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SIBOGA-EXPEDITIE.



Siboga-Expeditie

UITKOMSTEN

OP

ZOOLOGISCH, BOTANISCH, OCEANOGRAPHISCH EN GEOLOGISCH GEBIED

VERZAMELD IN

NEDERLANDSCH OOST-INDIË 1899—1900

AAN BOORD H. M. SIBOGA ONDER COMMANDO VAN

Luitenant ter zee 1^e kl. G. F. TYDEMAN

UITGEGEVEN DOOR

Dr. MAX WEBER

Prof. in Amsterdam, Leider der Expeditie

(met medewerking van de Maatschappij ter bevordering van het Natuurkundig
Onderzoek der Nederlandsche Koloniën)



BOEKHANDEL EN DRUKKERIJ

VOORHEEN

E. J. BRILL

LEIDEN

Siboga-Expeditie
XXXIX_a

THE
DECAPODA OF THE SIBOGA EXPEDITION

SUPPLEMENT TO PART I

Family PENAEIDAE

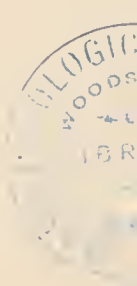
BY

DR. J. G. DE MAN

Ierseke (Holland)

EXPLANATION OF PLATES OF PENAEIDAE

—•••••—
LATE E. J. BRILL
PUBLISHERS AND PRINTERS
LEYDEN — 1913



The following ought to be still added to the List of Errata:

- Page 17, 8th line from below: the anterior prominence of the merus of 2nd maxillipeds measures a little more than one-third the total length of the joint; the joint, indeed, is 4 mm. long, the prominence 1,65 mm.
- Page 17, 2nd line from below: *for* "just half as wide" *read* "about just as wide".
- Page 23, 10th line from above, *for* "between the 3rd and 4th pairs" *read* "between the 4th and 5th pairs".
- Page 25, 2nd line from below: *for* "the chelae are comparatively shorter and less slender" *read* "the chelae are comparatively shorter and less slender, except the chelae of the 1st and 2nd pair, which are just as long as in *Hemip. crassipes*".

J4810



EXPLANATION OF THE PLATES.

Twenty three figures have been drawn by Mr. J. F. OBBES of Apeldoorn, Holland; their numbers are: Plate II, Fig. 5 and 6; Plate III, Fig. 10, 10*a*, 10*b*; Plate IV, Fig. 10*c*—10*g*; Plate V, Fig. 12, 12*a*—12*c*; Plate VI, Fig. 18, 18*a*—18*d*; Plate VIII, Fig 24, 24*a*, 27, 27*a*.



PLATE I.

- Fig. 1. *Benthesicymus Investigatoris* A. And. Dorsal view of the eye-peduncles and of the anterior part of the carapace of the female from Stat. 161, $\times 3$; *1a* thelycum of the same specimen, $\times 6$; *1b* dorsal view of the caudal fan of the same female, $\times 3$.
- Fig. 2. *Gennadas Pasithea* de Man, dorsal view of the antennular peduncles with a part of their flagella, of the right scaphocerite, of the eye-peduncles and of the anterior part of the carapace, $\times 5$; *2a* left scaphocerite, $\times 8\frac{1}{3}$; *2b* left maxilliped of the second pair, $\times 6$; *2c* left maxilliped of the third pair, $\times 6$; *2cc* lateral view of the terminal joint of this maxilliped, $\times 12\frac{1}{2}$; *2ccc* terminal joint of the same maxilliped, looked at from above, $\times 17$; *2d—2h* the legs of the first to the fifth pair, $\times 6$; *2i* petasma, the left branch looked at from the outer side, $\times 15$. In the description of this species (p. 18—19) the whole petasma has been described, the two branches taken together; the various parts are therefore here enumerated still once: α one of the two large, triangular, obtuse lobes (of the description), β the narrow tooth or spine, in which the lateral lobe terminates, γ the subacute, depressed, even slightly concave tubercle behind the lateral lobe, δ the posterior and ϵ the anterior of the two tubercles, situated behind one another at either side of the median line, η the small, compressed, narrow tooth or lobule between these two tubercles; *2ii* free margin of the large triangular lobe and of the anterior tubercle, more strongly magnified, $\times 30$; *2iii* two of the microscopical hooks with which the anterior tubercle ϵ is covered, in a lateral view; *2iiii* two of these hooks viewed from before, *2iiiii* some hooks of the foremost part of the large, triangular, obtuse, lobe; the three last figures magnified 160-times; *2j* thelycum, $\times 15$. With the exception of Fig. *2j*, all the figures are taken from the male.
- Fig. 3. *Gennadas clavicarpus* de Man, lateral view of the carapace etc., of the type specimen, the adult female from Stat. 128, $\times 6$; *3a* maxilliped of the second pair $\times 12\frac{1}{2}$; *3b* external maxilliped, $\times 12\frac{1}{2}$; *3c*, *3d*, *3e* legs of the first, second and third pair, $\times 12\frac{1}{2}$ (the figures *3a—3e* all taken from the adult female from Stat. 128); *3f* posterior view of the petasma of the male, long 23 mm., from Stat. 230, $\times 25$; *3g* right-half of the petasma of the same male, looked at obliquely from before, $\times 25$.

