ANNALS

OF THE

DURBAN MUSEUM.

(Vol. I.)

I.—On some Pelagic Entomostraca collected by Mr. J. Y. Gibson in Durban Bay,

by

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Plates I–IV.

FOR the surface gatherings in which the species here noticed were found I am indebted to my friend Mr. J. Y. Gibson.

The gatherings were made in Durban Bay, Natal, and are of great interest, as, so far as I know, the crustacean plankton of that region has not hitherto been at all carefully examined. There can be no doubt that it will afford a rich field for future exploration. The following list embraces all the species which I have been able satisfactorily to determine, but the collection contained others which, owing to their imperfect condition, I have had to leave out of account.

In addition to the Entomostraca which form the subject of this paper it may be mentioned that the collection contained great numbers of larval Cirripedes and Decapod Crustacea, a few Cumacea and Amphipoda, and one larval Isopod which is more particularly noticed below.

CLADOCERA.

Evadne gibsoni, sp. nov., abundant.

COPEPODA.

Setella gracilis, Dana, one example.
Undina vulgaris, Dana, frequent.
Pleuromma abdominale, Claus, one example.
Drepanopus furcatus, Brady, one specimen.
Temora africana, sp. nov., abundant.
Centropages chierchiæ, Giesbrecht, abundant.
Centropages violaceus, Claus, one specimen.
Calanoides natalis, sp. nov., several.
Acartia nana, sp. nov., very few.
Oncæa obtusa, Dana, few.
Corycæus venustus, Dana, few.
Corycæus obtusus, Dana, abundant.
Corycæus latissimus, sp. nov., several.

ISOPODA.

Liriopsis sp.? one example.

CLADOCERA.

Genus EVADNE, Lovén.

Evadne gibsoni, sp. nov. Plate I, figs. 1–5.

Female. Head indistinctly separated behind by a slight dorsal furrow, very broadly rounded in front, circular dorsal area (fig. 4) not very far behind the eye (fig. 1), urosome terminating in two short, broadly wedge-shaped spines the inner margins of which are obscurely serrated (fig. 5), marsupial region of the body broadly wedge-shaped, rounded off posteriorly Eye consisting of a large black pigment body with a series of conical crystalline lenses, a wide interval between these and the front of the head. Length 0·88 mm.

A considerable number of specimens were observed.

The genus *Podon* was separated by Prof. Lilljeborg from *Evadne* chiefly on account of a deeply constricted neck or furrow dividing the head from the posterior portion of the body, and by the broadly rounded hinder extremity of *Evadne*. Three species only, *E. norâmanni* Lovén, *E. spinifera* Müller and *E. tergestina* Claus, had up to a very recent date, been recognized—all of them marine, but more recently five new species with several varieties have been described by Prof. G. O. Sars, from the Caspian Sea. The species here described seems to be intermediate in character between the two genera *Podon* and *Evadne*, having a slightly indicated cervical furrow and a narrowly rounded marsupial portion. The circular dorsal disc is supposed to be a suctorial organ of attachment to some foreign object.

COPEPODA.

Genus TEMORA, Baird.

Temora africana, sp. nov. Plate III, figs, 1–8.

Female. Length 1·2 mm. Anterior division of the body (cephalothorax) very broad, tapering gradually backwards, rounded off posteriorly (fig. 1); abdomen three-jointed, much narrower than the cephalothorax; caudal stylets very long and slender (fig. 4), equal in length to the entire abdomen, bearing four short apical setæ, the principal one lancet-shaped (fig. 5); both caudal rami and setæ are non-plumose. Anterior antennæ when reflexed reaching nearly to the extremity of the cephalothorax, twenty-four-jointed and very sparingly setiferous: inner branches of all the swimming feet (fig. 6) bi-articulate; fifth pair unbranched, simple, three-jointed and bearing two short apical spines (fig. 7).

