as in *P. longirostris;* and *P. Goodei*, which, though resembling the *constrictus* in external characters, has the mandibular palpi, epipods, and branchiæ as in *P. longirostris*, and long and slender exopods at the bases of all the peræopods.

PARAPENÆUS CONSTRICTUS Smith.

Penæus constrictus Stimpson, Ann. Lyc. Nat. Hist. New York, x, p. 135, 1871.
Parapenæus constrictus Smith, Proc. National Mus., viii, p. 174, 1885.

Specimens examined.

[Locality: Off Cape Hatteras.]

Catalogue number.	Station number.	Locality.		Depth, temperature, and nature of bottom.			Date.	Specimens.	
		N. lat.	W. lat.	Fathoms.	°	Materials.			
		° ′ ″	° ′ ″				1884.	♂	♀
8867	2280	35 21 00	75 21 30	16	....	gy. S.	Oct. 19	1	2
8868	2281	35 21 05	75 22 05	16	....	gy. S.	Oct. 19	5*y*.	
8869	2283	35 21 15	75 23 15	14	....	gy. S.	Oct. 19	5*y*.	
8790	2283	35 21 15	75 23 15	14	....	gy. S.	Oct. 19		2
8870	2285	35 21 25	75 24 25	13	....	crs. gy. S.	Oct. 19	175	
7241	2285	35 21 25	75 24 25	13	....	crs. gy. S.	Oct. 19	25	
8871	2286	35 21 30	75 25 00	11	....	crs. gy. S.	Oct. 20	1	
8840	2286	35 21 30	75 25 00	11	....	crs. gy. S.	Oct. 20	1	3
8844	2288	35 22 40	75 25 30	7	....	crs. S.	Oct. 20		1
8872	2289	35 22 50	75 25 00	7	....	crs. S.	.....	1	
8804	2290	35 23 00	75 24 30	10	....	S. brk. S.	Oct. 20		1
8873	2291	35 25 30	75 20 30	15	....	gy. S. brk. S.	Oct. 20	2*y*.	
7246	2296	35 35 20	74 58 45	27	....	crs. gy. S.	Oct. 20	1	2

All these specimens agree well with Stimpson's description except that the carina of the carapax is scarcely grooved longitudinally, though distinctly flattened, at the cervical suture. The dorsal crest of the rostrum proper is armed with seven to nine equidistant teeth, and back of these, on the carina of the gastric region, there is a small tooth, described by Stimpson as the gastric tooth, and not referred to in connection with the rostral teeth, which explains the apparent discrepancy pointed out by Miers (Proc. Zool. Soc. London, 1878, p. 304) between Stimpson's description and the specimen in the British Museum. The surface of the posterior part of the branchial regions of the carapax and of the whole of the pleon, except a very narrow and inconspicuous line of pubescence either side of the dorsal carina of the fifth and sixth somites, is entirely naked and glabrous. The dorsal carina of the fourth and fifth somites of the pleon is divided by a narrow incision. The telson is shorter than the sixth somite and rather suddenly tapered to a short acuminate tip armed either side with a short and very small spine.

HYMENOPENÆUS Smith.

Two new species recently described (Proc. National Mus., viii, pp. 180, 183, 1885) confirm the distinctness of this genus and enable me to state its characteristics and its relations to the allied genera. Both flagella of the antennulæ are slender and at least as long as the cara-

pax, excluding the rostrum; the proximal segment of the mandibular palpus is larger and much broader than the distal, which is long and narrow; the endognath of the first maxilla is short and unsegmented; the second gnathopod and the first, second, third, and fourth peræopods have well-developed epipods; and there is, either side, a pleurobranchia on the fourteenth somite and two arthrobranchiæ on the thirteenth.

The branchio-epipodal formula is as follows:

Somites.	VII.	VIII.	IX.	X.	XI.	XII.	XIII.	XIV.	Total.	
Epipods.....	1	1	1	1	1	1	1	0		(7)
Podobranchiæ	0	1	0	0	0	0	0	0	1	
Arthrobranchiæ ..	0	2	2	2	2	2	2	0	12	
Pleurobranchiæ...	0	0	1	1	1	1	1	1	6	
									19+	(7)

The genus thus differs from both *Penæus* and *Parapenæus* in the elongated antennular flagella, the form of the mandibular palpus, and in the presence of two arthobranchiæ and an epipod on either side of the thirteenth somite; it agrees with *Penæus* and differs from *Parapenæus* in having an epipod at the base of the second gnathopod; and it agrees with *Parapenæus* and differs from *Penæus* in having the endognath of the first maxilla short and unsegmented.

The species examined further agree in having antennal, hepatic, and branchiostegal spines, a fourth spine back of the orbit, and small epipods at the bases of all the peræopods.

HYMENOPENÆUS DEBILIS Smith.

Bull. Mus. Comp. Zool., x, p. 91, pl. 15, figs. 6–11, pl. 16, figs. 1–3, 1882.

(Plate XVI, Fig. 7.)

Specimens examined.

Catalogue number.	Station number.	Locality.		Depth, temperature, and nature of bottom.			Date.	Specimens.	
		N. lat.	W. long.	Fathoms.	°	Materials.		♂	♀
		° ′ ″	° ′ ″				1884.		
8336	2187	39 49 30	71 10 00	420	40	gn. M. S.	Aug. 3	1	
8268	2201	39 39 45	71 35 15	538	39	bu. M.	Aug. 19	1	
8542	2233	38 36 30	73 06 00	630	39	gn. M.	Sept. 12	*f.*	

All these specimens are small and in bad condition, but are apparently specifically identical with those originally described from the Blake collection. The appendages of the second pleopods in the small male from station 2187 are very different from those of *H. microps* or *robustus*, and, though they are very likely not fully developed, are probably sufficiently

advanced to show essentially the adult form, and are very characteristic. These appendages are each long and very narrow, about three times as long as broad. There is a small and narrow lobe on the anterior side near the base of the lamella; the outer edge is slightly thickened, and terminates in a short rounded lobe a little way from the tip, which is about half as wide as the proximal part of the lamella and deeply bilobed, and near the middle of the mesial edge there is a slight emargination, probably marking the distal end of that part of the edge which articulates with the lamella of the opposite side.

This specimen, from station 2187, gives the following:

Measurements in millimeters.

Length from tip of rostrum to tip of telson	33+
Length of carapax, including rostrum	12.5
Length of rostrum	4.0
Length of eye-stalk and eye	2.5
Greatest diameter of eye	2.1
Length of antennal scale	5.6
Breadth of antennal scale	1.6
Length of flagellum of antenna	100+

HYMENOPENÆUS MICROPS Smith.

(Plate XVI, Fig. 8.)

Station 2224, September 8, north lat. 36° 16′ 30″, west long. 68° 21′, 2,574 fathoms, globigerina ooze, temperature 37°; 1 ♂, 1 ♀ (8604), both in bad condition and imperfect.

A single fragmentary female (7155), in addition to the two specimens already recorded from the collection of 1883, was taken at station 2042, July 30, north lat. 39° 30′, west long. 68° 26′ 45″, 1,555 fathoms, globigerina ooze, temperature 38°.

In the male, from station 2224, the carapax, including the rostrum, is 20^{mm} long, and the appendages of the first pleopods are fully developed. Each of these appendages is a large squarish lamellar plate, considerably narrowed distally, attached by a very short and narrow peduncle, and with the outer and distal margins slightly thickened, the latter irregularly lobed, and the median portion longitudinally plicated. There is a narrow, obtusely-tipped lobe on the mesial side of the peduncle, and close to it, on the base of the pleopod itself, a similar but more triangular lobe. The outer margin terminates at the distal end in a broad rounded lobe, on the mesial side of which there is a very much smaller rounded lobe, then a deep sinus, and then a broader bidentate lobe at the mesial side of the distal margin. The mesial edge is nearly straight, except a slight emargination near the middle, separating the proximal articular from the distal unarmed portion.

ARISTEUS? TRIDENS Smith.

(Plate XIX, Figs. 2, 2*a*.)

Specimens examined.

Catalogue number.	Station number.	Locality.		Depth, temperature, and nature of bottom.			Date.	Specimens.	
		N. lat.	W. long.	Fathoms.	°	Materials.		♂	♀
		° ′ ″	° ′ ″				1884.		
7979	2174	38 15 00	72 03 00	1,594	...	gy. M.	July 21		2
.....	2221	39 15 30	70 44 23	1,525	37	gy. O.	Sept. 6		1
8615	2222	39 03 15	70 50 45	1,537	37	gy. O.	Sept. 6		1
8581	2224	36 16 30	68 21 00	2,574	37	glb. O.	Sept. 8		1
8584	2224	36 16 30	68 21 00	2,574	37	glb. O.	Sept. 8	1*y*.	
8583	2226	37 00 00	71 54 00	2,021	37	glb. O.	Sept. 10		1
8616	2226	37 00 00	71 54 00	2,021	37	glb. O.	Sept. 10	1	1

In the original description of this species the minute terminal segment of the endopod of the maxilliped (Plate XIX, Fig. 2*a*) was overlooked.

HEPOMADUS TENER Smith.

Report U. S. Fish Com., part x, for 1882, p. 409, pl. 9, figs. 7, 8, 1884.

(Plate XIX, Figs. 3, 3*a*.)

Specimens examined.

Catalogue number.	Station number.	Locality.		Depth, temperature, and nature of bottom.			Date.	Specimens.	
		N. lat.	W. long.	Fathoms.	°	Materials.		♂	♀
		° ′ ″	° ′ ″				1883.		
5464	2099	37 12 20	69 30 00	2,949	....	glb. O.	Oct. 2	1	
5635	2102	38 44 00	72 38 00	1,209	39	glb. O.	Nov. 5	1	
							1884.		
8585	2226	37 00 00	71 54 00	2,021	37	glb. O.	Sept. 10		1

The specimen originally described (5464) was in rather bad condition, and its integument apparently much thinner and softer than in the larger and much more perfectly preserved specimens subsequently obtained. In these later specimens the integument is very much like that of *Aristeus? tridens*, which the species resembles closely in general appearance.

In the recently preserved alcoholic specimens, the small rounded tubercle on the inner side of the eye-stalk is semi-translucent, cornea-like, slightly pigmented at the base, receives a branch of the optic nerve, and has the appearance of a secondary simple eye.

The peduncles of the antennulæ reach nearly to or a little by the tips of the antennal scales; the body of the proximal segment is about half

the entire length, and the spiniform lateral process reaches to about the extremity of the segment itself, which, however, is armed with a slender spine just outside the base of the second segment; the second segment is about twice as long as the distal. The flagella are almost exactly as in *Aristeus? tridens.* The antennal scale is about three-fourths as long as the carapax excluding the rostrum, half as broad or a little less than half as broad as long, and in form and texture like that of *Aristeus? tridens.*

The sixth somite of the pleon is about half as high as long. The telson is nearly or quite as long as the sixth somite, regularly tapered, slightly flattened above, armed with small dorso-marginal aculei, and terminates in an acuminate tip armed with slender setæ.

A female taken in 1885, station 2563, north lat. 39° 18′ 30″, west long. 71° 23′ 30″, 1,422 fathoms, is much larger than any of the specimens previously taken, being over 200^{mm} in length. In this specimen the rostrum is longer than the carapax proper, the antennal scales are half as broad as long, and the telson is as long as the sixth somite of the pleon.

Measurements in millimeters.

Catalogue number	5635	8585
Station	2102	2226
Sex	♂	♀
Length from tip of rostrum to tip of telson	94	125
Length of carapax, including rostrum	37.7	49.0
Length of rostrum	17.3	20.5
Height of carapax	11.6	16.0
Breadth of carapax	10.0	14.2
Length of eye-stalk and eye	5.5	7.5
Greatest diameter of eye	2.2	2.8
Length of antennal scale	15.0	21.0
Breadth of antennal scale	7.0	9.3
Length of second gnathopod	26	39
Length of first peræopod	25	39
Length of chela	7.5	11.5
Breadth of chela	1.15	1.8
Length of dactylus	5.0	7.5
Length of second peræopod	29	45
Length of chela	7.8	12.3
Breadth of chela	1.2	1.9
Length of dactylus	5.1	8.1
Length of third peræopod	33	50
Length of chela	8.2	13.3
Breadth of chela	1.25	2.0
Length of dactylus	5.2	8.3
Length of fourth peræopod	40	58
Length of propodus	6.2	9.0
Length of dactylus	5.5	7.5
Length of fifth peræopod	42	61
Length of propodus	6.6	9.5
Length of dactylus	4.5+	6+
Length of sixth somite of pleon	13.8	18.5
Height of sixth somite of pleon	6.9	8.6
Length of telson	12.0	16.7
Length of inner lamella of uropod	12.3	17.2
Breadth of inner lamella of uropod	3.2	4.3
Length of outer lamella of uropod	15.3	21.5
Breadth of outer lamella of uropod	4.1	5.4

AMALOPENÆUS ELEGANS Smith.

Specimens examined.

Catalogue number.	Station number.	Locality.		Depth, temperature, and nature of bottom.			Date.	Specimens.	
		N. lat.	W. long.	Fathoms.	°	Materials.			
		° ′ ″	° ′ ″				1884.	♂	♀
8229	2190*	39 40 00	70 20 15	1,180	....	glb. O.	Aug. 4		1
8230	2193	39 44 30	70 10 30	1,122	38	gn. M.	Aug. 5	1	
8267	2201	39 39 45	71 35 15	538	39	bu. M.	Aug. 19		1
8526	2235	39 12 00	72 00 30	707	39	gn. M.	Sept. 13	1	
8537	2236	39 11 00	72 08 30	636	39	gn. M.	Sept. 13		2

* Trawl reported as "not on bottom."

BENTHŒCETES BARTLETTI Smith.

Benthesicymus? Bartletti Smith, Bull. Mus. Comp. Zool., x, p. 82, pl. 14, figs. 1–7, 1882.

