

(3) the fifth tooth of the antero-lateral borders though smaller than the others is by no means a rudiment:

(4) the crest of the basal antenna-joint is armed with a row of 3 large spines like those of *T. prymna*.

(5) the hands and fingers are like those of the *var. savignyi*: i.e., the hand is distinctly costate, some of its inner surface is granular, and the fingers are as long as the hand and have no particular channelling of the inner surface.

In the Indian Museum there is a single specimen from the Andaman Islands: the length of the carapace is 22 millim., its breadth 35 millim.

This form is probably only a variety of *T. admeta*.

56. *Thalamita integra*, Dana.

Thalamita integra, Dana, Proc. Ac. Nat. Sci. Philad. VI. 1852, p. 85 and U. S. Expl. Exp. Crust. pt. I. p. 281, pl. xvii. figs. 8 a-d: Stimpson, Proc. Ac. Nat. Sci. Philad., 1858, p. 39; A. Milne Edwards, Archiv. du Mus. X. 1861, pp. 358, 367, and in Maillard's l'île Réunion, Annexe F. p. 2: Streets, Bull. U. S. Nat. Mus. VII. 1877, p. 107: Hilgendorf, MB. Ak. Berl., 1878, p. 789: Richters in Möbius Meeresf. Maurit. p. 158: Miers, Zool. H. M. S. Alert, pp. 513, 540, and Challenger Brachyura, p. 195: de Man, Journ. Linn. Soc., Zool., XXII. 1887-88, p. 74: Cano, Boll. Soc. Nat. Nap. III. 1889, p. 215: Henderson, Trans. Linn. Soc., Zool., (2) V. 1893, p. 373: Whitelegge, Mem. Austral. Mus. III. 1897, p. 138.

Closely allied to *T. admeta* from which it can be recognized by the following characters:—

(1) the carapace is not quite so broad and is distinctly convex: it is bare of tomentum and the transverse ridges are much less distinct, the one that crosses the cardiac region being obsolescent or absent:

(2) the crest of the basal antenna-joint has a sharp entire edge:

(3) the surface of the chelipeds is smooth and polished: the costae of the wrist are worn and in great part obliterated, and the usual 3 spines at the outer angle of this joint are indistinct blunt points: the hand is quite smooth; the inner border of its upper surface is crest-like and bears two teeth, there is a blunt tooth in the usual place in front of the apex of the wrist-joint, and in front of this are one or two blunt tubercles; there may also be a smooth ridge running along the distal two-thirds of the lower border of the hand:

(4) the 6th abdominal tergum of the male is much broader than long.

In the Indian Museum are two specimens—from Mergui and the Andamans (besides a "Challenger" duplicate from Honolulu).

57. *Thalamita investigatoris*, n. sp.

Carapace about two-thirds as long as broad, covered with a velvet-

like pile, crossed by transverse ridges disposed as in *T. sima*, *admeta*, etc.—i.e., there is an additional ridge extending across the cardiac and neighbouring parts of the branchial regions—but they are all faint.

Front cut into six lobes (not including the inner supra-orbital angles) very similar to those of *Charybdis* (= *Goniosoma*) *callianassa*, i.e., the middle two are narrow rounded and more prominent than the others, the next on either side are broad, and the third on either side are very narrow and are subacute.

Antero-lateral borders straight, cut into 5 acute teeth (including, as usual, the outer orbital angles) of which the first 3 are large, the 5th very small, and the 4th a rudiment.

Posterior border straight, but forming a curve with the postero-lateral borders, its length hardly more than two-fifths the greatest width of the carapace.

Orbits large, their major diameter more than two-fifths the width of the interorbital space: the inner angle of the lower border not denticiform.

The basal antenna-joint is not equal to the major diameter of the orbit in its extreme extent: its crest is low and denticulated.

Chelipeds markedly unequal in the adult male, their upper surface with close-set vesicular granules: two or three enlarged spines on the anterior border of the arm, none on the posterior border: inner angle of wrist spiniform, two or three minute points on the outer angle: hand not costate, with only two distinct spines,—one being in front of the apex of the wrist-joint, the other, which is the larger, being some way behind the finger joint: [the other spines usually present in *Thalamita*, if present, are not distinguishable from the general granulation]. Fingers shorter than the hand, especially in the larger cheliped.

First 3 pair of legs long and slender, banded with brown. The merus of the last pair is more than twice as long as broad and has the usual spine on the posterior border: there are also a few spinules on the posterior border of the propodite of this pair.

Sixth abdominal tergum of male a good deal broader than long, its sides parallel in their proximal half and then suddenly converging.

