

It must be remembered that the material includes only three specimens of the first Mysis in each of the two species.

Dimensions:

Total length 10 mm; length of carapace 4 mm, height of same 3 mm; rostrum 1,5 mm; abdomen 2,5 mm; telson 2 mm.

Mysis II.

Figs. 267-281.

Very little change has taken place from the first to the second Mysis, except an increase in size and a further development of limbs and limbparts. The endopodial flagellum of the second antenna has increased in length and is reaching to the tip of the pterygostomian spine. The antennal scale has developed more setae on its margin.

In the mandible the molar part is very strongly developed, and the incisor part is only a single large tooth with a cutting ridge combining it with the molar part. The mandibular palp is three-jointed as in the previous stage but in some specimens, as also in specimens of the other stages, it is difficult to observe the line between the first and the second joints. The first and the second maxillae are strongly setose. No larger change has taken place in the maxillipedes and thoracopods. The gills are the same as in *C. petiti*.

The pleopods have developed further, and they are now jointed so far as partitions are observed between the protopod, the exopod and the endopod. The exopod is the largest branch. The endopod of the first pair is very small, but it grows larger backwards, and in the last pair the endopod is only little smaller than the exopod (Figs. 280-281).

The uropod has the same spine ventrally on the protopod as in the previous stage.

Dimensions:

Total length 12 mm; length of carapace 5 mm, height of same 4 mm; rostrum 2 mm; abdomen 3 mm; telson 2 mm.

Mysis III.

This stage is a little larger than the previous one. The flagellum of the first antenna reaches with about one third of its length beyond the pterygostomian spine. The palp of the mandible has grown a few more setae. The chelae on the three first pairs of thoracopods are more developed, and the various joints of the endopods have enlarged. The pleopods have grown, their exopods are now all furnished with embryonic setae along their full length, but the endopods are still behind in development, and this is especially the case for the first and the second pairs. The telson has developed the two dorsal ridges.

Dimensions:

Total length 15 mm; length of carapace 6 mm, height of same 4,5 mm; rostrum 2,5 mm; abdomen 4 mm; telson 2,5 mm.

Mysis IV.

Figs. 282-288.

The larva has again increased in size.

On the first antenna the statical spine is now a pointed stylus, and the statocyst has developed as a closed cavity with only a small opening in front medially at the base of the statical stylus. The lateral flagellum is still short with many sensory hairs on its medial margin, and it has started to become annulated. Also the medium flagellum is annulated and is twice as long as the lateral flagellum.

The second antenna has also developed further, and its flagellum has now grown to the full length of the carapace.

The mandible is well developed with a clearly folded molar part and with many setae along the distal part of the second joint as well as along the third joint, thus shaping a useful brush or fan.

On the first maxilla the setae on the basi-endite have become so short, spiny and almost teeth-like, that they can now definitely be used not only to hold the prey, but also to take part in the tearing of it into smaller pieces.