Benthœcetes Bartletti Smith, Report U. S. Fish Com., x, for 1882, p. 391, pl. 10, fig. 8, 1884; Proc. National Mus., vii, p. 508, 1885.

(Plate XVIII, Figs. 2, 2*a*, 2*b*.)

Specimens examined.

Catalogue number.	Station number.	Locality.		Depth, temperature, and nature of bottom.			Date.	Specimens.	
		N. lat.	W. long.	Fathoms.	°	Materials.			
		° ′ ″	° ′ ″				1884.	♂	♀
8019	2181	39 29 00	71 46 00	693	39	gy. M., fne. S.	July 23	1	
8262	2203	39 45 15	71 45 15	705	39	gn. M. S.	Aug. 19		1
8263	2215	39 49 15	70 31 45	578	....		Aug. 22		1
8264	2216	39 47 00	70 30 30	963	39	gn. M.	Aug. 22	2*y*.	
8588	2234	39 09 00	72 03 15	816	39	gn. M.	Sept. 13	1	
8587	2235	39 12 00	72 03 30	707	39	gn. M.	Sept. 13	1	1

Some of these specimens show that the dactyli of the fourth and fifth peræopods are, as I had supposed, normally very slender, but not multiarticulate nor very long in either sex, and that the flagella of the antennula are very long, apparently much longer than the body.

BENTHONECTES Smith.

This genus is closely allied to *Benthœcetes* and is specially charaterized by the multiarticulate flagelliform dactyli of the fourth and fifth peræopods. It is further distinguished from allied genera by the acute ventral process of the crowns of the mandibles and the narrow mandibular palpi; and probably, also, by the presence of a hepatic spine upon the carapax, the large reniform eyes, the equal lobes of the protognath of the second maxillæ, the absence or obsolescence of the third segment of the endopod of the maxilliped, the narrow merus of the first gnathopod, and the styliform dactylus of the second gnathopod. Like that of *Benthœcetes*, the relation to Bate's imperfectly described *Benthesicymus* is large-

ly problematical, but Bate's genus is described as having the eyes "not large," the eye-stalks flattened and furnished with a conspicuous tubercle, and the flagella of the antennula "not longer than the carapax" (although under the second species these flagella are said to be "half as long as the animal"), characters which I should not expect to find in species congeneric with the one here described.

BENTHONECTES FILIPES Smith.

Proc. National Mus., vii, p. 509, 1885.

(Plate XVIII, Figs. 1, 1*a*; Plate XIX, Figs. 1, 1*a*, 1*b*.)

Specimens examined.

Catalogue number.	Station number.	Locality.		Depth, temperature, and nature of bottom.			Date.	Specimens.	
		N. lat.	W. long.	Fathoms.	°	Materials.			
		° ′ ″	° ′ ″				1884.	♂	♀
8020	2181	39 29 00	71 46 00	693	39	gy. M. fne. S.	July 23	1*s*.	
8265	2206	39 35 00	71 24 30	1,043	38	gn. M.	Aug. 20		1
8266	2210	39 37 45	71 18 45	991	38	gy. glb. O.	Aug. 21	1*s*.	
7163	2235	39 12 00	72 03 30	707	39	gn. M.	Sept. 13	1	

This species is apparently very closely allied to that figured by A. Milne-Edwards as "*Benthesicymus Bartletti* (Smith)?" (Recueil de figures de Crustacés nouveaux ou peu connus, 1883), and is probably specifically identical with it.

The carapax is similar to that of *Benthœcetes Bartletti* in general form, but is considerably narrower and less expanded posteriorly. The dorsum is carinated or slightly angulated to near the posterior border, and rising anteriorly projects forward in a rostrum almost exactly as in that species except that it is a very little longer, so as slightly to overreach the eyes, and the lower edge is more nearly horizontal. The inferior angle of the orbit is slightly more acute, the antennal spine a little larger and a little farther forward, and there is in addition a hepatic spine nearly as large as the antennal.

The eye-stalks are relatively short, and the very dark brown eyes, large, swollen, reniform, project over the ends of the stalks and extend proximally along their mesial sides more than half way to the bases of the stalks, the greatest diameter of the eye being at least three-fourths of the whole length of the stalk. There is a small and inconspicuous tubercle on the mesial side of the stalk just back of the edge of the eye. The antennal scales are slightly narrower than in *Benthœcetes Bartletti*, but otherwise the antennæ and antennulæ are essentially as in that species. The flagella of the antennula are approximately equal in length, much longer than the body of the animal, and very slender, while the flagellum of the antenna is very much longer and almost equally slender.

The oral appendages are similar to those of *Benthœcetes Bartletti*, but

show some important differences. The ventral process of the crown of the mandible, instead of being truncated at the anterior angle, is prolonged into an acute angular process which closes by a similar process of the opposite side. The palpus is very different in form; the proximal segment is narrow, about three times as long as broad, reaches to about the tip of the crown, and expands very slightly distally; the distal segment is only about half as long as the proximal and about as wide at the base, but the inner edge is obliquely truncated from just below the middle so that the obtuse tip is narrow. The first maxillæ differ only very slightly and unessentially. The endognath and epignath of the second maxillæ differ very little, but the four lobes of the protognath are very much more nearly alike, the distal lobe being only a very little broader than the others, while the proximal is very much like the others, being as long as the one next it and not narrowed toward the rounded tip. The endognath of the maxilliped is a little shorter and the small terminal segment either wanting or very obscure; the exopod is shorter and suddenly narrowed into a short and slender flagelliform tip. The exopod of the first gnathopod is very much smaller, being very slender and considerably shorter than the endopod. The endopod of the second gnathopod is more slender and armed with longer and stronger spines, and the dactylus is very different, being nearly two-thirds as long as the propodus, slender, subcylindrical, and strongly tapered distally, where it is armed with several slender spines nearly as long as itself.

The chelate peræopods are similar to those of *Benthœcetes Bartletti*, but considerably longer and more slender, the first pair reaching considerably by the tips of the second gnathopods. The fourth and fifth peræopods are very long, exceedingly slender, and the proximal portions nearly as in *Benthœcetes Bartletti*. The carpi in the fifth pair are considerably longer than the meri; the propodi in the fourth are much shorter than the carpi, and in the fifth not half as long as the carpi; the dactyli are slender, multiarticulate, flagelliform, and very long, being in the fourth pair fully three times as long as the propodi. The number and arrangement of the branchiæ and epipods are the same as in *Benthœcetes Bartletti*, but there are small rudimentary exopods at the bases of all the peræopods, as in *Benthesicymus ? carinatus*.

The pleon is similar to that of *Benthœcetes Bartletti* except that there is no spine on the fifth somite. The dorsum is evenly rounded on the first four somites, but on the fifth and sixth there is a sharp median carina which projects posteriorly in a very slight angle on each of these somites. The epimera are all somewhat smaller than in *Benthœcetes Bartletti*, and the posterior edges of the fourth and fifth project much less and are broadly rounded. The telson is narrowly triangular, transversely convex above at the base, but with a broad and shallow sulcus two-thirds of its length. The extreme tip is spiniform and acute, and just in front of it the edge each side is armed with three small spines. The sternum of the first somite is armed with a laterally compressed mesial

process somewhat as in that species, but longer and obtuse. The pleopods have very long and slender rami, as in *Benthœcetes Bartletti*, but the appendage (petasma) of the first pair in the male is very different, being as long as the protopod to which it is attached, very narrow, and acutely triangular at the tip.

Measurements in millimeters.

Station	2235	2181
Sex	♂	♂
Length from tip of rostrum to tip of telson	82	63
Length of carapax, including rostrum	25.7	32.0
Length of rostrum	6.0	5.8
Height of carapax	12.8	9.6
Breadth of carapax	11.0	8.0
Length of eye stalk and eye	5.0	4.1
Greatest diameter of eye	3.7	3.3
Length of antennal scale	15.8	13.5
Breadth of antennal scale	5.1	4.0
Length of second gnathopod	24	20
Length of propodus	2.9	2.5
Length of dactylus	2.0	1.7
Length of first peræopod	27	21
Length of carpus	6.0	4.8
Length of chela	5.4	4.6
Breadth of chela	1.0	0.9
Length of dactylus	2.5	2.1
Length of second peræopod	34	27
Length of carpus	10.0	8.2
Length of chela	6.0	5.0
Breadth of chela	0.9	0.7
Length of dactylus	2.8	2.5
Length of third peræopod	44	32
Length of carpus	13.7	10.0
Length of chela	7.4	5.5
Breadth of chela	0.8	0.6
Length of dactylus	4.8	3.0
Length of fourth peræopod	67	50
Length of merus	13.3	12.0
Length of carpus	11.0	8.4
Length of propodus	7.5	6.0
Length of dactylus	25.0	18.5
Length of fifth peræopod	64+	.....
Length of merus	13.0	.....
Length of carpus	16.5	.....
Length of propodus	7.7	.....
Length of dactylus	15+	.....
Length of sixth somite of pleon	13.8	11.0
Height of sixth somite of pleon	7.0	5.4
Length of telson	11.0	9.3
Length of inner lamella of uropod	11.5	9.2
Breadth of inner lamella of uropod	2.8	2.3
Length of outer lamella of uropod	16.4	14.8
Breadth of outer lamella of uropod	4.5	3.6

BENTHESICYMUS? MORATUS, sp. nov.

Benthesicymus? sp. indet., Smith, Report U. S. Fish Com., x, for 1882, p. 397, pl. 10, figs. 3, 4, 5, 1884.

Specimens examined.

Catalogue number.	Station number.	Locality.		Depth, temperature, and nature of bottom.			Date.	Specimens.	
		N. lat.	W. long.	Fathoms	°	Materials.			
		° ′ ″	° ′ ″				1883.	♂	♀
7117	2042	39 33 00	68 26 45	1,555	38	glb. O.	July 30	1*f.*	
							1884.		
8018	2174	38 15 00	72 03 00	1,594		gy. M.	July 21		2*f.*
8580	2222	39 03 15	70 50 45	1,537	37	gy. O.	Sept. 6		1*f.*
							1885.		
10867	2575	41 07 00	65 26 30	1,710	37	gy. O.	Sept. 1	1*f.*	

In the general form and areolation of the carapax this species is very similar to *Benthœcetes Bartletti*, but there is a distinct hepatic spine, as in *Benthonectes filipes*, though very much smaller. The dorsum is carinated or slightly angulated nearly to the posterior border, but anteriorly it does not rise at the base of the rostrum nearly as much as in the two species just mentioned. The rostrum is strongly compressed, broad vertically, and the upper edge is somewhat arcuate above and just back of the orbit, where it is armed with two teeth, but in front it tapers to an acute point, nearly or quite reaching to the tips of the eyes.

The eyes are in bad condition in all the specimens. They are similar to those of *Benthœcetes Bartletti*, but the cornea is apparently a little larger and more compressed vertically, and the pigment is apparently white or very light in color. The antennæ and antennulæ are essentially as in *Benthœcetes Bartletti*. The crowns of the mandibles are also very nearly as in that species, but the palpi are very much larger; the proximal segment is nearly as broad as long, and the distal nearly as long as the proximal and very narrow, much less than half as wide as long. The maxillæ are nearly as in *Benthœcetes Bartletti*. The ultimate segment of the endopod of the maxilliped is about a sixth as long as the penultimate segment and intermediate in form and size between that of *Benthœcetes Bartletti* and that of *Benthesicymus? carinatus*, and the distal extremity of the exopod is suddenly narrowed into a slender flagellum, but otherwse the maxilliped agrees with that of *Benthœcetes Bartletti*.

The first gnathopod is intermediate in form between that of *Benthœcetes* and that of *Benthesicymus? carinatus;* the mesial side of the merus is expanded into a thin lamella the whole length of the segment, which is two-fifths as broad as long, but not much broader distally than proximally and projects only very slightly beyond the articulation of the carpus; the terminal segments are nearly as in *Benthesicymus? carinatus*. The second gnathopods reach beyond the middle of the antennal scales, and the relative proportion of the segments is about the same as in *Benthœcetes Bartletti*, but the form of the dactylus is different, though it is carried in the same position. This segment is a little longer and narrower than in *Benthœcetes Bartletti*, and obliquely truncated on the mesial side at the extremity, so that the triangular tip, which is armed with a single long spine, is at the outer edge; the outer and the truncated distal edges are setigerous.

There are minute rudimentary exopods at the bases of all the peræopods, of which the first three pairs are otherwise very much as in *Benthonectes filipes*. The number and arrangement of the branchiæ and epipods is the same as in *Benthœcetes Bartletti* and *Benthonectes filipes*.

The first and second somites of the pleon are evenly rounded above; the third is carinated posteriorly, the fourth and fifth for nearly the whole length, and on each of these somites the carina projects at the

posterior margin in a small sharp tooth. The sixth somite is compressed laterally, more than twice as long as high, and armed with a sharp dorsal carina. The telson is about as long as the sixth somite, narrowly triangular, with a broad and shallow dorsal sulcus except near the base, terminates in a small spiniform point, with a spine either side, and is armed in front of these with three pairs of lateral spines. The uropods and pleopods are very nearly as in *Benthœcetes Bartletti*, except that the appendage (petasma) of the first pair of pleopods in the male is long and narrow, approaching in form that of *Benthonectes filipes*.

Measurements in millimeters.