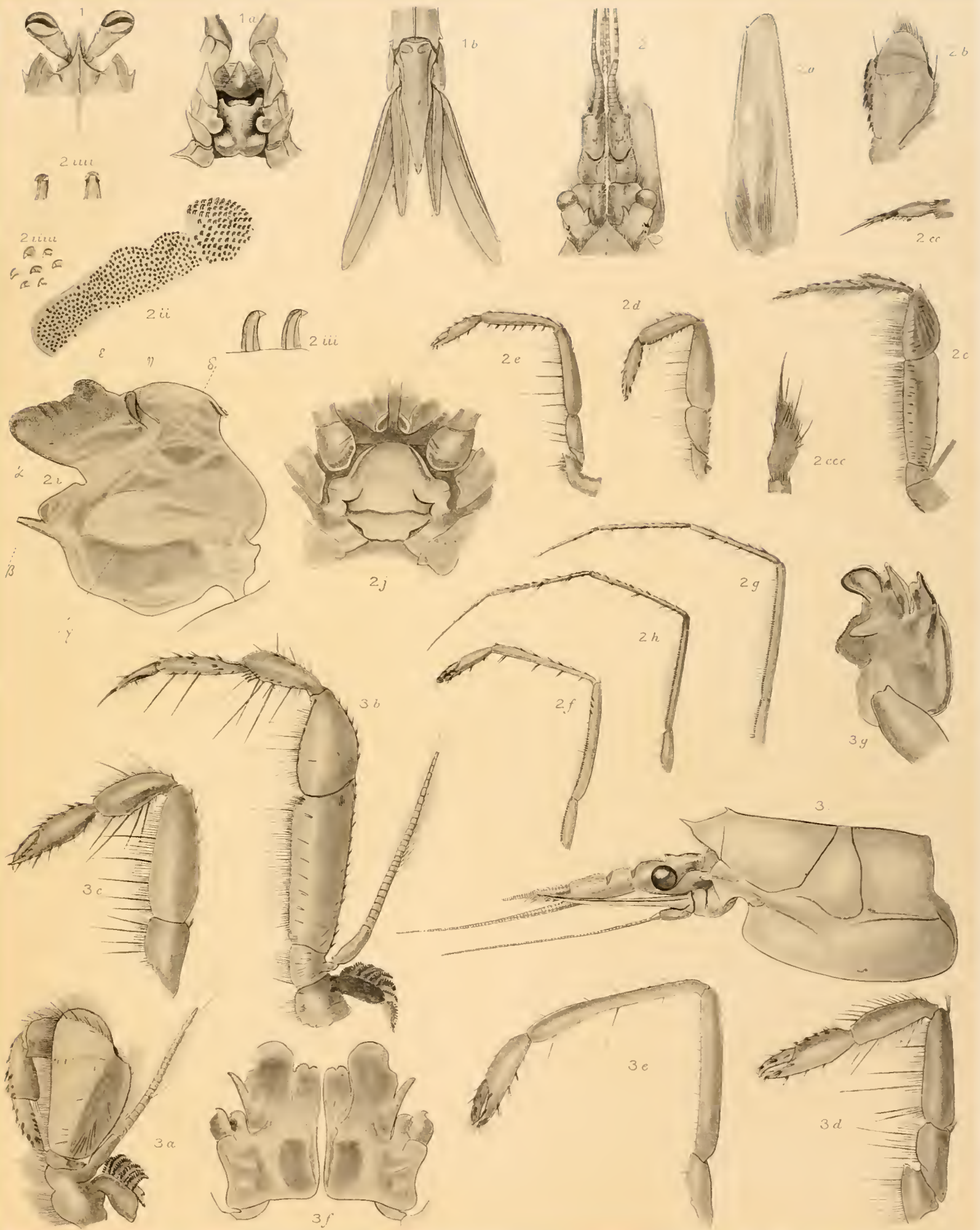


PLATE II.

Fig. 3*h*. *Gennadas clavicularpus* de Man, left-half of the petasma of the third male, on which one observes, instead of the large, rounded lobe of the distal border, a triangular, pointed process, the acuminate tip of which is curved forward: posterior surface, $\times 25$; 3*j* thelycum of the type specimen, the adult female from Stat. 128, $\times 17$; 3*k* thelycum of one of the four young females from Stat. 230, long 18 mm., $\times 25$.

Fig. 4*a-c*. *Hemipenaeus crassipes* (W.-Mas.), legs of the first pair (4*a*), of the second pair (4*b*) and of the third pair (4*c*) of the female from Stat. 85, $\times 1\frac{1}{2}$.

Fig. 5. *Hemipenaeus Sibogae* de Man, adult female, type, from Stat. 52, $\times 1\frac{1}{3}$; 5*a* leg of the first pair, 5*b* leg of the second pair, 5*c* leg of the third pair of this female; $\times 1\frac{1}{2}$.

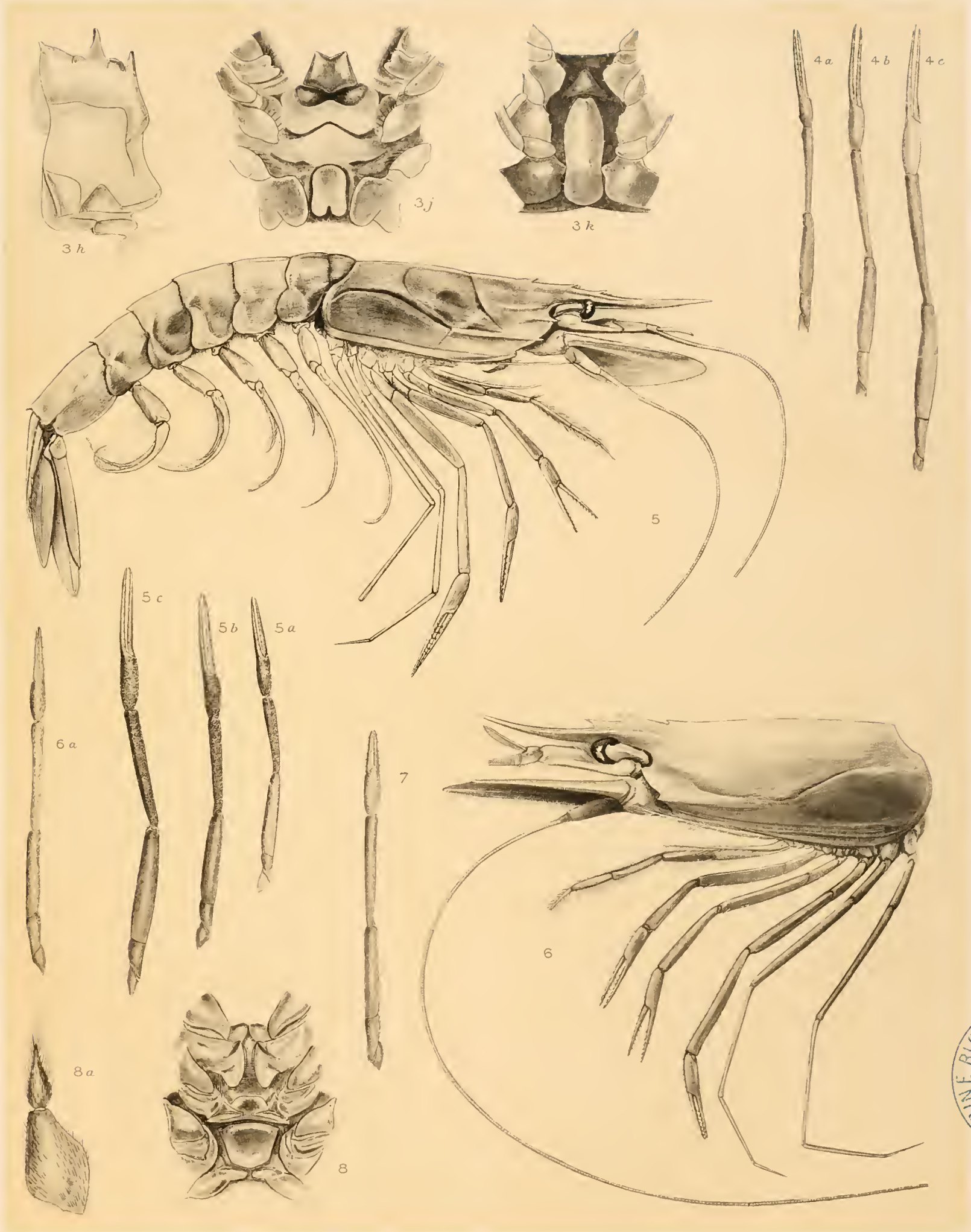
Remarks: The measurements of the legs of the first and of the second pair of the females both of *Hemip. crassipes* (W.-Mas.) and *Hemip. Sibogae* de Man are indicated in the following table, because in the description of *Hemip. Sibogae* (p. 25) not only the carpi but also the chelae of these legs are said to be shorter and less slender than those of *Hemip. crassipes*, which, as regards the chelae, is not the case in these legs:

