

1930

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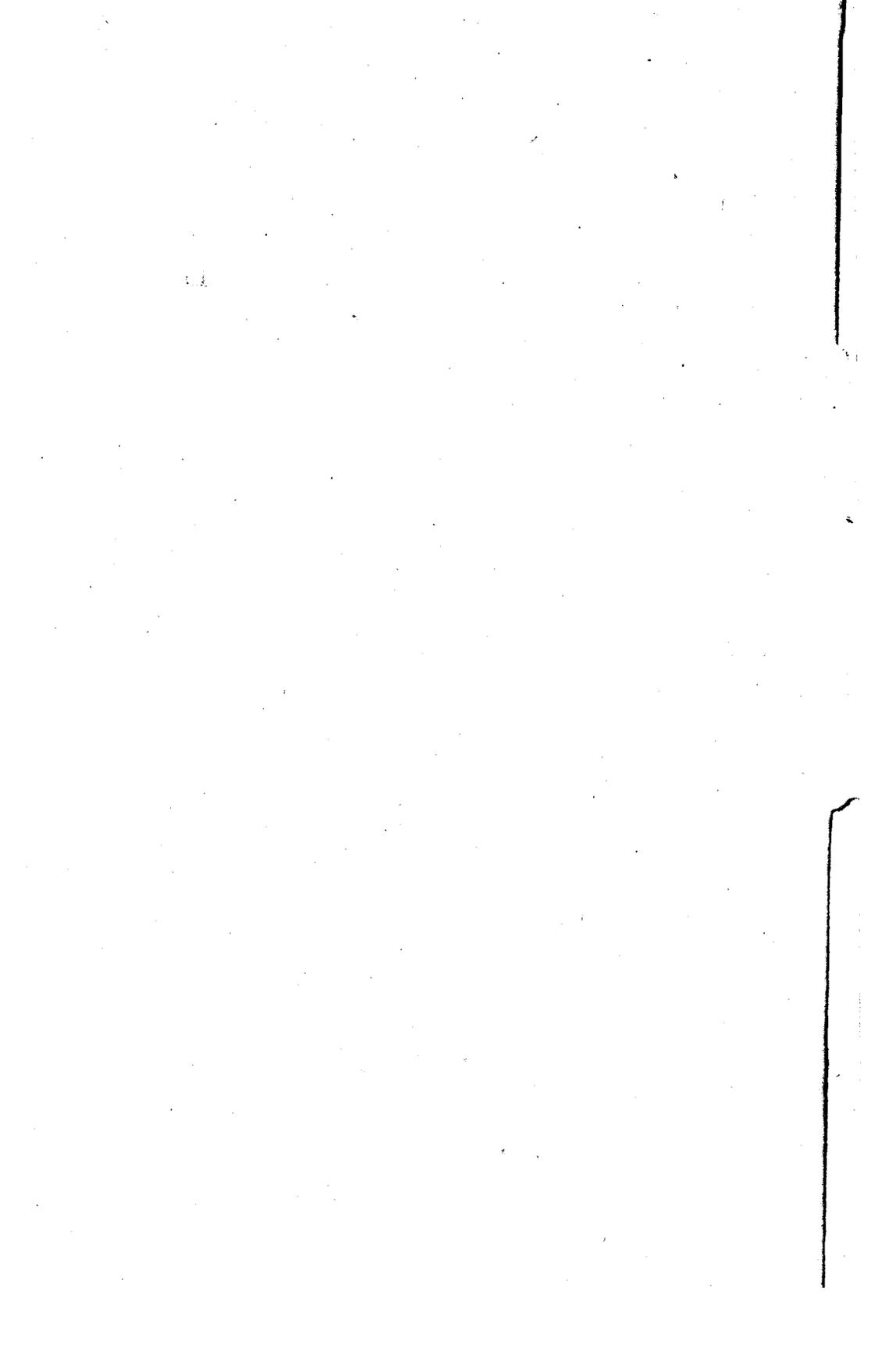
Seven new species of Brachyura from the coasts of China.

Ann & Mag. Nat. Hist. Ser. 10, vol. xi, pp. 519-525,  
Oct. 1930.

INVERTEBRATE

\ ZOOLOGY

Crustacea



*Seven new Species of Brachyura from the Coasts of China.*

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INTRODUCTION.

Two collections of Decapoda, chiefly Brachyura, from China (one from Hongkong, presented to the British Museum (N.H.) by R. W. D. Barney, Esq., the other from Pei-tai-ho and Amoy, presented by C. J. Shen, Esq., Fau Memorial Institute of Biology, Pekin), include a number of rare and seven new species. Among the rarer species are (1) a species of the genus *Ixoides*, probably *I. cornutus*,

MacGilchrist, but all three specimens are damaged; (2) *Lyreidus politus*, Parisi; (3) *Lissocarcinus arkati*, Kemp; (4) *Macrophthalmus teschi*, Kemp; (5) *Paracleistostoma depressum*, de Man, and, amongst the Anomura, three species of *Porcellana*—*P. ornata*, Stimpson, *P. pulchra*, Stimpson, and *P. spinulifrons*, Miers.