Station	2174	2222	2575
Sex	♀	♀	♂
Length from tip of rostrum to tip of telson	95	100	105
Length of carapax, including rostrum	37.5	40.0	41.0
Length of rostrum	5.5	6.8	7.5
Height of carapax	17.0	.....	.....
Length of eye-stalk and eye	6.2	6.4	7.0
Greatest diameter of eye	2.6	2.8	3.0
Length of antennal scale	.....	23.5	25.0
Breadth of antennal scale	6.6	7.0	7.1
Length of first peræopod	.....	30.0	30.0
Length of chela	.....	7.0	7.3
Breadth of chela	.....	1.6	1.7
Length of dactylus	.....	3.1	3.3
Length of second peræopod	44.0	46.0	46.0
Length of chela	6.6	.....	7.8
Breadth of chela	.....	.....	1.0
Length of dactylus	.....	.....	3.6
Length of third peræopod	.....	64.0	.....
Length of chela	.....	9.5	.....
Breadth of chela	.....	1.0	.....
Length of dactylus	.....	5.0	.....
Length of sixth somite of pleon	15.6	16.0	17.0
Height of sixth somite of pleon	7.2	7.8	8.2
Length of telson	16.0	17.0	.....
Length of inner lamella of uropod	15.5	16.4	16.8
Breadth of inner lamella of uropod	3.9	4.1	4.4
Length of outer lamella of uropod	21.0	22.5	23.0
Breadth of outer lamella of uropod	5.4	5.8	6.0

SERGESTIDÆ.

SERGESTES ARCTICUS Kröyer.

(Plate XX, Figs. 1, 2.)

Specimens examined.

Catalogue number.	Station number.	Locality. N. lat.	Locality. W. long.	Depth, temperature, and nature of bottom. Fathoms.	°	Materials.	Date.	Specimens. ♂	Specimens. ♀
		° ′ ″	° ′ ″				1884.		
7982	2180	39 29 50	71 49 30	523	39	bk. M.	July 23		2
7983	2182	39 25 30	71 44 00	861	39	gn. M.	.....	1	1
8088	2187	39 49 30	71 10 00	420	40	gn. M., S.	Aug. 3	7	8
8430	2187	.....	.....	.....	.....	.....	.....	1*y.*	
8425	2188	39 54 30	71 08 00	235	43	.....	.....	5*y.*	
8426	2192	39 46 30	70 14 45	1,060	39	gy. O.	Aug. 5	2*y.*	
8136	2201	39 39 45	71 35 15	538	39	bu. M.	Aug. 19	1	3
8532	2223	37 48 30	69 43 30	2,516	37	glb. O.	Sept. 7		1
8524	2236	39 11 00	72 08 30	636	39	gn. M.	Sept. 13	3*y.*	
8605	2237	39 12 17	72 09 30	520	39	.....	.....	1	1
[Locality: Off Cape Hatteras.]									
8805	2299	35 40 00	74 51 30	296	....	bk. M.	Oct. 20		2

SERGESTES ROBUSTUS Smith.

(Plate XX, Fig. 6.)

Specimens examined.

Catalogue number.	Station number.	Locality.		Depth, temperature, and nature of bottom.			Date.	Specimens.	
		N. lat.	W. long.	Fathoms.	°	Materials.			
		° ′ ″	° ′ ″				1884.	♂	♀
7981	2174	38 15 00	72 03 00	1, 594	....	gy. M.	July 21	1	
8135	2202	39 38 00	71 39 45	515	39	gn. M.	Aug. 19		1
8547	2224	36 16 30	68 21 00	2, 574	37	glb. O.	Sept. 8	1*s.*	
8599	2237	39 12 17	72 09 30	520	39	gn. M.	Sept. 13		2

SERGESTES MOLLIS Smith.

(Plate XX, Figs. 3, 3*a*, 4, 5.)

Specimens examined.

Catalogue number.	Station number.	Locality.		Depth, temperature, and nature of bottom.			Date.	Specimens.	
		N. lat.	W. long.	Fathoms.	°	Materials.			
		° ′ ″	° ′ ″				1884.	♂	♀
.....	2190	39 40 00	70 20 15	1, 180	....	glb. O	Aug. 4	1*f.*	
8089	2193	39 44 30	70 10 30	1, 122	38	gn. M.	Aug. 5	1	2
8231	2194	39 43 45	70 07 00	1, 140	38	O.	Aug. 5	1	
8129	2206	39 35 00	71 24 30	1, 043	38	gn. M.	Aug. 20		1
8130	2209	39 34 45	71 21 30	1, 080	39	glb. O.	Aug. 21	1*s.*	
8131	2210	39 37 45	71 18 45	991	38	gy. glb. O.	Aug. 21	1	
8132	2215	39 49 15	70 31 45	578	....	.....	Aug. 22		1
8133	2219	39 46 22	69 29 00	948	39	gy. M.	Aug. 23		1
8539	2229	37 38 40	73 16 30	1, 423	38	glb. O.	Sept. 11	1	

NEW HAVEN, CONN., *December* 4, 1885.

EXPLANATION OF PLATES.

All the figures on Plates I, II, IV, VII, VIII, IX, X, XIII, XIV, XVII, and XVIII; Fig. 1, Plate III; Fig. 2, Plate V; Figs. 1 and 1*a*, Plate VI; Figs. 1, 1*a*, 3, 3*a*, 4, 6, 6*a*, and 7, Plate XI; Figs. 4 and 6, Plate XII; Figs. 2 and 3, Plate XIX; and Figs. 1, 2, 3, 3*a*, 5, and 6, Plate XX, were drawn by J. H. Emerton. Fig. 2, Plate III, and Fig. 1, Plate V, were drawn by J. H. Blake. All the other figures were drawn by the author.

PLATE I.

FIG. 1.—*Lispognathus Thomsoni.* Dorsal view of a male from station 951, enlarged two diameters.

FIG. 1*a*.—Lateral view, the peræopods omitted, of the same specimen, enlarged the same amount.

FIG. 2.—*Anamathia Agassizii.* Dorsal view, the peræopods omitted, of the originally described male from the Blake collection, natural size.

FIG. 3.—Dorsal view of a female (5693), from station 2109, one-half natural size.

FIG. 3*a*.—Ventral view of the front and oral region of the same specimen, natural size.

FIG. 4.—*Anamathia Tanneri.* Dorsal view of one of the originally described males, from station 1043, natural size.

PLATE II.

FIG. 1.—*Homola barbata.* Dorsal view of a male, from station 940, natural size.
FIG. 2.—*Lambrus Verrillii.* Dorsal view of a female, from station 872, natural size.

PLATE III.

FIG. 1.—*Lithodes Agassizii.* Dorsal view, the peræopods omitted, of a male, from station 2115, one-half natural size.
FIG. 2.—Dorsal view of a male (8048), from station 2196, one-half natural size.

PLATE IV.

Munidopsis crassa. Dorsal view of the female (8563), from station 2224, natural size.

PLATE V.

FIG. 1.—*Munidopsis similis.* Dorsal view of the female (8255), from station 2192, natural size.
FIG. 1*a*.—Second maxilla of the right side of the same specimen, enlarged eight diameters.
FIG. 1*b*.—First gnathopod of the right side of the same specimen, enlarged eight diameters.
FIG. 1*c*.—Second gnathopod of the right side of the same specimen, enlarged four diameters.
FIG. 2.—*Munidopsis Bairdii.* Dorsal view of a female (5717), from station 2106, natural size.

PLATE VI.

FIG. 1.—*Munidopsis rostrata.* Dorsal view of a male, from the Blake collection of 1880, station 341, natural size.
FIG. 1*a*.—Lateral view of the carapax of the same specimen, natural size.
FIG. 2.—*Munidopsis similis.* First maxilla of the right side of the specimen figured on Plate V, enlarged eight diameters.
FIG. 2*a*.—Maxilliped of the right side of the same specimen, enlarged the same amount.

PLATE VII.

FIG. 1.—*Pentacheles nanus.* Dorsal view of a female (8238), from station 2206, natural size.
FIG. 1*a*.—Lateral view of the carapax and pleon of the same specimen, natural size.
FIG. 2.—*Pentacheles debilis.* Dorsal view, the peræopods omitted, of a male (7145) from station 2074, enlarged two diameters.

PLATE VIII.

FIG. 1.—*Glyphocrangon longirostris.* Lateral view of the small female originally described from the Blake collection, station 330, enlarged two diameters.
FIG. 2.—Lateral view of an adult female (8256), from station 2205, natural size.
FIG. 3.—*Glyphocrangon sculptus.* Lateral view of the originally described female, from the Blake collection, station 330, natural size.

PLATE IX.

FIG. 1.—*Glyphocrangon sculptus.* Dorsal view of the specimen figured on Plate VIII, natural size.

FIG. 2.—Dorsal view of the carapax and anterior appendages of a male (7182), from station 2051, natural size.

FIG. 3.—*Glyphocrangon longirostris.* Dorsal view of the adult female (8256) figured on Plate VIII, natural size.

FIG. 4.—Dorsal view of carapax and anterior appendages of a male (8257), from station 2206, natural size.

FIG. 5.—Dorsal view of the carapax and anterior appendages of the small female from the Blake collection, figured on Plate VIII, enlarged two diameters.

PLATE X.

FIG. 1.—*Sabinea princeps.* Lateral view of one of the originally described females, from the Blake collection, natural size.

FIG. 1*a*.—Dorsal view of the carapax and anterior appendages of the same specimen, natural size.

FIG. 1*b*.—Dorsal view of the terminal portion of the pleon of the same specimen, natural size.

FIG. 2.—Dorsal view of the carapax and anterior appendages of a male (7954), from station 2180, natural size.

FIG. 3.—*Sabinea Sarsii.* Dorsal view of female, from station 2063, natural size.

FIG. 3*a*.—Lateral view of the carapax of the same specimen, enlarged two diameters.

FIG. 4.—Dorsal view of the carapax and anterior appendages of a male, from station 2063, enlarged two diameters.

PLATE XI.

FIG. 1.—*Pontophilus gracilis.* Dorsal view of the female originally described, from the Blake collection, station 315, enlarged two diameters.

FIG. 1*a*.—Lateral view of the carapax of the same specimen, enlarged two diameters.

FIG. 2.—Left chela of a male, from station 1029, enlarged four diameters.

FIG. 3.—*Pontophilus abyssi.* Dorsal view of a female (8600), from station 2226, natural size.

FIG. 3*a*.—Lateral view of the carapax of the same specimen, enlarged two diameters.

FIG. 4.—Dorsal view of the carapax and anterior appendages of a male (8600), from station 2226, enlarged two diameters.

FIG. 5.—Left chela of a male (8600), from station 2226, enlarged four diameters.

FIG. 6.—*Pontophilus Norvegicus.* Dorsal view of a female, from station 946, natural size.

FIG. 6*a*.—Lateral view of the carapax of the same specimen, enlarged two diameters.

FIG. 7.—Dorsal view of the carapax and anterior appendages of a male, from station 947, enlarged two diameters.

PLATE XII.

FIG. 1.—*Bythocaris Payeri.* Dorsal view of the front of the carapax and the anterior appendages of a female, from the Faröe Channel, enlarged four diameters.

FIG. 2.—*Bythocaris nana.* Dorsal view of the front of the carapax and the anterior appendages of a female, from station 878, enlarged four diameters.

FIG. 3.—*Bythocaris gracilis.* Dorsal view of the front of the carapax and the anterior appendages of the female (7132), from station 2116, enlarged four diameters.

FIG. 4.—Lateral view of the female (8258), from station 2206, enlarged two diameters.

FIG. 5.—*Notostomus robustus.* Lateral view of the front of the carapax and the eye of the young specimen (8543), from station 2228, enlarged four diameters.

FIG. 6.—*Hymenodora gracilis.* Lateral view of a male (7158), from station 2036, enlarged three diameters.

PLATE XIII.

FIG. 1.—*Pandalus propinquus.* Lateral view of a female, from station 1045, natural size.

FIG. 2.—*Pandalus Montagui.* Lateral view of a female taken off Massachusetts Bay in 1877, natural size.

FIG. 3.—*Acanthephyra microphthalma.* Lateral view of a male (8584), from station 2224, natural size.

PLATE XIV.

FIG. 1.—*Acanthephyra eximea.* Lateral view of the male (5644), from station 2111, natural size.

FIG. 2.—*Acanthephyra brevirostris.* Lateral view, with most of the appendages omitted, of a male (5673), from station 2105, enlarged two diameters.

FIG. 3.—*Ephyrina Benedicti.* Lateral view of the female (7156), from station 2083, enlarged two diameters.

PLATE XV.

All the figures on this plate are enlarged eight diameters.

FIG. 1.—*Acanthephyra Agassizii.* First maxilla of the left side of one of the originally described males, from the Blake collection, station 330.

FIG. 2.—*Acanthephyra brevirostris.* First maxilla of the right side of a female (5448), from station 2099.

FIG. 3.—*Hymenodora glacialis.* First maxilla of the right side of a male, from the Faröe Channel.

FIG. 4.—*Meningodora mollis.* First maxilla of the right side of the female originally described, from the Blake collection.

FIG. 5.—Distal portion of the right mandible of the same specimen, seen from above.

FIG. 6.—*Acanthephyra Agassizii.* Distal portion of the left mandible, from the same specimen as Fig. 1, seen from beneath.

FIG. 6*a*.—The same mandible seen from above.

FIG. 7.—Second maxilla of the left side, from the same specimen as Figs. 1 and 6.

FIG. 8.—*Acanthephyra brevirostris.* Second maxilla of the right side, from the same specimen as Fig. 2.

FIG. 9.—*Meningodora mollis.* Second maxilla of the right side, from the same specimen as Fig. 4.

FIG. 10.—*Hymenodora glacialis.* Second maxilla of the right side, from the same specimen as Fig. 3.

PLATE XVI.

All the figures on this plate are enlarged eight diameters.

FIG. 1.—*Acanthephyra brevirostris.* Maxilliped of the right side, from the same specimen as Figs. 2 and 8, Plate XV.

FIG. 2.—*Acanthephyra Agassizii.* Maxilliped of the left side, from the same specimen as Figs. 1, 6, 6*a*, and 7, Plate XV.

FIG. 3.—*Meningodora mollis.* Maxilliped of the right side, from the same specimen as Figs. 4, 5, and 9, Plate XV.