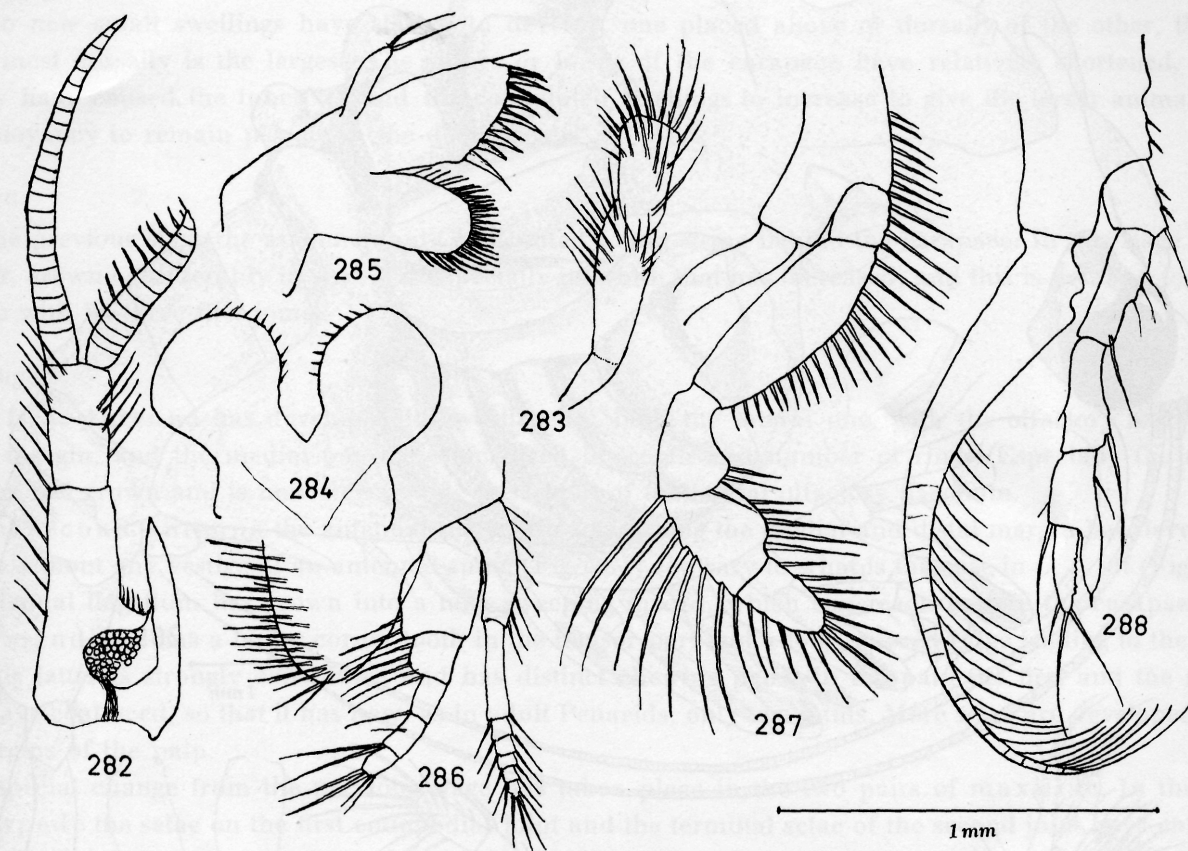


Fig. 282-288. *Cerataspis monstrosa*. Fourth Mysis. Fig. 282, first antenna from ventral. — Fig. 283, mandibular palp. — Fig. 284, labium. — Fig. 285, first maxilla. — Fig. 286, first maxillipede, showing distal part of protopod with exopod and endopod. — Fig. 287, second maxillipede, showing basis and endopod. — Fig. 288, first pereopod except for the more proximal part of the protopod.

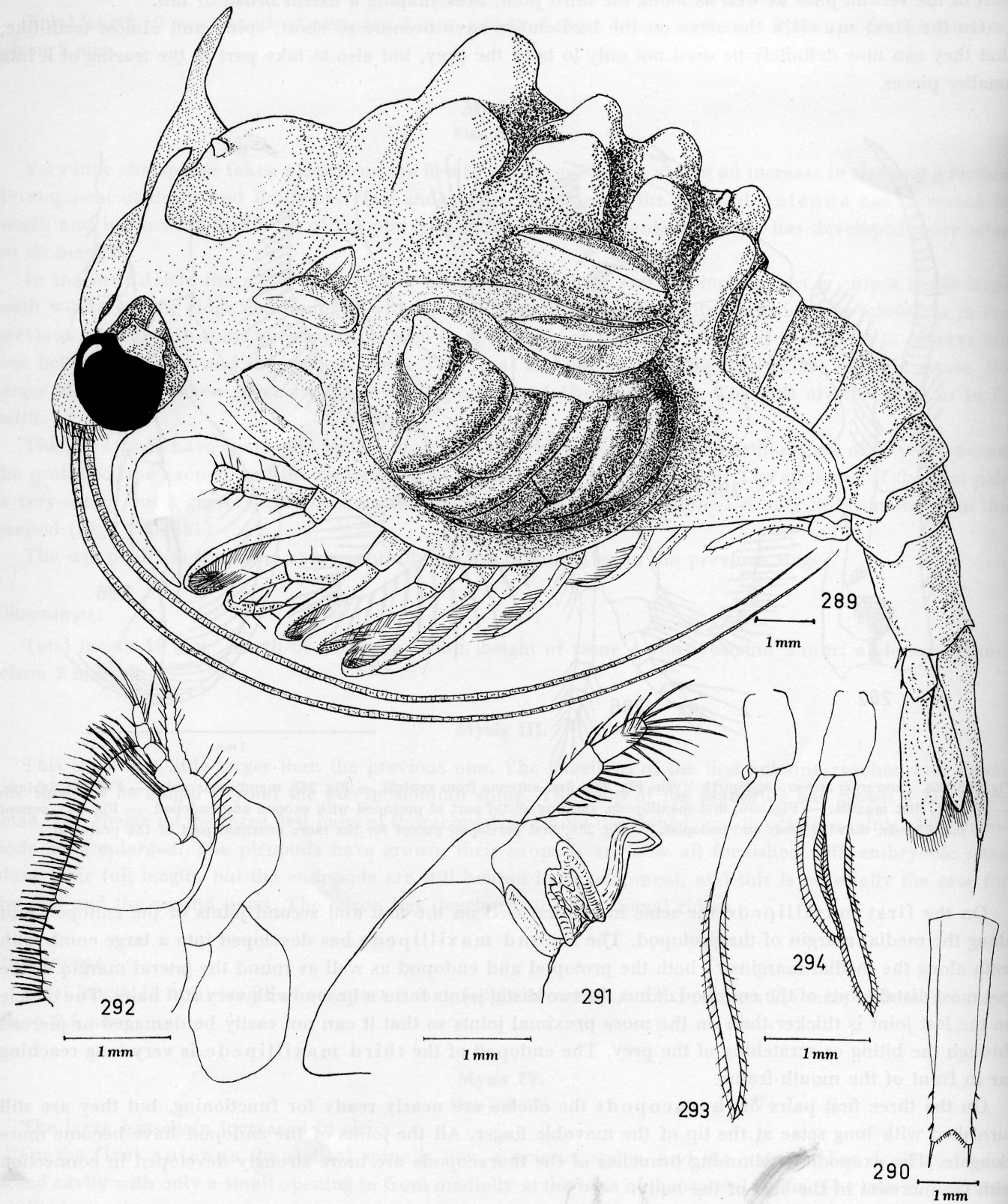
On the first maxillipede the setae have increased on the first and second joints of the endopod and along the medial margin of the protopod. The second maxillipede has developed into a large comb with teeth along the medial margins of both the protopod and endopod as well as round the lateral margin of the two most distal joints of the endopod. Thus the two distal joints form a broom with very stiff hairs. The cuticle on the last joint is thicker than on the more proximal joints so that it can not easily be damaged or pierced through the biting or scratching of the prey. The endopod of the third maxillipede is very long reaching far in front of the mouth-frame.

