

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

WITH SHORT DESCRIPTIONS AND FIGURES OF ALL THE SPECIES

BY

G. O. SARS

VOL. IV

**COPEPODA**  
**CALANOIDA**

PARTS XIII & XIV

PARAPONTELLIDÆ, ACARTIIDÆ, SUPPLEMENT

WITH 12 AUTOGRAPHIC PLATES



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## PREFACE.

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The present Volume deals with one of the great divisions of the extensive order, *Copepoda*, viz., that of the *Calanoida*, which of late has attracted the special interest of biologists, on account of the enormous numbers in which some of the species are sometimes found to appear, forming, as they do, a very essential part of the so-called *Zoö-plankton*. As not only the amount of the plankton, but also its quality is of great significance in determining the nutritive value of the water both in the sea and in lakes, a thorough knowledge of the organisms composing it may be said to be quite indispensable. It is now generally admitted that Copepoda of the Calanoid group form an essential part of the nourishment of several of our common food-fishes, either in the adult state, or at any rate in the earlier periods of their life; and the investigation of these little creatures must therefore be regarded as intimately connected with that of the fisheries, whether in the sea or in lakes.

The present Volume, which gives full diagnoses and figures of all Norwegian Calanoids, both marine and fresh-water, known at present, may thus, I hope, be of essential use to those who are studying our fisheries and the biological conditions connected therewith.

In order to make the determination of the species as easy as possible, I have given, besides anatomical analyses, carefully drawn habitus-figures of all, in most cases both a dorsal and a lateral view, and as a rule of both sexes. The detail figures, unlike those in Dr. Giesbrecht's work, are always arranged in such a manner, that they can at once be referred to their respective species.

An objection may perhaps be urged against the practical arrangement of the present Volume, as also of the 3 preceding Volumes, viz., that no analytical tables are given. In my opinion, however, the practical value of such tables, especially when they comprise a great number of different forms requiring a more or less complicated arrangement, has been much overestimated. I think that the

student, instead of labouring through such a complicated table, will in most cases prefer the much more simple and direct method of determination by comparing his specimen with the figures, and, if still in doubt, consulting the short diagnoses given of the respective families, genera and species.

In the elaboration of this Volume, I have been assisted by several distinguished naturalists both in my own country and abroad; and I desire here to tender them my best thanks. Among foreign naturalists, my thanks are due to Canon A. M. Norman, Mr. Th. Scott, Prof. Brady and Prof. Cleve, for sending me interesting specimens. I am also greatly indebted to the Zoological Station at Naples for a very interesting series of plankton-samples, which have been of great use to me in comparing the Mediterranean species with those of the northern seas. The Norwegian naturalists to whom I wish to offer my hearty thanks are Mr. O. Nordgaard, director of the Biological Station in Bergen, and Dr. J. Hjort, director of the Norwegian marine fisheries. To the latter gentleman I am especially indebted for the opportunity he gave me of examining the numerous plankton-samples taken during the cruise of the "Michael Sars" in different parts of the Norwegian Sea. A most important addition to the Calanoid fauna of Norway has thereby been gained, as will be shown in the course of the account here given. Finally, I beg to thank the direction of the Bergen Museum for the readiness with which it has undertaken the continued publication of the present extensive work.

**G. O. Sars.**

## ERRATUM.

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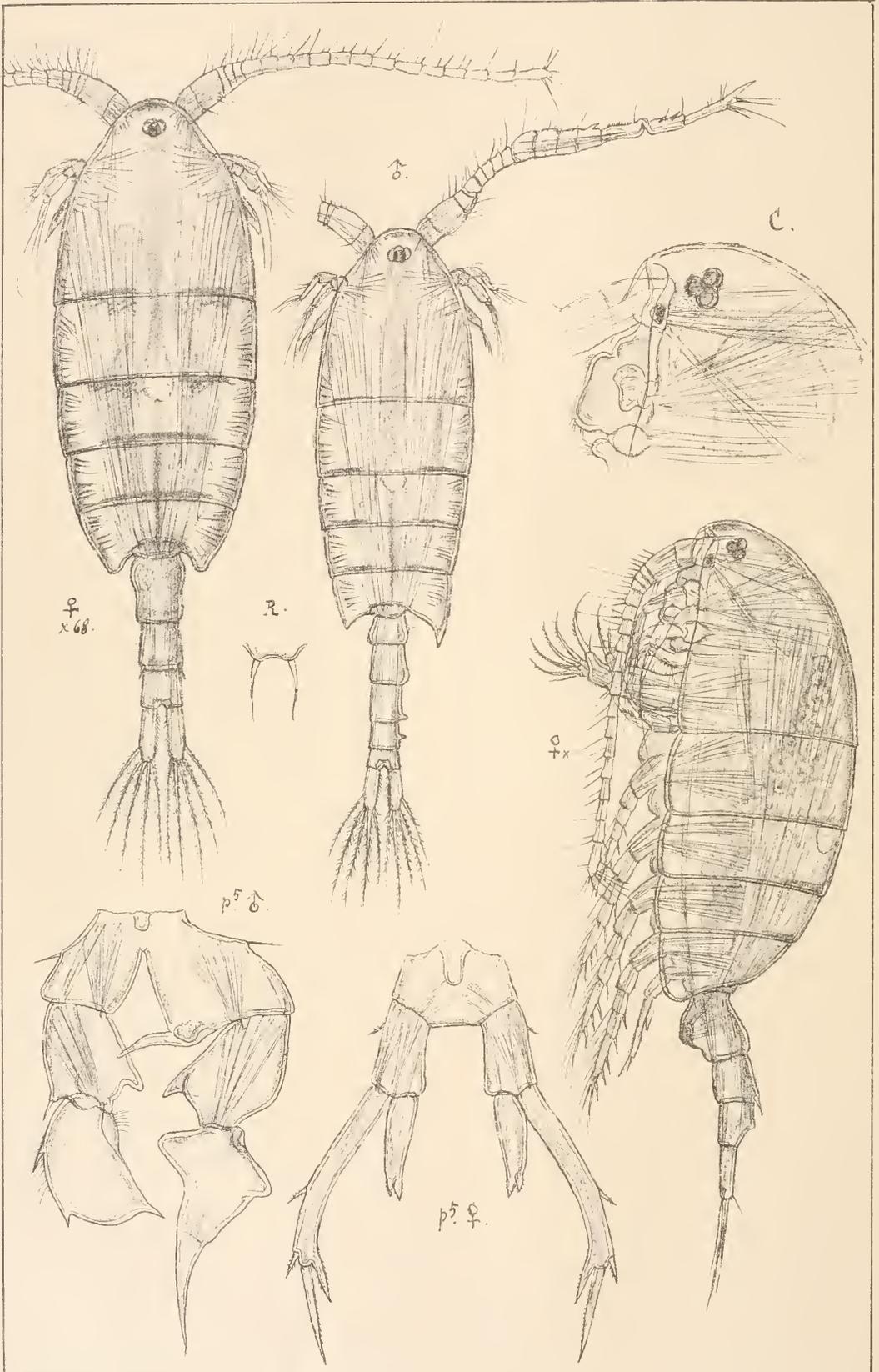
Page 114, line 10; *for* „It was subsequently recorded,“ *read* „It had been previously recorded.“

