the masticatory part narrowly exerted, palp comparatively large, though having the rami short and stout. Maxillæ not examined. Anterior maxillipeds with the 2nd basal joint remarkably long and narrow, forming with the 1st a sharp genicular bend. Posterior maxillipeds apparently 4-articulate, with the penultimate joint rounded and fringed with ciliated setæ, terminal joint armed at the tip with claw-shaped spines. 1st pair of legs with the inner ramus sub-pre-

hensile and only composed of 2 unequal joints; rami of the succeeding 3 pairs normal. Last pair of legs comparatively large, foliaceous, resembling in structure those in the genus *Pseudobradya*.

*Remarks.*—This genus has been recently established by Dr. A. Brian, to include a small Ectinosomid found by him among marine littoral algae growing near the zoological laboratory of "Quarto dei Mille", Ligurian coast. As observed by that author, the most essential distinguishing character of this genus is derived from the structure of the 1st pair of legs, the inner ramus of which is peculiarly transformed and very unlike that found in any other form of the Ectinosomidæ, being only composed of 2 joints and apparently prehensile in character. Otherwise the genus seems to approach that of *Pseudobradya*. A well-marked Norwegian species of this interesting genus will be described below.

37. *Halophytophilus spinicornis*, G. O. Sars, n. sp.  
(Pl. XXIX).

*Specific Characters.*—*Female.* Body rather slender, broadest in front and gradually attenuated behind, with no sharp demarcation between the anterior and posterior divisions. Cephalic segment not fully attaining the length of the exposed part of the trunk and, seen from above, obtusely rounded in front; rostrum very coarse, acuminate, and curved downwards. The 3 succeeding segments each with a transverse row of small spinules across the middle of the back, epimeral plates well developed and obtusangular behind. Last trunkal segment only slightly smaller than the preceding one. Urosome somewhat exceeding in length  $\frac{2}{3}$  of the anterior division, and rapidly tapered behind; genital segment rather large, though not fully attaining the length of the 2 succeeding segments combined; anal segment very small and only slightly incised behind in the middle. Caudal rami about the length of the anal segment and not at all divergent, each with a well-marked keel along the dorsal face; apical setæ very slender. Anterior antennæ of moderate size and composed of 6 well defined joints rapidly diminishing in width distally and clothed with strong curved setæ; 2nd joint armed, in addition to the setæ, at the end with a very strong thickish spine; last joint very narrow and about the length of the 2 preceding joints combined. Posterior antennæ very strongly built, with the terminal part (inner ramus) scarcely longer than the basal part, its distal joint armed along the anterior edge with 4 coarse thickish spines, apical setæ 5 in number; outer ramus small, biarticulate with 2 slender setæ at the

tip. 1st pair of legs with the outer ramus normally developed, inner ramus of about equal length, but very different in structure, being only composed of 2 joints, the proximal one much the larger and somewhat lamellar, with a very long deflexed seta inside near the end; distal joint about half the length of the proximal one and much narrower, carrying at the tip a slender somewhat claw-like spine accompanied inside by 2 elongated setæ, inner edge provided, at some distance from the end, with a much shorter seta. The 3 succeeding pairs with both rami 3-articulate and sub-equal in length. Last pair of legs comparatively large, with the distal joint rather regularly oval in form and nearly smooth, terminal lobes well defined and slightly unequal; marginal setæ moderately slender and exhibiting the usual relation in length; appendicular bristle well developed, and attached at some distance from the base of the joint, being accompanied outside by a single small spinule; inner expansion of proximal joint rather narrow, and extending about to the middle of the distal joint; apical setæ slender and somewhat unequal in length.

Colour of the living animal not yet ascertained.

Length of adult female 0.67 mm.

*Remarks.*—The above-described form is evidently referable to the genus *Halophytophilus*<sup>1)</sup> of Brian, exhibiting a quite analogous structure of the 1st pair of legs. It is however quite certainly specifically different from the typical form, *H. fusiformis* Brian, being of much larger size, and moreover differing in the very conspicuous spinous armature of both antennæ, as also in the relative length of the 2 joints composing the inner ramus of the 1st pair of legs, and in the number of setæ attached to the distal joint of that ramus.

*Occurrence.*—A solitary female specimen only of this anomalous form has as yet come under my notice. It was found in a sample taken last summer at Hvalør, outside the Christiania Fjord, from a depth of about 10 fathoms, muddy bottom.

<sup>1)</sup> The aspiration of the first component of the name (*άλζ*) has erroneously been omitted by that author (*Alophytophilus*).

## Fam. Harpacticidæ.

### Gen. *Harpacticus*, M. Edwards.

38. *Harpacticus tenellus*, G. O. Sars, n. sp.  
(Pl. XXX).

*Specific Characters.*—*Female.* Body resembling in shape that of *H. gracilis* Claus, but of somewhat smaller size and more delicate structure, with rather thin and pellucid integuments. Anterior division slightly depressed and oblong oval in outline, being rather sharply marked off from the comparatively small urosome. Cephalic segment about the length of the trunk and evenly contracted in front; rostral plate somewhat prominent and obtusely rounded at the tip. Urosome not nearly attaining half the length of the anterior division and much narrower; genital segment comparatively large, occupying about half the length of the urosome. Caudal rami short, quadrangular, scarcely as long as they are broad; apical setæ much elongated. Anterior antennæ very slender, attaining almost the length of the cephalic segment, and composed of 9 joints, the 3rd and 4th of which are rather narrow and elongated, subequal in size; terminal part, composed of the 5 outermost joints, scarcely longer than the preceding (4th) joint. Posterior antennæ resembling those in *H. gracilis*, but of a more delicate structure. Posterior maxillipeds with the basal part much elongated and narrowed distally, hand less dilated than in the said species, being about twice as long as it is broad and somewhat curved, palmar edge well defined and armed, at some distance from the end, with a very conspicuous spiniform process curving upwards along the edge. 1st pair of legs built on the same type as in *H. gracilis*, but of more delicate structure, with the rami comparatively narrower, the inner one about the length of the 1st joint of the outer. Natatory legs of the usual structure. Last pair of legs with the distal joint oblong oval in form and comparatively narrower than in *H. gracilis*; inner expansion of proximal joint less produced. Ovisac large, rounded oval in form.

*Male* fully as large as female and exhibiting the usual rather strongly marked sexual differences. Anterior antennæ conspicuously hinged, though far less robust than in *H. gracilis*. Posterior maxillipeds scarcely more powerful than in female. 2nd and 3rd pairs of legs transformed in a much similar manner to that in *H. gracilis*. Last pair of legs much reduced in size, with the proximal joint very small and not at all expanded inside.

