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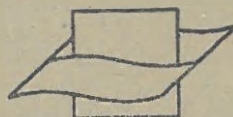
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SECOND ADDITION TO THE FAUNA OF BRACHYURAN
CRUSTACEA OF NORTH CHINA, WITH A
CHECK LIST OF THE SPECIES RECORDED
IN THIS PARTICULAR REGION

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SECOND ADDITION TO THE FAUNA OF BRACHYURAN
CRUSTACEA OF NORTH CHINA, WITH A
CHECK LIST OF THE SPECIES RECORDED
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BY

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(Text figures 1-11)

The crabs with which I deal in this paper were in the collection made in the Kiaochow Bay by the co-operation of the National Academy of Peiping and the Tsingtao Municipality. They form an important addition to our carcinological fauna.

Of the twelve species listed below, one (1)** is proved to be new to science, four (2, 3, 9, 10) are new to North China, five (5, 6, 8, 11, 12) are for the first time recorded in our waters and another two (4, 7), which had been imperfectly recorded in my former work (Shen, 1932), are re-examined by this opportunity.

* Contributions from the Zoological Laboratory, National Peking University, No. 16.

** The numbers enclosed in the brackets are used to indicate the ordinal numbers of the species as shown in the list on page 278.

I wish to acknowledge with my best thanks to Mr. Y. P. Liu for the opportunity of examining a part of his collection, to Prof. Si Tchang, under whose leadership the zoological survey in the Kiaochow Bay brings us many interesting results and to Prof. T. H. Lou, the Director of the Zoological Institute, National Academy of Peiping, by whose earnest directions the survey of marine zoology has been much promoted. I desire also to express my grateful thanks to Prof. Dr. Balss for his confirmation of the species of *Actæa*.

The species recorded in this paper are as follows:

Family Leucosiidæ

1. *Nursia sinica*, sp. nov.
2. *Arcania globata* Stimpson
3. *Arcania undecimspinosa* de Haan
4. *Philyra carinata chefooensis* Shen, nom. nov.

Family Maiidæ

5. *Achæus tuberculatus* Miers
6. *Pugettia minor* Ortmann

Family Xanthidæ

7. *Pilumnus spinulus* Shen
8. *Actæa rüppelli orientalis* Odhner
9. *Parapanope euagora* de Man

Family Goneplacidæ

10. *Typhlocarcinus nudus* Stimpson

Family Pinnotheridæ

11. *Pinnixa penultipedalis* Stimpson
12. *Xenophthalmus pinnotheroides* White

Family **LEUCOSIIDÆ**Subfamily **LEUCOSIINÆ**Genus **Nursia** Leach**Nursia sinica**, sp. nov.

Text figs. 1-2

Material: 2 ♂♂ (1 type), 3 ♀♀ (No. 1462); Station 180; at depth of 22 m., bottom sandy and shelly; 21/V/1935.

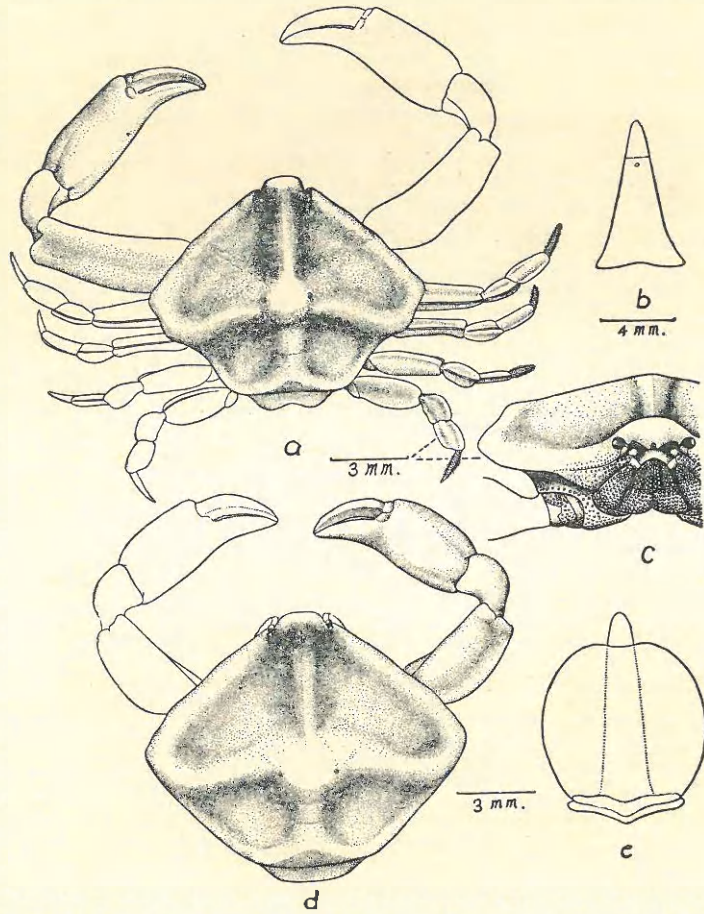
1 ♂, 1 ♀ (No. 3809); Station 379; at depth of 5 m., bottom sand-muddy; 19/IX/1936.