Male. Right anterior antenna (fig. 2) scarcely at all swollen, geniculated between the eighteenth and nineteenth joints, very slightly setiferous; fifth pair of feet strongly prehensile, similar to those of *T. longicornis*, but stouter and slightly different in spinous armature (fig. 8).

This is almost a fac-simile of the familiar northern species *T. longicornis*, the most important differences being found in the details of the fifth pair of feet in both sexes, in the generally non-setiferous character of the limbs, and in the lancet-shaped terminal spine of the caudal stylets in the female.

Genus CALANOIDES, Brady.

Calanoides natalis, sp. nov. Plate I, figs. 6–11.

Female. Length 2·55 mm. Body elongated, sub-cylindrical (fig. 6), the anterior division (cephalothorax) distinctly separated, and much stouter than the posterior abdominal portion, rounded off in front and behind, forehead bearing a pair of slender, curved, tentacular processes; abdomen four-jointed, caudal stylets short, scarcely longer than the last abdominal segment, and bearing five apical setæ. Anterior antennæ twenty-four-jointed, sparingly setiferous, reaching when reflexed beyond the distal end of the abdomen; branches of the posterior antennæ nearly equal in size (fig. 8); inner branch two-jointed, outer indistinctly four- or five-jointed. Mandible (fig. 9) and palp of the usual calanoid type: all the swimming feet biramose, the branches three-jointed.

Male. Abdomen very slender, five-jointed (fig. 7). Biting plate of the mandible entirely wanting; first four pairs of feet as in the female; fifth pair very slender and prehensile, destitute of lateral setæ; inner branch of the foot of the right side (fig. 10) reduced to a very minute ovate, one-jointed process, outer branch slender, flexile, three-jointed, its last joint much the shortest; inner branch of the left foot (fig. 11) three-jointed, much reduced in size, reaching only to the middle of the second joint of the outer branch.

This species occurred plentifully in the Durban Bay collection, but females were comparatively scarce.

The chief distinctive characters of the genus *Calanoides* may be stated as follows:—the indistinctly jointed outer branch of the posterior antennæ (four or five imperfect joints, as against seven distinct joints in *Calanus*), the total absence of mandibles in the male, and the elongated prehensile development of the male fifth foot. But Dr. Giesbrecht has figured in his great work on Neapolitan Copepoda the fifth pair of feet in the male of a form which he indentifies with *Calanus brevicornis* Lubbock, his figure agreeing very exactly with the fifth pair of the male *Calanoides natalis*. But this limb is neither figured nor described by Sir John Lubbock, and *C. brevicornis* is in other respects quite unlike the African species here described. It is, however, possible that Giesbrecht's figure may apply to *C. natalis*, in which case the reference to *Calanus brevicornis* is certainly erroneous.

The genus *Calanoides* was founded originally on specimens taken during the cruise of the "Challenger" in the South Atlantic. The

species, *C. patagoniensis*, has not again been noticed nor has any species been described, so far as I know, by later authors.

Genus CENTROPAGES, Kröyer.

Centropages chierchiæ, Giesbrecht. Plate II, figs. 1–6

Centropages chierchiæ, Giesbrecht, Pelagische Copepoden des von Neapel, p. 320. Plate 38, fig. 3.

Female. Length 2 mm. Body robust, head obtuse, forehead nent in the middle, obtusely angular; metasome abruptly tru behind (fig. 1), its hinder margin deeply excavated in the mid strongly produced at the lateral angles, forming two long, pointed spines; urosome much narrower than the metasome, more or less swollen and distorted, the genital segment very tun bearing two, or sometimes three, long curved spines, the fol segment also tumid and produced laterally on the right side, f a prominent mimillar protuberance (fig. 1), caudal laminæ short and somewhat divergent. Anterior antennæ long and slender, re when reflexed to the extremity or slightly beyond the extremity tail segments: the outer branch of the fifth foot has its middl produced, as usual in this genus, into a long sharp spine (fig. 2)

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Male. The body of the male is somewhat more slender than that of the female, but is nearly of the same length; posterior extremity of the metasome is, however much narrower, the lateral spines much smaller and sometimes absent altogether; urosome four-jointed (fig. 6), very slender; right anterior antenna of the usual geniculated type, the first two joints bearing short tooth-like spines, the front of the head with two tentacular processes (fig. 3): outer branch of the left fifth foot bi-articulate (fig. 5), that of the right foot forming a strongly prehensile chelate limb (fig. 5), the longer claw of which is subsigmoid in shape with a crenulated, imperfectly ringed extremity.