Body in both sexes rather pellucid, of an uniform whitish grey colour, without any obvious pigment.

Length of adult female 0.63 mm.

*Remarks.*—The present species is closely allied to *H. gracilis* Claus, but of somewhat smaller size, and on the whole of a rather more delicate appearance. On a closer examination some well-marked differences are also found in the structural details, as pointed out in the above diagnosis.

*Occurrence.*—I have met with this species in several places both on the west and south coasts of Norway, but have formerly not been aware of its specific difference from *H. gracilis* Claus. It is only found in depths ranging from 20 to 60 fathoms, never, as is the case with *H. gracilis* and most other species of the present genus, in the littoral zone.

## Fam. Idyæidæ.

### Gen. *Idyæa*, Philippi (*Idya*).

#### 39. *Idyæa graciloides*, G. O. Sars, n. sp.

(Pl. XXXI).

*Specific Characters.*—*Female.* Body comparatively slender, resembling somewhat in shape that of *I. gracilis* Scott. Cephalic segment about equalling in length the 3 succeeding segments combined and rather broad behind; rostral prominence very small. Epimeral plates of the 3 succeeding segments laterally expanded and closely contiguous. Last trunkal segment, as usual, very small and without any distinct epimeral plates. Urosome about equalling in length  $\frac{2}{3}$  of the anterior division and much narrower; genital segment fully as long as the 3 succeeding segments combined and somewhat fusiform in outline, being conspicuously dilated in the middle. Caudal rami about as long as they are broad, and sub-quadrangular in form; apical setæ very slender, the outermost and innermost ones rather thin and considerably longer than in *I. gracilis*. Anterior antennæ slender and elongated, exceeding somewhat in length the cephalic segment, 3rd joint longer and narrower than the 2nd and about twice the length of the 4th; terminal part, composed of the 4 outermost joints, occupying about  $\frac{1}{4}$  of the length of the antenna. Posterior antennæ and oral parts of the usual structure. 1st pair of legs resembling somewhat those in



*I. gracilis*, the distal joint of the inner ramus being very narrow, though less elongated than in that species, only slightly exceeding in length the proximal joint. The 3 succeeding pairs of legs of quite normal appearance. Last pair of legs much smaller than in *I. gracilis*, with the distal joint rather narrow, sub-linear in form, and less densely hairy, all the setæ issuing from the outermost part of the joint.

*Male* of nearly same size as female, but comparatively still more slender, with the urosome distinctly 5-articulate. Anterior antennæ only slightly transformed, being a little thicker than in female, with a small joint intercalated between the 3rd and 4th; hinge rather imperfect. 2nd pair of legs with none of the setæ transformed. Last pair of legs much reduced in size.

Colour of the living animal not yet ascertained.

Length of adult female 0.86 mm.

*Remarks.*—This form is nearest allied to *I. gracilis* Scott, but is evidently specifically distinct, differing in the comparatively less produced caudal rami, as also rather conspicuously in the structure of the anterior antennæ and the last pair of legs.

*Occurrence.*—Several specimens of this form were picked up from samples taken at Korshavn from a depth of about 60 fathoms, muddy sand. I have not met with it in other places on the Norwegian coast.

40. *Idyæa compacta*, G. O. Sars, n. sp.  
(Pl. XXXII).

*Specific Characters.*—*Female.* Body unusually short and compact, with the anterior division rather broad and somewhat depressed. Cephalic segment considerably exceeding in length the exposed part of the trunk, and only very slightly contracted in front. Epimeral plates of the 3 succeeding segments considerably expanded laterally and closely contiguous, sub-imbricate. Last trunkal segment, as usual, much narrower than the preceding ones, and without any epimeral plates. Urosome unusually short, only slightly exceeding in length  $\frac{1}{3}$  of the anterior division, its segments scarcely at all spinulose at the lateral corners, and densely crowded. Anal opercle rather prominent, semilunar, and coarsely denticulated at the edge. Caudal rami scarcely as long as they are broad at the base, and somewhat obliquely truncated at the end, the outer corner being the more prominent; apical setæ very slender and elongated, the innermost but one almost attaining the length of the whole body; innermost and outermost setæ much thinner than the 2 middle ones and rather prolonged; seta

of outer edge apparently wanting. Anterior antennæ comparatively short and stout, not nearly attaining the length of the cephalic segment, and gradually attenuated distally; 2nd joint much the largest, 4th joint about half the length of the 3rd; terminal part somewhat shorter than the 2 preceding joints combined. Posterior antennæ and oral parts of quite normal appearance. 1st pair of legs resembling somewhat in structure those in *I. furcata*; 2nd joint of inner ramus however comparatively shorter, not attaining the length of the 1st; apical claws of this ramus considerably longer than in *I. furcata*. Natatory legs of the usual structure. Last pair of legs of moderate size, with the distal joint oblong oval in form and comparatively broader than in *I. furcata*, edges of the joint only provided with a few scattered small spinules, apical setæ rather slender.

Colour of the living animal not yet ascertained.

Length of adult female 0.62 mm.

*Remarks.*—The above-described form may be easily recognised by its very short and compact body, and more particularly by the unusually poor development of the urosome. It belongs to the smaller species of the present genus.

*Occurrence.*—Two female specimens only of this form have as yet come under my notice. They were found in a sample taken, some years ago, at Risør from a depth of about 50 fathoms.

## Gen. *Idyella*, G. O. Sars.

### 41. *Idyella major*, G. O. Sars, n. sp.

(Pl. XXXIII, fig. 1).