# Copepoda

## Calanoida

Parapontellidæ.

Pl. XCVII

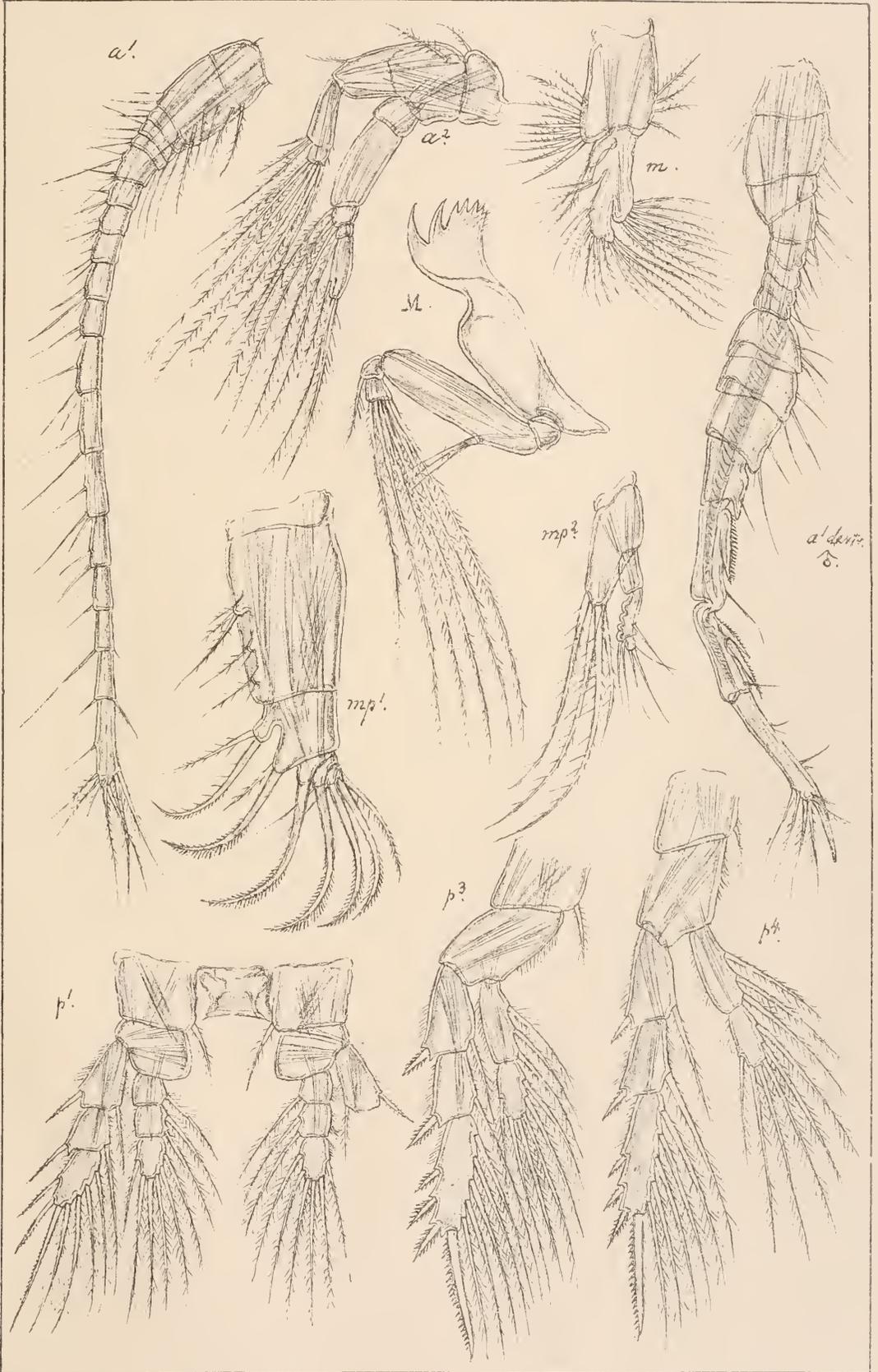


# Copepoda

## Calanoida

Parapontellidæ.

Pl. XCVIII.