2 ♂♂, 2 ♀♀ (No. 4209); Station 407; at depth of 45 m., bottom with shells and gravels; 24/IX/1936.

Characters of male (type): Carapace broader than long with the posterior margin in the form of two semi-circular lobes, above which, runs a transverse ridge. Antero-lateral margin almost straight with some indistinguishable emarginations. Postero-lateral margin being concave behind the branchial ridge. Surface of carapace finely granulate, convex at centre, from which four ridges radiate as follows: one extends forwards, along the median line, to the front; one backwards, along the median line, to the posterior transverse ridge; one laterally across the branchial region to the lateral margin of carapace. No trace of oblique ridge, on either side, to the hepatic region. The space between the ridges are markedly concave (fig. 1, a).

Front broadly round in dorsal view, projected much beyond the eyes, anterior margin thickly granular. It has a median depression between the antennular fossæ, when viewed facially. Antennæ very small. Third maxilliped and sternum all coarsely granulated (fig. 1, c).

Chelipeds slightly more than one and one-half times the length of carapace, finely granulate. The outer borders of the arm, of the

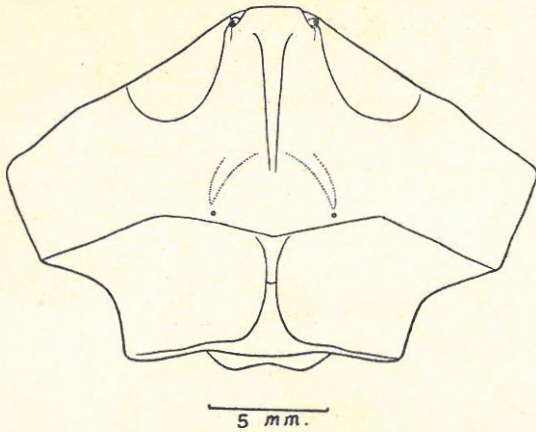


Text fig. 1. *Nursia sinica*, sp. nov. a, dorsal view of ♂; b, ♂ abdomen; c, frontal view of a; d, dorsal view of ♀; e, ♀ abdomen.

wrist and of the hand are sharply carinate. The dorsal surface of hand is more convex than the ventral. Fingers slightly shorter than

hand, dactylus is narrower than pollex, the tip of the dactylus is on the inner side of that of the pollex and no gap is left when they closed (fig. 1, a).

Ambulatory legs compressed. All merus and propodus are sharply carinate dorsally and ventrally. The carpus has two sharp dorsal crests. Dactylus is closely pubescent and coarsely granulate.



Text fig. 2. *Nursia sinica*, sp. nov. carapace of a largest ♂
(No. 3809).

Abdomen elongate, third to sixth segments fused, on this fused plate, there is a median longitudinal ridge and a subterminal tubercle (fig. 1, b).

Characters of female: Postero-lateral margin of carapace almost straight. Posterior margin not divided into two semicircular lobes as is in the male. Abdomen large, in the form of a round shield (fig. 1, d, e).

Measurements:	♂ (<i>largest</i>) (No. 3809)	♂ (<i>type</i>) (No. 1462)	♀ (No. 1462)
Length of carapace	16.4 mm.	12.8 mm.	10.8 mm.
Breadth of carapace	22	14.7	12.5

Distribution: China (Kiaochow Bay).

Remarks: It differs from *Nursia lar* (Fabr.)* by having no oblique ridge on the hepatic region, front bluntly round and chelipeds less than twice the length of carapace.

It differs from *Nursia plicata* (Herbst)* by having no oblique ridge on the hepatic region and no tubercles at middle of the carapace.

It differs from *Nursia persica* Alcock‡ and *Nursia abbreviata* Bell† by having a transverse ridge behind the branchial region, posterior margin bilobed, no ridge on the upper surface of hand.

Genus *Arcania* Leach

Arcania globata Stimpson

Text fig. 3

Arcania globata Stimpson, 1858, p. 160; 1907, p. 156, pl. 18, fig. 9.

Arcania globata Miers, 1879, p. 44.

Arcania globata Ortmann, 1892, p. 577.

Arcania globata de Man, 1907, p. 400, pl. 31, figs. 11-13.

Arcania globata Balss, 1922, p. 132.

Arcania globata Yokoya, 1933, p. 134.

* Ihle, 1918, Siboga Exped. 39, b2, p. 236.

+ Alcock, 1896, J. A. S. B. 65, p. 180.