	<i>Hemip. crassipes</i>	<i>Hemip. Sibogae</i>
Length of the merus	12	12
Width of the merus in the middle	2	2,1
Length of the carpus	13	11
Width of the carpus at the distal extremity	1,5	1,6
Length of the chela	14,5	14,5
Width of the palm in the middle	2	2
} of the legs of the first pair		
Length of the merus	14	14
Width of the merus in the middle	2,3	2,4
Length of the carpus	16,25	14
Width of the carpus at the distal extremity	1,6	1,8
Length of the chela	18,5	18,5
Width of the palm in the middle	2,25	2,3
} of the legs of the second pair		

Fig. 6. *Aristeus virilis* (Sp. Bate), carapace with the legs etc. of a young male, long 118 mm., from Stat. 38, $\times 2$; 6*a* leg of the third pair of the female from Stat. 262, $\times 1\frac{1}{2}$.

Fig. 7. *Aristeus semidentatus* (Sp. Bate), leg of the third pair of the female from Stat. 262, $\times 1\frac{1}{2}$.

Fig. 8. *Haliporus aequalis* Sp. Bate, thelycum of the larger female from Stat. 262, $\times 6$; 8*a* mandibular palpus of the same female, $\times 5$.



FRANÇOIS BIOT

PLATE III.

- Fig. 9. *Haliporus propinquus* de Man, right-half of the petasma of a male, long 76 mm., from Stat. 316, the posterior side viewed at obliquely from behind, $\times 10$; *9a* left-half of the same petasma, view of the outer side, $\times 10$; *9b* the two lobules in which the left-half of the petasma terminates, looked at from the outer side, $\times 25$: the larger anterior lobule does not only present an incision at its anterior extremity, by which a small tooth is formed, but a similar tooth exists also at the posterior extremity, the latter tooth, however, was not described in the text; *9c* thelycum of a female, long 85 mm., from Stat. 316, $\times 6$; *9d* mandibular palpus of this female, $\times 5$.
- Fig. 10¹⁾. *Haliporus Sibogae* de Man, adult female, long 160 mm., from Stat. 74, $\times 1\frac{1}{4}$; *10a* anterior part of the carapace, with the rostrum, the eye, the antennule and the antenna of the same adult female, $\times 2$; *10b* the carapace with the eyes etc. of the same female, viewed from above, $\times 1\frac{1}{4}$.

1) The three spines on the lateral surface of the carapace are situated a little farther distant from the upper margin than they are in this figure.

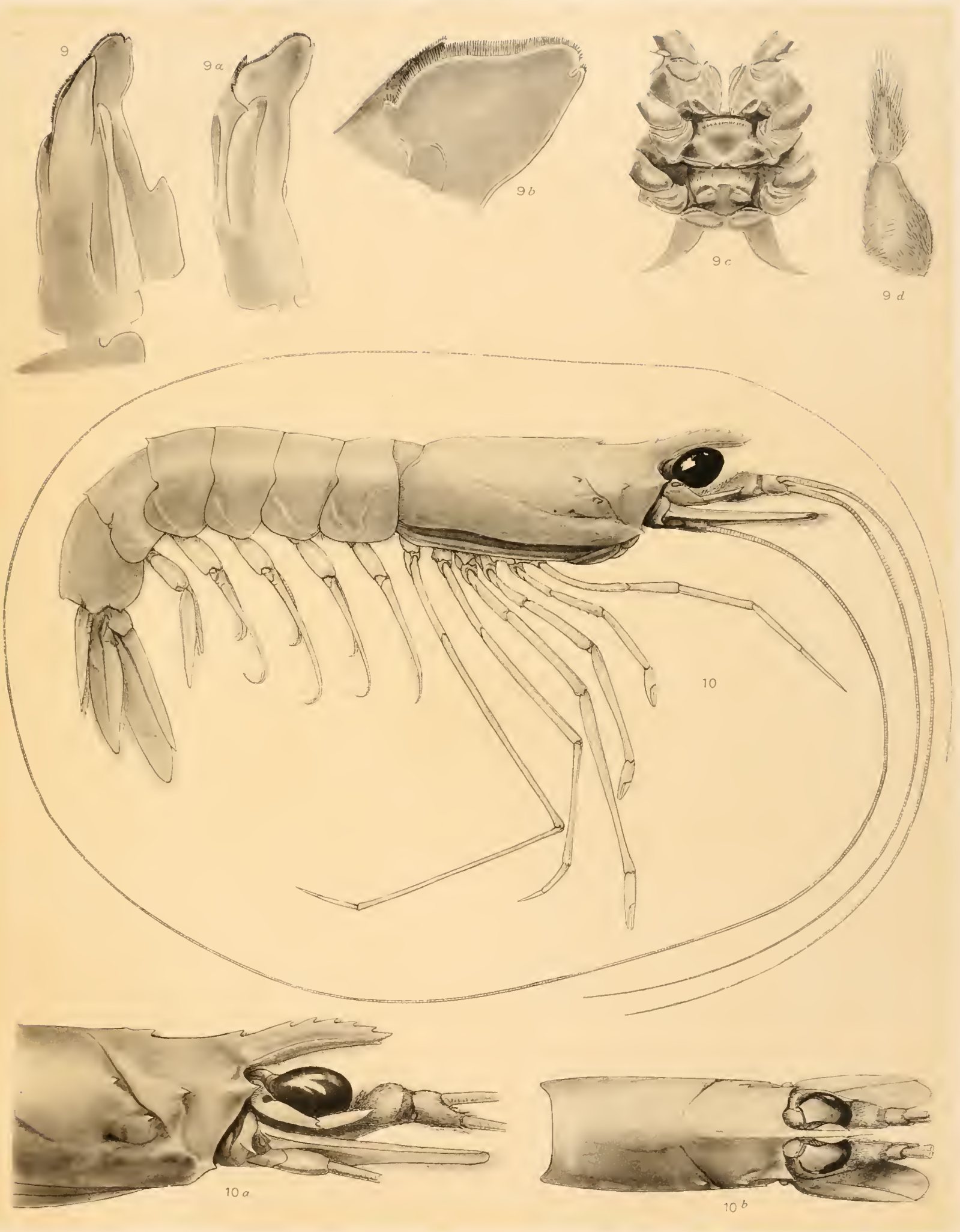


PLATE IV.