FIG. 4.—*Ephyrina Benedicti.* Maxilliped of the right side, from the specimen figured on Plate XIV.

FIG. 5.—*Hymenodora glacialis.* Maxilliped of the right side, from the same specimen as Figs. 3 and 10, Plate XV.

FIG. 6.—*Acanthephyra brevirostris.* First gnathopod of the right side, from the same specimen as Figs. 2 and 8, Plate XV, and Fig. 1, this plate.

FIG. 7.—*Hymenopenæus debilis.* Appendage (petasma) of the protopod of the first pleopod of the right side of a male (8336), from station 2187, seen from in front.

FIG. 8.—*Hymenopenæus microps.* Appendage of the protopod of the first pleopod of the right side of a male (8604), from station 2224, seen from in front.

PLATE XVII.

FIG. 1.—*Nematocarcinus cursor.* Lateral view of a female (8149), from station 2202, natural size.

FIG. 1*a*.—Dorsal view of the carapax and anterior appendages of the same specimen.

FIG. 2.—*Nematocarcinus ensiferus.* Lateral view of a female, from station 2035, natural size. This is a corrected copy of Fig. 1, Plate VII, of the Report on the Decapod Crustacea of the Albatross dredgings in 1883.

PLATE XVIII.

FIG. 1.—*Benthonectes filipes.* Lateral view of a male (7163), from station 2235, natural size.

FIG. 1*a*.—Dorsal view of the carapax and anterior appendages of the same specimen.

FIG. 2.—*Benthœcetes Bartletti.* Lateral view of a female (8263), from station 2215, natural size.

FIG. 2*a*.—Dorsal view of the carapax and anterior appendages of the same specimen.

FIG. 2*b*.—Dorsal view of the posterior somites of the pleon of the same specimen.

PLATE XIX.

FIG. 1.—*Benthonectes filipes.* Maxilliped of the right side of a male, from station 2181, enlarged eight diameters.

FIG. 1*a*.—First gnathopod of the right side of the same specimen, enlarged eight diameters.

FIG. 1*b*.—Terminal portion of the endopod of the second gnathopod of the same specimen, enlarged eight diameters.

FIG. 2.—*Aristeus? tridens.* Maxilliped of the right side of a female, from station 2043, natural size.

FIG. 2*a*.—Tip of endopod of the same appendage to show the minute terminal segment, enlarged four diameters.

FIG. 3.—*Hepomadus tener.* Lateral view of female (8585), from station 2226, natural size.

FIG. 3*a*.—Maxilliped of the right side of the same specimen, enlarged four diameters.

PLATE XX.

FIG. 1.—*Sergestes arcticus.* Lateral view of a male, from station 937, enlarged two diameters.

FIG. 2.—Dorsal view of the carapax and anterior appendages of a female, from station 937, enlarged three diameters.

FIG. 3.—*Sergestes mollis.* Dorsal view of front of carapax and anterior appendages of a male (8539), from station 2229, enlarged three diameters.

FIG. 3*a*.—Lateral view of the same part of the same specimen, enlarged three diameters.

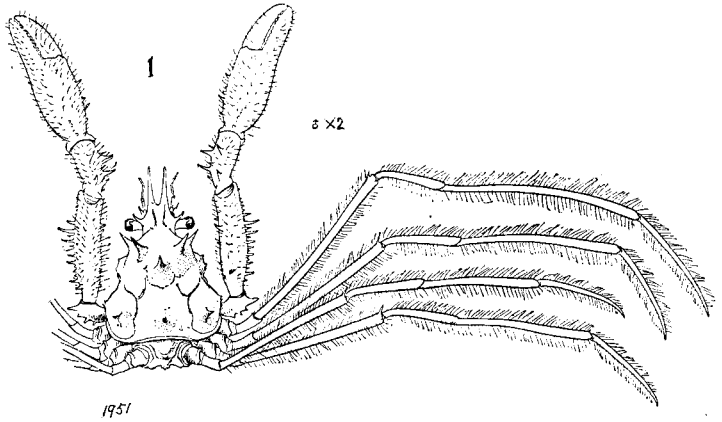
FIG. 4—Tip of the left antennal scale of a male (7106), from station 2051, enlarged eight diameters.

FIG. 5.—Lateral view of the left side of the peræon, with the carapax removed to show the branchiæ, &c., of a female (7106), from station 2151, enlarged three diameters: *h*, *i*, bases of the gnathopods; *k*, *l*, *m*, *n*, *o*, bases of the peræopods; *ep*, epipod; and *po*, podobranchia, of the first gnathopod; *pl*, anterior pleurobranchiæ of the ninth to thirteenth somites; *pl'*, posterior pleurobranchiæ, represented by simple lamellæ on the eighth to twelfth somites, and by a small compound branchia on the thirteenth.

FIG. 6.—*Sergetes robustus.* Lateral view of the left side of the peræon, with the carapax removed to show the branchiæ, &c., of a male (5516), from station 2003, enlarged three diameters: *f*, scaphognath of second maxilla; *g*, base of maxilliped; *h*, *i*, *k*, *l*, *m*, *n*, *o*, *ep*, *po*, *pl*, *pl'*, as in Fig. 5, except that the posterior pleurobranchia on the twelfth somite is a large compound branchia in place of a simple lamella.

INDEX.

[NOTE.—The references are to page-figures in brackets.]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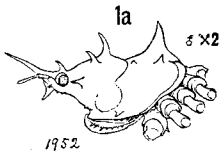
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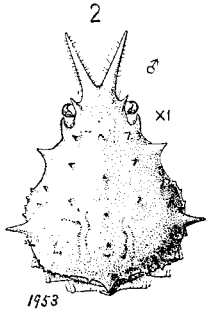
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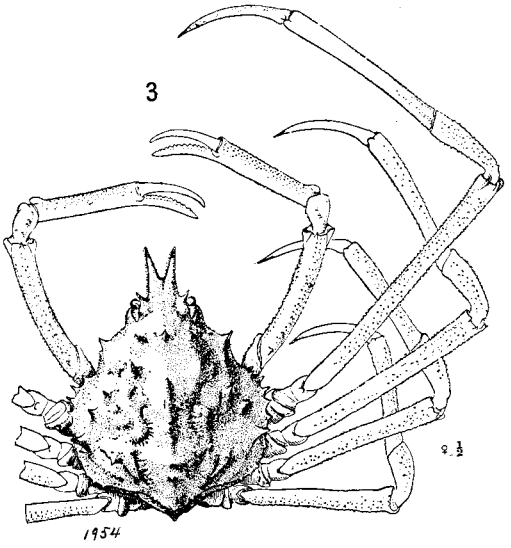
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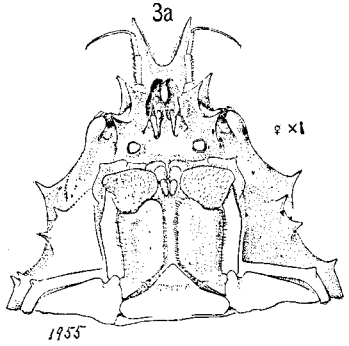
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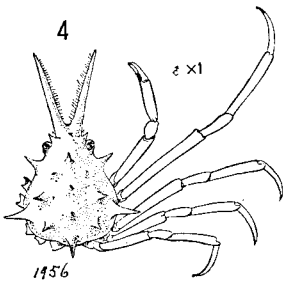
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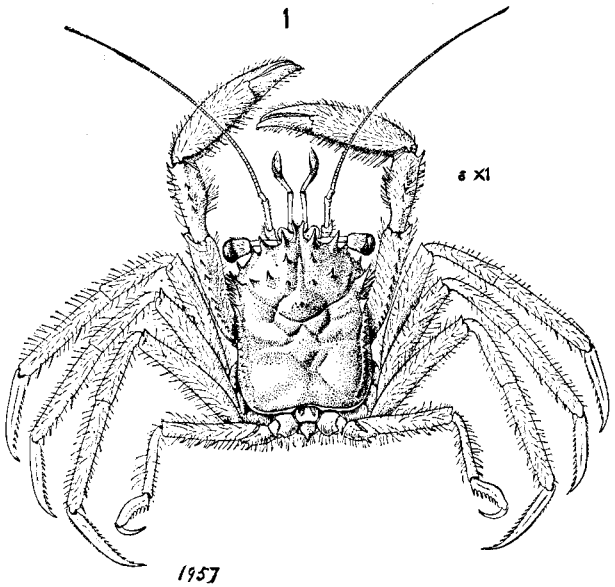

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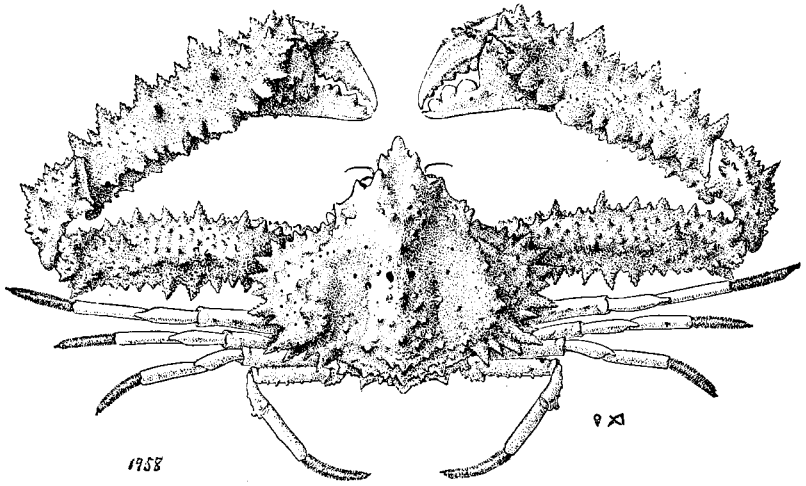

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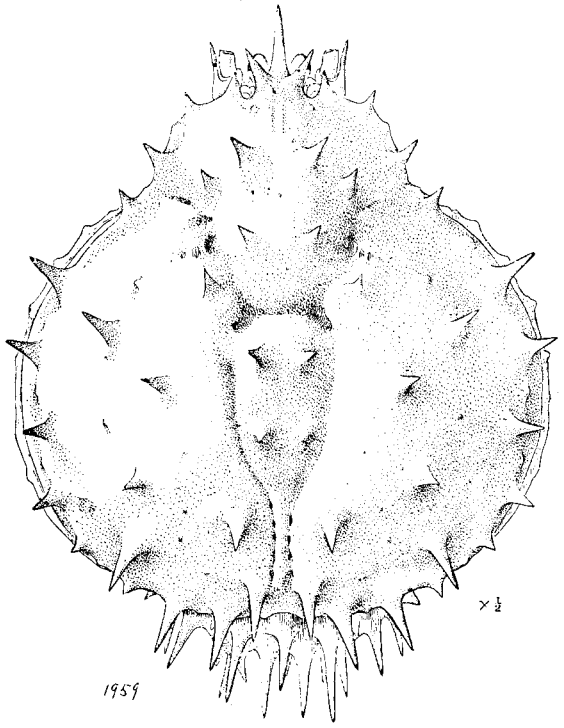

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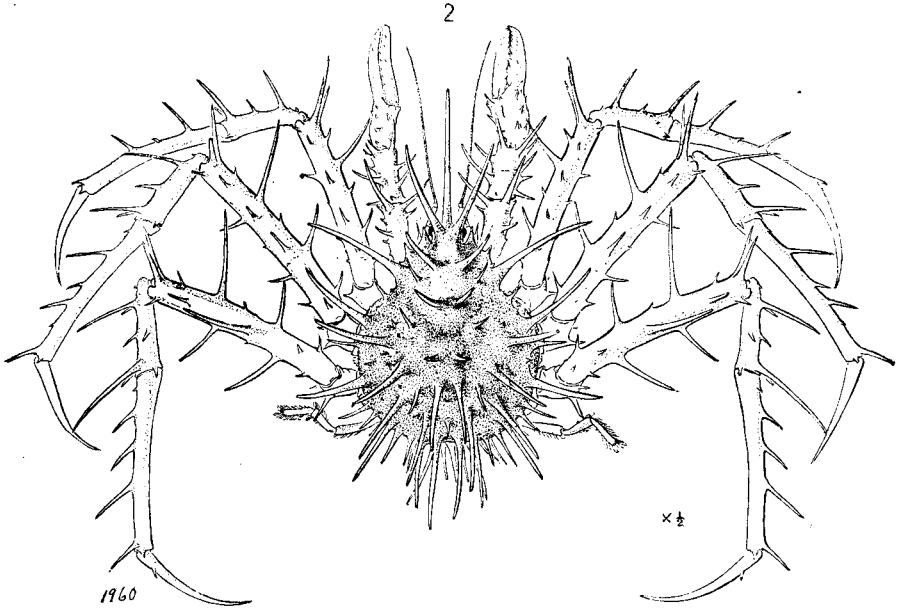