G. O. Sars autogr.

Trykri den private Uptmaalng. Cnra

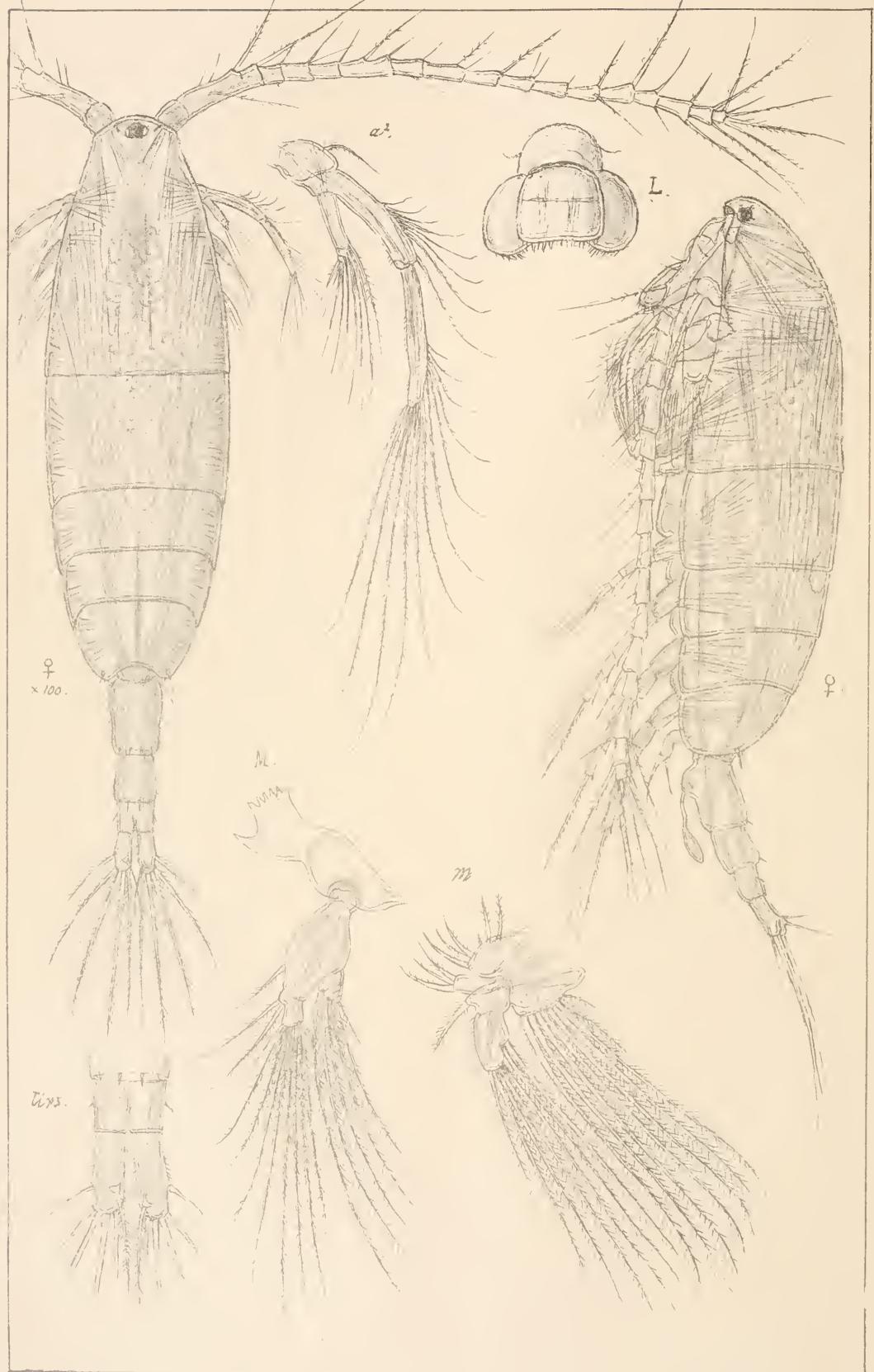
*Parapontella brevicornis* (Lubbock)  
(continued)

# Copepoda

## Calanoida

Acartiidæ.

Pl. XCIX



60 Sars autogr

Trykt den private Opmaaling Chra

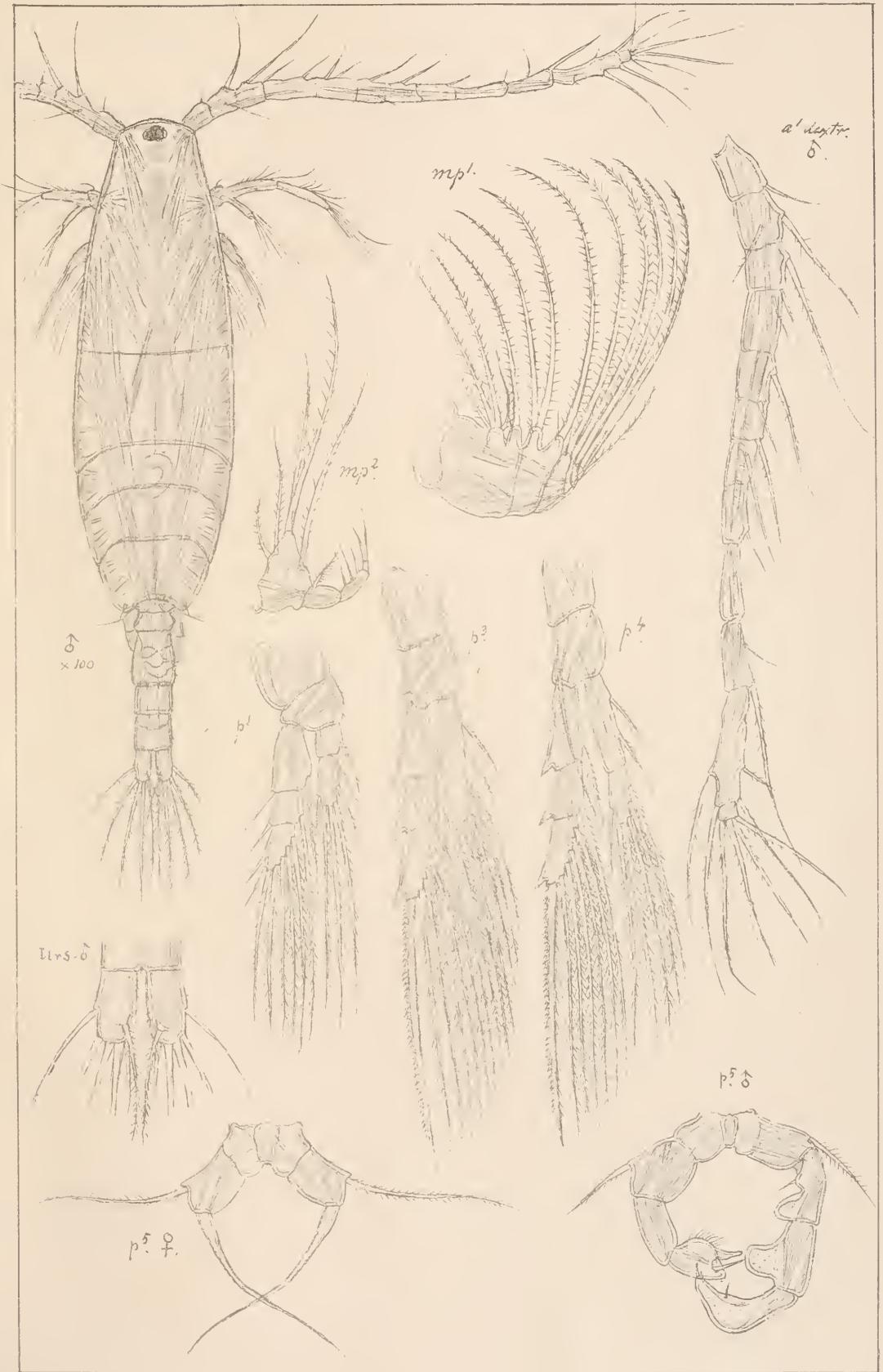
*Acartia longiremis* (Lilljeborg)