Fig. 10*c*. *Haliporus Sibogae* de Man, the carapace of the male, long 155 mm., from Stat. 74, with the various appendages, viewed from the lower side, $\times 1\frac{1}{4}$; 10*d* anterior part of the carapace of another female from Stat. 74, $\times 2$; 10*e* caudal fan of an adult male from Stat. 74, $\times 1\frac{1}{2}$; 10*f* and 10*g* anterior part of the carapace of two males, long 125 mm., from Stat. 74, $\times 2$; 10*h* sternum of an adult male from Stat. 38, long 150 mm., $\times 3$; α left leg of the third pair; 10*i* petasma of an adult male, from Stat. 38, looked at from behind, $\times 3$; 10*j* thelycum of an adult female, long 145 mm., from Stat. 74, where the thelycum appears faintly carinate in the middle line, $\times 3$; 10*k* thelycum of an adult female, long 155 mm., from Stat. 38, in which it appears rhomboid, the two anterior sides making a right angle with one another and separated by grooves from the rest of the sternum, $\times 3$; 10*l* left mandibular palpus of an adult male, long 150 mm., viewed from the outer side, $\times 4$; 10*m* left maxilliped of the first pair of the same male, $\times 3$; 10*n* maxilliped of the second pair of the same male, $\times 3$, α the podobranch; 10*o* terminal joint of this maxilliped, $\times 5$; 10*p* maxilliped of the third pair of the same male, long 150 mm., from Stat. 38, $\times 2$; 10*q* the two last joints of the outer footjaw of an adult female, long 155 mm., from Stat. 38, $\times 2$.

Fig. 11. *Solenocera pectinata* (Sp. Bate), distal spiniferous part of the petasma of the male from Stat. 204, looked at from behind, $\times 25$.

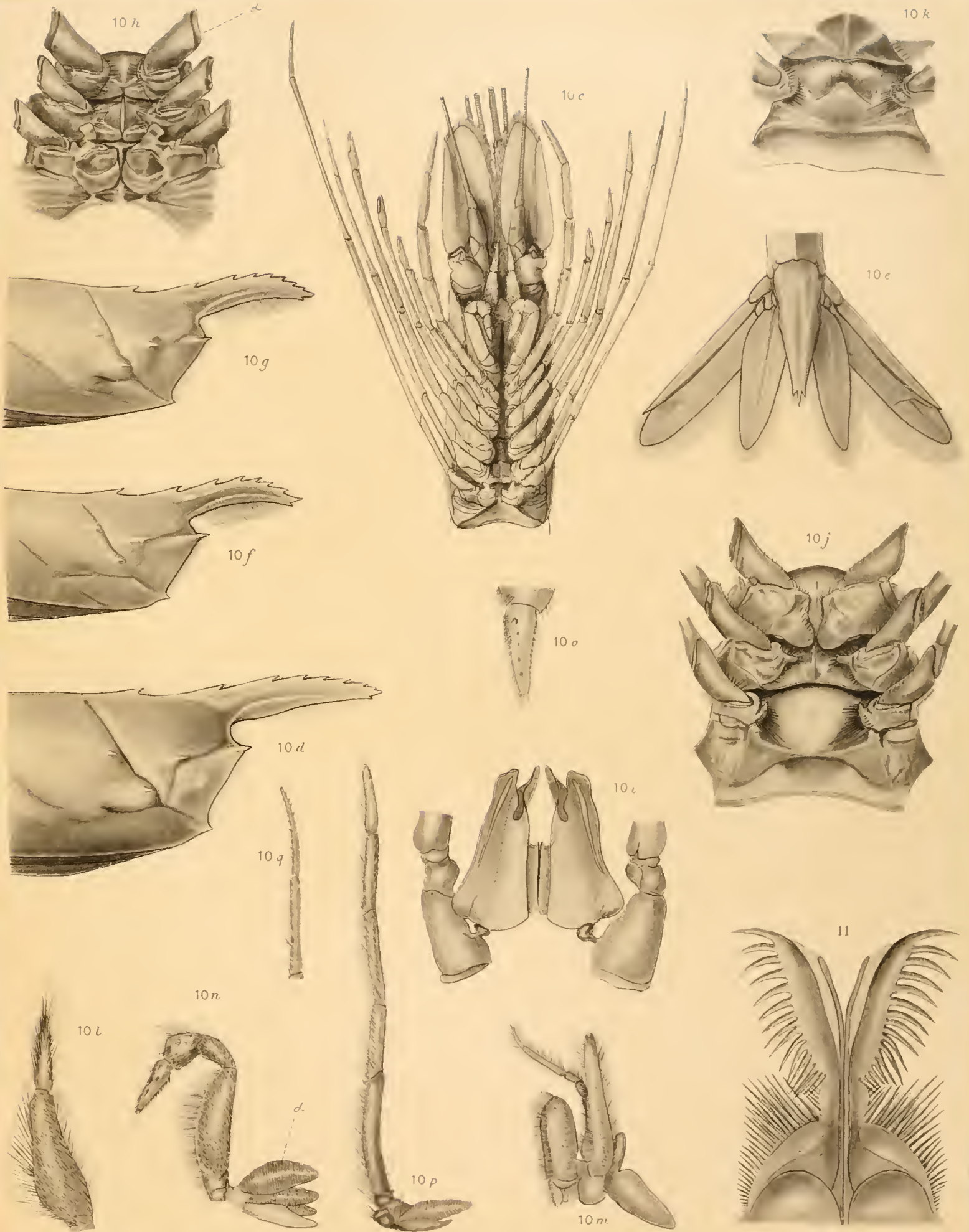


PLATE V.

- Fig. 12. *Solenocera Melantho* de Man, adult female, long 125 mm., from Stat. 312, $\times 1\frac{1}{4}$; 12*a* carapace with the eye etc. of this female, $\times 1\frac{1}{2}$; 12*b* the same viewed from above, $\times 1\frac{1}{2}$; 12*c* caudal fan of this female, $\times 1\frac{1}{2}$; 12*d* petasma of the adult male from Stat. 312, looked at from before, $\times 5$; 12*e* petasma of the same male, looked at from behind, $\times 5$; 12*f* left-half of the petasma of the same male, lateral view, $\times 5$; 12*g* distal margin of the anterior and median lobe of this petasma, in a lateral view, $\times 12$; 12*h* the same lobes looked at from behind, $\times 12$; 12*i* right posterior lobe of the same petasma, posterior view, $\times 12$.
- Fig. 13. *Solenocera Faxonii* de Man, carapace etc. of the female, type, from Stat. 254, $\times 2$; 13*a* the same viewed at from above, $\times 2$; 13*b* antero-inferior part of the carapace looked at obliquely, in order to show the rounded antero-inferior angle of the carapace, $\times 3$; 13*c*, 13*d* distal extremity of the upper, respectively the lower antennular flagellum, $\times 25$.