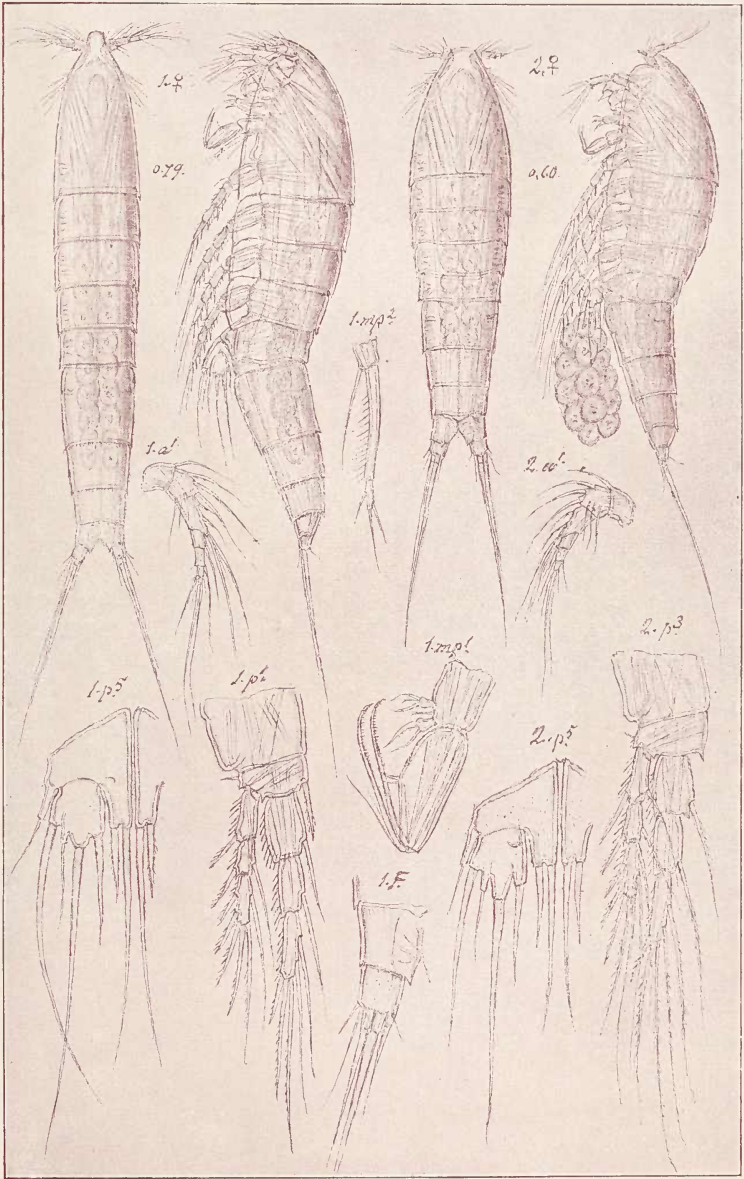
*Specific Characters.*—*Female.* Body rather short and stout, with the anterior division considerably dilated and somewhat vaulted dorsally. Cephalic segment very large, about as long as it is broad, and evenly rounded in front; rostral projection small and recurved. The 3 succeeding segments successively diminishing in width, and having the epimeral plates not much prominent laterally. Last trunkal segment very small. Urosome not nearly attaining half the length of the anterior division and much narrowed; genital segment comparatively large, occupying half the length of the urosome, and forming on each side a broad lamellar expansion angular behind. Caudal rami very small, quadrangular, with the apical setæ rather slender and scarcely at all divergent.