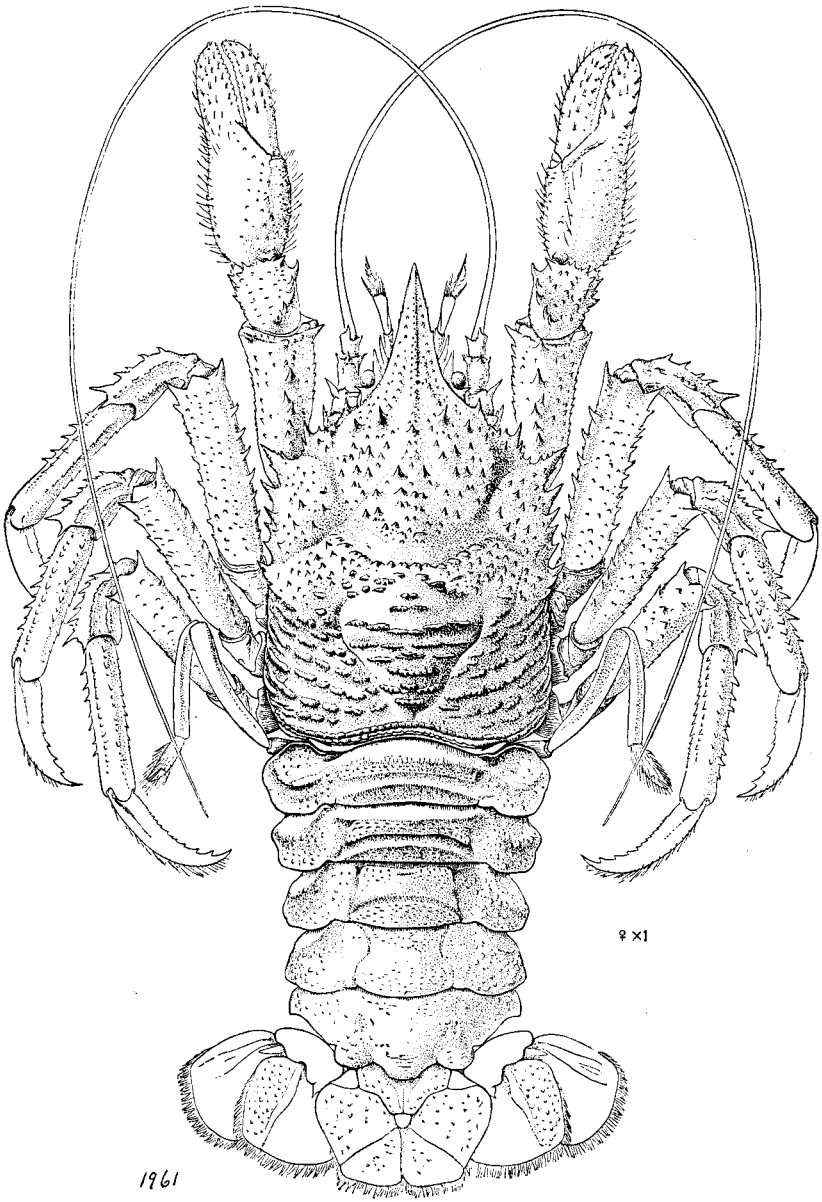
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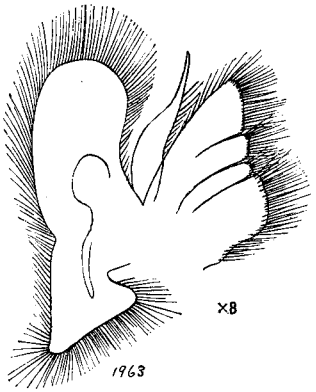
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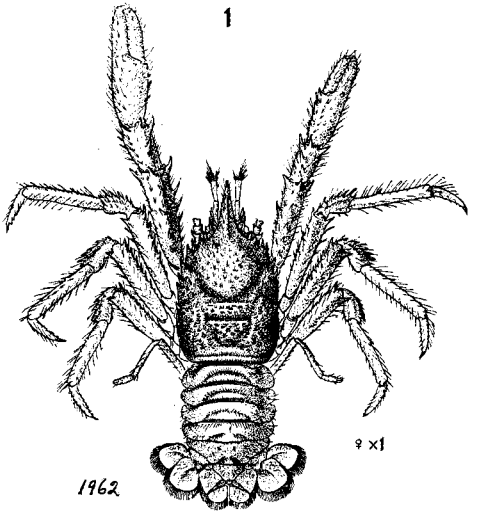
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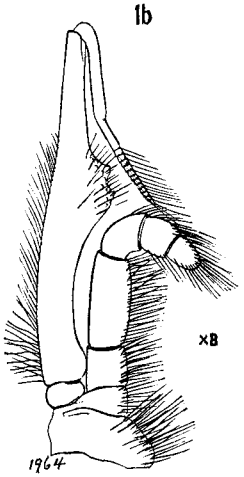
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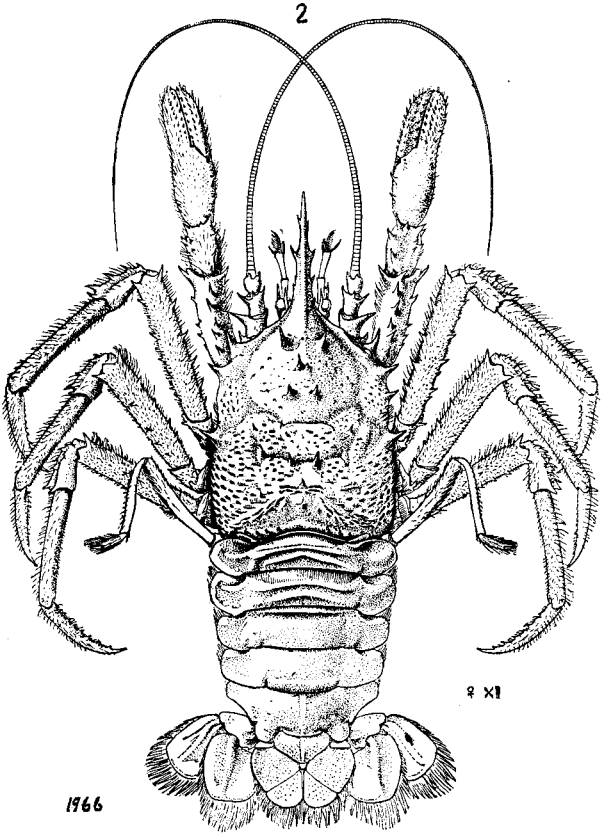
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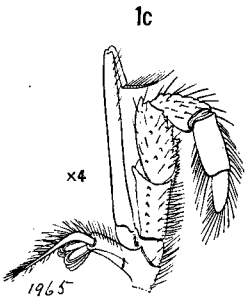
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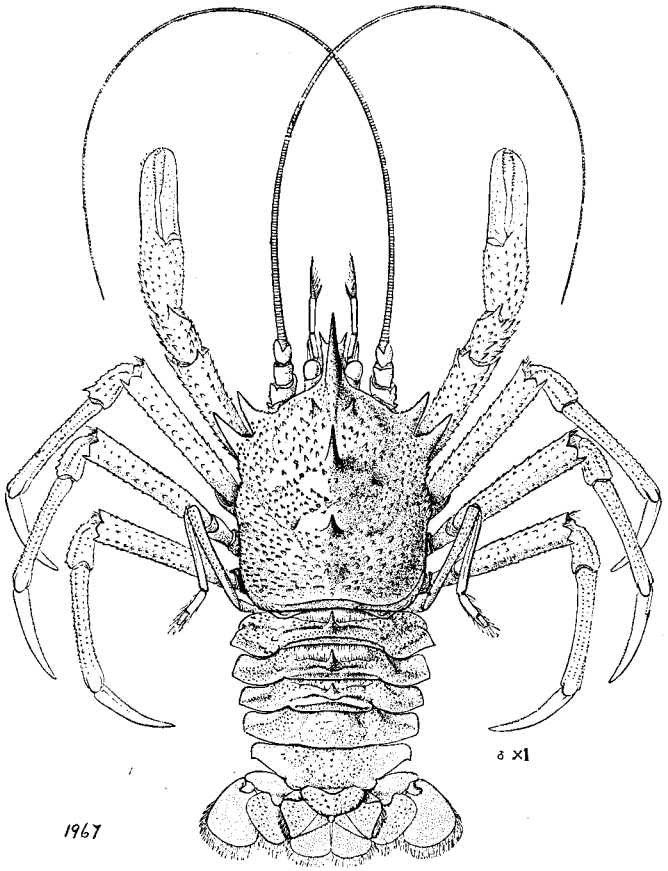

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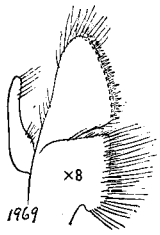
1967

2



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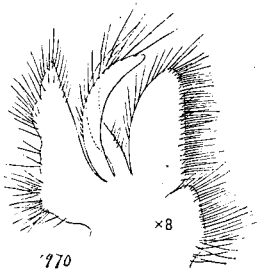

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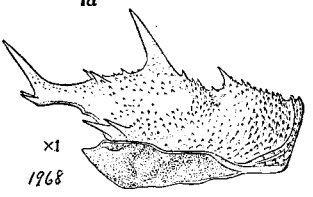

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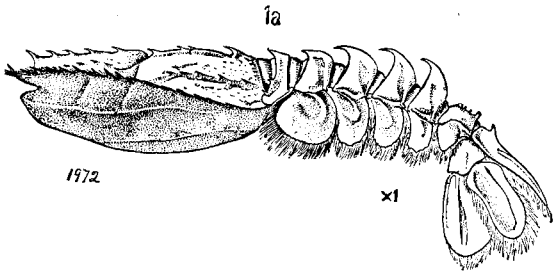
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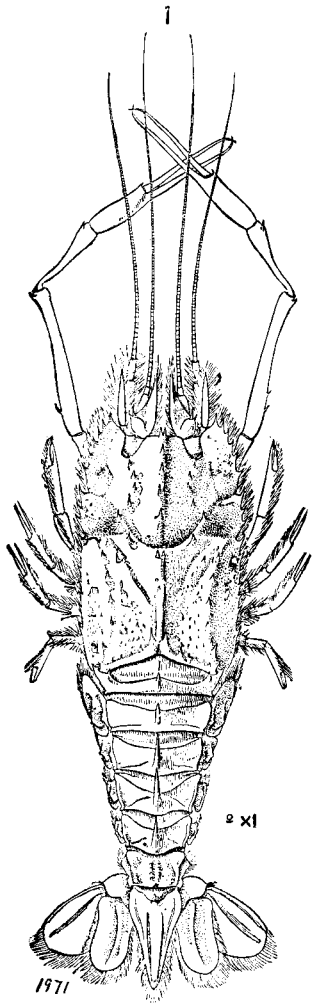
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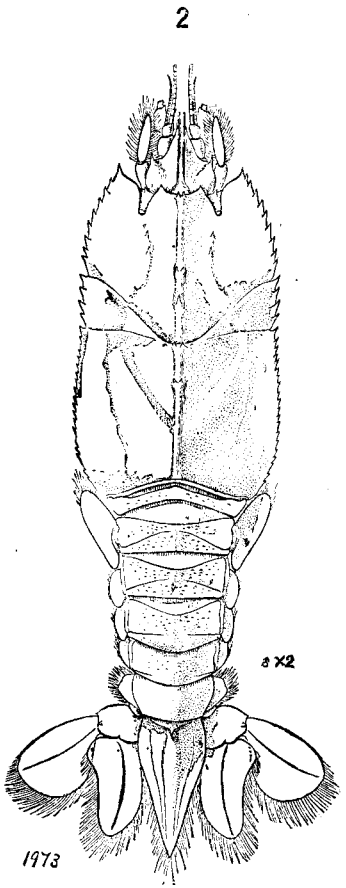
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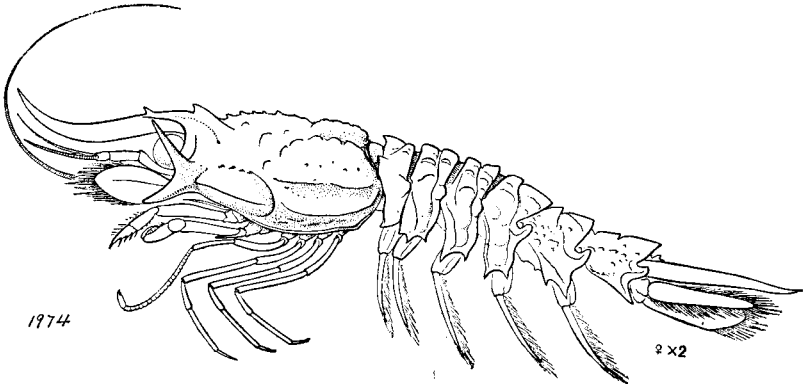

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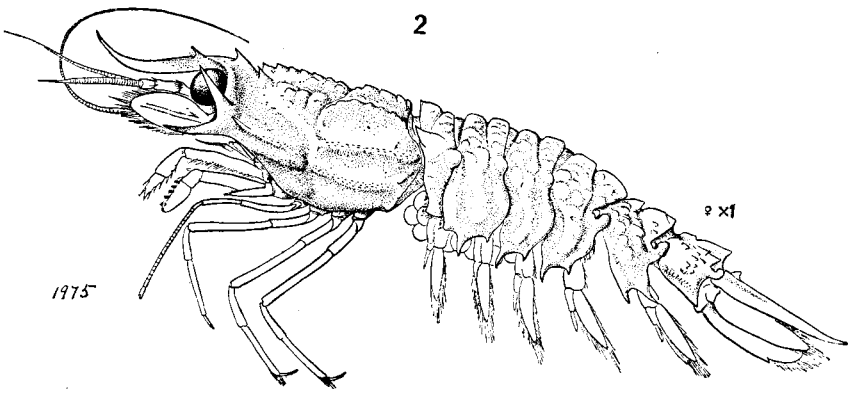

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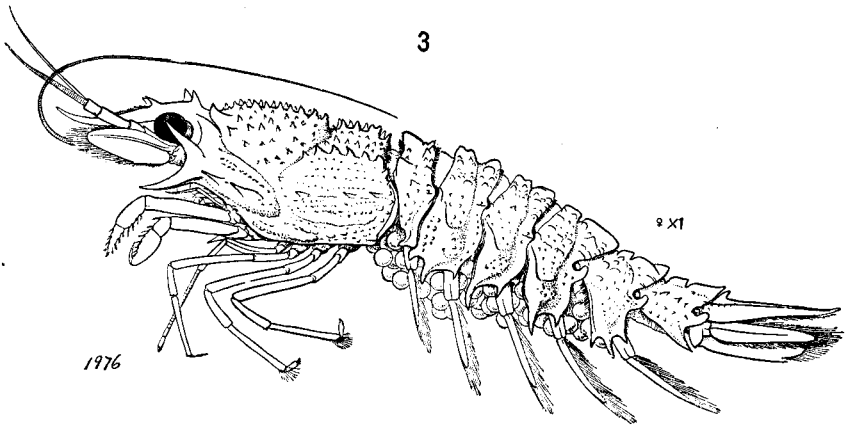