A single male from off Ceylon, 34 fathoms.

A small species, the carapace being 8 millim. long, and 11.5 millim. broad.

58. *Thalamita exetastica* n. sp.

Closely resembles *T. investigatoris*, from which it differs in the following particulars:—

(1) the median frontal teeth are on a lower plane than, and are almost as broad as, the submedian teeth:

(2) the teeth of the antero-lateral border gradually decrease in size from before backwards, the 4th and 5th being extremely small; moreover there is a tiny tooth out in the base of the first, somewhat after the manner of *Goniosoma orientale*, but very much smaller:

(3) the carapace is three-quarters as long as broad, and the length of the posterior border is more than half the greatest breadth of the carapace:

(4) all surfaces of the chelipeds, except that part of the upper surface of the arm that is concealed by the carapace, are covered with transverse squamiform markings; the hand is oostate and there are at least 4 distinct spines on its upper surface, two of which along the inner border are particularly large; the fingers are as long as the palm.

(5) the legs are not particularly long and slender; the merus of the last pair is about two-thirds as broad as long, and the posterior border of the propodite is smooth.

A mature female and a young male from off the Malabar coast, 26-31 fms.

A small species, the carapace being 9 millim. long and 12 millim. broad. It is more nearly related to *Oharybdis* (= *Goniosoma*) than is any other of these small *Thalamites* with reduced basal antenna-joint.

59. *Thalamita imparimanus*, n. sp.

Closely resembles *T. investigatoris*, from which it differs in the following particulars:—

(1) the transverse ridges of the carapace are prominent:

(2) the median frontal teeth are about as broad as, are on a lower plane than, and are to some extent overlapped by, the submedian teeth:

(3) the basal antenna-joint is quite *Goniosoma*-like, its greatest extent being less than half the major diameter of the orbit: its crest is almost indistinguishable:

(4) the chelipeds, though otherwise similar, have the inequality in the male even more marked and there are no points on the outer angle of the wrist that are distinct from the general granulation:

(5) the legs are even longer and slenderer, and the posterior border of the propodite of the last pair is smooth:

(6) the line of junction between the 6th and 7th abdominal terga of the male is concave instead of straight.

Three specimens from off the Gaujam coast, 35 fathoms.

The carapace of the largest is 7 millim. long and 10 millim. broad.

60. *Thalamita sexlobata*, Miers.

Thalamita sexlobata, Miers, Challenger Brachyura, p. 196, pl. xvi. fig. 2: Henderson, Trans. Linn. Soc., Zool., (2) V. 1893, p. 373.

Carapace nearly three-fourths as long as broad, flattish, closely pilose, the transverse ridges distinct and disposed as in *T. sima*, *admata* and *investigatoris*.

Front cut into 4 lobes (not including the supra-orbital angles) of which the middle pair are the narrowest and slightly the most prominent and on a slightly lower plane, while the outer pair are the broadest, being also broader than the arched supra-orbital angles from which they are separated by a distinct notch.

Antero-lateral borders cut into 5 teeth, of which the first is the largest and the fourth is a mere rudiment, while the fifth is sometimes smaller and sometimes larger than the third.

Posterior border of the usual shape, its length is nearly half the greatest breadth of the carapace.

Orbits large, with a somewhat dorsal inclination, their major diameter is about a third the width of the inter-orbital space: the inner angle of the lower border not dentiform.

Basal antenna-joint about equal to the major diameter of the orbit in extreme extent: its crest is low and either entire or finely granular.

Chelipeds pilose, covered with transverse squamiform markings. Two enlarged spines on the anterior border of the arm, none on the posterior border. Inner angle of wrist strongly spiniform, three spinules on outer angle. Hand costate, with 4 or 5 (usually 4) spines, of which the most conspicuous are the 2 along the inner border of the upper surface. Fingers of the smaller cheliped rather longer, of the larger cheliped rather shorter, than the hand.

First 3 pair of legs with transverse squamiform markings on the upper surface. In the last pair the merus is nearly twice as long as broad and has the usual spine on the posterior border, and the same border of the propodite is smooth.

Sixth abdominal tergum of male with arched sides, the tergum being broader than long and much broader at its base than at its far end, though the base is not quite the broadest part.

In the Indian Museum are 15 specimens, from the Arakan coast, Andamans, and Persian Gulf. The carapace of an egg-laden female is 9 millim. long and 12.5 millim. broad.

61. *Thalamita Hanseni*, n. sp.

Carapace two-thirds as long as broad, slightly convex, somewhat pilose, crossed by transverse ridges which have the same disposition as in *T. admata*, *sealobata* etc.