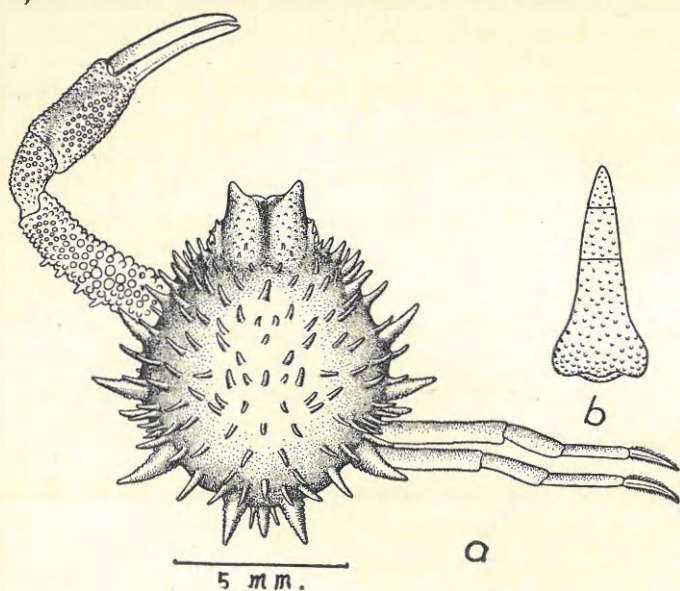
‡ Alcock, *l.c.*, pp. 193-4, pl. 7, fig. 7.

† Alcock, *l.c.*, pp. 184-5.

Material: 1 ♂ juv. (No. 2089); Station 221; at depth of 20 m., bottom sand-muddy and shelly; 25/IV/1936.

1 ♀ juv. (No. 3091); Station 323; at depth of 15 m., bottom with sand and gravels; 25/V/1936.

Characters: Carapace longer than broad, covered with almost equally long spines; besides the eleven granulated marginal spines (fig. 3, a).



Text fig. 3. *Arcania globata* Simpson, a, dorsal view of ♂; b, ♂ abdomen.

Front bidentate, anterior margin shallowly incised (almost straight in female). The dorsal surface is densely covered with granules and depressed at the middle (fig. 3, a).

Chelipeds coarsely granulated, less than twice the length of carapace. Arm bears some spines on the posterior border. Fingers

longer than hand. The ambulatory legs are slender, finely granulated (fig. 3, a).

Male abdomen is pointed, consisting of five segments. Sides of the sixth segment straight (fig. 3, b).

Measurements:

	♂
Length of carapace	9 mm.
Breadth of carapace	7
Length of cheliped	16.6
Length of hand	3.3
Length of movable finger	4

Distribution: Japan; Korea; China (Kiaochow Bay); Hong Kong.

Remarks: It differs from *Arcania erinaceus* Herbst* which has the front more incised, shorter spines on the carapace, fingers shorter than hand, sides of sixth segment of male abdomen convex.

***Arcania undecimspinosa* de Haan**

Arcania undecimspinosa Shen, 1931, pp. 107-8, pl. 10, fig. 1.

Material: 1 ♀ (No. 4240); Station 413; at depth of 20 m., bottom sand-muddy and shelly.

Measurements:

	♀
Length of carapace	25 mm.
Breadth of carapace	23
Length of cheliped	58
Length of hand	10
Length of movable finger	13

* Alcock, 1896, J. A. S. B., 65, p. 268.

Distribution: Japan; China (Kiaochow Bay, Fukien, Kwangtung); Hong Kong; Siam; Indian Ocean.

Genus *Philyra* Leach

Philyra carinata chefooensis Shen, nov. nom.

Philyra yangmataoensis forma *chefooensis* Shen, 1932, pp. 28-30. text figs., 16, d; 17, pl. 1, fig. 4.

Material: 1 ♀ juv. (No. 2542); Shih-chia-tao (薛家島); 9/V/1936.

Remarks: When I compared *Philyra yangmataoensis* Shen* with Bell's *Philyra carinata*** in the British Museum (Nat. Hist.), London, I found that they were practically identical in most respects. The former, therefore, should be regarded as a synonym to the latter, and the name of its forma *chefooensis* must be thus corrected by this opportunity.

Measurements: Length of carapace 5.5 mm., breadth 5.3 mm.

Distribution: China: Shantung Peninsula (north and south).

Family MAIIDÆ

Subfamily INACHINÆ

Genus *Achæus* Leach

Achæus tuberculatus Miers

Text fig. 4

Achæus tuberculatus Miers, 1879, pp. 25-6.

Achæus tuberculatus Ortmann, 1893, p. 34.

Achæus tuberculatus Rathbun, 1894, p. 47.

