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FASCICULI MALAYENSES

ANTHROPOLOGICAL AND ZOOLOGICAL RESULTS OF AN EXPEDITION
TO PERAK AND THE SIAMESE MALAY STATES, 1901-1902

UNDERTAKEN BY

NELSON ANNANDALE AND HERBERT C. ROBINSON

UNDER THE AUSPICES OF THE UNIVERSITY OF EDINBURGH AND
THE UNIVERSITY OF LIVERPOOL

REPORT ON THE CRUSTACEA

BY

W. F. LANCHESTER, M.A.

ASSISTANT LECTURER AND DEMONSTRATOR IN ZOOLOGY AT UNIVERSITY COLLEGE, DUNDEE

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THE collection is small and, though supplying representatives of many of the great groups of Crustacea, presents in consequence few points of interest. One new and characteristic species of *Potamon* is described, and attention may be drawn to the curious association of the young of *Neptunus pelagicus* with a *Rhizostoma*.

1. *Doclea gracillipes*, Stimpson

Alcock, *Journ. As. Soc. Bengal*, vol. lxiv, pt. 2, p. 229 (1895).

1 ♂, 4 ♀'s. Patani Bay.

2. *Naxia hystrix*, Miers

Chall. Brachyura, p. 61 (1886).

Patani Bay.

The tips of the rostrum in this female example are broken off, but I have little doubt that my identification is correct. The spines generally are somewhat less sharp than in the typical form.

3. *Hyastenus planasius*, Ad. and White

Alcock, *J.A.S.B.*, vol. lxiv, pt. 2, p. 212 (1895).

1 small ♂. 1½ miles E.S.E. of Cape Patani. 10 fath.

'Hard clayey mud, with many dead shells.'

4. *Neptunus pelagicus*, Linn.

Alcock, *J.A.S.B.*, vol. lxviii, pt. 2, p. 34 (1899).

1 ♀. Patani Bay.

Much damaged.

1 ♂. Jambu River.

'From ventral surface of large Rhizostomous medusa.'

Several young. Estuary of Jambu River.

'From ventral surface of various medusae.'

I am not aware that the association of this species with medusae has been previously noted, and the discovery is of interest. Seeing to what a large size *N. pelagicus* grows the association can only be temporary, and it would be interesting to know if it is only accidental in these cases, or, as is more probable, a regular phenomenon bound up with some particular purpose.

5. *Neptunus sanguinolentus*, Herbst.

Alcock, *J.A.S.B.*, vol. lxxviii, pt. 2, p. 33 (1899).

1 ♀. Patani Bay.

6. *Charybdis (Goniosoma) callianassa*, Herbst.

Alcock, *J.A.S.B.*, vol. lxxviii, pt. 2, p. 57 (1899).

1 ♂. Patani Bay.

7. *Thalamita danae* var. *stimpsoni*, A.M.E.

Alcock, *J.A.S.B.*, vol. lxxviii, pt. 2, p. 79 (1899).

1 young ♂. 1½ mile E.S.E. of Cape Patani. 10 fath.

'Clayey mud with much shelly debris.'

8. *Myomenippe granulosa*, A. M. Edw.

de Man, *Mergui Crust.*, pl. ii, fig. 1, p. 40 (1888).

Patani Bay.

One ♂, with a small *Balanus concavus* on the carapace.

9. *Scylla serrata*, Forskal.

Haswell, *Cat. Austr. Crust.*, p. 79 (1882).

Patani Bay.

One large male.

10. *Potamon (Potamon) pealianum*, Wood-Mason

J.A.S.B., vol. xl, pt. 14, fig. 7, p. 204 (1871).

Bukit Besar. 2,500 feet.

Three adult males and three adult females.

Three young males and two young females.

'From small jungle stream.'

The spines and rugosities are generally less marked in these specimens than in the type. In the young examples the short hairs on the carapace are sufficiently dense to appear almost as a pubescence, and the joints of the legs are banded dark on a lighter background.

11. Potamon (Paratelphusa) Improvisum, Lanch. (Fig. 1)

Proc. Zool. Soc., pl. 33, fig. 2, p. 546 (1901)

Mabek, Hulu Jalor.

In the above paper I described this species from a single female specimen. In this collection there are one large male, three small males, and one small female; and on comparing the large male with the description of the type specimen I note the following differences:—The left hand of the male is much larger than the right, with the hand much swollen, two-thirds as high as long, and with the fingers gaping and hardly crossing at the tips. The first epibranchial tooth (*i.e.*, the one behind the extra-orbital tooth) is blunt and conical, not sharp and conical; this, however, may be only an individual difference. The external, *i.e.*, lateral portions of the post-frontal crest are just a little more wavy than they appear in the figure (*l.c.*, pl. 33, fig. 2). The branchial regions are markedly excavate. The abdomen may be thus described: The third segment extends proximally between the bases of the legs, and distally becomes only very slightly narrower; the fourth segment narrows rapidly, its border being somewhat concave; the fifth segment narrows slightly, while the sixth again slightly expands; and the seventh, at first becoming narrower, then runs with parallel sides to its rounded termination.