# Copepoda

Ectinosomidæ

Suppl. Volume

Pl. XVII



G. O. Sars, del.

1. *Ectinostoma compressum*, G. O. Sars
2. „ „ *tenuipes*, Scott

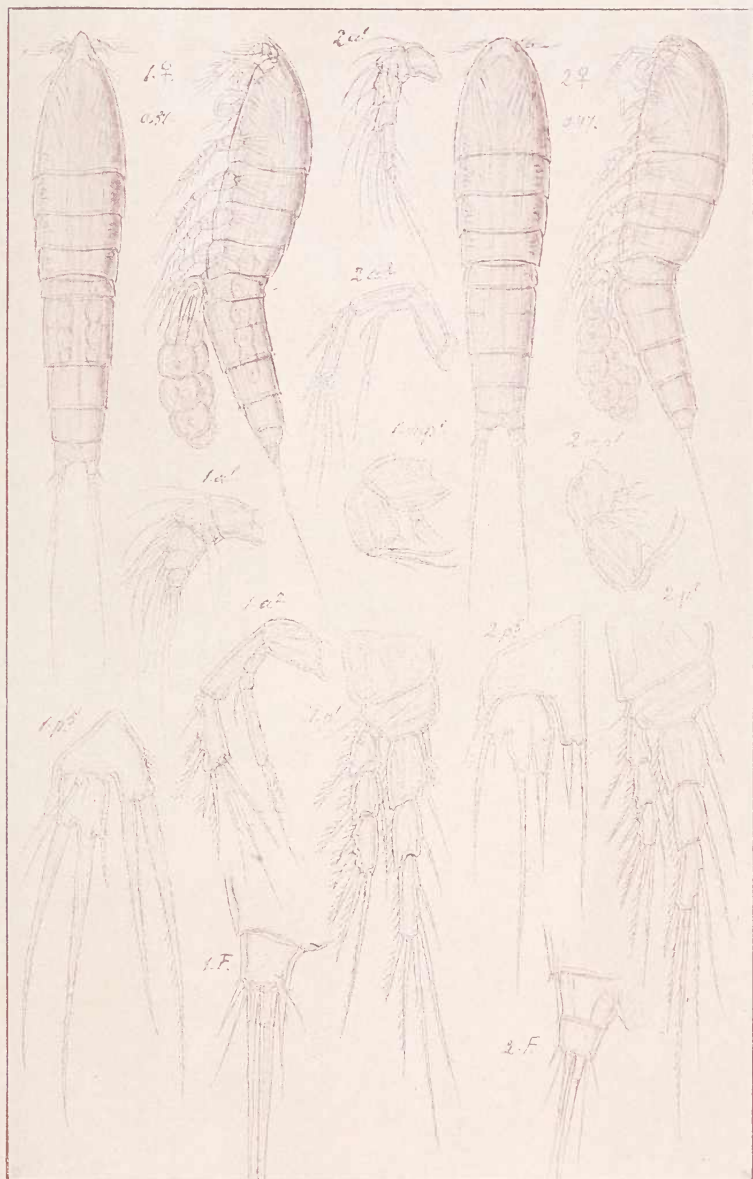


# Copepoda

Ectinosomidæ

Suppl. Volume

Pl. XVIII



G. O. Sars, del.

1. *Ectinosoma distinctum*, G. O. Sars
2. " *obtusum*, G. O. Sars



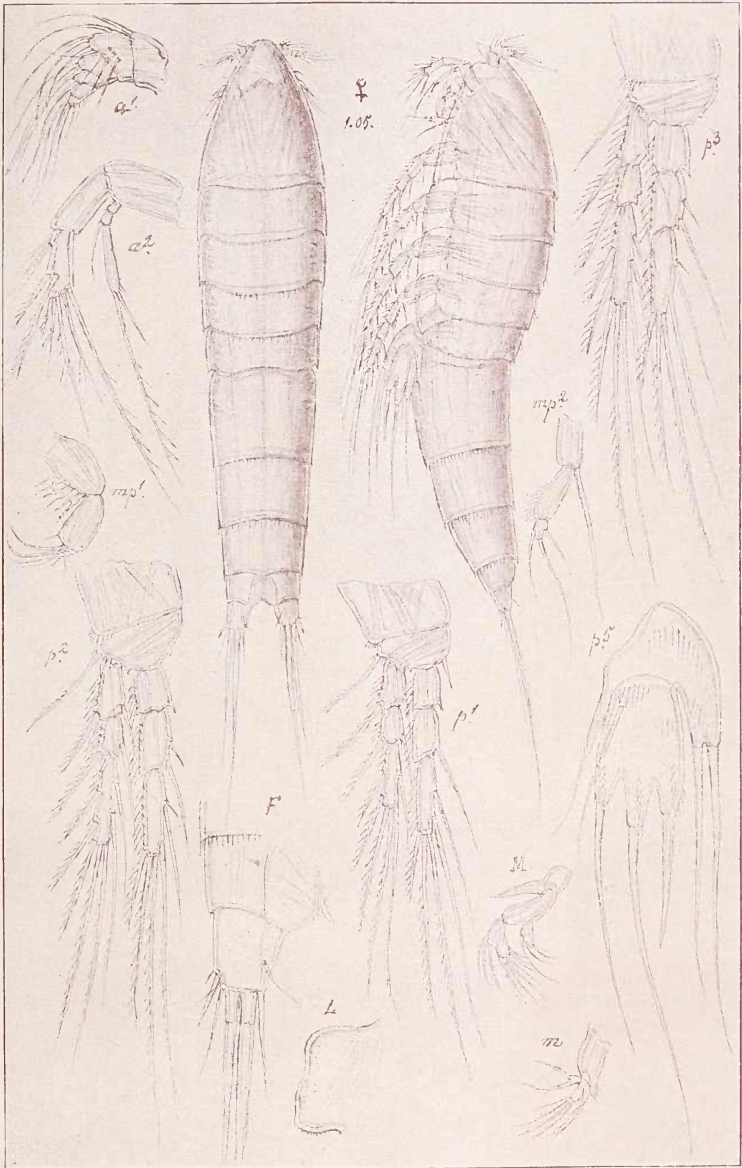


# Copepoda

Ectinosomidæ

Suppl. Volume

Pl. XIX



G. O. Sars, del.