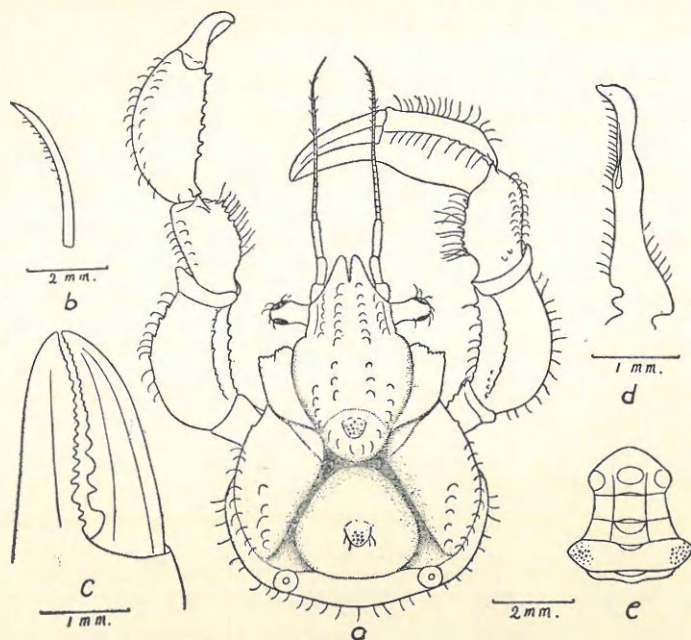
* Shen, 1932, Zool. Sinica, Ser. A, Vol. 9, fas. 1, pp. 27-8, text fig. 16, pl. 1, fig. 3.

** Bell, 1855, Trans. Linn. Soc. Vol. 21, p. 302, pl. 3, fig. 3.

Material: 1 ♂ (No. 623); 23/V/1935.

Characters: The general characters of this only specimen are agreeable with the description given by Dr. Rathbun (1894) with the exception of some minor points:

The rostral teeth are not granulate and pointing straight forwards, so that the interspace is deeply v-shaped (fig. 4, a). The last segment



Text fig. 4. *Achæus tuberculatus* Miers. a, dorsal view of ♂; b, dactylus of last leg; c, fingers; d, ♂ appendage; e, ♂ abdomen.

of the male abdomen has three prominences arranged in a triangle (fig. 4, e). Eye-peduncle is smooth at the extremity (fig. 4, a).

Measurements: Length of carapace 9.2 mm., breadth 7 mm.

Distribution: Japan; China.

Subfamily **AGANTHONYCHINÆ**Genus **Pugettia** Dana**Pugettia minor** Ortmann

Text fig. 5

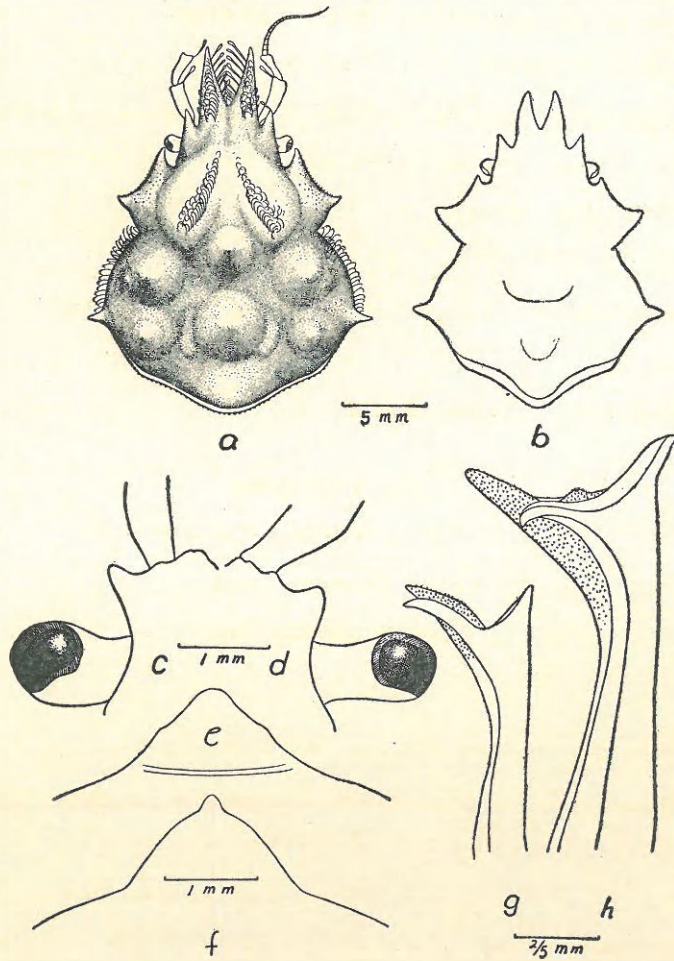
Pugettia minor Ortmann, 1893, p. 44.

Material: 2 ♂♂ (No. 2311); Station 257; at depth of 29 m., bottom with stones and gravels; 4/V/1936.