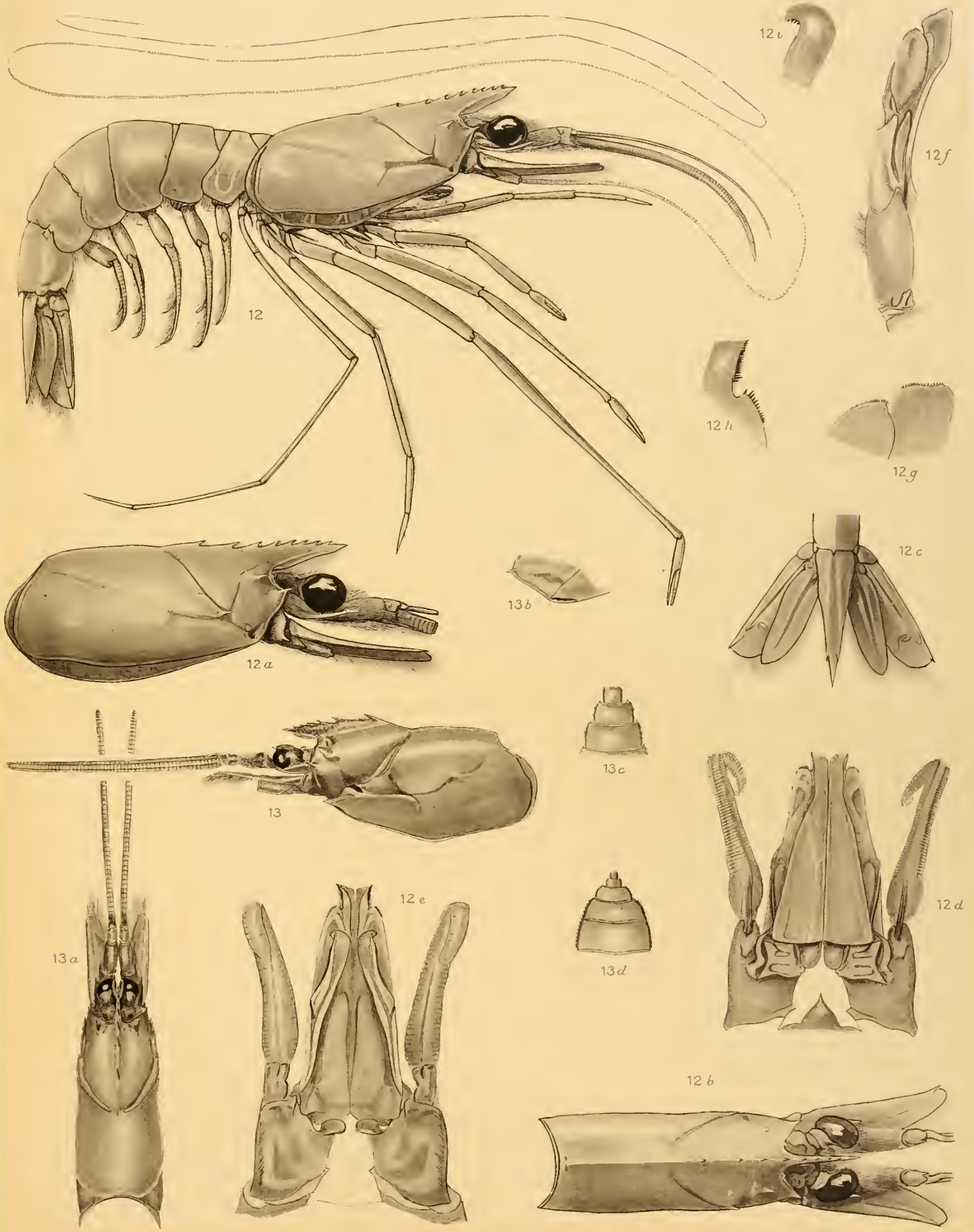


PLATE VI.

- Fig. 14a. *Penaeopsis monoceros* (Fabr.), petasma of a male, long 85 mm., from Stat. 47, looked at from behind, $\times 4$; 14b distal part of this petasma, $\times 8$; 14c thelycum of the adult female, long 150 mm., from Stat. 2, $\times 3$.
- Fig. 15a. *Penaeopsis affinis* (H. M. Edw.), petasma of the male, long 63 mm., from Stat. 213, looked at from behind, $\times 4$; 15b distal part of this petasma, $\times 8$.
- Fig. 16a. *Penaeopsis elegans* (de Man), right leg of the fifth pair of the male, long 81 mm., $\times 2$; 16b ischium and proximal part of the merus of this leg, $\times 5$; 16c petasma of this male, looked at from behind, $\times 5$; 16d distal part of this petasma, $\times 10$; 16e distal part of the petasma of the other male, which is 75 mm. long, also looked at from behind, $\times 10$.
- Fig. 17. *Penaeopsis* sp. Thelycum of the female from Stat. 71, $\times 10$.
- Fig. 18. *Penaeopsis Sibogae* (de Man), adult male, long 65 mm., from Stat. 306, $\times 2$; 18a carapace with the eyes etc. of this male, looked at from above, $\times 2$; 18b and 18c carapace with the eye etc. of two females, long 70 mm. and 75 mm., from the same Station, $\times 2$; 18d carapace of the female, long 75 mm., viewed from above, with the eyes, antennulae and scaphocerites, $\times 2$; 18e petasma of an adult male from Stat. 306, viewed at from behind, $\times 8$; 18f distal extremity of this petasma, posterior side, $\times 17$; 18g distal half of this petasma, anterior side, $\times 17$; 18h thelycum of an adult female from the same Station, $\times 10$.