*Pseudobradya digitata*. G. O. Sars







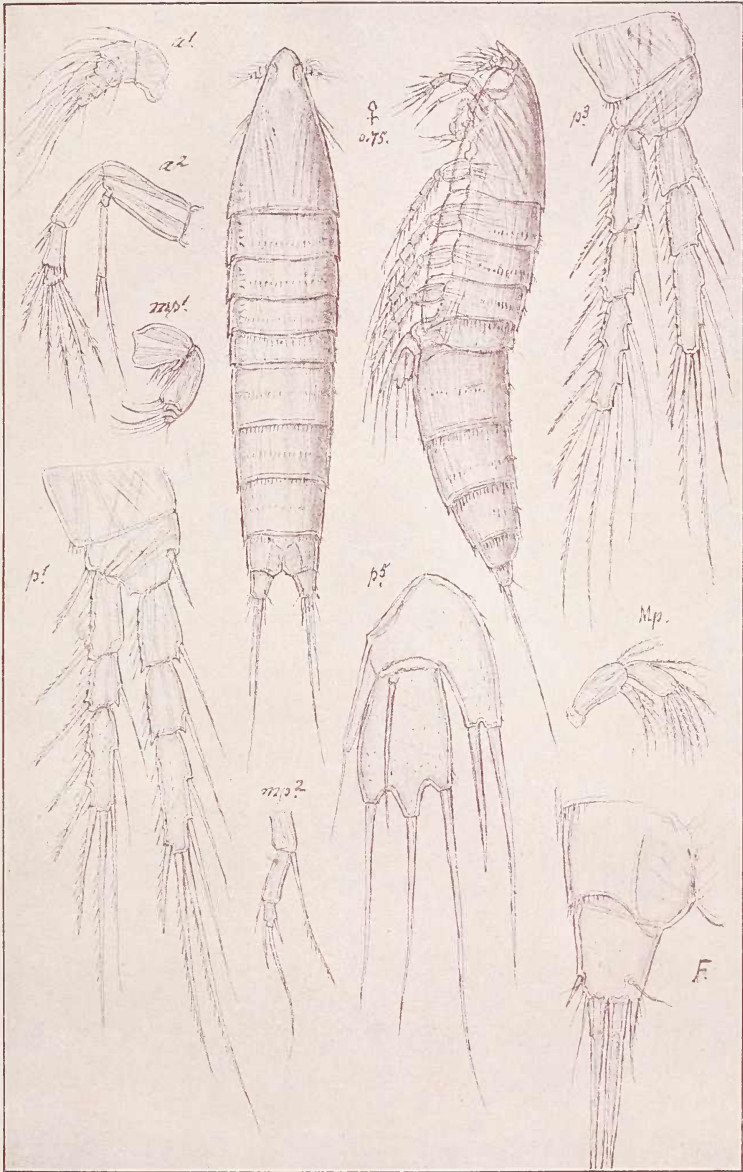


# Copepoda

Ectinosomidæ

Suppl. Volume

Pl. XXI



G. O. Sars, del.

*Pseudobradya scabriuscula*, G. O. Sars

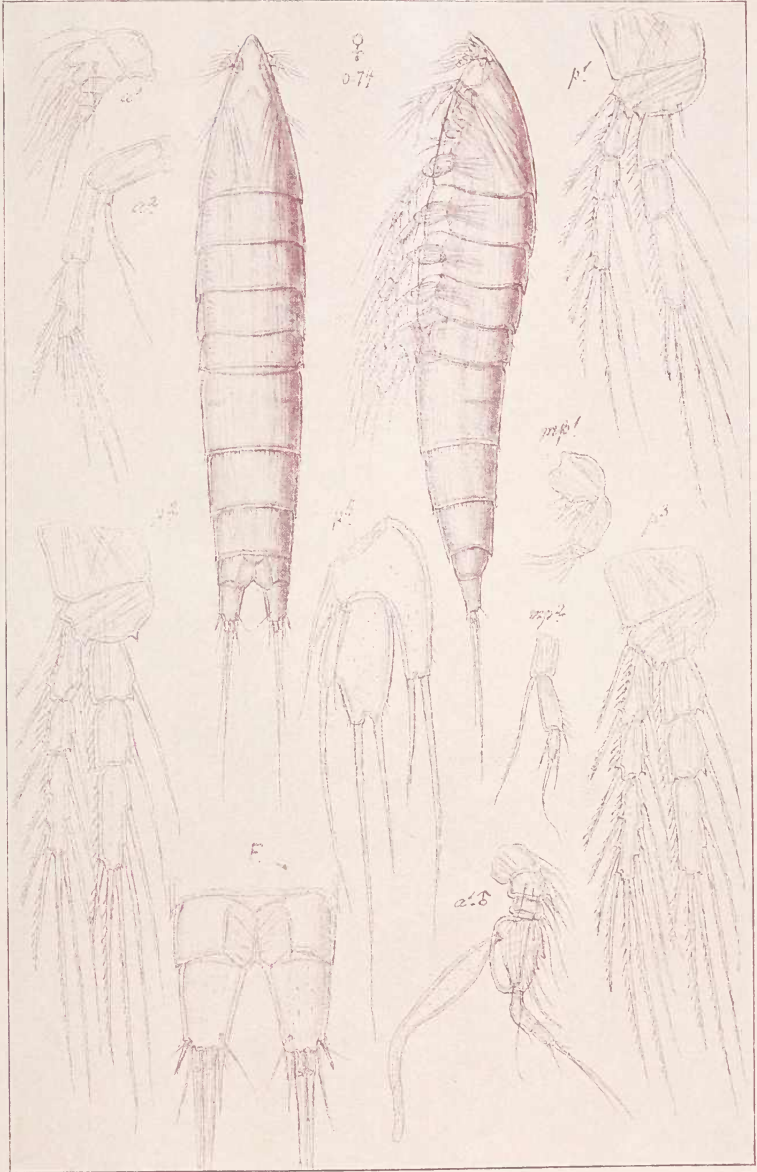


# Copepoda

Suppl. Volume

Ectinosomidæ

Pl. XXII



G. O. Sars, del.

*Pseudobradya attenuata*, G. O. Sars

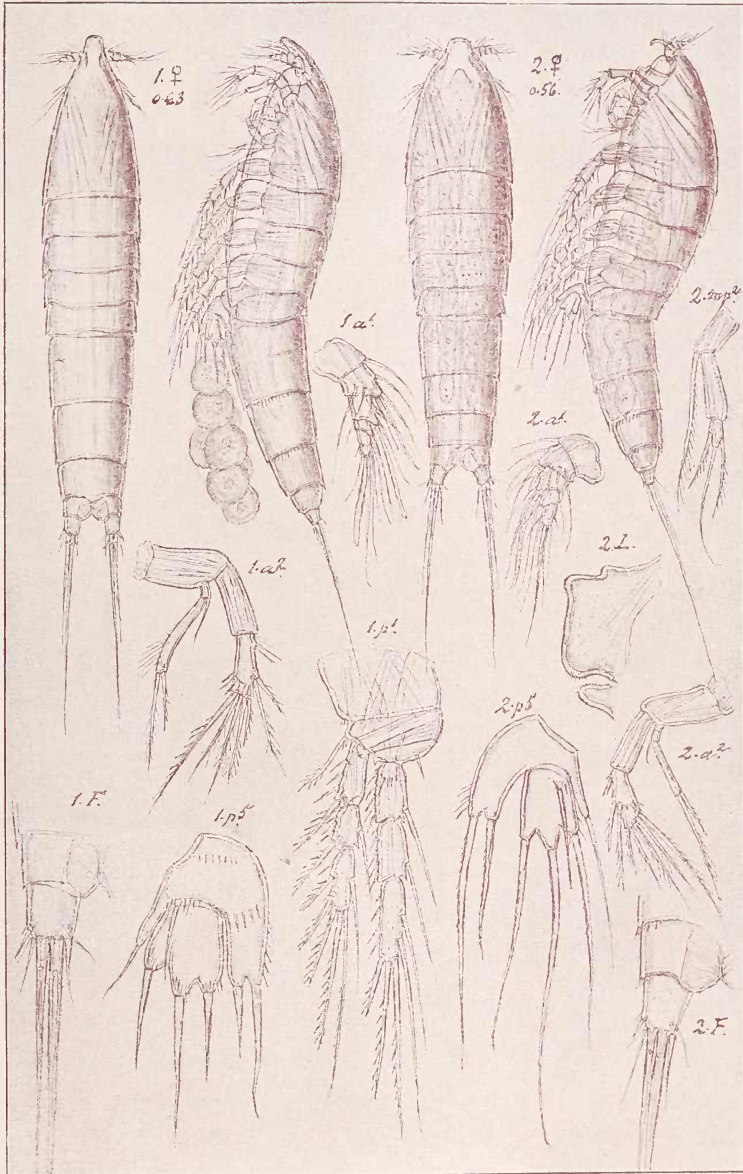


# Copepoda

Suppl. Volume

Ectinosomidæ