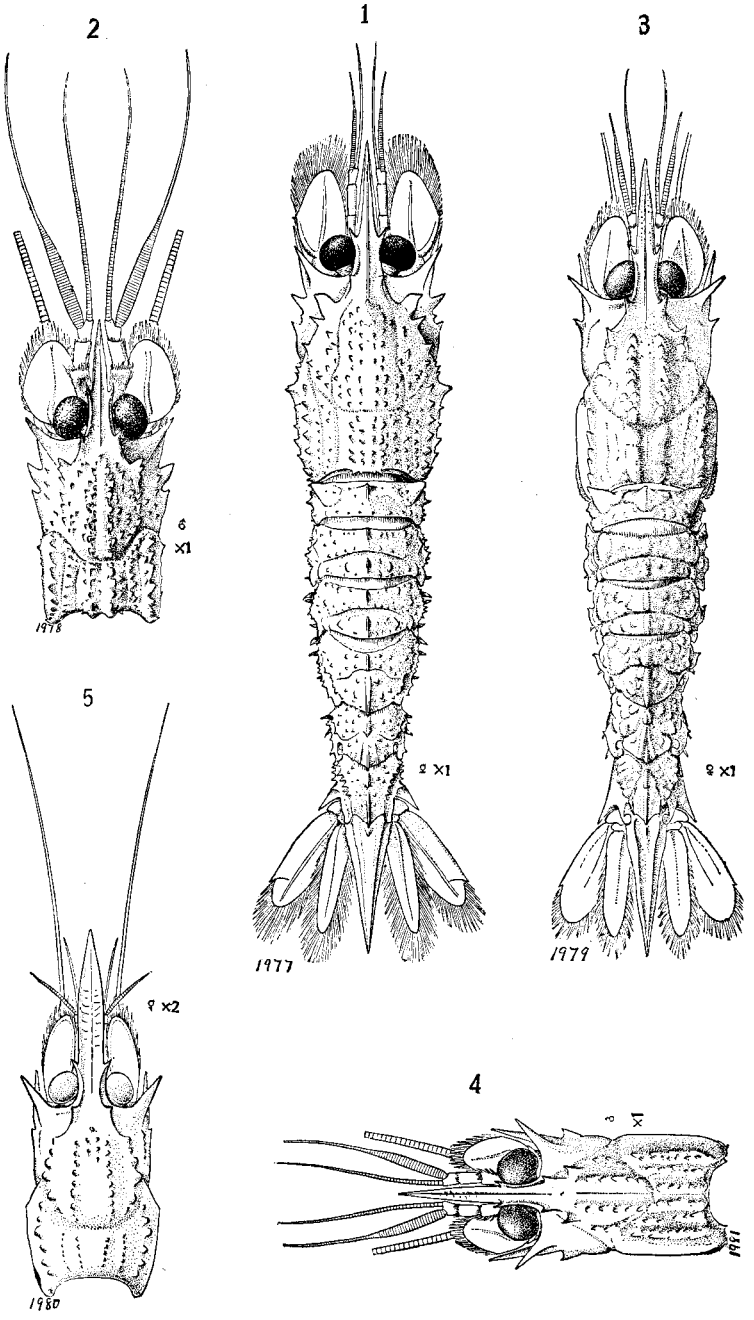
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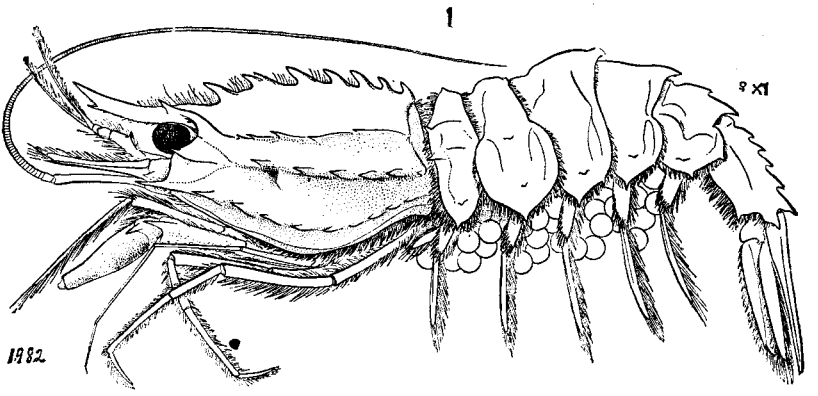
1978
1
♀ ×1
1977
3
♀ ×1
1979
5
♀ ×2
1980
4
1981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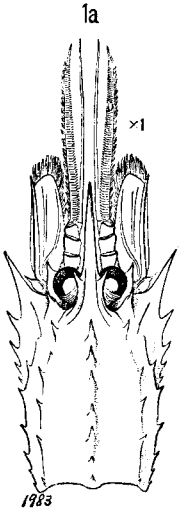
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×1
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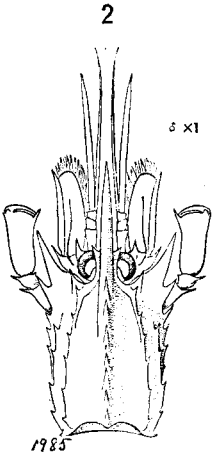
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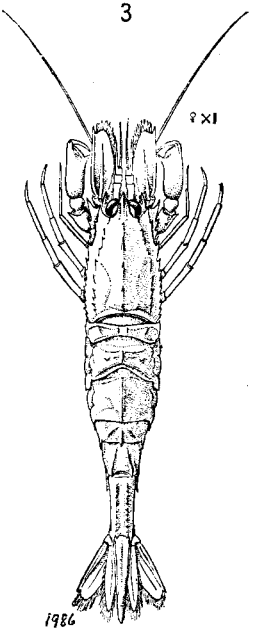
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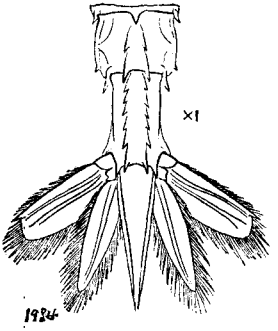
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×1
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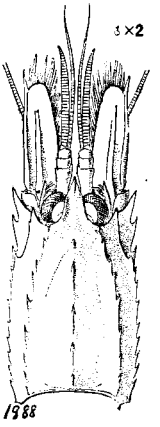
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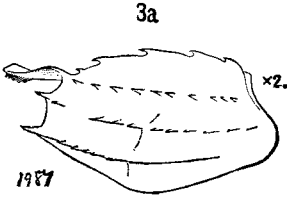
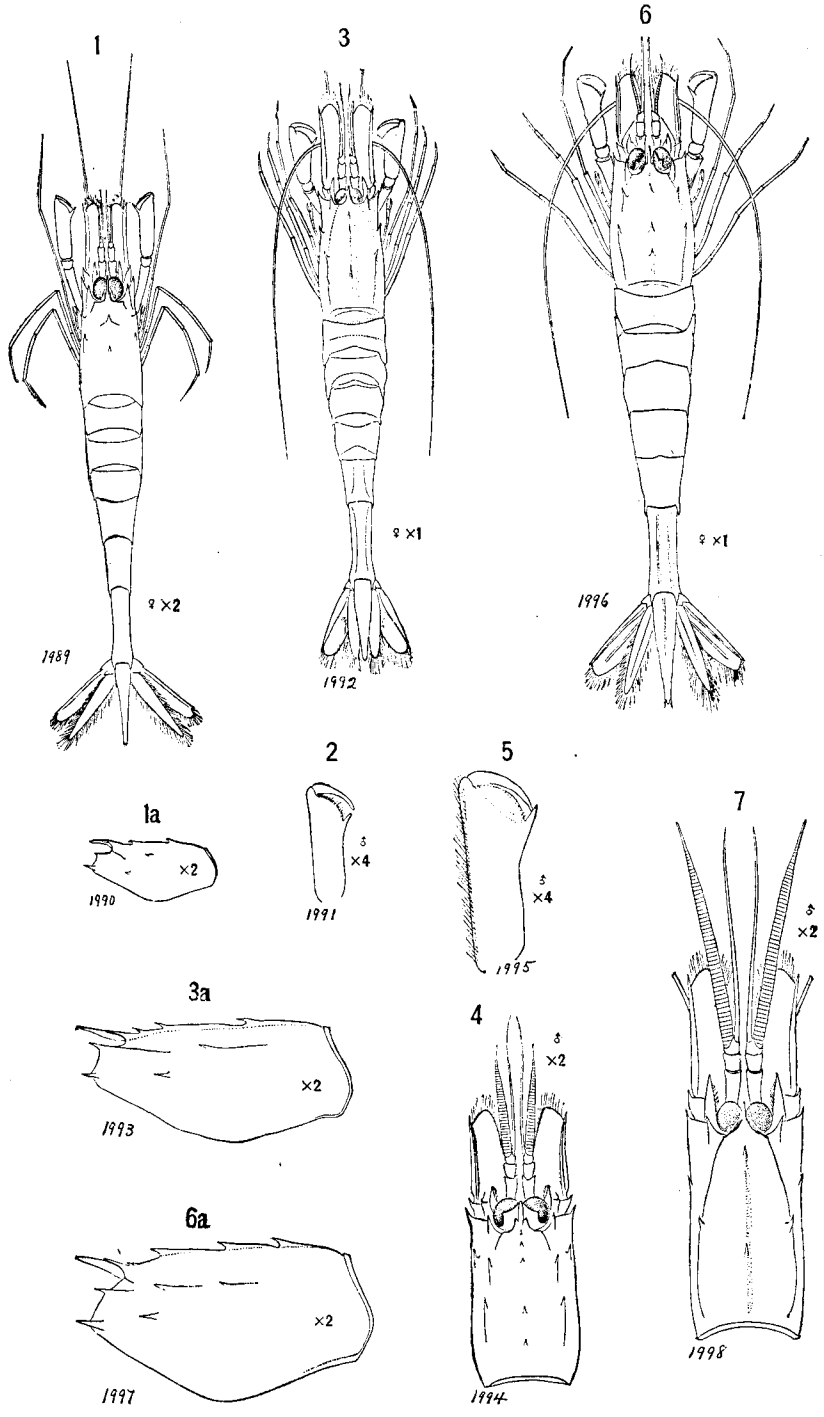
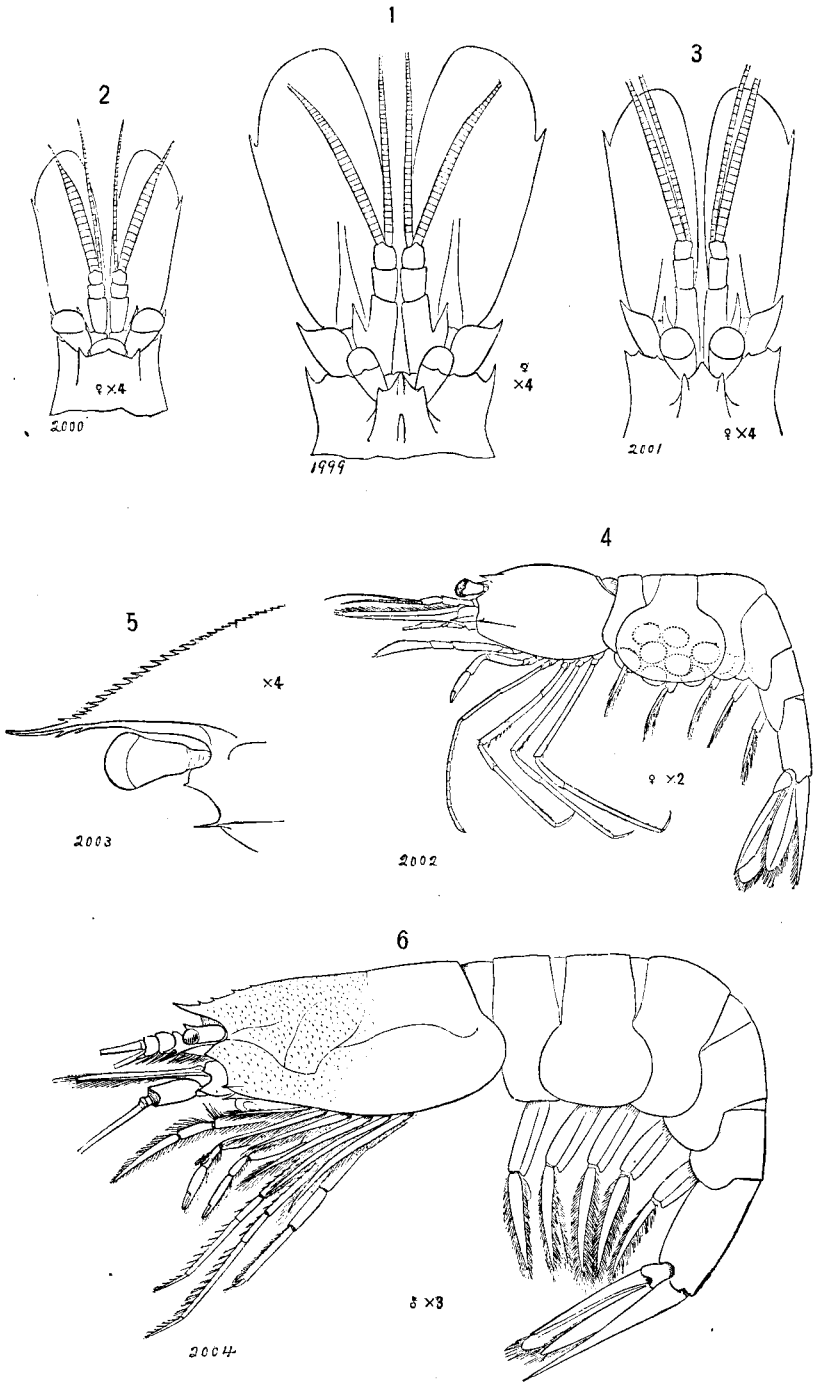
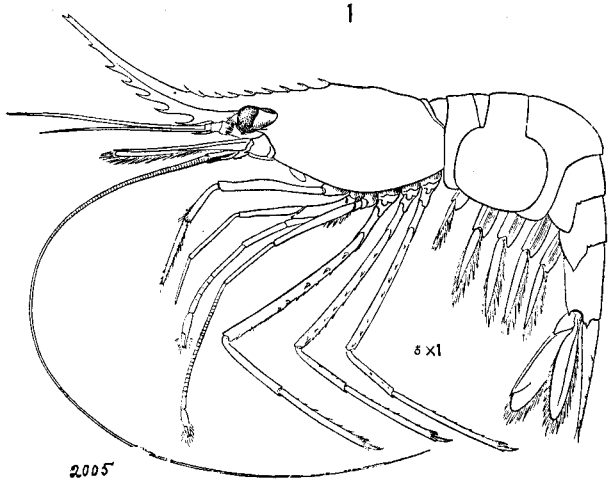