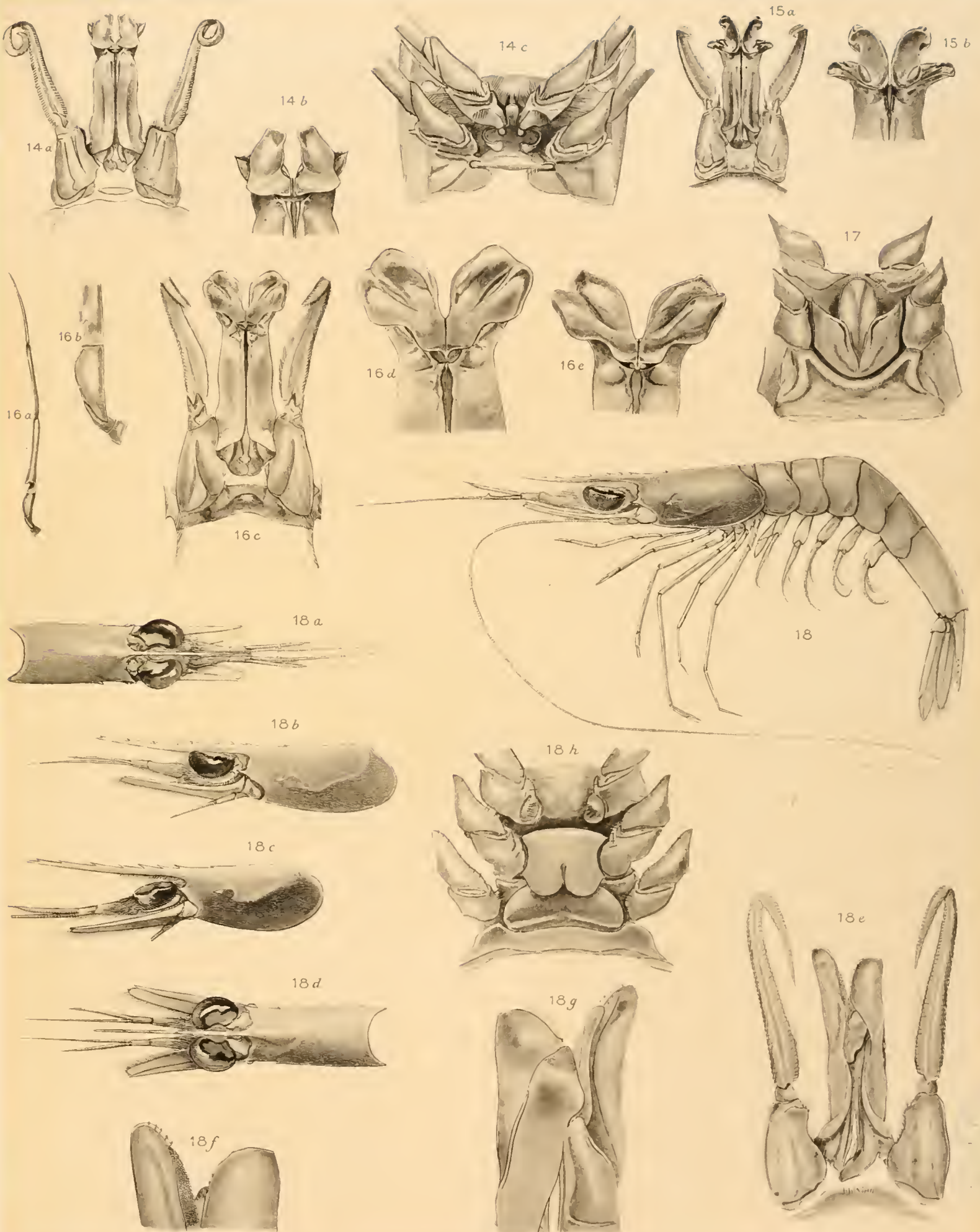


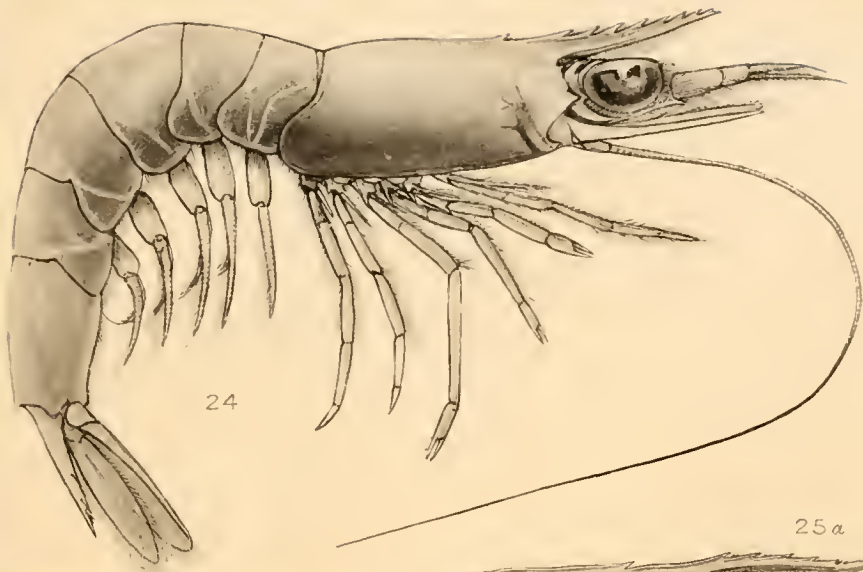
PLATE VII.

- Fig. 19*a*. *Penaeopsis Richtersii* (Miers), anterior part of the body of the female from Stat. 240, in a lateral view, $\times 6$; 19*b* dorsal view of the same, $\times 6$; 19*c* rostrum, $\times 12$.
- Fig. 20*a*. *Penaeopsis stridulans* (W.-Mas.), thelycum of the female from Stat. 320, $\times 5$; 20*b* thelycum of the female from Stat. 296, $\times 5$.
- Fig. 21. *Penaeopsis distinctus* (de Man), thelycum of one of the two females from Stat. 184, $\times 8$.
- Fig. 22*a*. *Penaeopsis* sp. (Siboga-Penaeidae, p. 70), petasma of the larger male, long 45 mm., from Stat. 273, viewed from behind, $\times 8$; 22*b* base of the petasma of the other male, long 40 mm., from the same Station, also looked at from behind, $\times 10$; 22*c* thelycum of a female, long 60 mm., from Stat. 240, $\times 8$; 22*d* the two, divergent, median teeth between the legs of the fourth pair, $\times 25$.
- Fig. 23*a*. *Penaeopsis quinquedentatus* (de Man), carapace of the male, long 45 mm., from Stat. 109, $\times 6$; 23*b* sixth abdominal somite of this male, $\times 3$; 23*c* petasma of the same male, viewed from behind, $\times 10$; 23*d* thelycum of a female, long 40 mm., from Stat. 240, $\times 10$.

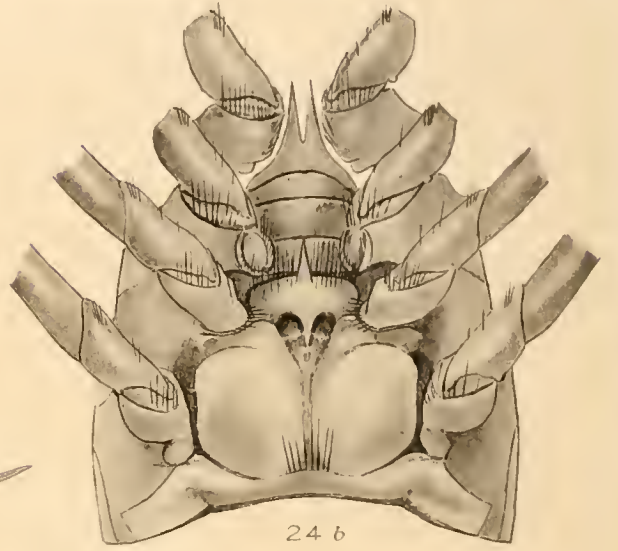


PLATE VIII.

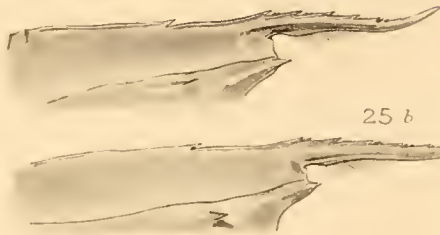
- Fig. 24. *Penaeopsis Borradailei* de Man, the female from Stat. 193, long 53 mm., $\times 3$; 24*a* carapace of this female, with the eyes, the antennulae and the scaphocerites, looked at from above, $\times 3$; 24*b* thelycum of the female from Stat. 193, $\times 10$.
- Fig. 25*a*. *Parapenaeus fissurus* (Sp. Bate), carapace and rostrum of an adult male, long 115 mm., from Stat. 302, $\times 1\frac{1}{2}$; 25*b* carapace and rostrum of an adult female, long 120 mm., from the same Station, $\times 1\frac{1}{2}$.
- Fig. 26*a*. *Parapenaeus rectacutus* (Sp. Bate), telson of the male, long 127 mm., from Stat. 12, $\times 2$; 26*b* petasma viewed from behind, $\times 3$; 26*c* left side of the petasma, looked at obliquely from before, $\times 3$.
- Fig. 27. *Atypopenaeus dearmatus* de Man, adult female, 58 mm. long, from Stat. 312, $\times 2$; 27*a* carapace of this specimen with the eyes, the antennulae and the scaphocerites, viewed from above, $\times 2$; 27*b* anterior part of the carapace of an adult female from Stat. 312, $\times 5$; 27*c* petasma of the male from the same Station, viewed from behind, $\times 10$; 27*d* distal part of this petasma, posterior view, $\times 25$; 27*e* thelycum of the female, long 72 mm., from Stat. 302, $\times 8$.
- Fig. 28. *Trachypenaeus anchoralis* (Sp. Bate), thelycum of the larger female, long 58 mm., from Stat. 51, $\times 10$.