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Genus ACARTIA, Dana.

Acartia nana, sp. nov. Plate II, figs. 7–12.

Female. Length 1 mm. Anterior portion of the body seen dorsally very slender, oblong, widest in the middle, greatest width equal to one third of the length (fig. 7), anterior extremity narrowed and subtruncate, posterior truncated and minutely spined at the lateral angle; urosome equal in length to one-third of the metasome, first two segments nearly equal in length, last segment very small; caudal rami slender, about equal in length to the median abdominal segment. Anterior antennæ (fig. 8) scarcely at all nodulose or dentiferous, reaching when reflexed to the middle of the urosome, fifteen-jointed, the first two joints much the longest, median joints very indistinctly marked, the last six or seven quite distinctly separated. Terminal spines of the outer rami of the swimming feet very long and slender, their inner margins minutely pectinated (fig. 10) along their entire length. Last pair of legs very small, basal joint expanded (fig. 11), sub-quadrate, bearing two setæ, one of which is very long, the other rather shorter, bulbously expanded at its base, and minutely multifid toward the apex, which is produced into a delicate terminal seta.

Male—differs very slightly from the female except in the urosome, which consists of four segments of nearly equal length, with shorter and stouter caudal segments, the terminal setæ stouter and more divergent. Last pair of legs (fig. 12) differing only in minor details from the pattern usual in this genus, except that the basal portion is divided so as to form a digitiform outer branch, which ends in a long terminal seta.

The animal is almost pellucid, and, as there were very few examples, I found the more minute parts, especially the last pair of legs, very difficult of observation, and I am not quite sure whether future research may altogether confirm my description.

Genus CORYCÆUS, Dana.

Corycæus latissimus, sp. nov. Plate IV.

Female. Length 1·05 mm. Seen dorsally (fig. 1) the anterior division of the body is ovate, greatest width in front of the middle, and equal to more than half its length, broadly rounded in front, narrow and constricted behind, the third segment produced laterally

into very conspicuous wings, which are broad at the base and projecte backwards, ending in long acuminate points; urosome bi-articulat the first segment nearly twice as long as the following one an excessively tumid; caudal stylets equal in length to the last abdomin segment, terminal setæ short, three in number; eyes remote. Apic spines of the exopodites of the first and second pairs of feet (figs. 5, long and slender, outer edge very feebly pectinated; terminal spi of endopodite (fig. 7) small, lancet-shaped and pectinated; endopodi of the third pair (figs. 8, 9) destitute of spines, the last joint ovat its apex obliquely rounded off; its inner margin bearing two seta endopodite of the fourth pair consisting of a small papilla (fig. 1 with two long setæ; fifth pair reduced to a single short seta on eac side of the last thoracic segment.

The two described species which most nearly approach this i general character are *C. latus*, Dana, and *C. obtusus*, Giesbrecht, b neither of these appears to be at all so robust or tumid as the prese species. Specimens which I refer with some hesitation to the latt of these two species were found abundantly in Mr. Gibson's netting but are easily distinguished by their smaller size and by their beaut fully opalescent blue tint, which appears to be dependant upon mass of dark blue pigment scattered about the tissues of the animal.

ISOPODA.

Genus LIRIOPSIS, M. Schultze.

Plate III, figs. 9–15.