Characters: It is very much resembling *Pugettia quadridens* (de Haan)* but it differs from the latter by the following respects:

<i>Pugettia minor</i>	<i>Pugettia quadridens</i>
1. Carapace more convex (fig. 5, a).	less convex (fig. 5, b).
2. Regions very gibbous (fig. 5, a).	not so gibbous (fig. 5, b).
3. Hepatic lobe with the anterior spine larger than posterior (fig. 5, a).	the anterior spine smaller than posterior (fig. 5, b).
4. Branchial spine smaller, sharply pointed (fig. 5, a).	larger, bluntly pointed (fig. 5, a).
5. Outer angle of the basal segment of antenna, on the ventral surface, is blunt (fig. 5, d).	pointed (fig. 5, c).
6. Sternum pointed anteriorly, without a distinct transverse ridge (fig. 5, f).	not pointed anteriorly, with a distinct transverse ridge (fig. 5, e).

* Shen, 1932, *Zoologia Sinica*, Ser. A, Vol. 9, fas. 1, pp. 49-55, text figs. 26-30, pl. 2, fig. 2.



Text fig. 5. *a, d, f, g*—*Pugettia minor* Ortmann, *a*, dorsal view of ♂; *d*, ventral view of basal segment of antenna; *f*, sternum; *g*, ♂ appendage.
b, c, e, h—*Pugettia quadridens* (de Haan), *b*, dorsal view of ♂; *c*, ventral view of basal segment of antenna; *e*, sternum; *h*, ♂ appendage.

7. Margins of arm and inner margin of wrist all blunt.
of wrist all sharp.
8. Male appendage with the median tuberculated process much shorter and straight in the natural position (fig. 5, g).
much longer and curved ventrally in the natural position (fig. 5, h).

Measurements: Length of carapace (σ) 22 mm., breadth 16 mm.

Distribution: Japan; China.

Family **XANTHIDÆ**

Subfamily **MENIPPINÆ** Ortmann

Genus **Pilumnus** Leach

Pilumnus spinulus Shen

Text fig. 6

Pilumnus spinulus Shen, 1932, pp. 107-9, text fig. 62.

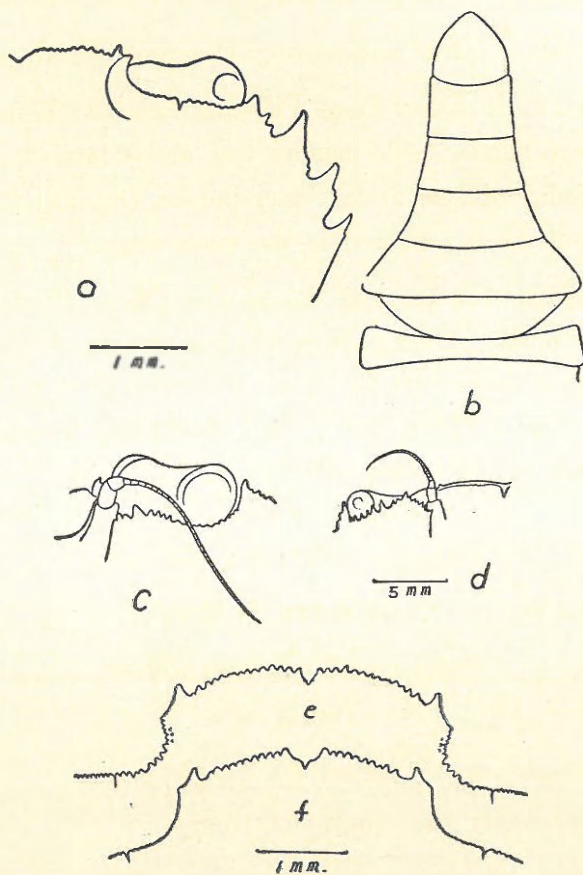
Material: 3 $\sigma\sigma$ (No. 3557); Station 360; at depth of 41 m., bottom with sand and shells; 15/IV/1936.

6 $\sigma\sigma$, 9 ♀♀ (2 ovig.), (No. 4276); Station 86; at depth of 25 m., bottom sand-muddy and shelly; 28/IX/1936.

Characters: Carapace covered with reddish bristles besides the yellowish pubescence. The bristles are longer in the anterior portion than those on the posterior.

Front bilobed, median portion is more produced than laterals. Dorsal orbital margin finely granulate (fig. 6, a, e, f). Outer orbital

spine is smaller than the three spines of the antero-lateral margin which are acute, spiny and with subgranules (fig. 6, *a*).



Text fig. 6. *Pilumnus spinulus* Shen, *a*, antero-lateral portion of carapace; *b*, ♂ abdomen; *c*, ventral orbital margin; *d*, ventral orbital margin of *Pilumnus hirsatus* Stimpson from Macclesfield Bank; *e*, *f*, variations of the frontal margin (*e*, from type).

Merus of ambulatory legs with some fine denticles on the anterior margin. Carpus with a denticle at the distal angle.

Measurements: Length of carapace 5.3 mm., breadth 7 mm.

Distribution: China: Shantung Peninsula (north and south).

Remarks: It differs from *Pilumnus hirsutus* Stimpson* which has the antero-lateral teeth pointed less antero-laterally, suborbital margin becoming oblique at the inner portion (fig. 6, *d*), carpus of larger cheliped much produced at the inner angle.