24 a



24 b

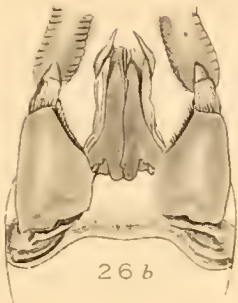


25 a

25 b



26 a



26 b



26 c



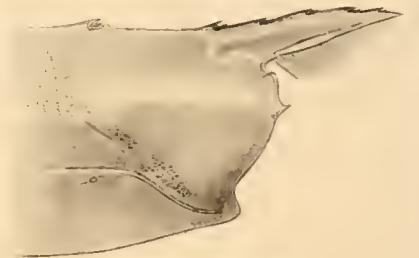
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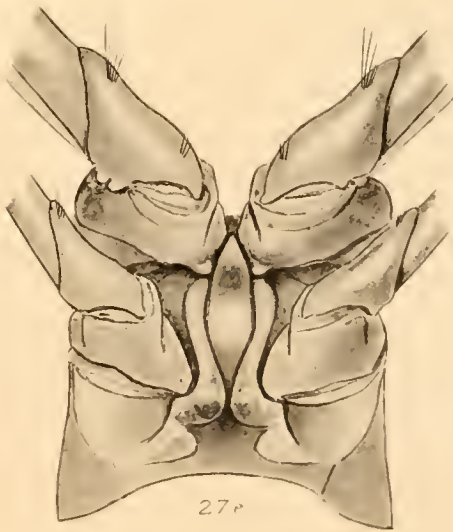
27 a



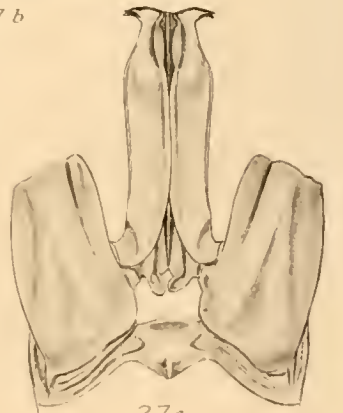
27 d



27 b



27 e



27 c



28

PLATE IX.

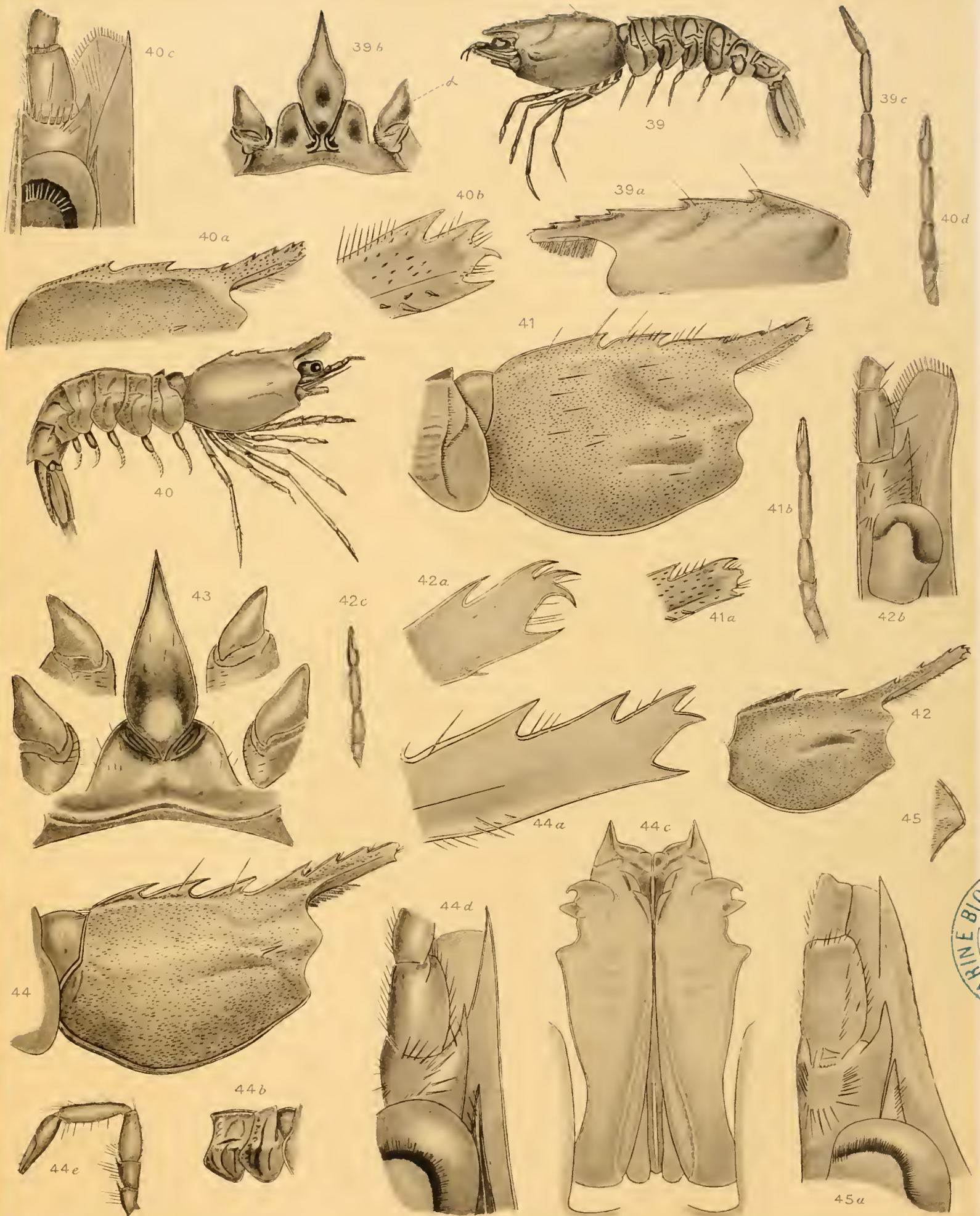
- Fig. 29*a*. *Trachypenaeus salaco* de Man, petasma of the male, long 42 mm. from Stat. 205, viewed from behind, $\times 10$; 29*b* distal part of this petasma, viewed from the left side, $\times 10$; the convex anterior surface is situated at the left hand of the figure; 29*c* the same petasma looked at from above, $\times 10$, *z* being the posterior side of the organ.
- Fig. 30. *Parapenaeopsis venusta* de Man, larger female from Stat. 273, $\times 3$; 30*a* anterior part of the carapace of the other female, $\times 6$; 30*b* telson of the larger female, $\times 6$; 30*c* thelycum of the larger female, $\times 12$.
- Fig. 31*a*. *Penaeus semisulcatus* de Haan, petasma of the male, long 175 mm., from Stat. 213, looked at from behind, $\times 4$; 31*b* flagella of the right antennule of the same specimen, viewed from above, $\times 2$.
- Fig. 32*a*, 32*b*. *Penaeus indicus* H. M. Edw., var. *longirostris* de Man, left leg of the first respectively second pair of the largest female, long 165 mm., from Stat. 213, looked at from the outer side, $\times 2$.
- Fig. 33*a*. *Penaeus merguensis* de Man, carapace of a young female, long 92 mm., from Stat. 47, $\times 2$, in which the foremost tooth of the upper margin appears distinctly situated before the third joint of the antennular peduncle; 33*b* and 33*c* left leg of the first and of the second pair of an adult female from Makassar, looked at from the outer side, $\times 2$.
- Fig. 34*a*. *Penaeus canaliculatus* Oliv., thelycum of the adult female, long 137 mm., from Stat. 133, $\times 6$; 34*b* thelycum of the young female, long 60 mm., from the same Station, $\times 6$.
- Fig. 35*a*. *Penaeus latisulcatus* Kish., thelycum of the almost adult female, long 135 mm., from Japan, $\times 5$; this female, which is preserved in the Museum at Göttingen, was erroneously referred by W. Hess to *Penaeus plebejus* Hess.
- Fig. 35*b*. Thelycum of a young female, long 110 mm., from Djeddah, $\times 10$. This female, which is preserved in the Leyden Museum, and which in 1880 was referred by me to *Penaeus canaliculatus* Oliv., does apparently also belong to *Penaeus latisulcatus* Kish.
- Fig. 36*a*. *Penaeus plebejus* Hess, thelycum of the type of this species from Sydney, nearly 15 cm. long, and preserved in the Museum at Göttingen, $\times 5$; 36*b* anterior prominence of this thelycum looked at from before, $\times 5$.
- Fig. 37. *Sicyonia benthophila* de Man, the female from Stat. 253, type, $\times 5$; the third legs are wanting and the very fine setae with which the carapace is covered, have not been figured; 37*a* anterior part of the carapace with the eye and the stylocerite, $\times 17$; 37*b* the cordiform plate of the thelycum, at either side of which one observes the coxae of the fourth pair of legs, $\times 17$; 37*c—e* the legs of the first, fourth and fifth pair, $\times 10$.
- Fig. 38. *Sicyonia fallax* de Man, female from Stat. 105, $\times 2$; 38*a* upper side of the carapace and the rostrum, $\times 5$; 38*b* sixth and fifth abdominal somite, with a part of the fourth, $\times 5$; 38*c* thelycum, $\times 10$.