Special attention was paid to the anterior male abdominal appendages, which may prove to be of considerable taxonomic importance. In many instances species closely resembling each other show marked differences in these, although this may not be discovered until the appendages are examined under the microscope, and, leaving aside the genus *Pilumnus*, in no two species of the Xanthidæ examined were they identical.

In view of the fact that a colleague is at present working on Chinese crabs a preliminary description of the new species is given here, as the author's paper, with its many illustrations, may not appear for some considerable time.

The following species are described below :—

1. *Pugettia cristata*, sp. n.
2. ——— *sagamiensis*, nom. nov. for *P. brevirostris*, Parisi, nec Doflein.
3. *Neptunus (Hellenus) alcocki*, nom. nov. for *N. spinipes*, Alcock, nec Miers.
4. *Charybdis (Goniosoma) barneyi*, sp. n.
5. ——— (*Goniohellenus*) *sinensis*, sp. n.
6. *Pilumnus penicillatus*, sp. n.
7. ——— *sinensis*, sp. n.
8. *Litochœira amoyensis*, sp. n.
9. *Metaplax sheni*, sp. n.

#### OXYRHYNCHA.

##### *Pugettia cristata*, sp. n.

*Material*.—Two ovigerous ♀ ♀, 13 × 9.5 mm. and 12.7 × 9.6 mm. (holotype) respectively, from Amoy.

*Description*.—A small *Pugettia*, resembling *P. incisa* (de Haan)\* in general outline, but with a high thin crest on dorsal margin of merus of anterior walking-leg. Crest shorter on second, still more reduced or obsolete on third, and absent on last leg. A dorsal crest on wrist and two prominent crests on arm of cheliped.

*Remarks*.—It was thought that these specimens might belong to *P. minor*, Ortmanu (1893, Zool. Jahrb. Syst.

\* 1833-1850, "Fauna Japonica—Crustacea." in P. F. von Siebold, fol. 'Lugduni Batavorum,' pl. xxiv. fig. 3.

vii. p. 44), but, on comparing them with two cotypes from the Strasbourg Museum, this proved not to be the case. *P. minor* has a large, curved, spiniform, postorbital process followed by a small straight spine, instead of a single, large, wing-like postorbital process, and no crests on the meri of the anterior walking-legs.

*Pugettia sagamiensis.*

(Nom. nov. for *P. brevirostris*, Parisi, nec Doflein.)

Parisi, 1915, Pavia, Atti Soc. Ital. Sc. Nat. liv. pp. 287-288, text-fig. 2 pl. vii. fig. 1.

On comparing Parisi's specimen with the type of *P. brevirostris*, Doflein (1904, 'Valdivia' *Brachyura*, vol. vi. p. 85, pl. xxvii. figs. 13, 14), it proved not to be co-specific. The most pronounced difference between the two specimens lies in the walking-legs, the dactyli and propodi of which are much compressed in *P. sagamiensis*, slender and cylindrical in *P. brevirostris*. Moreover, *P. sagamiensis* has (1) a broad wing-like outgrowth instead of two spines posterior to the orbit; (2) postero-lateral border drawn into two lobes instead of armed with a single branchial spine; (3) two eminences (anterior one more prominent) instead of five on the gastric region; (4) vesicular outgrowths for the most part low, flattened, and scale-like, whereas in *P. brevirostris* they are everywhere rather long, and so mask the general contours of the carapace that at first sight it seems to approach to that of *P. sagamiensis*.

BRACHYRHYNCHA.

*Neptunus (Hellenus) alcocki*. \* *fulchri cristatus*

(Nom. nov. for *N. (H.) spinipes*, Alcock, nec Miers.)

Alcock, 1899, Journ. Asiat. Soc. Bengal. lxxviii. pt. ii. no. 1, pp. 32 & 39-40.

Differs from *N. spinipes*, Miers, in the following points:— (1) angle at the junction of posterior with postero-lateral border much more spiniform; (2) lobes of the antero-lateral border much less pronounced, the three anterior ones almost obsolete; (3) lateral epibranchial spine much longer; (4) crests on second and third abdominal segments less prominent, but "elegantly denticulate," that on third segment not bilobed; (5) anterior ♂ abdominal appendages differ appreciably at the extreme apex, which is directed upwards in *N. (H.) alcocki*, downwards in *N. (H.) spinipes*.