The original description of this species (Shen, 1932) was based upon a single broken specimen from which it was impossible to give all the characters in detail. In Mr. Liu's collection, there is, however, a considerable number of this form. So I should take the opportunity to add here some supplementary notes.

Subfamily **XANTHINÆ** Ortmann

Genus **Actæa** de Haan

Actæa rüppelli orientalis Odhner

Text fig. 7

Actæa rüppelli orientalis Odhner, 1925, p. 46.

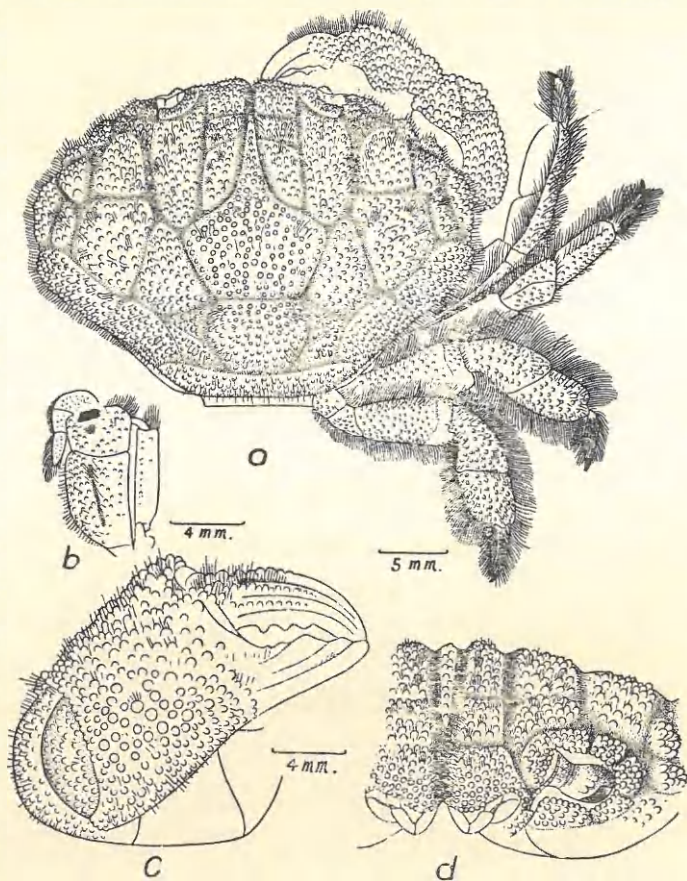
Material: 1 ♀ (No. 960); V/1935.

Characters: Carapace distinctly areolated by smooth grooves, each region is coarsely granulated and set with long tufts of hairs. Protogastric region is divided by a longitudinal groove, the inner

* Stimpson, 1858, Proc. Ac. Nat. Sci., Philad. p. 37.

** Miers, 1879, Proc. Zool. Soc. p. 31.

portion is subdivided by two transverse grooves. Mesogastric region large, pentagonal. Branchial region is divided into several small



Text fig. 7. *Actæa rüppelli orientalis* Odhner, a dorsal view of ♀; b, third maxilliped; c, chela; d, frontal view of carapace.

areas. Cardiac region roundish, without any trace of a longitudinal groove (fig. 7, a).

Front deflexed, bilobed. Dorsal orbital margin with two incisions (fig. 7, a, b).

Antero-lateral margin of carapace divided into four elevations, each is composed of a group of granules. The first two are much smaller than the posterior ones (fig. 7, a); the sulci between the first and second, second and third, extend to the ventral surface of carapace.

Chelipeds and legs all granulate externally and the latter are pilose on the margins. The finger tips are black and granulated proximally (fig. 7, a, c).

Measurements: Length of carapace 23 mm., breadth 31 mm.

Distribution: China; Sulu Island (type locality).

Genus **Parapanope** de Man

Parapanope euagora de Man

Text fig. 8

Parapanope euagora de Man, 1895, pp. 514-8, pl. 12, fig. 4.

Parapanope euagora Lanchester, 1900, p. 737.

Hoploxanthus hextii Alcock, 1898, p. 126.

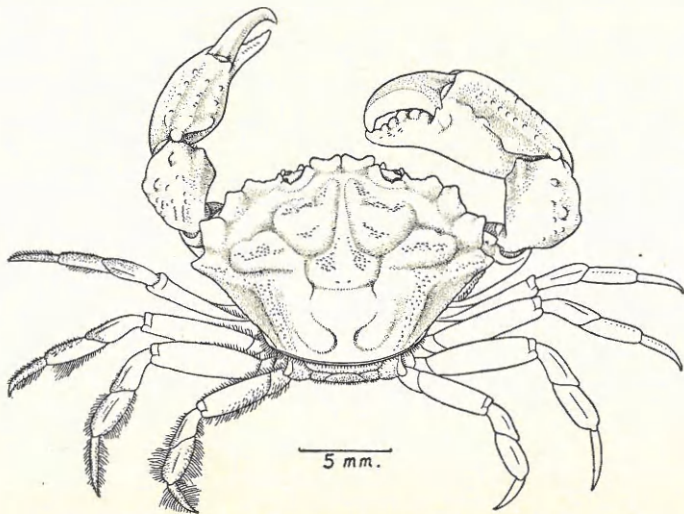
Material: 3 ♀♀ (No. 3557); Station 360; at depth of 41 m., bottom sandy and shelly; 15/IX/1936.