# Copepoda

## Calanoida

Acartiidæ.

PI. C.

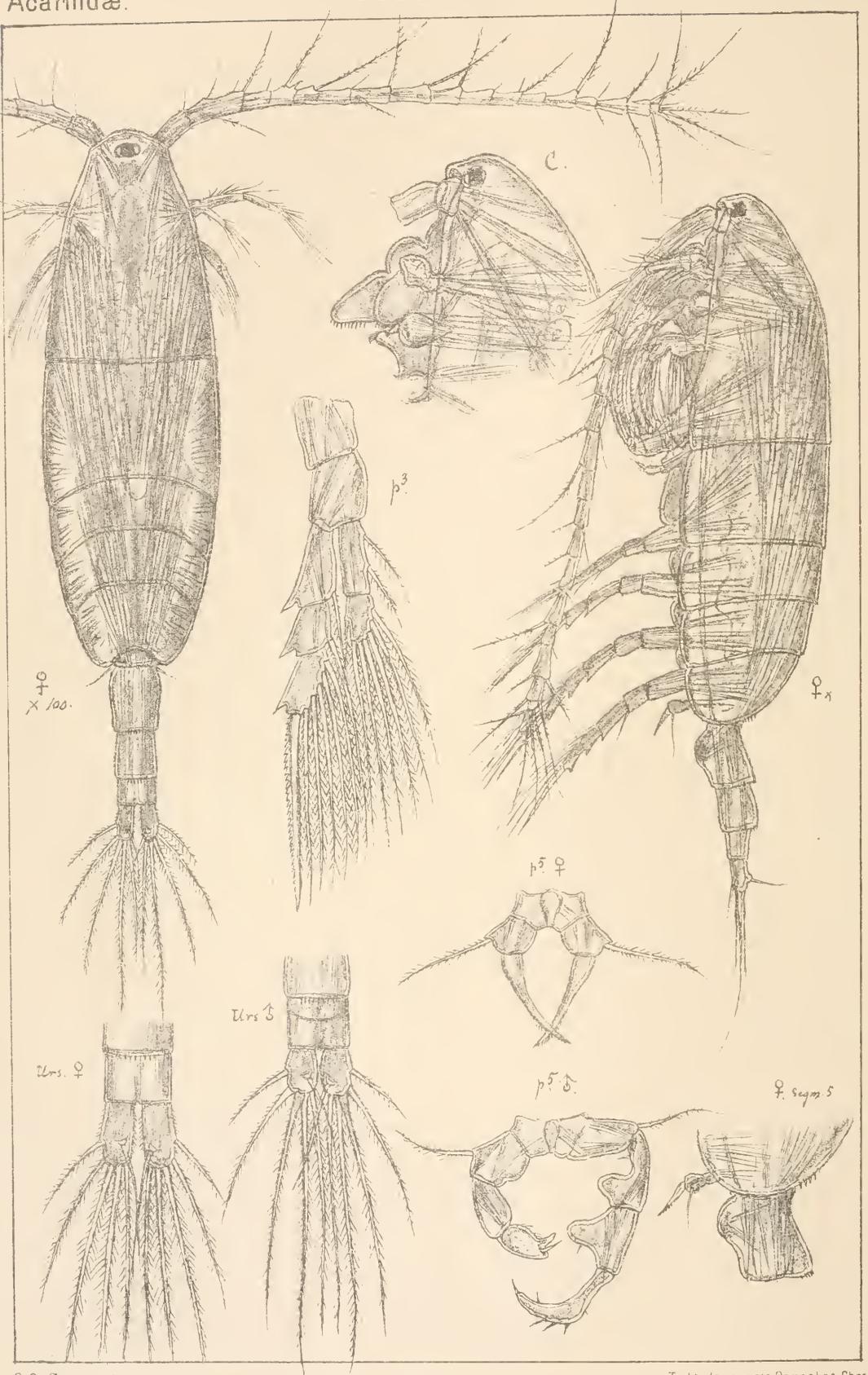


# Copepoda

## Calanoida

Acartiidæ.