Pl. XXIII



G. O. Sars, del.

1. *Pseudobradya tenella*, G. O. Sars
2. " *parvula*, G. O. Sars







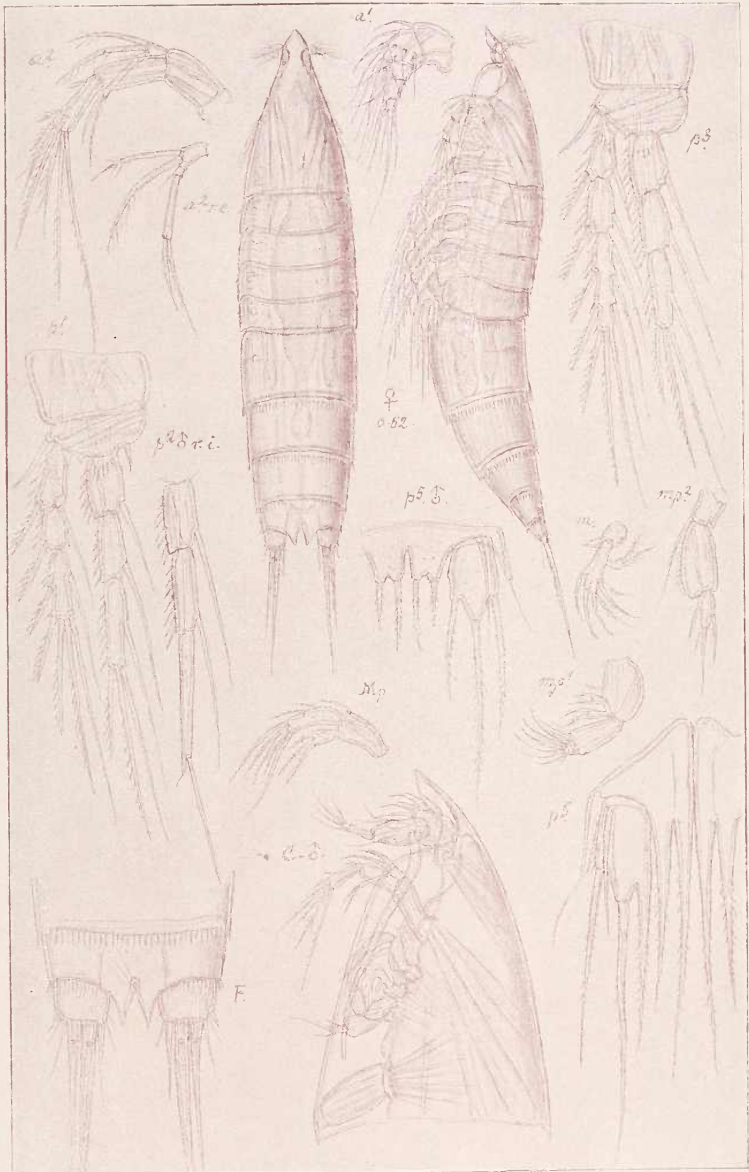


# Copepoda

Suppl. Volume

Ectinosomidæ

Pl. XXV



G. O. Sars, del.

*Pseudobradya ambigua*, G. O. Sars



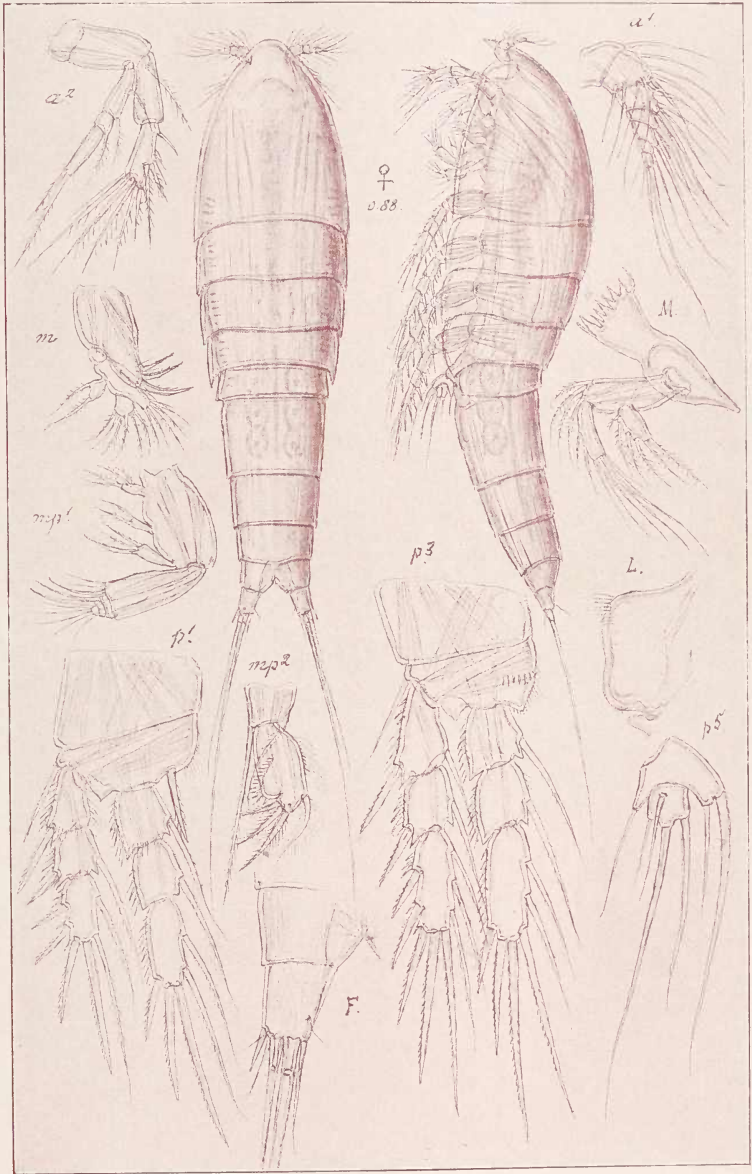


# Copepoda

Suppl. Volume

Ectinosomidæ

Pl. XXVI



G. O. Sars, del.

Brady Scotti, G. O. Sars

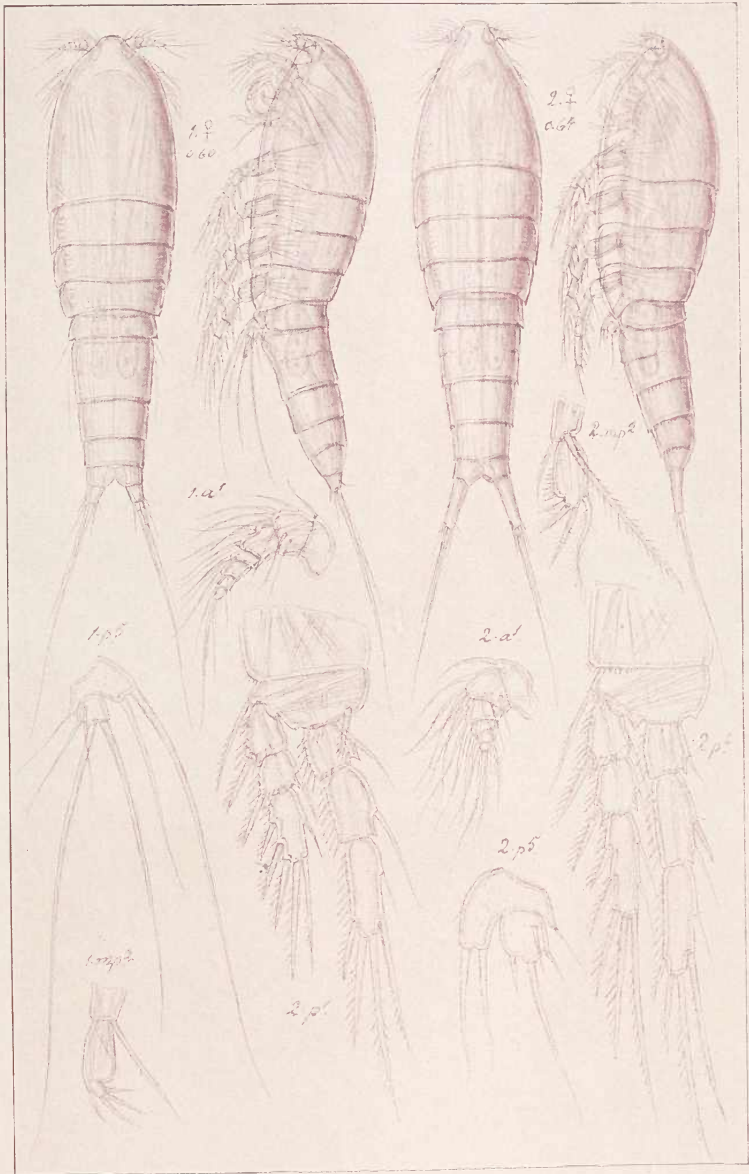