12. Potamon (Paratelphusa) sex-punctatum, sp. nov. (Fig. 2)

1 ♀. Sai Kau, Nawngchik.

From rice-field.

1 ♀. Cape Patani.

Freshwater pool.

In this species there are three epibranchial teeth behind the extra-orbital, the carapace is very convex and marked on the gastric region with six large punctae arranged roughly in a semicircle, and the meropodites of the legs are armed with a sub-distal spine.

Of the lateral teeth the extra-orbital is blunt, the other three sharp; all of them flattened conical, the second slightly smaller than the rest. The carapace is about one-sixth broader than it is long (43 : 36 mm. and 42 : 34 mm.), covered with distinct and distant punctae, six of which are very large and arranged as in Fig. 2A. The post-frontal crest is distinct and interrupted at a level just inside that of the internal angle of the eye; the median piece inside this level is only very slightly oblique in a backward direction as it passes outwards, while outside this level the direction of the crest becomes more oblique

up to the level of the tips of the eyes, from which point it curves roughly in the arc of a circle with forwardly directed convexity, to join almost, but not quite, the anterior border of the last epibranchial tooth. From the point where the crest takes on a forward direction a distinct groove or suture runs down the steep anterior surface of the crest as far as the base of the extra-orbital tooth. The front is salient, in the one specimen with its anterior edge straight or even very slightly convex, in the other excavate in the middle line so as to give rise to two shallow lateral lobes; laterally it curves away gradually into the supraorbital border which is thick, and especially so at a point just behind the base of the eye-stalks. None of these ridges—whether teeth, crest, front, or supra-orbital border—are denticulated; a faint rugosity may be detected here and there with the lens, but generally speaking they are quite smooth. The sub-orbital border, however, is distinctly denticulated.

The impressed line on the ischium of the third maxillipedes lies close to, and practically parallel with, the inner border; the outer surface of the meri is distinctly excavate. The chelipedes do not present any particularly characteristic features; the merus is armed with a conical spine near the distal end of its upper border, and the carpus has the usual spine on its inner and upper border, this spine being strong and sharp without any subsidiary spinules at its base.

13. *Sesarma taeniolatum*, White. (Fig. 3)

Alcock, *J.A.S.B.*, vol. lxix, pt. 2, p. 419 (1900).

Four large males. Patani Bay.

The musical ridges form exceedingly prominent short ridges tipped with tubercles.

14. *Sesarma maculata*, de Man.

Weber's, *Zool. Ergebn*, p. 347, pl. 21, fig. 19.

Lanchester, *P.Z.S.*, p. 550, 1901.

A small ♂. Bukit Besar. 2,500 feet.

· 'From sweep-net among low vegetation near jungle stream.'

A small ♀. Same mountain. 3,500 feet.

'Among bamboo beds at top of hill some distance from water.'

The second epibranchial tooth is absent in the ♀ on the right side, and only represented on the left by a small tubercular prominence. In the ♂ it is present on both sides as a distinct tubercle.

On the base of the movable finger there are only two to three indistinct teeth.

15. Ocypode ceratophthalma, Pallas

Alcock, *J.A.S.B.*, vol. lxx, pt. 2, p. 345, 1900.

5 ♂'s and 1 ♀. Patani.

'Live in burrows at high-tide mark.'

16. Uca annulipes, Latr.

Alcock, *J.A.S.B.*, vol. lxxix, pt. 2, p. 353 (1900).

13 ♂'s. Cape Patani.

17. Matuta victor, Fabr.

Alcock, *J.A.S.B.*, vol. lxxv, pt. 2, p. 160 (1896).

2 adult ♂'s, 1 young ♂, 3 adult ♀'s. Patani Bay.

Undoubtedly *M. victor*, but the front is not broader than, but exactly the width of, the orbit in every one.

18. Dorippe facchino, Herbst.

Alcock, *J.A.S.B.*, vol. lxxv, pt. 2, p. 278 (1896).

1 ♂ with anemone, and gastropod operculum interposed, 3 ♂'s. Patani Bay.