*Distribution.*—Madras, Andamans, G. of Martaban, Arakan, Muscat, and Hongkong.

\* *preoccupied*

*Charybdis (Goniosoma) baryneyi*, sp. n.

*Material*.—Two ♂♂ measuring 50·5 × 32 mm. (holotype) and 43 × 28·4 mm. respectively, from Hongkong.

*Description*.—A *Goniosoma* with no transverse ridges on the pubescent carapace behind the level of the last spine, and with not more than three large spines on the anterior border of the arm (Alcock, 1899, Journ. Asiat. Soc. Bengal, lxxviii. pt. ii. no. 1, group A. 1 of key on p. 49). Chelipeds just over twice length of carapace, armed with the usual spines; palm rather inflated, with six low costæ, one of which is on the inner, three on the outer surface. Sixth abdominal segment with sides parallel for about  $\frac{2}{3}$  of their length, then rapidly converging. Anterior abdominal appendage with distal portion curved outwards in sickle-fashion.

*Remarks*.—All the species included in Alcock's group A. 1 (1899, p. 49) and *Ch. (G.) japonica*, A. M. Edw., are represented in the British Museum collection. In *Ch. (G.) annulata* (Fabr.) a short portion near the apex of the anterior ♂ abdominal appendage is abruptly bent outwards at an angle of 90°. In all the other species these appendages are long and nearly straight, the distal third being directed slightly outwards. In *Ch. (G.) baryneyi* the bending occurs at a lower level than in *Ch. (G.) annulata*, but is less abrupt.

This species from Hongkong appears to be most nearly related to *Ch. (G.) crucifera* (Fabr.) and *Ch. (G.) rivers-andersoni*, Alcock, and may prove to be identical with the *Ch. (G.) "affine"* of de Man (1887, Journ. Linn. Soc. London, xxii. no. 137, p. 80, pl. v. fig. 2) from Mergui.

*Charybdis (Goniohellenus) sinensis*, sp. n.

*Material*.—A ♂, 22·7 × 13·8 mm. (holotype), and 2 ♀♀, 20·7 × 12·3, 26 × 15·5 mm. (ovigerous); from Hongkong.

According to Alcock's key (1899, Journ. Asiatic Soc. Bengal, lxxviii. pt. ii. no. 1, pp. 49–51, description on p. 66) would be identified as *Ch. (G.) hoplites*, Wood-Mason, but the male especially differs from that species in that (1) the lateral margins of the sixth abdominal segment are markedly convex instead of being straight and convergent, and (2) the anterior abdominal appendages are quite distinctive. In *Ch. (G.) sinensis* the anterior ♂ appendage has an unusually long, slender, distal portion resembling the neck, head, and beak of a swan; in *Ch. (G.) hoplites*, on the other

hand, the apical portion is much shorter, slightly sinuous, and tapers gradually to a blunt point. There are other minor differences between the two species, e. g., in *Ch. (G.) hoplites* (1) the antero-lateral teeth are distinctly square-cut and more conspicuously serrated on the outer border; (2) the scale-like granulations on the palm are more pronounced; and (3) the lobulations on the dorsal surface of carapace are more prominent than in *Ch. (G.) sinensis*.

*Pilumnus penicillatus*, sp. n.

*Material*.—A ♀ measuring 4.2 × 2.9 mm. (holotype), another ovigerous ♀, and a ♂ of approximately the same size as holotype, from Hongkong.

*Description*.—A small, unusually hairy *Pilumnus*, with numerous long, feathered, or brush-like setæ on chelipeds, walking-legs, eye-stalks, and front; a few scattered on dorsal surface of carapace. All three specimens characterized by the following curious pattern-arrangement of short clubbed setæ:—two medial rows on mesogastric region ending in a diamond posteriorly, on a level with the last antero-lateral lobe; a large somewhat irregular ocellus on each proto-gastric region. Similar short setæ occur elsewhere on the dorsal surface, but the arrangement of these is less definite and somewhat variable. Carapace broad; fronto-orbital border slightly exceeding length of carapace, two shallow emarginations in outer half of upper orbital border; external orbital angle prominent, dentate. Antero-lateral borders somewhat divergent, each quadridentate (including orbital angle), third and fourth teeth with outer margin serrate, fourth small. Postero-lateral rather longer than antero-lateral borders, slightly convergent. Chelipeds equal, approximately 1.5 times length of carapace; rows of minute granules beneath pilose covering of palm. Anterior ♂ abdominal appendage with a stout spine beneath the downturned apex.

*Remarks*.—This species differs from *P. quadridens*, de Man, *P. seminudus*, Miers, and *P. levimanus*, Dana, chiefly in having the chelipeds equal and limbs and carapace unusually hairy.

*Pilumnus sinensis*, sp. n.