# Copepoda

Ectinosomidæ

Suppl. Volume

Pl. XXVII



G. O. Sars, del.

1. *Bradya macrochæta*, G. O. Sars
2. " *furcata*, G. O. Sars



# Copepoda

Ectinosomidæ

Suppl. Volume

Pl. XXVIII



G. O. Sars, del.

1. *Bradya congenera*, G. O. Sars
2. " *simulans*, G. O. Sars



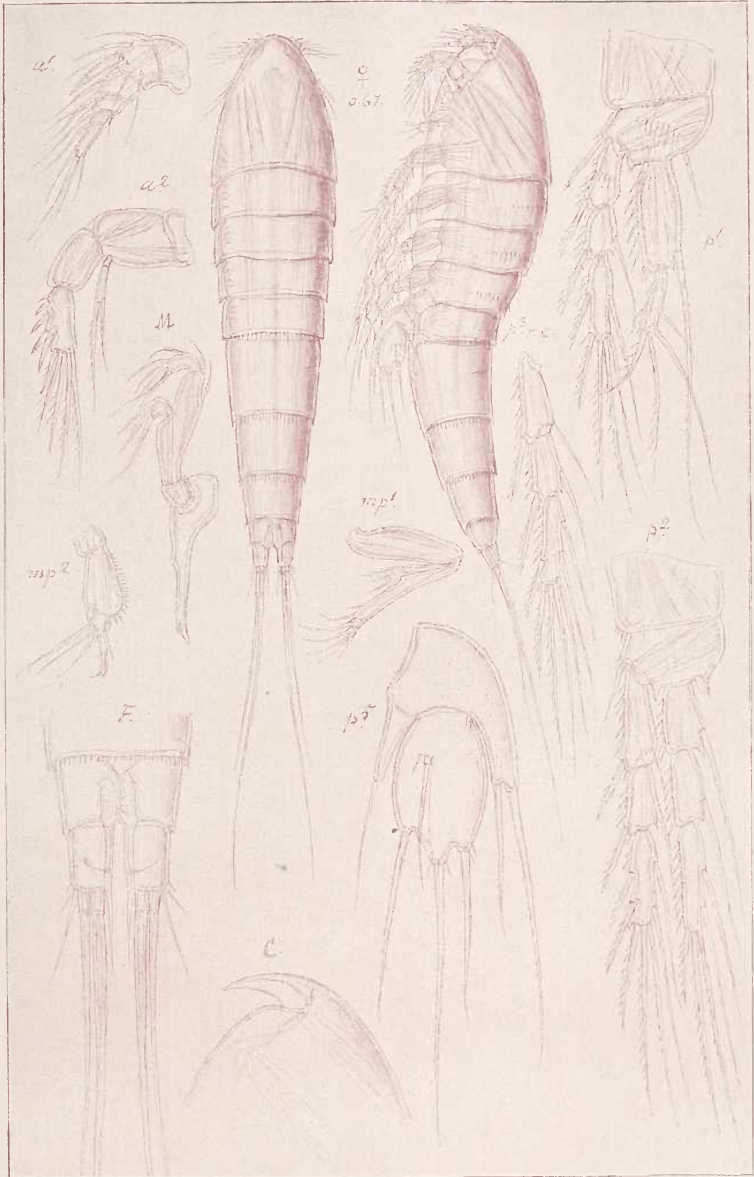


# Copepoda

Ectinosomidæ

Suppl. Volume

Pl. XXIX



G. O. Sars, del.

*Halophytophilus spinicornis*, G. O. Sars