Pl. CI



G.O Sars autogr

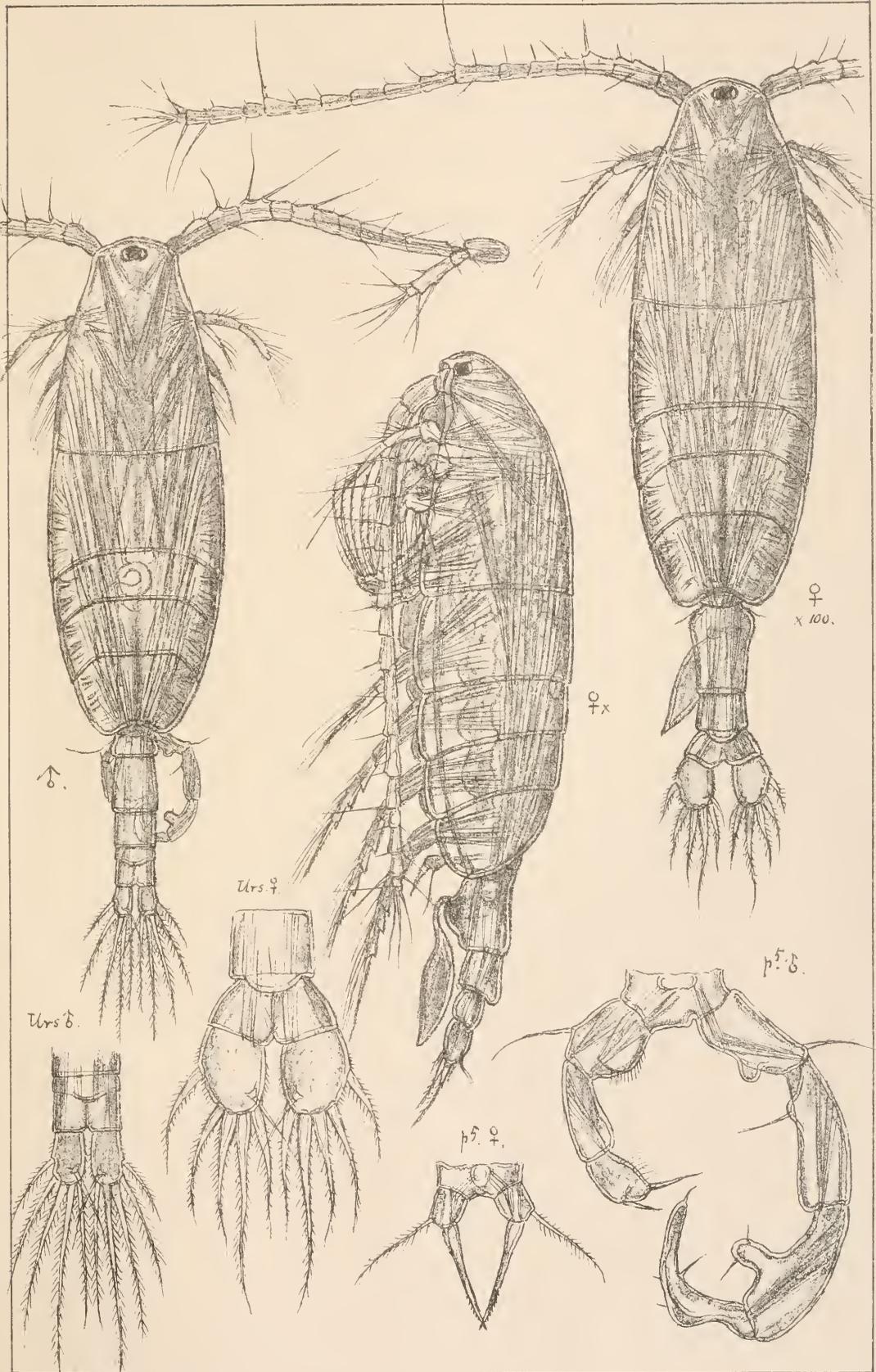
Trykt den private Opmaaling, Chra

Acartia Clausi, Giesbrecht.

# Copepoda

## Calanoida

Acartiidæ.



60 Sars autogr

*Acartia discaudata* Giesbrecht.