Front deeply cut into 4 lobes (not including the inner supra-orbital

angles) of which the middle two are narrow rounded and prominent beyond the outer two which are broad: the latter are well separated from the supra-orbital angles, which are arched and are about the same breadth as the middle frontal lobes.

Antero-lateral borders cut into 4 acute teeth (including the outer orbital angles) of which the first and last are the largest.

Posterior border of dorsum of carapace straight, but forming a curve with the postero-lateral borders, its length is half the greatest width of the carapace.

Orbits large, their major diameter about two-fifths the width of the inter-orbital space, the inner angle of their lower border is not dentiform, and they have no particular dorsal inclination.

Basal antenna-joint less than the major diameter of the orbit in extreme extent, its crest is smooth.

Chelipeds of usual form: three spines on the anterior border of the arm, none on the posterior border, the distal half of the upper surface with squamiform markings: inner angle of wrist strongly spiniform, three spinules on the outer angle: hand with 5 spines, in the usual position, the two behind the finger-joint the smallest, there are 2 or 3 obscure costæ and some indistinct squamiform markings on the outer surface: fingers shorter than the palm, especially in the larger cheliped.

Legs slender: the merus of the last pair is more than twice as long as broad and has the usual spine on the posterior border, the same border of the propodite of this pair has 2 or 3 spinules.

6th abdominal tergum of male much broader than long, with gradually convergent sides.

Three specimens were dredged by a Danish Expedition off Trincomalee in 2 fathoms, and have been very kindly lent to me for examination by Dr. H. J. Hansen. The carapace of the largest specimen is 6 millim. long and 9 millim. broad.

62. ? *Thalamita intermedia*, Miers.

Thalamita intermedia, Miers, Challenger Brachyura, p. 196, pl. xvi. fig. 1: Ortman, in Semou's *Forschungar.* (Jena. Denk. VIII.) Crust. p. 46.

"The carapace is broadly transverse, and is covered with a close, whitish pubescence, the transverse ridges which cross its dorsal surface are not more distinct than in *Thalamita admete* to which species and to *Thalamita savignyi*, *Thalamita intermedia* is nearly allied.

"Of the six lobes of the front the median are smallest, and separated by a narrow and rather deep incision, the submedian and lateral are subequal, the latter slightly overlapping the former; the lateral lobes project somewhat less than the others.

"The five spines of the antero-lateral margin are all well developed, but the three anterior are very slightly larger than the fourth and fifth.

"The basal antennal joint is very distinctly granulated; the maxillipeds present nothing remarkable.

"The chelipeds in the male are subequal, the merus or arm with three spines on its anterior margin, of which the two nearest to the distal extremity are largest; wrist with a strong spine on its inner margin and three small spinules on its outer surface, palm with three or four spines disposed alternately in two series, on its upper surface, and with three granulated ridges on its outer surface, between which are other granules, as in *Thalamita savignyi*; the fingers are somewhat shorter than the palm, and irregularly denticulated on their inner margins.

"The ambulatory legs slender and slightly compressed; the fifth legs shaped much as in *Thalamita admeta* and *Thalamita savignyi*, with a spine near the distal end of the inferior margin of the merus-joint, and with the inferior margin of the penultimate joint armed with a very distinct series of small spinules.

Colour (in spirit) pinkish-brown; pubescence whitish."

The above is Miers' description, which I have copied, as I am not perfectly sure of the identity of our specimen. It should be added that the basal antenna-joint is "*Goniosoma*"-like, its extreme extent being less than the major diameter of the orbit, and that the front is cut perfectly straight.

In the Indian Museum is a single egg-laden female from off Ceylon 34 fms. The carapace is 5.5 millim. long and 9 millim. in extreme breadth.

63. *Thalamita Wood-Masoni*, n. sp.

Carapace nearly three-fourths as long as broad, convex, crossed transversely by ridges, which have the same disposition as in *T. sima*, *T. admeta*, *T. investigatoris*, etc., and are all very distinct and straight.

Front cut into 4 rather obscurely marked lobes (not including the inner supra-orbital angles) of which the two middle ones are very broad and the two lateral ones very narrow: the inner supra-orbital angles, which are well arched, are broader than the lateral lobes of the front but much narrower than the median lobes.

Antero-lateral borders nearly straight, cut into 5 sharp teeth, of which the 4th is rudimentary and is visible only when the carapace is denuded of its close pile.

Posterior border of dorsum of carapace straight but forming a curve with the postero-lateral borders, its length is rather more than two-fifths the greatest breadth of the carapace.