PRINCE BIOL

PLATE X.

- Fig. 39. *Sicyonia rectirostris* de Man, female from Stat. 193, type, $\times 4$; 39*a* upper part of the carapace with the rostrum, $\times 10$; 39*b* thelycum, $\times 17$, \approx the legs of the fifth pair; 39*c* left leg of the first pair, $\times 10$.
- Fig. 40. *Sicyonia parvula* de Haan, young female from Stat. 164, long 17 mm., $\times 5$; 40*a* upper side of the carapace, with the rostrum, of another female of the same size, from the same Station, $\times 10$; 40*b* distal part of the rostrum of this female, $\times 50$; 40*c* right antennular peduncle with the surrounding organs, of this female, $\times 25$; 40*d* right leg of the first pair of this female, $\times 10$; this leg shows a stouter shape than that of *Sic. rectirostris*.
- Fig. 41. *Sicyonia laevis* Sp. Bate, carapace with the rostrum of the young female from Stat. 184, $\times 10$; 41*a* distal extremity of the rostrum, $\times 25$; 41*b* right leg of the first pair, $\times 10$.
- Fig. 42. *Sicyonia bispinosa* de Haan, carapace of the young male from Stat. 99, $\times 10$; 42*a* extremity of the rostrum, $\times 50$; 42*b* right antennular peduncle with the eye and the scaphocerite, $\times 25$; 42*c* left leg of the first pair, $\times 10$.
- Fig. 43. *Sicyonia ocellata* Stimpson. Thelycum of the female, from Stat. 301, $\times 25$.
- Fig. 44. *Sicyonia trispinosa* de Man, carapace of the male from Stat. 37, $\times 10$; 44*a* distal part of the rostrum of the female from Stat. 51, $\times 50$; 44*b* first and second abdominal somite of the male, $\times 5$; 44*c* petasma viewed from behind, $\times 50$; 44*d* right antennular peduncle etc. of the male, $\times 25$; 44*e* left leg of the first pair of the male, $\times 10$.
- Fig. 45. *Sicyonia carinata* Olivi = *sculpta* H. M. Edw., orbital angle of a female, long 62 mm., from the gulf of Naples, $\times 10$; 45*a* right antennular peduncle etc. of this female $\times 10$.



MARINE BIOLOGY
L. W.

RÉSULTATS DES EXPLORATIONS
ZOOLOGIQUES, BOTANIQUES, OCÉANOGRAPHIQUES ET GÉOLOGIQUES

ENTREPRISES AUX
INDES NÉERLANDAISES ORIENTALES en 1899—1900,
à bord du **SIBOGA**

SOUS LE COMMANDEMENT DE
G. F. TYDEMAN

PUBLIÉS PAR
MAX WEBER
Chef de l'expédition.

- *I. Introduction et description de l'expédition, Max Weber.
- *II. Le bateau et son équipement scientifique, G. F. Tydeman.
- *III. Résultats hydrographiques, G. F. Tydeman.
- IV. Foraminifera, F. W. Winter.
- *IVbis. Xenophyophora, F. E. Schulze.
- V. Radiolaria, M. Hartmann.
- *VI. Porifera, G. C. J. Vosmaer et I. Ijima¹⁾.
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Siboga-Expeditie

THE DECAPODA OF THE SIBOGA EXPEDITION

Plates of Part I

Family **PENAEIDAE**

BY

DR. J. G. DE MAN
Ierseke (Holland)

Supplement to

Monographie XXXIX^a of:

**UITKOMSTEN OP ZOOLOGISCH,
BOTANISCH, OCEANOGRAPHISCH EN GEOLOGISCH GEBIED**

verzameld in Nederlandsch Oost-Indië 1899—1900

aan boord H. M. Siboga onder commando van
Luitenant ter zee 1^e kl. G. F. TYDEMAN

UITGEGEVEN DOOR

Dr. MAX WEBER
Prof. in Amsterdam, Leider der Expeditie

(met medewerking van de Maatschappij ter bevordering van het Natuurkundig
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