On the three first pairs of thoracopods the chelae are nearly ready for functioning, but they are still furnished with long setae at the tip of the movable finger. All the joints of the endopod have become more elongate. The exopodial swimming branches of the thoracopods are more strongly developed in connection with the increase in the size of the body.

The pleopods have grown larger, but are still without any function as the brims of setae along their branches still consist of embryonic setae only.

Dimensions:

Total length 22 mm; length of carapace 10 mm, height of same 6 mm; rostrum 3 mm; abdomen 6 mm; telson 3 mm.



Figs. 289-294. *Cerataspis petili*. Fifth Mysis. Fig. 289, larva from lateral. — Fig. 290, telson. — Fig. 291, mandible. — Fig. 292, first maxillipede. — Fig. 293, first pleopod. — Fig. 294, fifth pleopod.

Mysis V.

Figs. 264, 289-294.

Carapace.

The larva has grown, but it has retained its peculiar form, and the sculpture on the carapace has developed further. The dorsal tubercles have enlarged, and so has the convoluted lateral surface of the carapace which now extends far laterally of the body proper as two big floats. A tubercle in the shape of an elongate pad was in the fourth Mysis placed between the swollen lateral areas of the carapace and the dorsal tubercles. In the present stage this pad-formed tubercle has grown larger. On the lateral side in front of the convoluted surface two new small swellings have started to develop, one placed above or dorsally of the other, the one placed most dorsally is the largest. The spines or horns of the carapace have relatively shortened, which possibly have caused the tubercles and the convoluted swellings to increase to give the larger animal sufficient buoyancy to remain pelagic in the deep oceans.

Abdomen.

In the previous stage the abdomen only constituted a thin string behind the carapace. In this stage it has, however, grown considerably in size. It is especially its width that has increased, and this is first and foremost the case with its three first joints.

Appendages.

The first antenna has developed its two flagella; both the lateral one, with the olfactory hairs on its medial margin, and the medial one have increased in length and number of rings. Especially the medial flagellum has grown and is now well double the length of the lateral olfactory flagellum.

In the second antenna the antennal scale with setae along the medial and distal margin has developed, but it is without any vestige of an antennal spine (Fig. 264) contrary to what is the case in *C. petiti* (Fig. 263). The antennal flagellum has grown into a long sweeping thread, which can reach behind the carapace.

The mandible has a larger corner-tooth in the incisor part and a long, curved ridge leading to the molar part, this latter is strongly convoluted and has distinct chewing pads. In the palp the first and the second joints have coalesced, so that it has now, as in adult Penaeids, only two joints. More setae are developed along the margins of the palp.

No special change from the previous stage has taken place in the two pairs of maxillae. In the first maxillipede the setae on the first endopodial joint and the terminal setae of the second joint have enlarged.

The thoracopods are unchanged from the fourth Mysis stage.

The pleopods have enlarged. In the first and second pairs the endopods are only small notches on the protopods, but their exopods are very long. In the following three pairs of pleopods the exopods become shorter and the endopods longer from pair to pair, so that the fifth pair has the longest endopod and the shortest exopod, although the exopod in the fifth pair still is a little longer than the endopod of the same pair. All these branches, the exopods and the endopods, except the two first pairs, have in spite of their further development still embryonic setae sticking through the cuticle, so of course they can still have no function.

The uropods have the ventral spine of the protopod and a notch instead of the lateral spine of the exopod. The telson is more elongate and narrow, with two strong, longitudinal keels.

Dimensions:

Total length 27 mm; length of carapace 11 mm, height of same 7 mm; rostrum 4 mm; abdomen 8 mm; telson 4 mm.

Mysis VI.?

Of this species I saw a large specimen, longer than the above described Mysis V, in the British Museum collections, which was sent in from South African Waters by the late Dr. BARNARD, South African Museum in Capetown. I do not have the exact measures, but I have ranged it here as a possible sixth Mysis stage.