The term *Liriopsis* is applied to the female and male (or last larva stage of a parasite, which in its sedentary or female form is found the bodies of *Peltogaster*—itself a parasite on the higher crustace especially *Pagurus* and *Eupagurus*. The female animal is exceedingly degraded structure, almost amorphous, while the male well developed and locomotive. I found a single male specimen amo Mr. Gibson's tow-net captures. The female should be looked for the bodies of stalk-eyed crustacea. The one specimen here referred is figured in Plate III. Professor G. O. Sars notes the typical speci *Liriopsis pygmæa* as being found in the seas of Denmark and Norwa and in the Black Sea.

Explanation of Plates I–IV,

Illustrating Dr. G. S. Brady's paper on "Some Pelagic Entomostraca collected by Mr. J. Y. Gibson in Durban Bay."

Plate I.

Evadne gibsoni.

Fig. 1.—x 84. Female seen laterally.
Fig. 2.—x 125. Anterior antenna.
Fig. 3.—x 240. Mandible.
Fig. 4.—x 240. Dorsal disc seen dorsally.
Fig. 5.—x 240. Spines of urosome.

Calanoides natalis.

Fig. 6.—x 40. Male seen from right side.
Fig. 7.—x 84. Abdomen of male.
Fig. 8.—x 84. Posterior antenna.
Fig. 9.—x 240. Mandible of female.
Fig. 10.—x 84. Fifth foot of right side, male.
Fig. 11.—x 84. Fifth foot of left side, male.

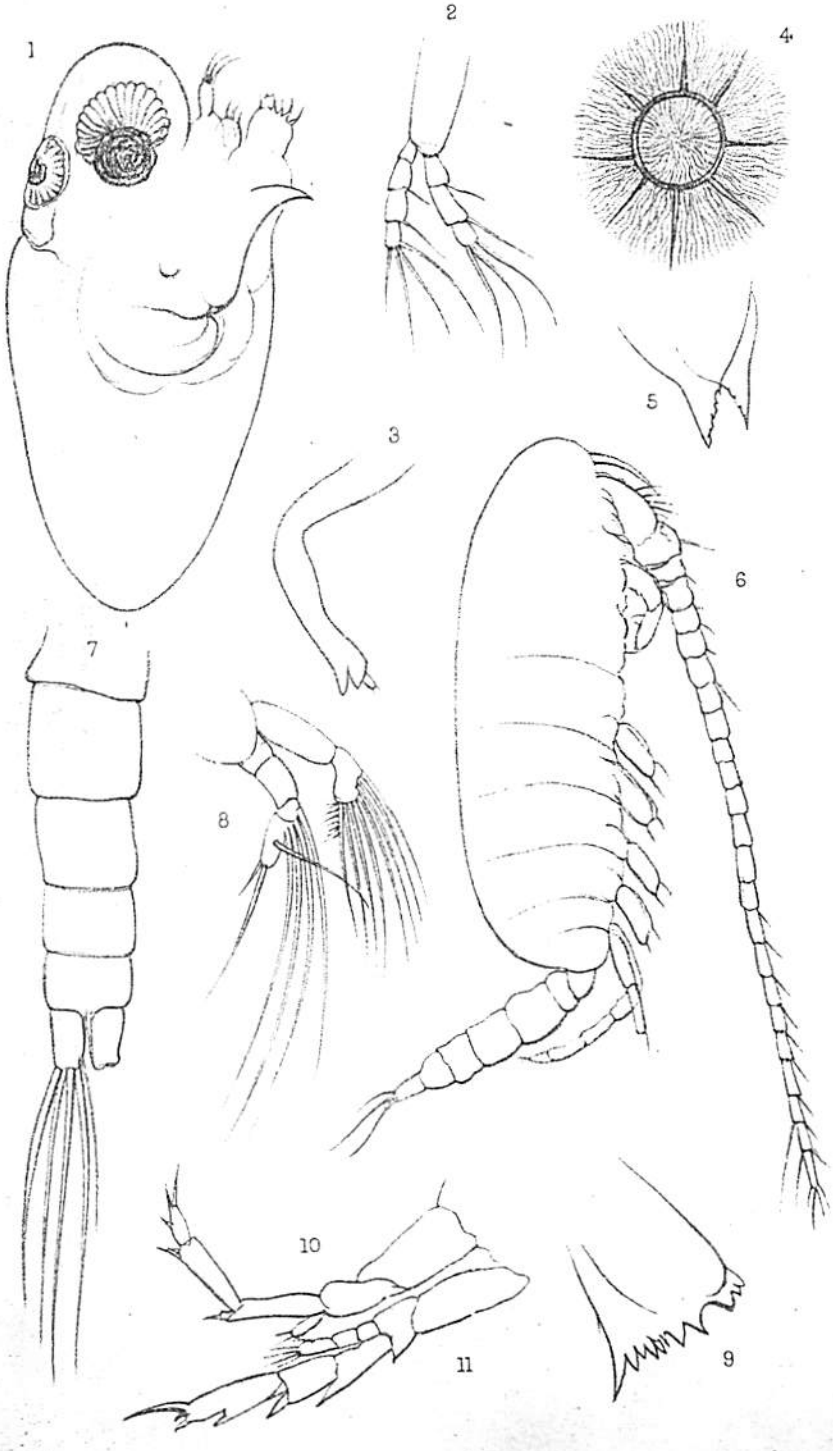
Plate II.