Orbits without any particular dorsal inclination: their major diameter nearly a third the width of the inter-orbital space: the inner angle of the lower border not dentiform.

Basal antenna-joint about equal to the major diameter of the orbit in extreme extent, traversed by a low microscopically-granular crest.

Chelipeds rather pilose: the arm has 3 spines on the anterior border, none on the posterior border, the exposed part of its upper surface has some squamiform granules: wrist costate and granular, its inner angle spiniform, 3 sharp spinules on its outer angle: hand with numerous granular costæ, and with 5 sharp and very distinct spines in the usual position: fingers about as long as the hand in the smaller cheliped, shorter than the hand in the larger cheliped.

Merus of last pair of legs slender, more than twice as long as broad, with the usual spine on the posterior border: the posterior border of the propodite of the same pair has some spinules.

The 6th abdominal tergum of the male is a good deal broader than long, its sides are suddenly convergent near the distal end and its distal border is concave.

In the Indian Museum is a single specimen from the Andamans. Among the specimens kindly lent me for examination by Dr. H. J. Hansen of the Copenhagen Museum is a male from Paumban (Pulk-Str.).

A small species: carapace 9 millim. long, 12.5 millim. broad.

Thalamita Wood-Masoni var. *taprobanica*.

Differs from *T. Wood-Masoni*, type, much as *T. admeta* differs from var. *T. savignyi*:—

(1) the frontal lobes are deeper cut:

(2) the sculpture of the chelipeds is much less distinct: the squamiform markings on the arm wrist and hand, and the costæ of the wrist and hand are much worn; the spinules on the outer angle of the wrist are blunt and obsolescent; and the spines on the upper surface of the hand are small and blunt—the anterior two of the outer row being smaller and blunter than the others; the fingers are much shorter.

In the Indian Museum is a single specimen from Ceylon.

64. *Thalamita oculoa* n. sp.

Carapace rather more than two-thirds as long as broad, closely and densely pilose. When denuded, the transverse ridges are prominent and more numerous than in any other Indian species, because besides the ridges found in *T. danse* etc., and besides the additional ridge across the cardiac and neighbouring part of the branchial regions found in

T. sima, *admeta* etc., there is—behind all—another short ridge or linear tubercle on either branchial region.

Front proper straight, obscurely divided into 2 lobes (*not* including the inner supra-orbital angles) by a notch that needs looking for with a lens. The inner supra-orbital angles are arched and their breadth is not half that of either of the true frontal lobes.

Antero-lateral borders nearly straight, cut into 5 teeth, of which the first is the largest and the last two (which are co-equal) are very much smaller than any of the others.

Posterior border of dorsum of carapace straight, but forming a curve with the postero-lateral borders; its length is rather more than half the greatest breadth of the carapace.

Orbits with a distinctly dorsal inclination, large—their major diameter being little less than half the width of the inter-orbital space—the fissures in the upper border obscure, the inner angle of the lower border not dentiform.

Basal antenna-joint Goniosoma-like, its extreme extent being much less than the major diameter of the orbit, its crest low and smooth.

Chelipeds pilose, covered with transverse squamiform markings: 2 enlarged teeth on the anterior border of the arm, none on the posterior border: inner angle of wrist strongly spiniform, 2 or 3 inconspicuous denticles on the outer angle: hand costate, with 4 or 5 (usually 4) spines, of which only three (namely, the one in front of the apex of the wrist-joint and the two along the inner border of the upper surface) are visible to ordinary observation, the other 1 or 2 being lost in the general squamiform granulation.

Legs pilose, the first 3 pair with squamiform sculpture on the upper surface: in the last pair the merus is nearly twice as long as broad, and has the usual spine on its posterior border, and the propodite has a smooth posterior border.

Sternum with numerous transverse grooves—a sort of scutiform sculpture—most conspicuous in the male.

6th abdominal tergum of male a good deal broader than long, with gradually convergent sides.

7 specimens from off Ceylon, 28–34 fms., 1 from off Malabar coast 26–31 fms., 3 from the Andaman Sea.

A small species: the carapace of the largest egg-laden female is 9 millim. long and 13 millim. broad.

Alliance III. *Podophthalmoidis*.

PODOPHTHALMUS, Lamk.

Podophthalmus, Lamarck, Syst. Anim. sans. Vert. V. p. 152, and Hist. Nat.