3a
×2.
1987


1
♀ ×2
1989
3
♀ ×1
1992
6
♀ ×1
1996
1a
×2
1990
2
♂
×4
1991
5
♂
×4
1995
7
♂
×2
1998
3a
×2
1993
4
♂
×2
1994
6a
×2
1997


1
2
3
4
5
6
♀ ×4
2000
♀ ×4
1999
♀ ×4
2001
×4
2003
♀ ×2
2002
♂ ×3
2004

1



2005

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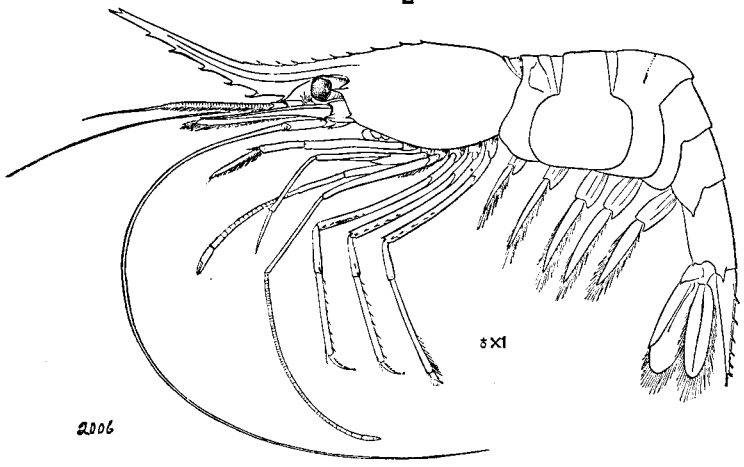

2006

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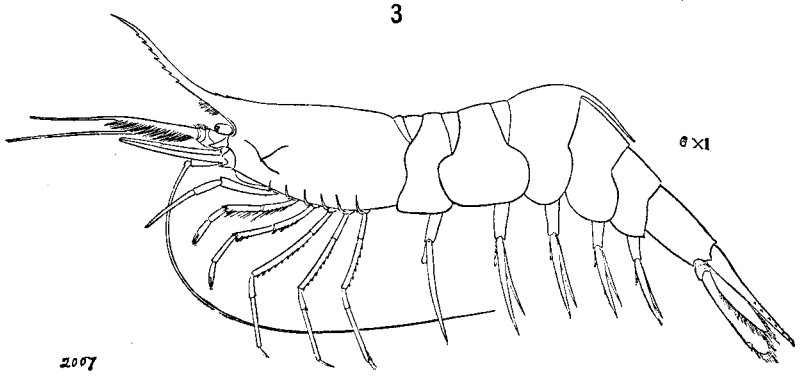

2007

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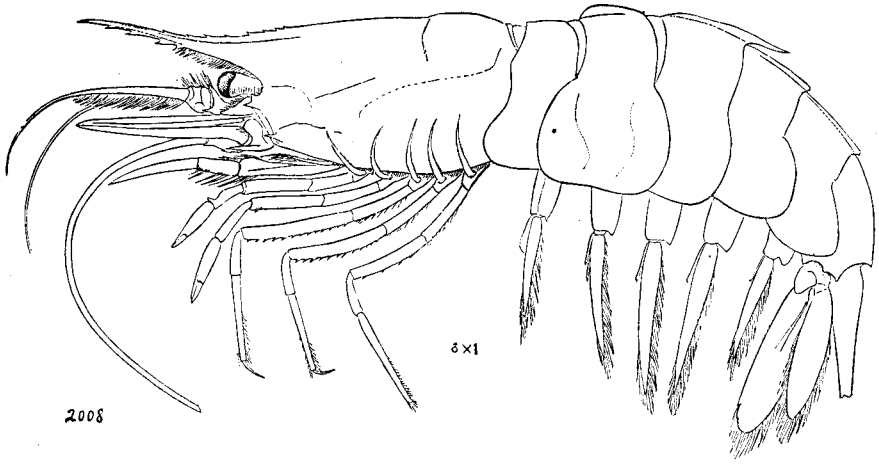

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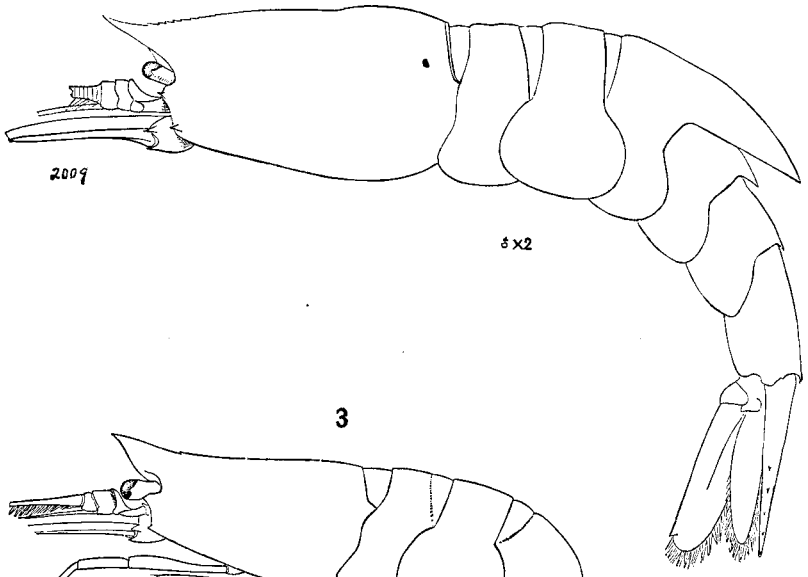

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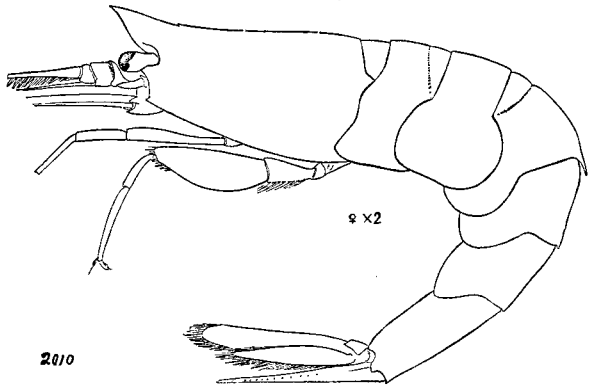

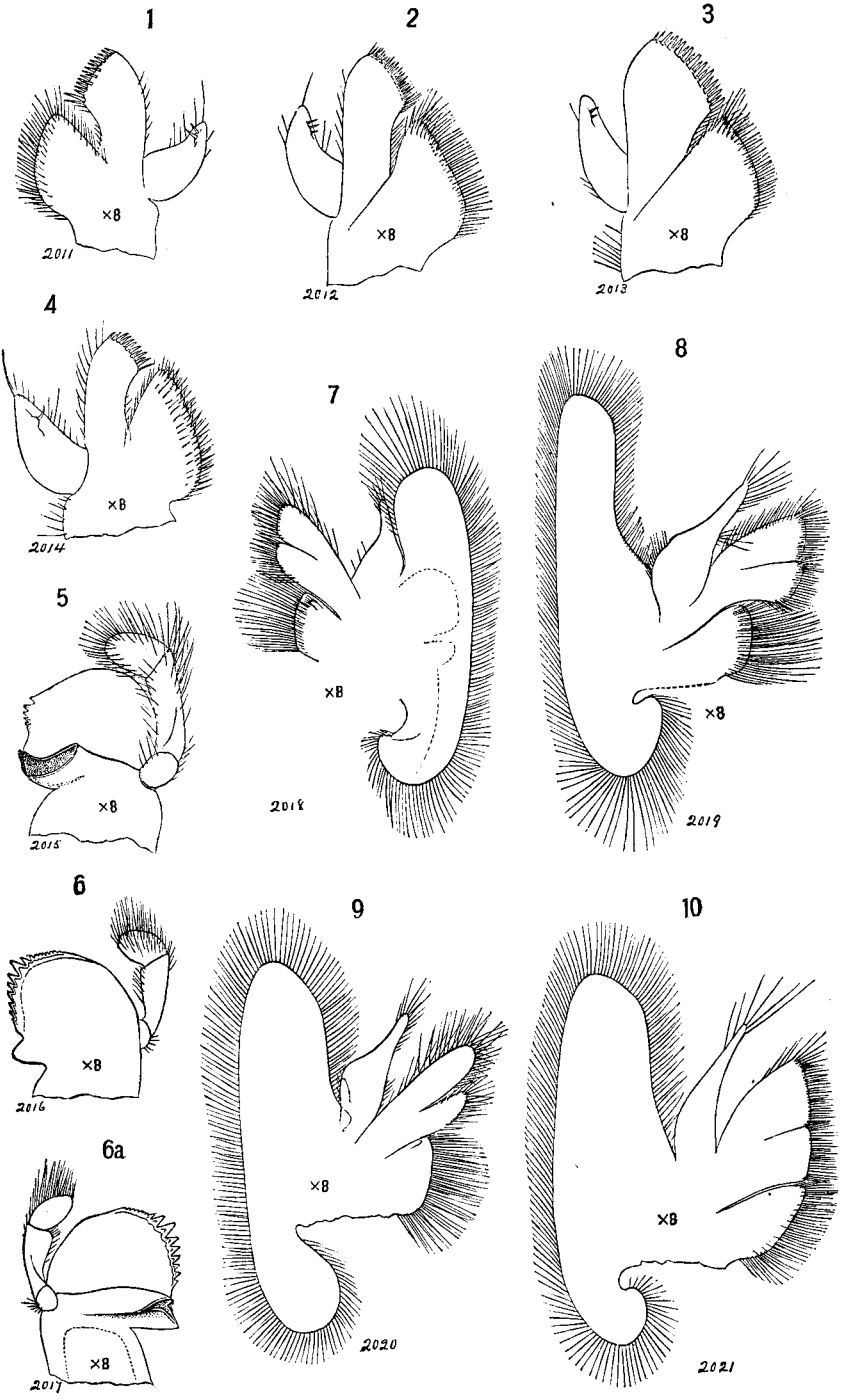
1
×8
2011
2
×8
2012
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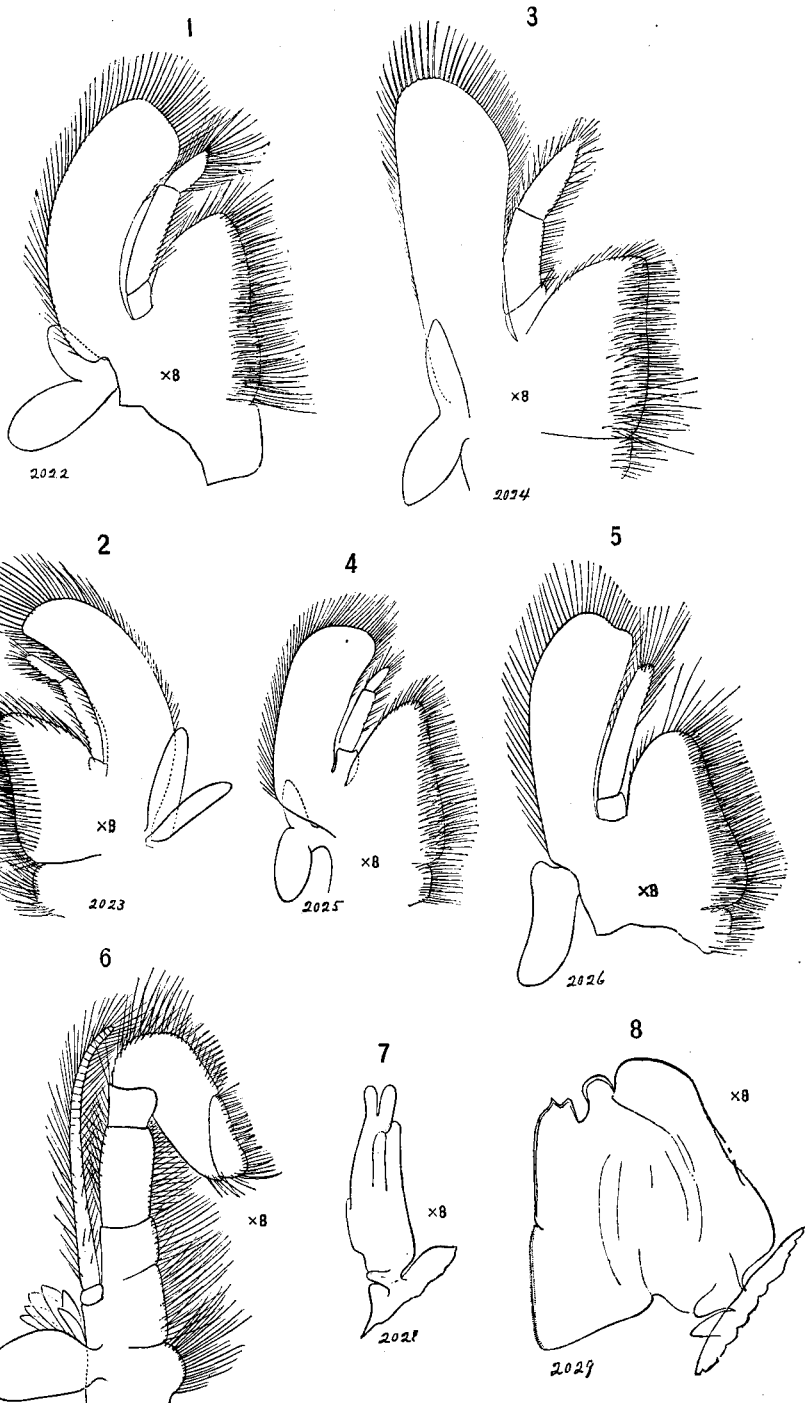
×8
2013
4
×8
2014
5
×8
2015
6
×8
2016
6a
×8
2017
7
×8
2018
8
×8
2019
9
×8
2020
10
×8
2021