1 ♂ (No. 4522); on the northern muddy shore of Mo-tao (毛島) 4/X/1936.

Characters: Carapace hexagonal, broader than long. Regions well defined, tumid, their convexities granular (fig. 8). Sternum, abdomen and ambulatory legs all pubescent.

Front produced beyond the orbits and separated from them by a notch. It is square cut and divided by a median incision into two lobes, each has its anterior margin concave. Dorsal orbital margin with two incisions, the outer one is very near the outer orbital angle, which is very low (fig. 8).

Antero-lateral margin of carapace thin and sharp, cut into four triangular teeth (those of the southern forms are laciniate), the first one



Text fig. 8. *Parapanope euagora* de Man, dorsal view of ♂.

is very low, second and third subequal in size, fourth smaller than third, but sometimes spiny (fig. 8). The margins of all the teeth, of the front and of the orbits are finely granular. The postero-lateral margin of carapace is obliquely straight and granulate, and dorsal to it, the surface is marked by a longitudinal line of granules, the narrow, longitudinal surface between those two lines forms a lateral facet, sharply marked off from the general surface of the carapace (fig. 8).

Chelipeds unequal, arm with some granules on the dorsal margin, wrist uneven on the dorsal surface and with a tooth at the inner angle, hand with two or three longitudinal granulated lines on the dorsal surface, the granules on the innermost line are larger and usually in the form of blunt denticles, outer surface (of both hands) smooth. Finger tips dark brown, tip of movable finger is on the inner side of the outer when they closed (fig. 8).

Ambulatory legs long, slender and pubescent, propodus and dactylus bear long hairs on their anterior and posterior margins, the latter is compressed and ended with a horny tip (fig. 8).

Male abdomen narrowly elongated, male appendage hooked ventrally at the terminal portion.

Measurements: Length of carapace 11 mm.; breadth 16 mm.

Distribution: China (Kiaochow Bay, Amoy); Java sea; Malacca; Indian Ocean.

Family **GONEPLACIDÆ**

Subfamily **RHIZOPINÆ**

Genus **Typhlocarcinus** Stimpson

Typhlocarcinus nudus Stimpson

Text fig. 9

Typhlocarcinus nudus Stimpson, 1858, p. 96.

Typhlocarcinus nudus Alcock, 1900, p. 322.

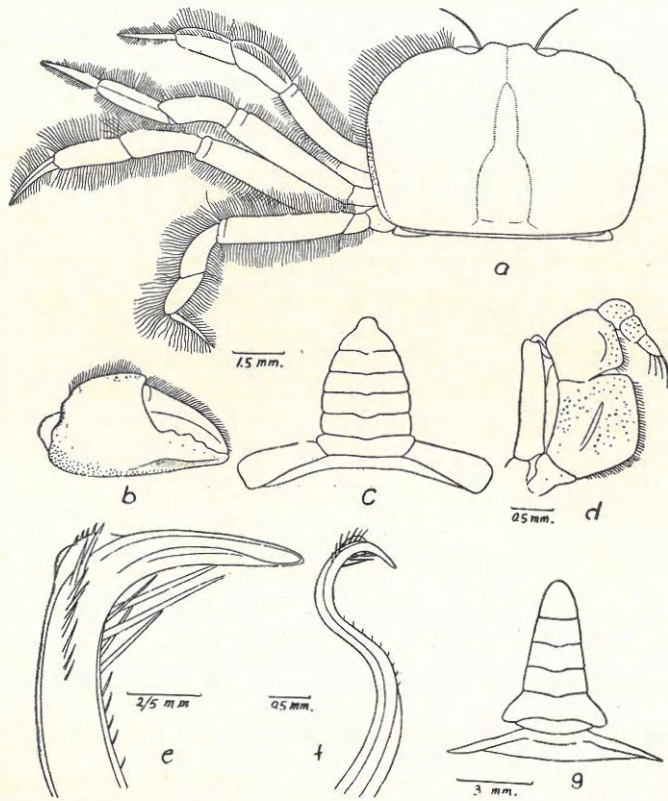
Typhlocarcinus nudus Rathbun, 1910, p. 343, text fig. 29; pl. I, fig. 6.

Typhlocarcinus nudus Tesch, 1918, p. 208, pl. 13, fig. 1.

Material: 1 ♀ (No. 1575); Station 211; at depth of 22 m., bottom sand-muddy; 1/XI/1935.

1 ♂ (No. 4006); Station 394; at depth of 4 m., bottom muddy;
22/IX/1936.