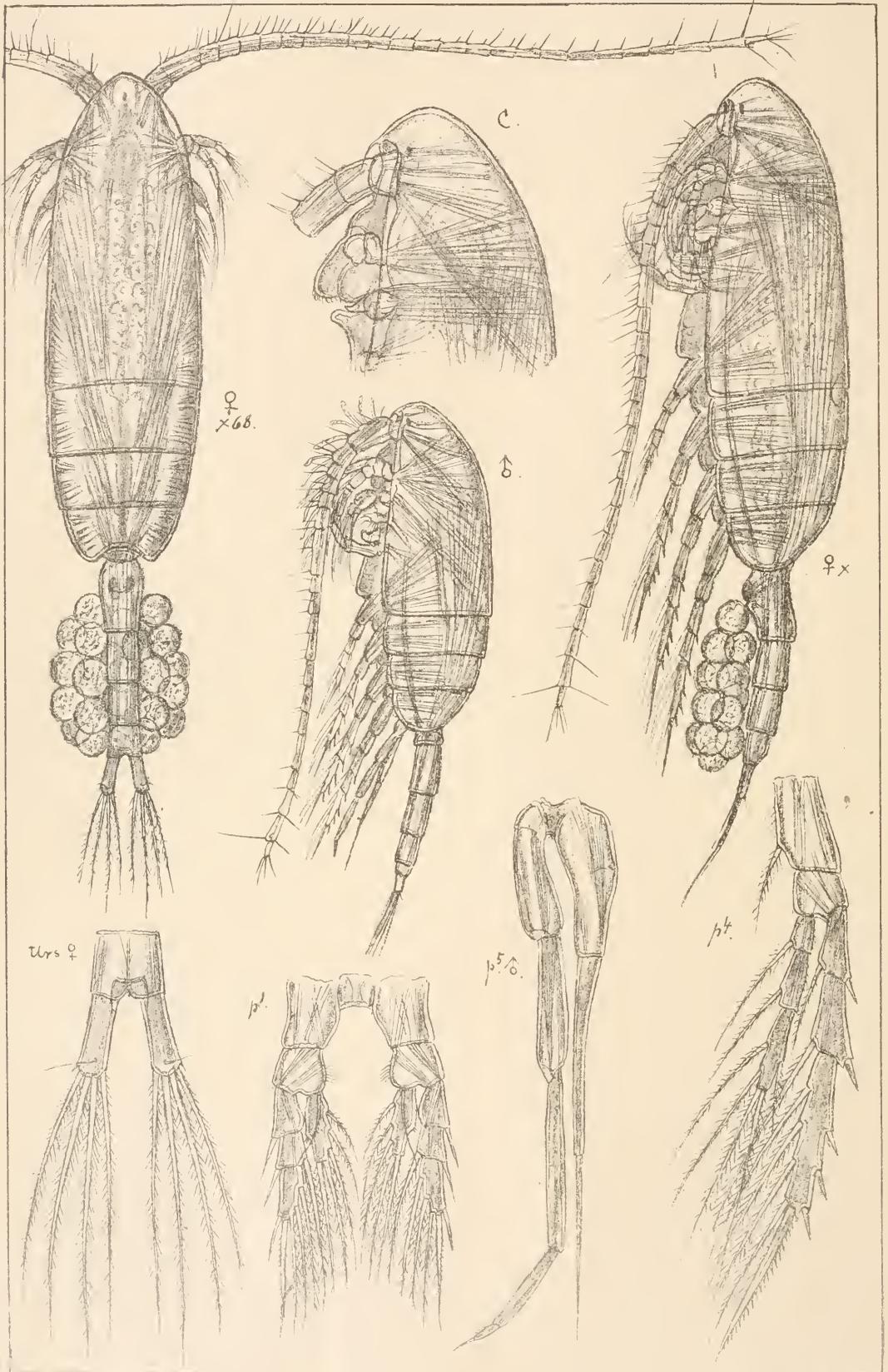
Trykt i den private Opmaalng. Chra

# Copepoda

## Calanoida

Suppl. Pl. I

Pseudocalanidæ.



*Pseudocalanus gracilis*, G.O. Sars.

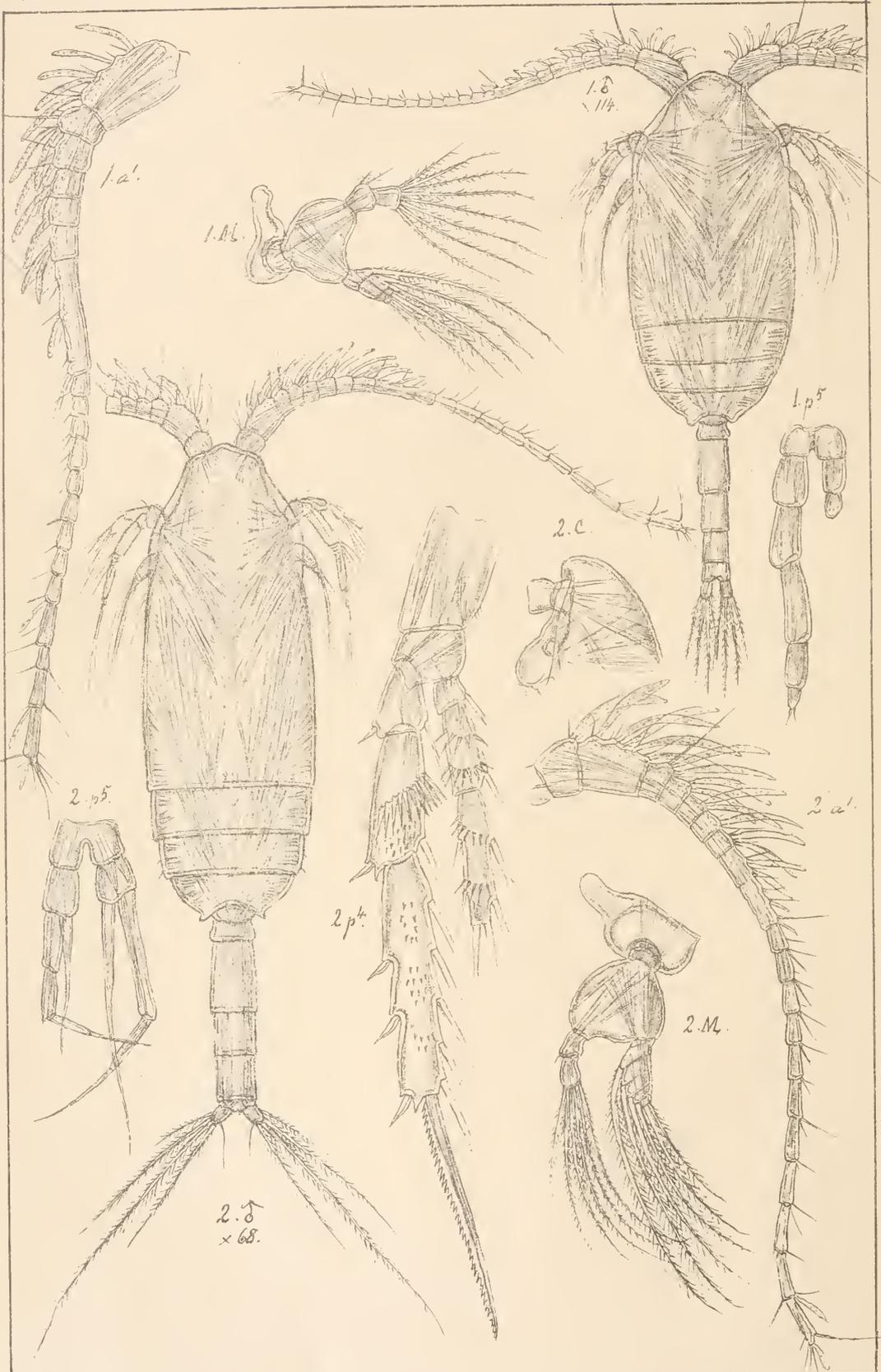


# Copepoda

## Calanoida

Pseudocalanidæ.

Suppl. Pl. III.



G O Sars autogr

1. *Microcalanus pusillus*, G.O. Sars.