Anim. sans. Vertebr. V. p. 255; Latreille, *Hist. Nat. Crust.* VI. p. 58; Leach, *Zool. Miscell.* II. p. 147; Desmarest, *Consid. Gen. Crust.* p. 99; Milne Edwards, *Hist. Nat. Crust.* I. 465; De Haan, *Faun. Japon. Crust.* p. 10; A. Milne Edwards, *Ann. Sci. Nat., Zool.*, (4) XIV, 1860, pp. 288, 228, and *Archiv. du Mus.* X. 1861, p. 419; Miers, *Challenger Brachyura*, p. 207.

Carapace extremely broad. Its antero-lateral borders are almost transverse in the greater part of their extent and then turn obliquely backwards to end in a large spine; they are deeply grooved along their whole extent to receive the enormously elongate eye-stalks. The groove is an extension of the true orbit, which also encroaches on the dorsal surface of the front, so that the true front comes to lie beneath the roots of the eye-stalks, cut off from the rest of the carapace except for a narrow isthmus left between the eye-stalks.

The true front, which thus lies below the eye-stalks but in its normal relation to the antennules and antennæ, is extremely narrow.

Close behind the spine that terminates the antero-lateral border is another, smaller, spine.

The eyes are borne on slender basal stalks of peculiar length: the orbits, as already explained, occupy the whole extent of the antero-lateral border, even extending on to the lateral epibranchial spine. The antennules are lodged in fossæ beneath the front, into which they are not completely retractile.

The antennæ are also in their normal position in the wide orbital hiatus: the basal joint is short, the flagellum long and slender.

The epistome though short, or even linear, and though encroached upon by the external maxillipeds, is well defined. Buccal cavern squarish broader than long: efferent branchial channels ill defined.

Chelipeds legs and abdomen as *Neptunus*.

As M. A. Milne Edwards has remarked *Podophthalmus* is merely an abnormal *Neptunus*.

65. *Podophthalmus naereus*, n. sp.

Carapace broadly hexagonal, approaching the oblong-quadrate, its length just over half its breadth (lateral spines included) its regions fairly well delimited, its surface finely granular.

Front proper (that is, the piece almost cut off from the rest of the carapace by the encroachment of the eye-stalks) horizontal, distinctly bilobed, its breadth about a sixth that of the carapace (spines included).

Antero-lateral borders distinctly arched, or angularly bent, the lower edge of the groove for the eye-stalks very prominent and forming almost a quadrant of a broad ellipse, the lateral epibranchial spine short—its length about half the width of the front.

Postero-lateral borders not at all strongly convergent, the spine at their anterior end sharply carinate. Posterior border straight, its length is half the greatest width of the carapace (spines included).

Eyes, with the eye-stalks, well over half the greatest breadth of the carapace (spines included).

The maxillipeds in repose almost close the mouth, a narrow space being left between them: the antero-external angle of the merus produced and lobe-like. Epistome almost linear.

Chelipeds in the male nearly three times the greatest length of the carapace: anterior border of arm with a row of spines the distal 2 of which are enlarged, posterior border with 2 enlarged spines in its distal half: inner angle of wrist strongly spiniform, a spine followed by a carina along the outer surface of wrist: hand very sharply carinated on the upper and outer surfaces, armed with 2 spines—one in front of the apex of the wrist-joint, the other behind the finger-joint: dactylus very little shorter than the palm.

First 3 pair of legs slender: a short spine on the posterior border of the merus of the 4th pair.

2nd and 3rd abdominal terga carinate in both sexes: 6th tergum in the male much broader than long, with converging sides.

Colours in spirit yellowish; the edges of the carapace, the crests and spines of the chelipeds, and the carinae of the abdomen have much the same nacreous sheen as in *Neptunus argentatus*.

In the Indian Museum are 3 specimens from the Andamans, and one from the Gulf of Martaban 53 fms. The carapace of the largest specimen is 12 millim. long and 23 millim. broad.

This species in several respects approaches *Euphyllax*. It differs from *Podophthalums vigil* in the following particulars:—

(1) the carapace is almost oblong-quadrate, its antero-lateral borders are curved or angularly bent, its surface is granular and its regions better defined:

(2) the buccal cavern is squarer and is more nearly closed by the external maxillipeds, the antero-external angle of the merus of which is produced to form a lobule: the epistome is linear:

(3) the front is horizontal and bilobed:

(4) the lateral epibranchial spine is much shorter:

(5) the hand is very sharply carinated and the fingers are nearly as long as the palm.

Family CANCRIDÆ.

Canceriens argués (*Pseudocarcinus* and *Pirimela* only) Milne Edwards Hist. Nat. Crust. I. 371: and *Corystiens*(part) Milne Edwards, op. cit. II. 139.