'All the specimens had, when taken, a gastropod operculum, with an anemone attached, on their backs. In one case the anemone and the operculum were removed from the living crab, which was placed in a jar of sea-water in which there were several small Rhizostomous medusae. It immediately seized hold of one of these by means of its two posterior legs and, despite the medusa's violent pulsations, held it firmly. An anemone on an operculum from another crab was then placed in the jar. The first crab immediately let go the medusa and took hold of the operculum which fitted closely to its back. All the anemones seen on crabs of the species were identical in form and coloration, and similar ones were not seen in any other position.'—N.A.

19. Diogenes planimanus, Henderson

Trans. Zool. Soc. (2), vol. v, p. 416, pl. 39, fig. 5 (1893).

One large and one small specimen. Cape Patani.

In the larger specimen the granules are smaller and flatter in the middle of the palm where the greatest depression occurs, in the smaller they are of equal size; in both they appear of a pearly nature under the lens.

20. Diogenes mixtus, Lanchester.

Proc. Zool. Soc., p. 367, pl. 39, fig. 2 (1902).

Patani Bay.

Four specimens, and one larger with two anemones on the shell.

The most constant, and at the same time the most distinctive, features of this species are the following :—

The length of the inner lobe of the antennal acicle.

The number of granules in the two rows on the carpus.

The extension of the row of granules on the lower finger up to the carpal joint.

The number of granules on the fingers varies here from 27-30, and on the inner row of the palm they reach 12-14. The external row on the palm is always terminated at the finger-joint by two spinous granules placed each in the same transverse line and a little out of the line of those behind ; of these I have only included one in my enumeration. On the lower outer surface of the palm the spiniform granules tend to disappear.

21. Clibanarius infraspinatus, Hilgendorf

de Man, *Mergui Crust.*, p. 237 (1888).

Two specimens. Patani Bay.

22. Coenobita compressus, M. Edw.

Ortmann, *Zool. Jahrb. Syst.* v, p. 318 (1892).

1 ♂. Patani Bay.

The granulation on the last two points of the third left leg is confined to the proximal quarter of the penultimate joint.

23. Palaemon sundaicus, Heller

Ortmann, *Zool. Jahrb. Syst.* v, p. 719 (1891).

Kuala Mabeq, Jalor.

Ten specimens. All small, except one which measures 57 mm. including the rostrum, and which is precisely similar to the smaller specimens except for a certain amount of pubescence on the carpus, the hand, and especially the fingers.

24. Alpheus brevirostris, Olivier

de Man, *Mergui Crust.*, p. 261 (1888).

One specimen. Patani Bay.

25. Squilla raphidea, Fabr.

Miers, *Ann. Mag. Nat. Hist.* (5) v, p. 27 (1880).

Patani Bay.

Two males, in one of which the left dactylus of the raptorial limbs carries nine spines instead of eight.

26. Squilla nepa, Latr.

Miers, t.c., p. 25.

One female. Patani Bay.

'Very shallow water ; sand.'

27. Allia emarginata, Claus. (Fig. 4)

Abh. d. kön. Ges. Wiss. Göttingen, Bd. vi, p. 42, fig. 33, 1871.

Off Cape Patani.

Caught while dredging on a sandy bottom at four fathoms, but probably really obtained from the surface.

A single specimen of 20 mm. The arrangement of teeth on the edges of the carapace is as follows :—Seven spines on and behind the antero-lateral angle, slightly decreasing in size backwards, then a gap, then three up to and on the postero-lateral angle, and one a little way along the under surface of the large lateral spine.

28. Balanus amphitrite var. **communis**, Darwin

Balanidae, p. 240 (1854).

Patani Bay.

A few specimens, of which the shells only are present. It is far from satisfactory to try and identify Balanids from single specimens or from such as lack the opercular valves and the soft parts, especially since we have such variable species existing as the present and *B. tintinnabulum*. The present specimens cannot belong to the latter species, however, since their radii are not porose, and I think it highly probable that I am right in referring them to the equally common *B. amphitrite*.

29. Balanus concavus, Brown

Balanidae, p. 225 (1854).

Patani Bay.

One specimen on an oyster shell, and another small one from the carapace of *Myomenippe granulosa*. I have satisfied myself of the identity of

this form by a careful examination of the valves and the soft parts, and in so far as there are differences (admittedly slight) between this and the last species, those differences are present here.

30. *Ligia exotica*, Roux.

Budde-Lund, *Isop. Terr.*, p. 266 (1885).

Four small specimens. Jambu River.

'From mud of mangrove swamp. Malay name, *Gutu prahu* (boat-louse).'