*Material*.—An ovigerous ♀, 24 × 18.7 mm. (holotype), and a ♂, 30 × 23.4 mm., from Hongkong.

*Description of holotype.*—Three antero-lateral spines directed forward and outward from expanded bases. Two spines at outer angle of orbit; a small spine and two granules on subhepatic region; lower orbital border armed with spines on inner, serrated on outer half. A deep fissure below outer orbital spines and two indistinct notches on upper margin. Antennal flagellum standing in gap between inner orbital angle and outer spiniform lobe of front; inner frontal lobes broad, separated medially by a narrow fissure. Chelipeds unequal; six to seven longitudinal rows of spines on palm, the larger spines curved, the smaller conical; three rows of spines on proximal upper half of dactylus; numerous curved spines on outer surface of carpus; a spine near the distal end of upper margin of merus. No spines on meri of walking-legs. Colour greyish white; anterior half of carapace and chelipeds with long, stiff, yellowish-brown bristles, those on walking-legs more slender.

*Male.*—Abdomen long and slender, seventh segment nearly as long as the sum of sixth and fifth segments; anterior pair of appendages long and slender, perfectly straight in anterior half, apex reaching forward to anterior end of sternal groove.

*Remarks.*—This species is most nearly related to *P. orbitospinis*, Rathbun (1911, Trans. Linn. Soc. London, xiv. 2, p. 229, pl. xvi, figs. 14 & 15), and to *P. spinohirsutus*, Lockington (Rathbun, 1904, Harriman Alaska Exped. x. p. 185, pl. vii, fig. 2). It differs from the former in having longer more curved spines on the chelipeds and no spines on the meri of the walking-legs (*cf.* Parisi, 1916, Atti Soc. Ital. Sc. Nat. lv. p. 185); from the latter in many respects, *e. g.*, (1) in the absence of spines on median frontal lobes and upper orbital border; (2) in the absence of spines on the walking-legs; (3) in having all spines white and slightly calcareous, instead of brown and presumably horny; and (4) in having the apex of anterior male abdominal appendages straight, not bent outwards and downwards.

*Litocheira amoyensis*, sp. n.

*Material.*—A ♂ measuring 6.4 × 4.6 mm. from Amoy.

*Description.*—Carapace quadrilateral; areolation faint; fronto-orbital width slightly less than length of carapace; antero-lateral shorter than postero-lateral border. Outer orbital angle rounded and confluent with the long anterior lobe of antero-lateral border; second lobe long and low,

separated from first by a very shallow emargination ; third lobe dentate, conspicuous ; fourth a minute tooth. Eye-stalk broadened at base, freely movable in orbit. Chelipeds equal ; palm and base of each finger covered with a short brownish-yellow felt (thicker than that on dorsal surface of carapace), faintly granulose underneath ; rest of fingers white, two sulci on fixed digit ; a stout triangular spine on inner distal angle of wrist. Long silky hairs on palm, wrist, and walking-legs ; on carapace a single row on the front. First abdominal segment covers all the space between the last pair of walking-legs ; anterior pair of abdominal appendages cross over near the apices, which are bent inwards ; male genital duct passes forward from base of last leg along a wide shallow groove in the sternum.

*Remarks.*—This specimen does not appear to agree with any of the species mentioned by Tesch (1918, ‘Siboga’ Monograph, 39 c’, c<sup>1</sup>, pp. 163–165) ; although most nearly related to the *L. ciliata, angustifrons, cristata*-group, it differs from all three in that the third lobe of antero-lateral border is prominent, acute, not truncated.

*Metaplex sheni, sp. n.*

*Material.*—Two ♂♂, measuring 13·2 × 8·6 mm. (holotype) and 12·8 × 8·5 mm. respectively, from Amoy.

*Description.*—Infraorbital crest divided into 15–19 lobules ; the first of these, by far the largest, faintly crenulate on the inner half ; the second about half the length of the first ; third to fifth gradually decreasing in size, and thereafter the lobules are small round beads. Two large, followed by two small teeth on antero-lateral border. Chelipeds large, equal, nearly twice length of carapace ; most of merus projecting beyond carapace ; palm long, fingers deflexed.

*Remarks.*—According to Tesch (1918, ‘Siboga’ Monograph 39 c, pp. 115–117), who revised the genus, the infra-orbital crest in the ♂ is of “great systematic value.” The position of the species in Tesch’s key is as follows :—

- 2. Number of lobules of infraorbital ridge of ♂ 7–9 . . . . . 3.
- Number of lobules of infraorbital ridge of ♂
- 15–19 . . . . . *M. sheni, sp. n.*

It is most nearly allied to *M. dentipes* (Heller) and *M. distincta*, H. M.-Edw., both of which have 25–30 lobules, but arranged differently.