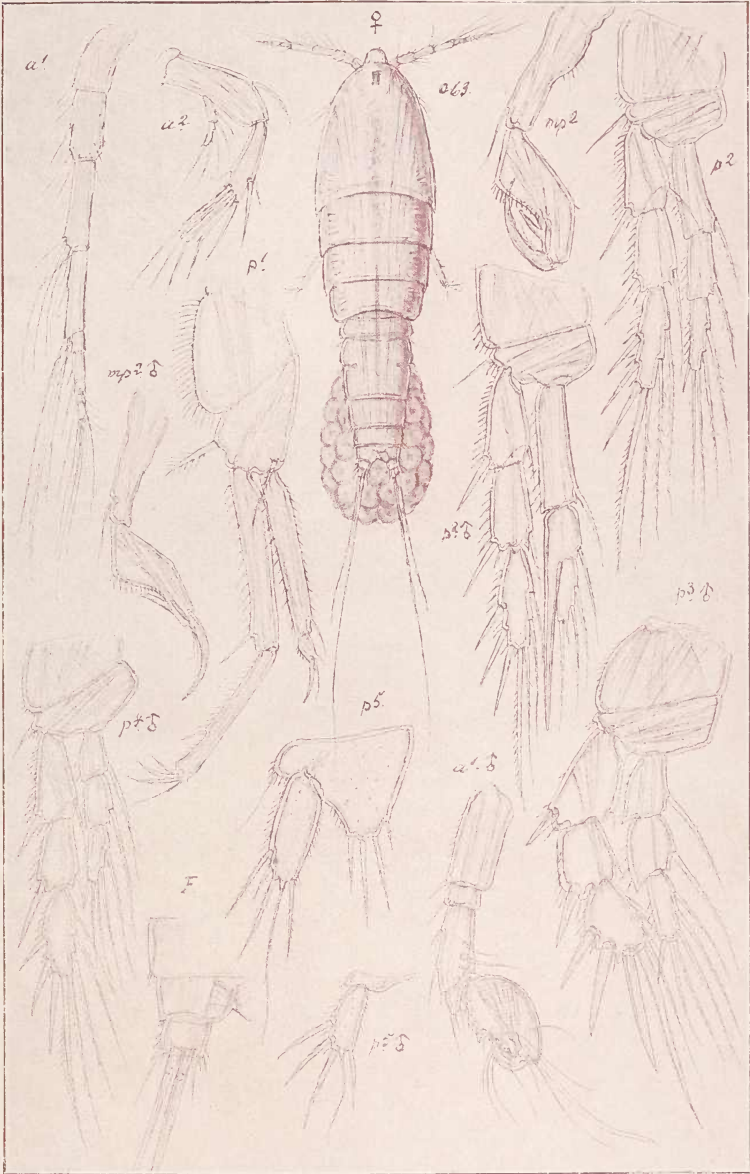


# Copepoda

## Suppl. Volume

Harpacticidæ

Pi. XXX



G. O. Sars, del.

*Harpacticus tenellus*, G. O. Sars

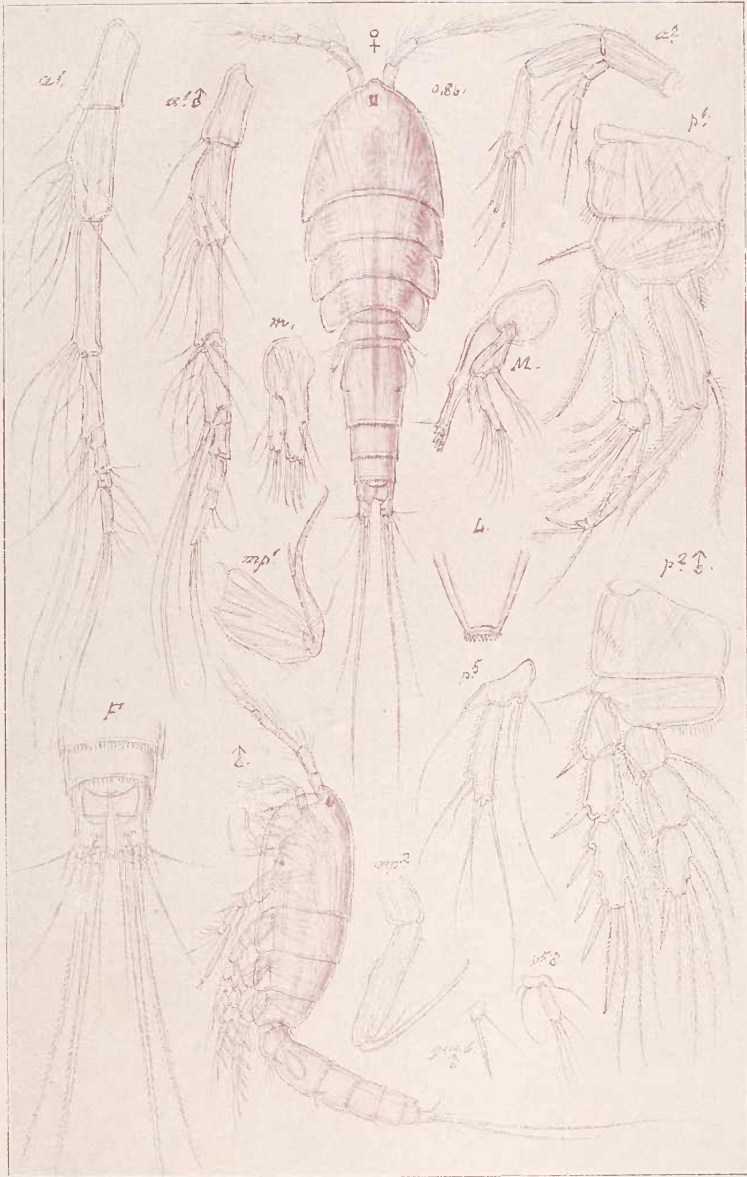


# Copepoda

Suppl. Volume

Idyæidæ

Pl. XXXI



G. O. Sars, del.

*Idyæa graciloides*, G. O. Sars



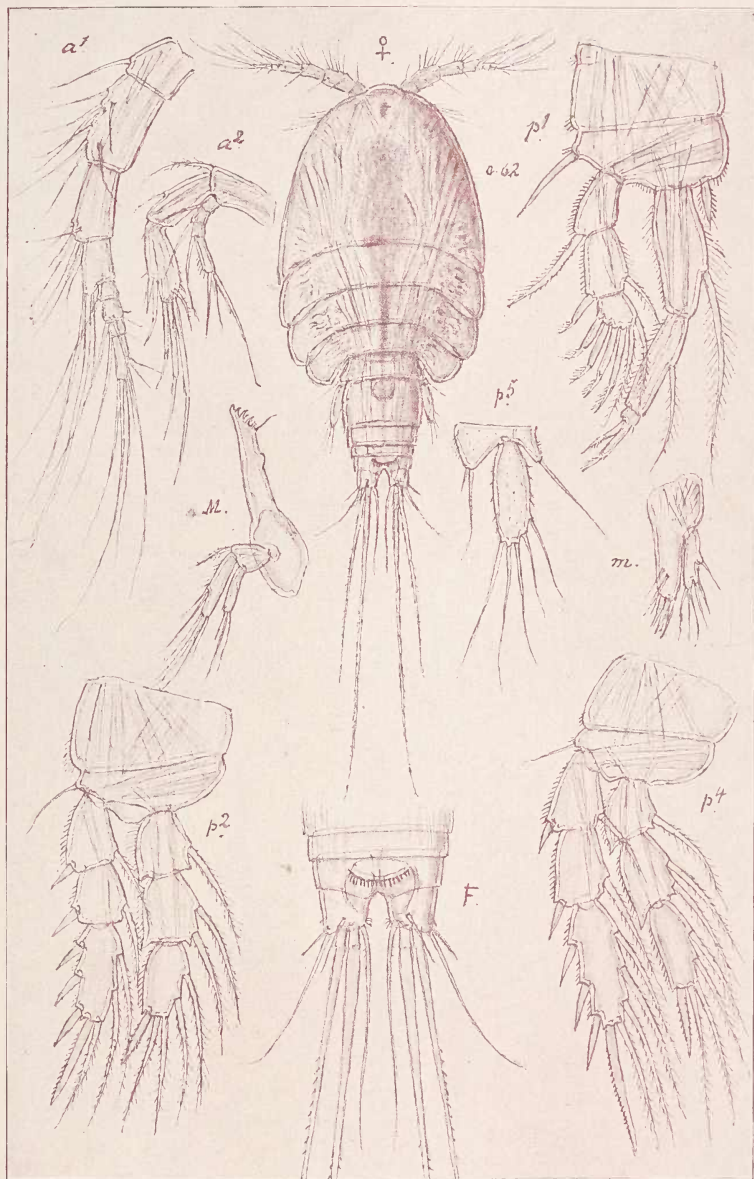


# Copepoda

Suppl. Volume

Idyæidæ

Pl. XXXII



G. O. Sars, del.

*Idyæa compacta*, G. O. Sars