On the Malay name of this animal Mr. ANNANDALE writes me as follows:—
'This wood-louse is called "*Gutu prahu*" in the Patani dialect, "*Kutu prahu*" in more correct Malay. At Patani it is also called "*Hibu prahu*," *i.e.*, boat parasite (*lit.* boat mother); but I think that it shares these names with a large earwig which is commonly found on the seashore just above high-tide mark.'

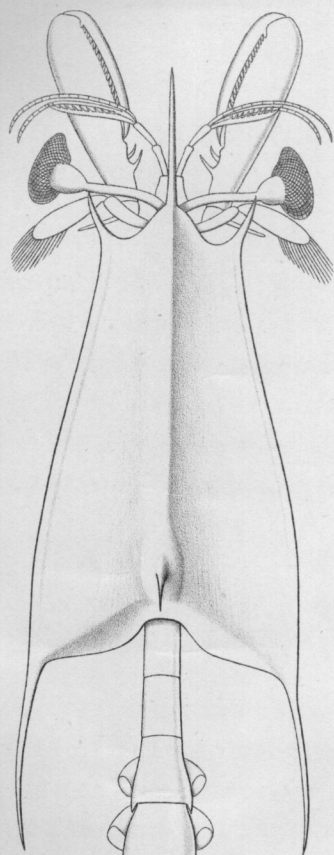
31. *Rocinela mundana*, Lanchester

Proc. Zool. Soc., p. 378, pl. xxxv, fig. 9 (1902).

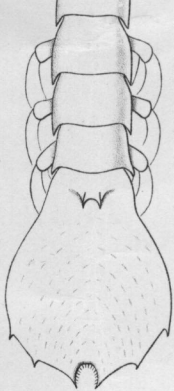
An ovigerous female. Ban Sai Kau.

'From the mouth of a Silurid fish, from pool in rice-fields.'

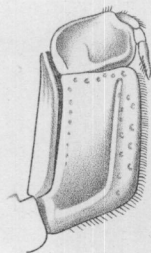
In my previous description I have said that the anterior legs are unarmed, but this statement is probably wrong as, in this specimen, I find that they are armed. The spines, however, are very small and few in number and only visible under the high power of the microscope. On the tarsi I find two, side by side, subdistally and one subproximally, and three subdistally on the femora; all very short and thick. The apex of the telson is also a little more rounded in this specimen. As my figure shows, the whole body is marked with rather irregular dull-brown pigment areas, giving it a somewhat spotted appearance. The type was also procured in freshwater, from the gills of a skate.



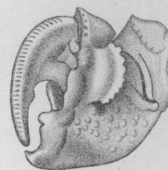
4a.



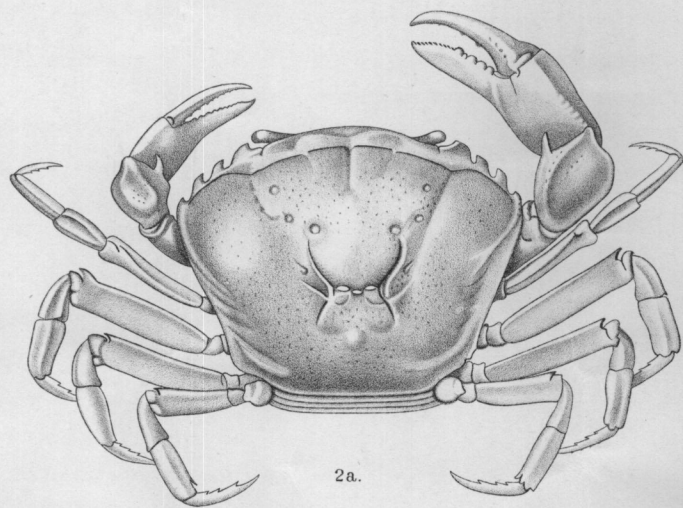
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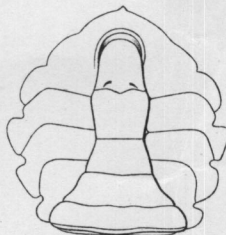
2b.



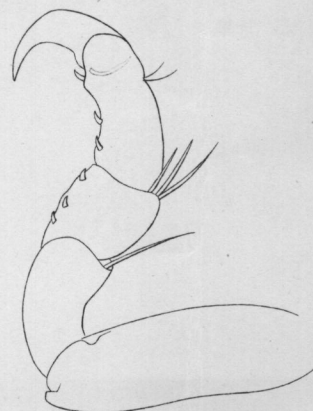
3.



2a.



1.



5.

- 1. *Potamon improvisum*.
- 2. *Potamon sex-punctatum*.
- 3. *Sesarma taeniolum*.
- 4. *Alima emarginata*.
- 5. *Rocinela mundana*.

E. Wilson, Cambridge.