Centropages chierchiæ.

Fig. 1.—x 84. Posterior metasome and urosome of female.
Fig. 2.—x 84. Outer branch of fifth foot of female.
Fig. 3.—x 100. Forehead and base of right anterior antenna of male.
Fig. 4.—x 84. Part of anterior antenna of female.
Fig. 5.—x 100. Fifth pair of feet of male.
Fig. 6.—x 50. Urosome and last joint of metasome of male.

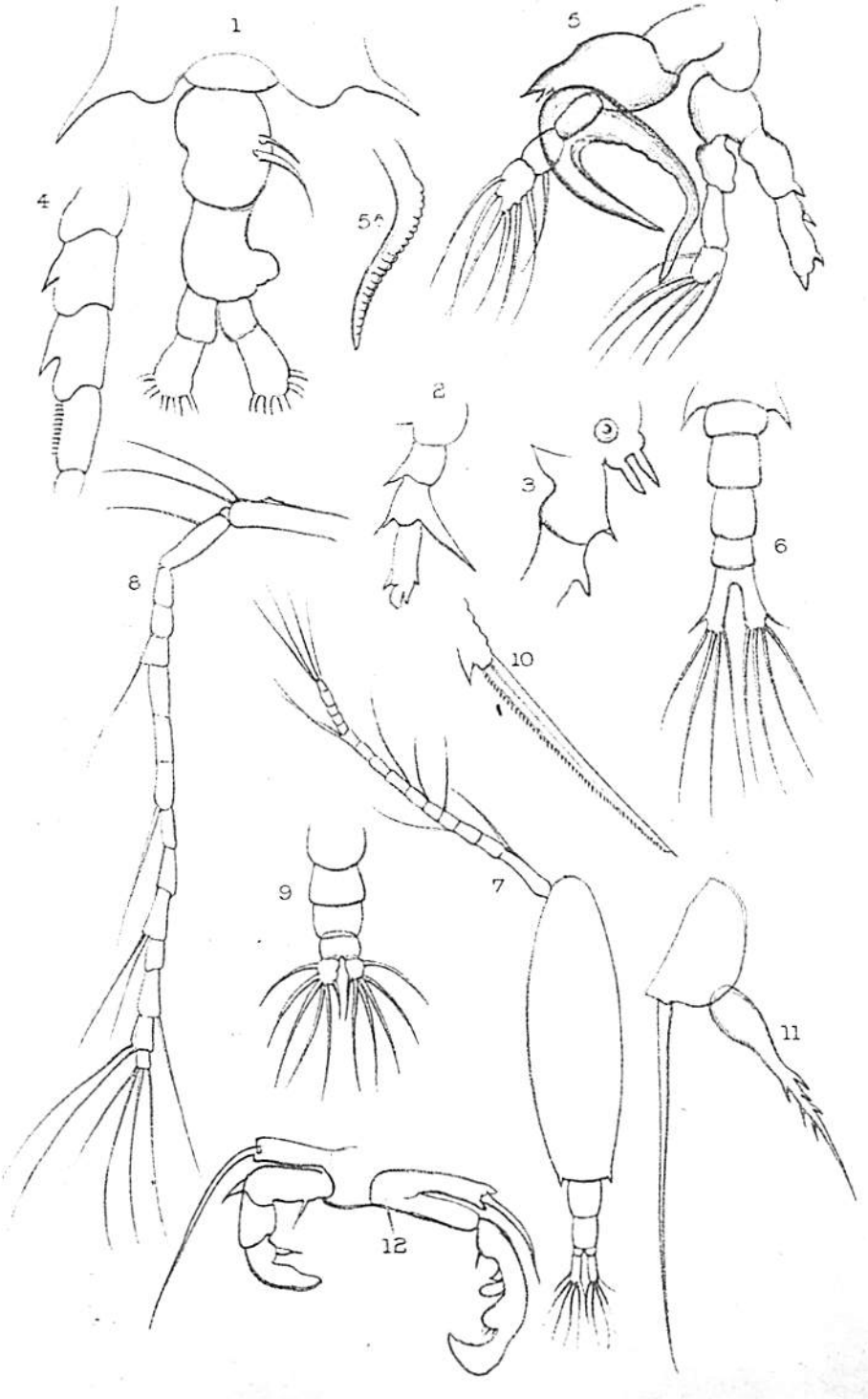
Acartia nana.