Trykt i den private Opmaaling, Chra

(continued)

2. *Spinocalanus abyssalis*, Giesbrecht

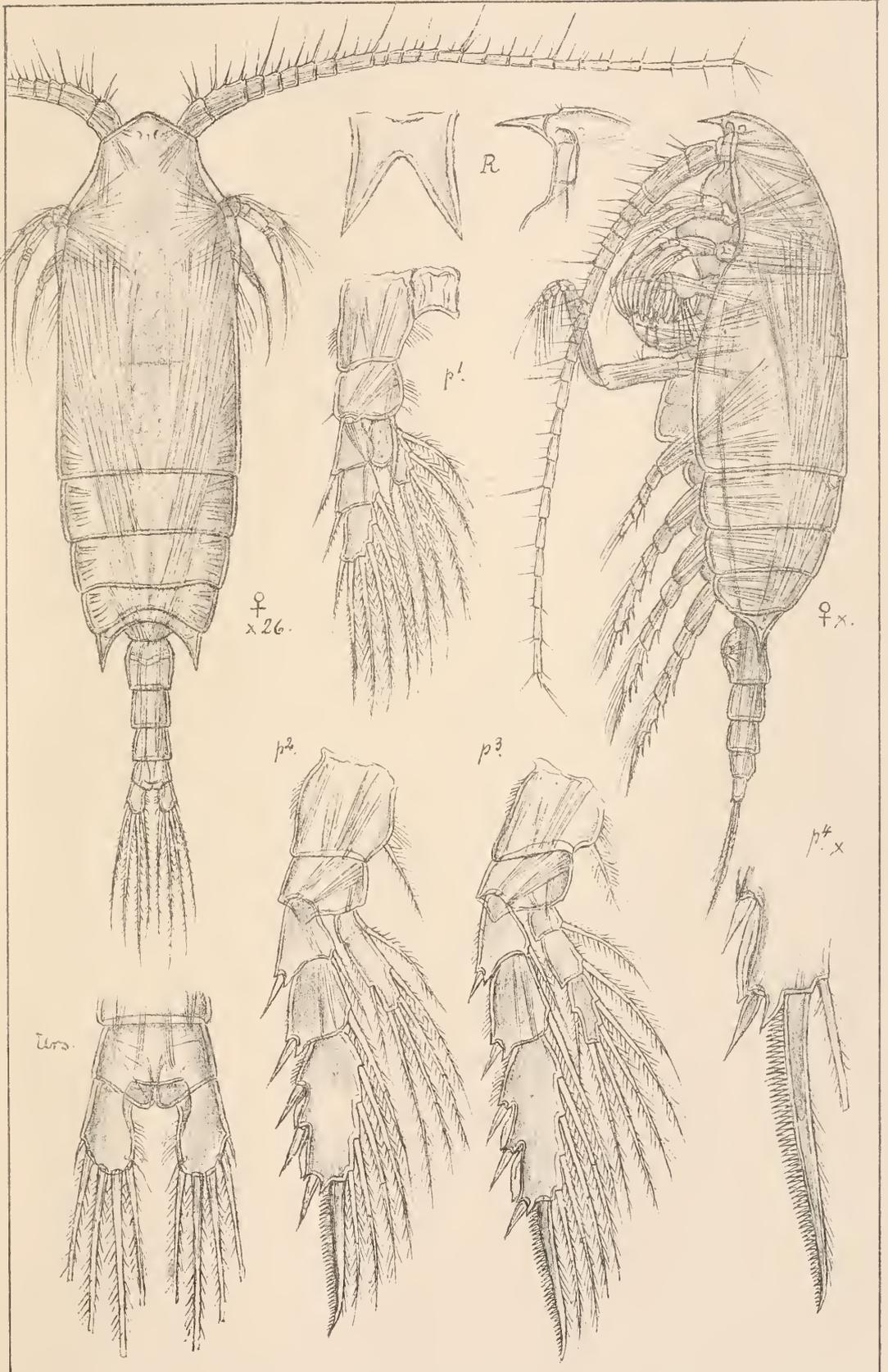
(male)

# Copepoda

## Calanoida

Ætideidæ.

Suppl. Pl. IV



G. O. Sars autogr.

Tryktri den private Opmaalng. Chra

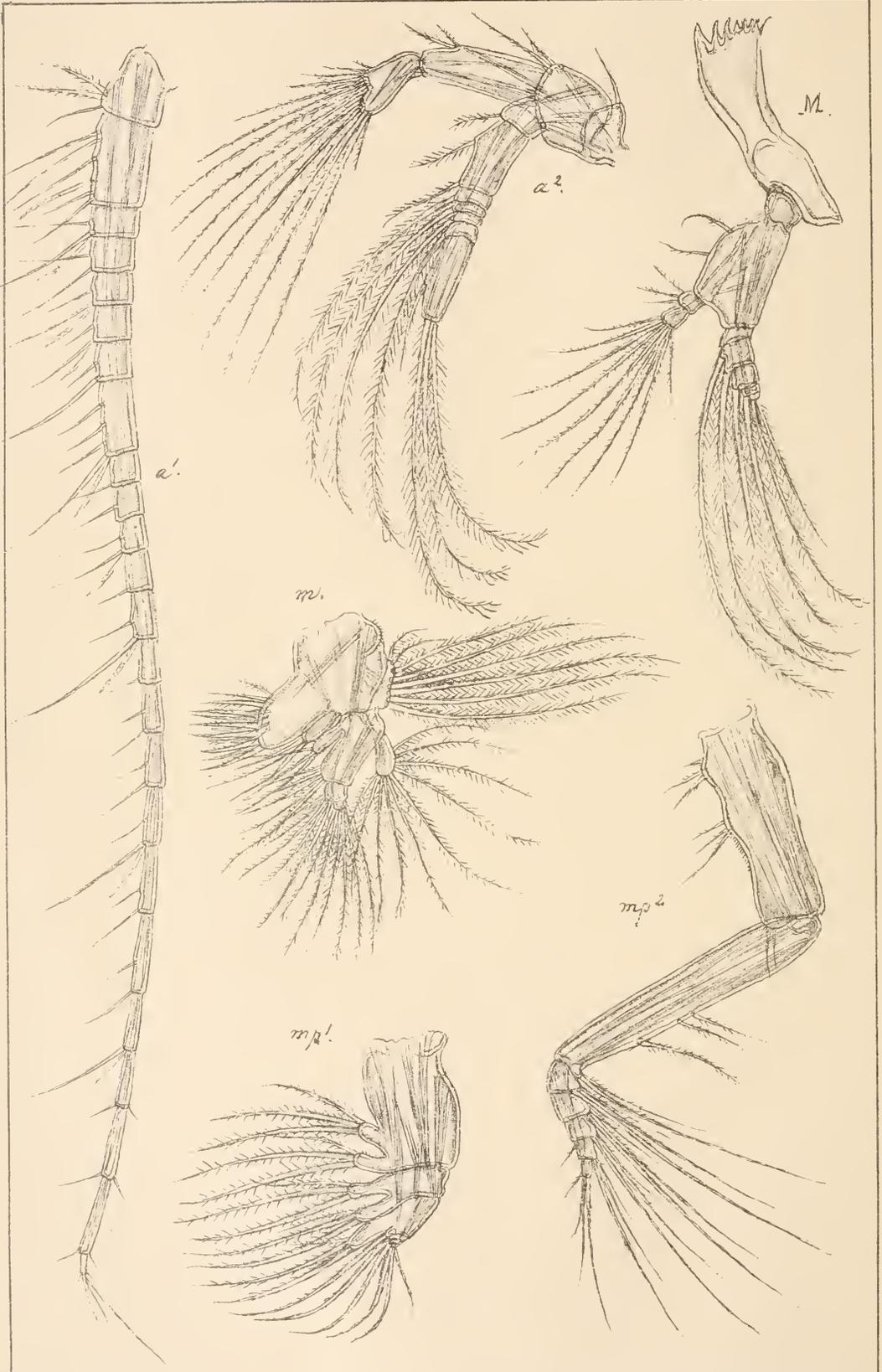
*Ætideopsis rostrata*, G. O. Sars.