1
×8
2022
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×8
2024
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×8
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×8
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×8
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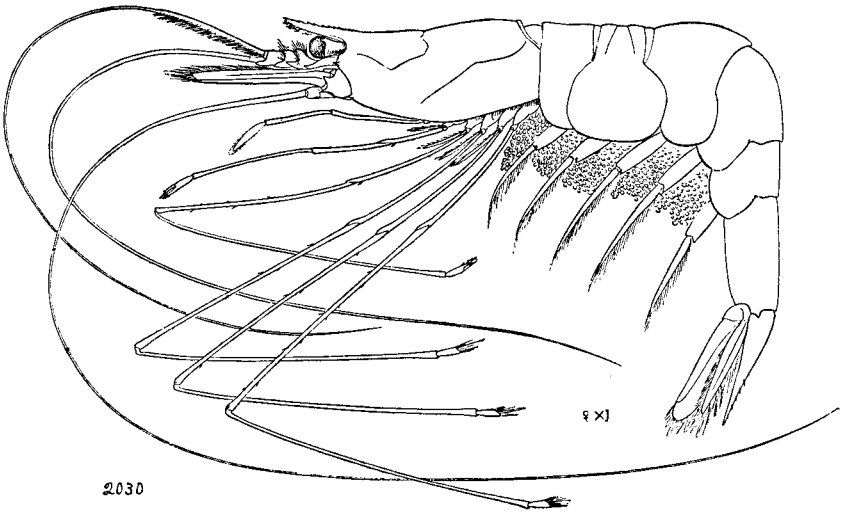
×8
2028
8
×8
2029

1



2030

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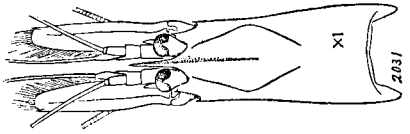

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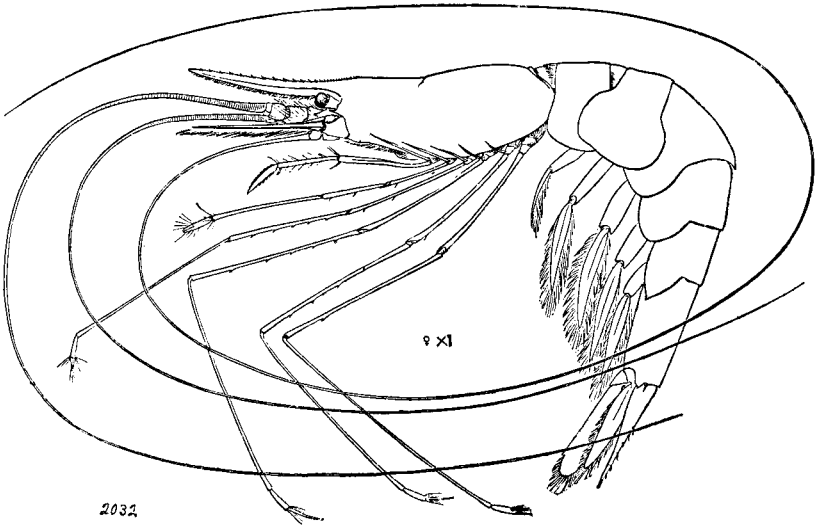

2032

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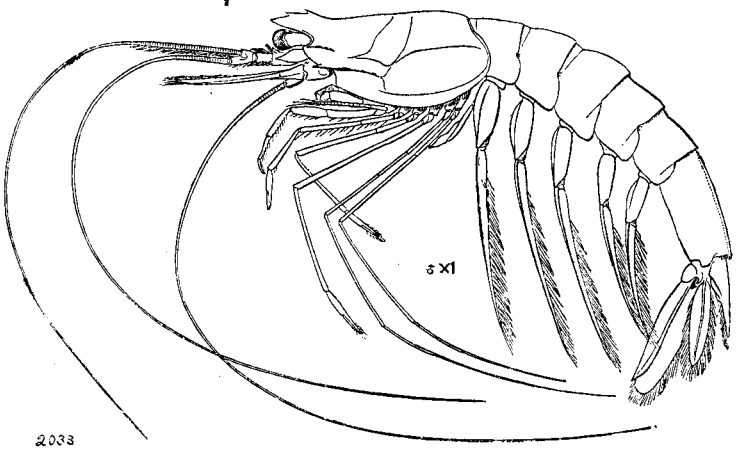

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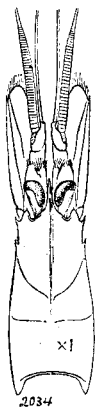
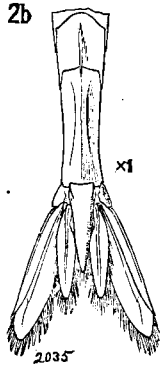


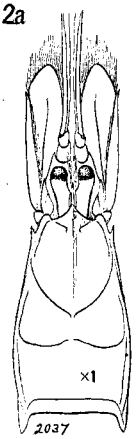
2034

2b



2035

2a



2037

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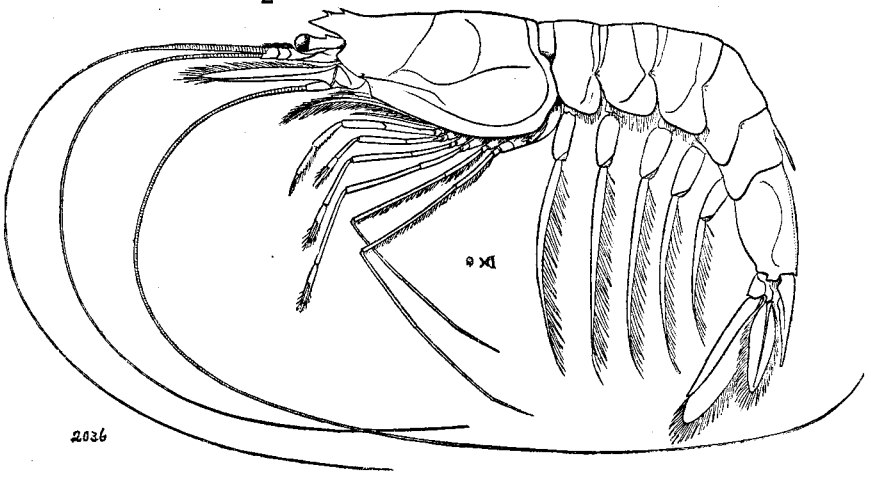

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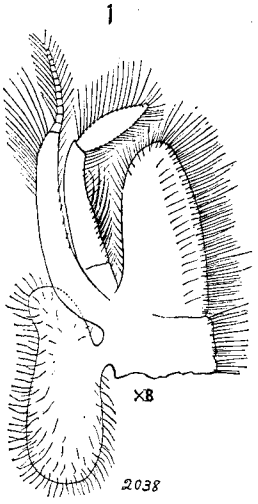
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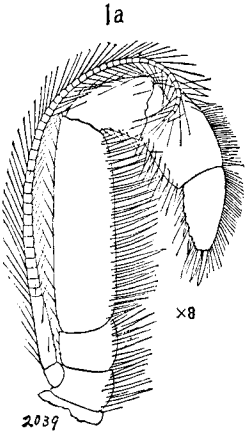
1a
×8
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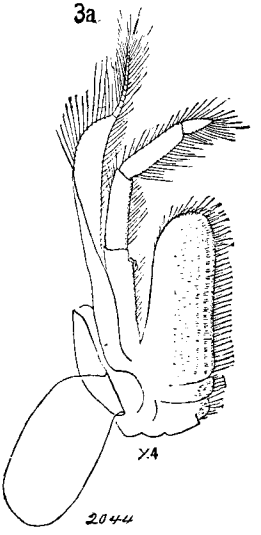
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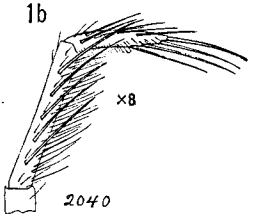
1b
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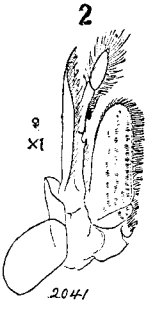
2
♀
×1
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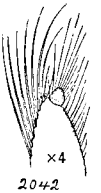
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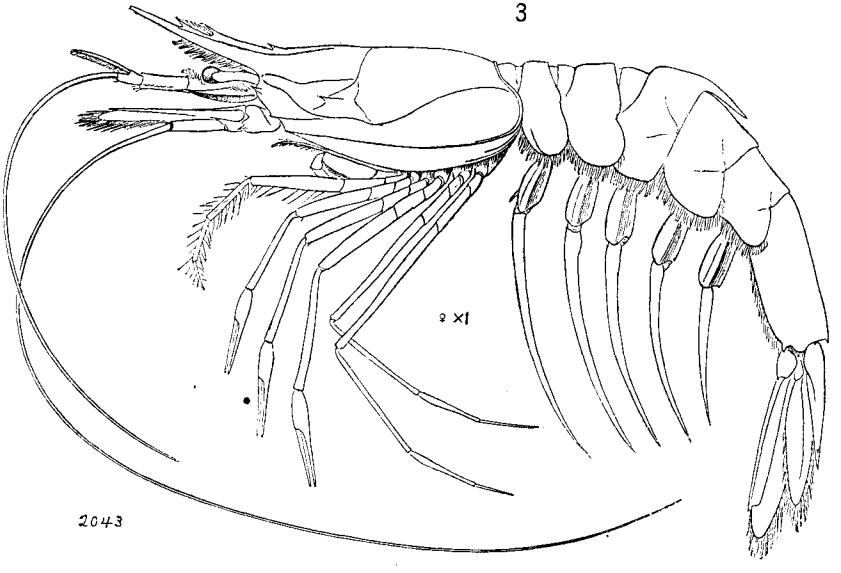
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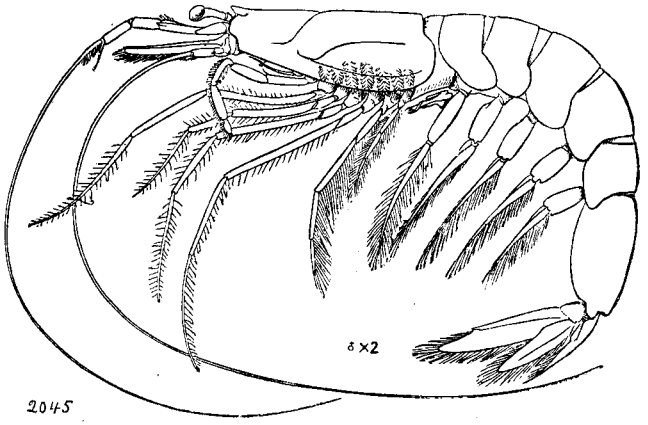

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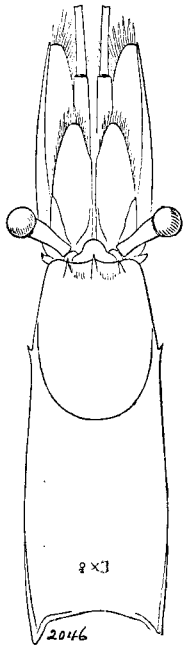

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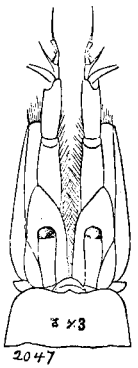

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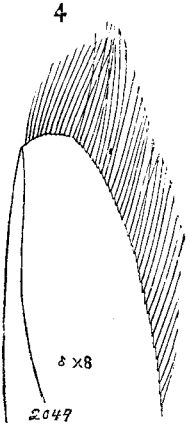

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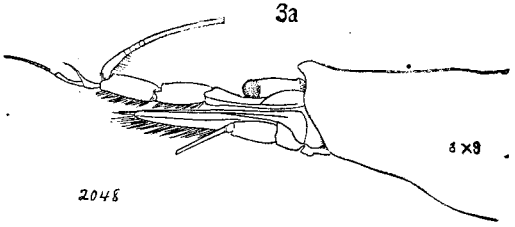

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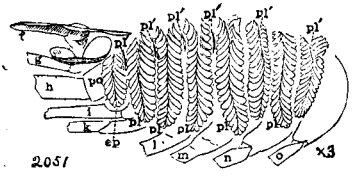

5