Fig. 7.—x 50. Female seen dorsally.
Fig. 8.—x 84. Anterior antenna of female.
Fig. 9.—x 84. Urosome of male.
Fig. 10.—x 240. Terminal spine of one of the swimming feet.
Fig. 11.—x 440. Foot of fifth pair, female.
Fig. 12.—x 240. Fifth pair of feet, male.



G.S.Brady del. West, Newman lith.

Brady, G.S. 1914 On further pelagic Entomostraca collected by Mr. J.Y. Gibson in Durban Bay. Annals of the Durban Museum 1:25-28, pls. 5-6. (1-vi-1914)



G.S.Brady del. West,Newman lith.

1-6 CENTROPAGES CHIERCHIÆ. 7-12 ACARTIA NANA.

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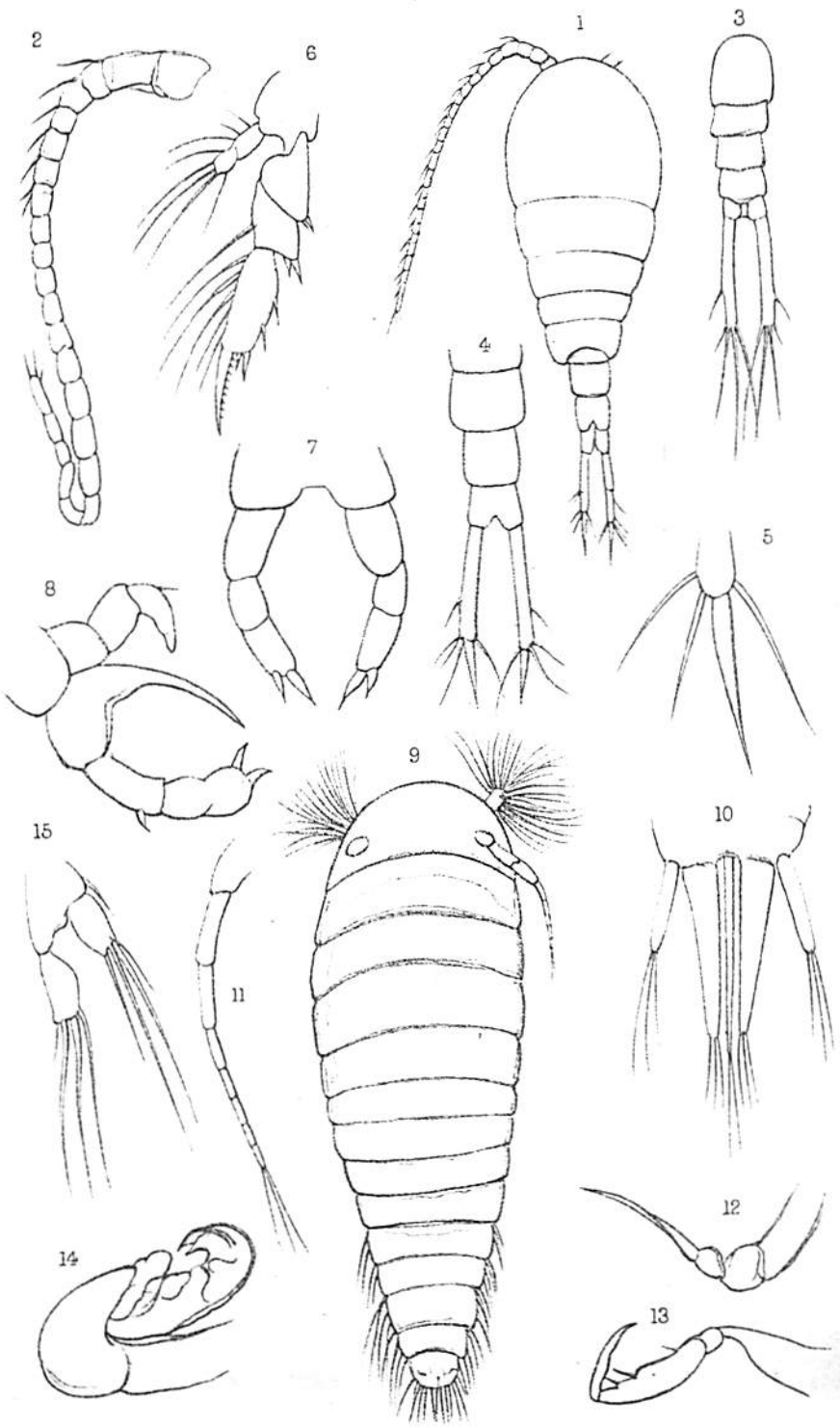