# Copepoda

## Calanoida

Ætideidæ.

Suppl. Pl. V.



G. O. Sars autogr

Trykt i den private Opmaaling Chra

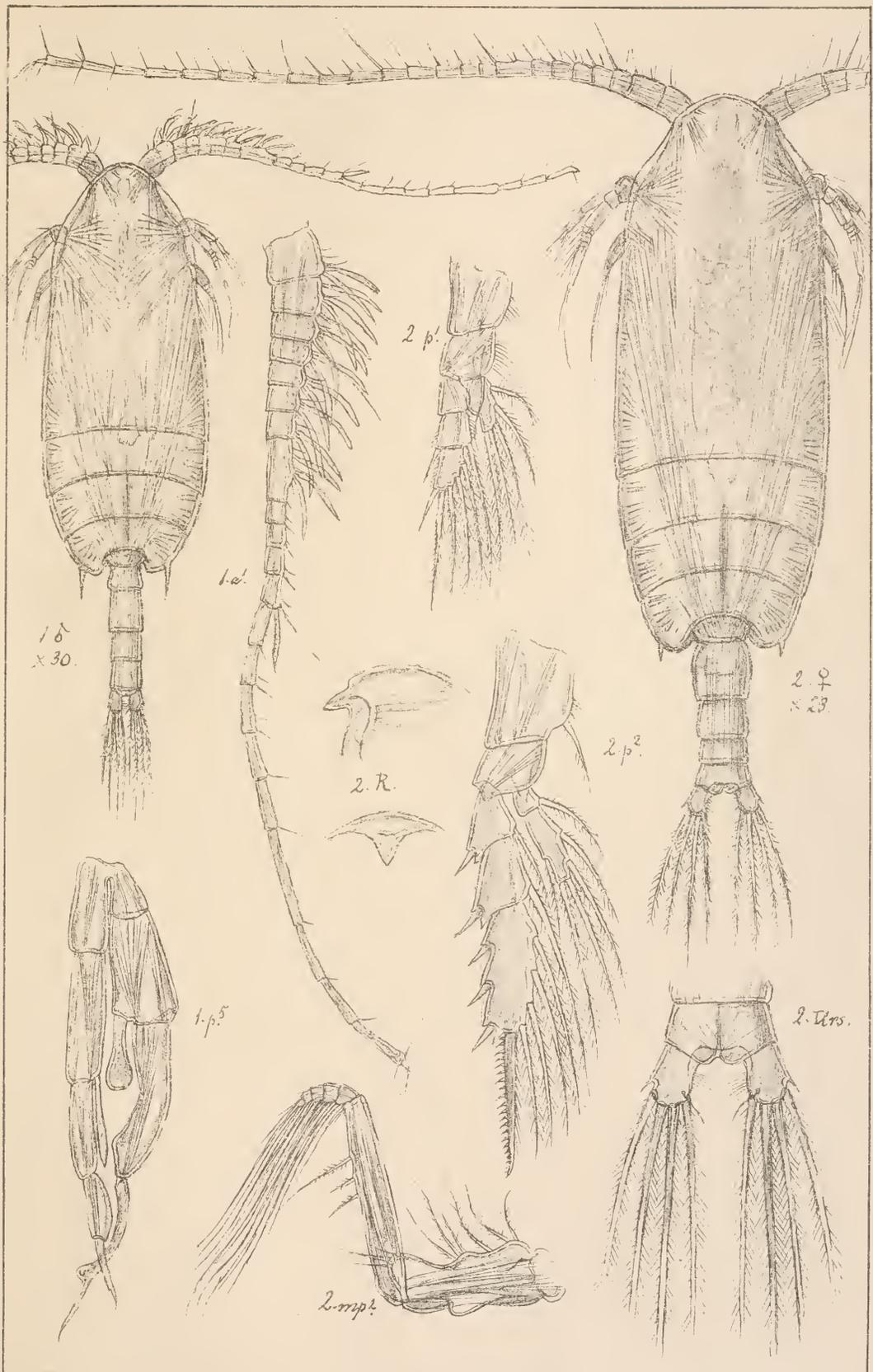
*Ætideopsis rostrata*, G. O. Sars.  
(continued)

# Copepoda

Ætideidæ.

Calanoida

Suppl. Pl. VI.



G.O. Sars autogr.

Trykt i den private Opmaalings Ckru

1. *Gaidius tenuispinus*, G.O. Sars.

(male)

2. *Gaidius brevispinus*, G.O. Sars.