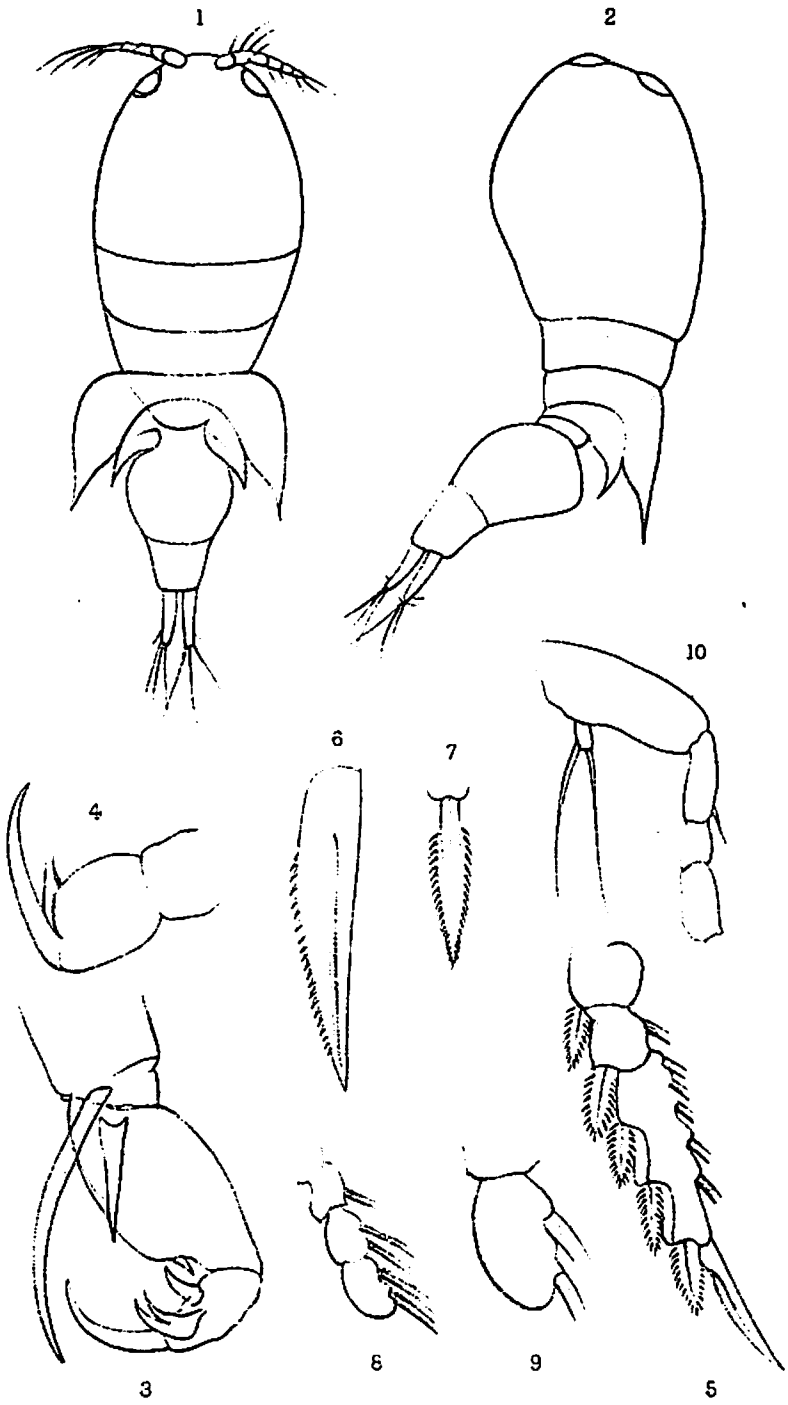

G.S.Brady del. West, Newman lith.

CORYCÆUS LATISSIMUS.

Plate III.

Temora africana.

Fig. 1.—x 50. Female seen dorsally.
Fig. 2.—x 100. Right anterior antenna, male.
Fig. 3.—x 84. Abdomen of male.
Fig. 4.—x 84. Abdomen of female.
Fig. 5.—x 240. Median apical seta of caudal lamina, female.
Fig. 6.—x 125. Foot of fourth pair.
Fig. 7.—x 210. Fifth pair of feet of female.
Fig. 8.—x 150. Fifth pair of feet of male.

Liriopsis sp.

Fig. 9.—x 84. Male seen dorsally.
Fig. 10.—x 240. Furca.
Fig. 11.—x 125. Posterior antenna.
Fig. 12.—x 240. First foot.
Fig. 13.—x 125. Third foot.
Fig. 14.—x 240. Second foot. ?
Fig. 15.—x 125. One of the swimming feet.

Plate IV.

Corycæus latissimus.

Fig. 1.—x 65. Female seen dorsally.
Fig. 2.—x 65. Female seen laterally.
Fig. 3.—x 240. Posterior antenna.
Fig. 4.—x 240. Footjaw.
Fig. 5.—x 180. Outer branch of second foot.
Fig. 6.—x 440. Terminal spine, outer branch of second foot.
Fig. 7.—x 440. Terminal spine, inner branch of second foot.
Fig. 8.—x 240. Inner branch of third foot.
Fig. 9.—x 440. Terminal joint of inner branch of third foot.
Fig. 10.—x 240. Foot of fourth pair.