1 ♀ (No. 4411); Station 442; at depth of 20 m., bottom sand-
muddy and shelly; 1/X/1936.



Text fig. 9. *Typhlocarcinus nudus* Stimpson, a, dorsal view of ♀; b, chela; c, ♀ abdomen; d, third maxilliped; e, ♂ appendage much enlarged; f, ♂, appendage; g, ♂, abdomen.

Characters: Carapace convex antero-posteriorly, surface almost smooth. Fronto-orbital border about one-half the greatest breadth of carapace. Antero-lateral border of carapace with two shallow emarginations. Postero-lateral borders parallel to each other.

Buccal cavern diminishes in breadth from behind forwards. Merus of the third maxilliped is rounded off at the antero-outer angle.

Hand of cheliped almost smooth, but granular along the dorsal and ventral borders. Ambulatory legs hairy, especially dense on the anterior and posterior margins of the last leg. Dactylus of last leg curved upwards and somewhat backwards.

Abdomen narrowly triangular, first segment short, but not occupying the whole space of the sternum. Male appendage twisted as shown in the text fig. 9, e, f. Female abdomen elongate oval (fig. 9, g).

Measurements:

	♂	♀
Length of carapace	8.3 mm.	6 mm.
Breadth of carapace	11.0	8
Breadth of front	2.4	2
Breadth of fronto-orbit	4.5	3.8
Length of cheliped	17	10
Length of third ambulatory leg ...	18	13

Distribution: China (Kiaochow Bay); Hong Kong; Singapore; Siam; Indian Ocean.

Remarks: It is generally agree with the description given by Tesch (1918) excepting the slight narrowness in the proportion of carapace (1:1.3 instead of 1:1.6) and the slight shortness of the ambulatory legs.

When I compared the specimens with the figures, which I had drawn from a small male specimen (3.7:5 mm.) from Karachi in the

British Museum (Nat. Hist.), London, there are some differences between them. The Karachi form has some granules on the lateral portion of the carapace, the merus of the third maxilliped is more rounded off at the outer distal angle, and the last segment of abdomen is more rounded distally than that of our specimens. The differences in these forms are probably not specific but merely a matter of variation.

Although it is very closely resembling *T. villosus* Stimpson* but it differs from the latter in some respects as shown in the following table:

<i>Typhlocarcinus nudus</i>	<i>Typhlocarcinus villosus</i>
1. Carapace glabrous.	pubescent and granular.
2. Buccal cavern divergent backwards.	both sides subparallel.
3. Dactylus of last leg curved upwards and somewhat backwards.	straight, not curved.

Family **PINNOTHERIDÆ**

Subfamily **PINNOTHERELINÆ** Alcock

Genus **Pinnixa** White

Pinnixa penultipedalis Stimpson

Text fig. 10

Pinnixa penultipedalis Stimpson, 1858, p. 108.

Pinnixa penultipedalis Ortmann, 1894, p. 695, pl. 23, figs. 7-7i.

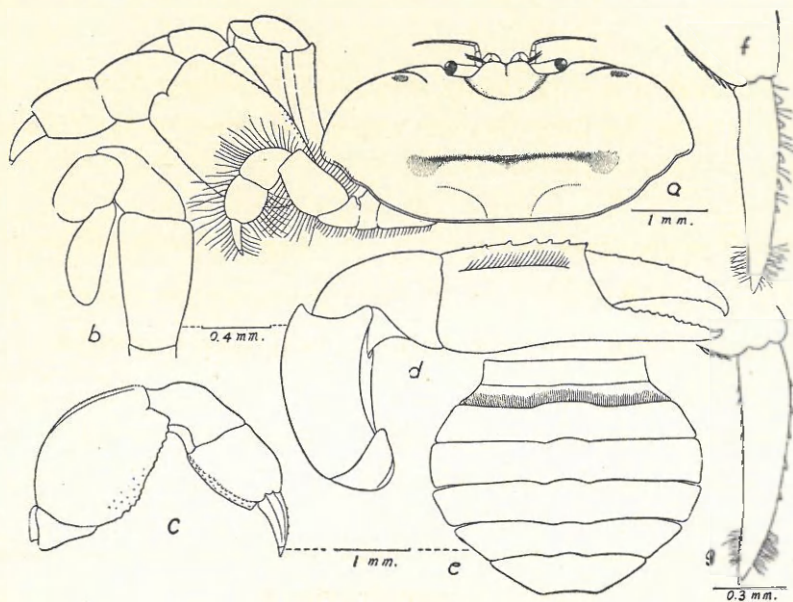
* Tesch, 1918, Siboga Exped., 39, c1, p. 209, pl. 13, fig. 2.

Pinnixa penultipedalis Stimpson, 1907, pp. 143-4.

Pinnixa penultipedalis Balss, 1922a, p. 140.

Pinnixa penultipedalis Sakai, 1934, pp. 41-2, fig. 2e.

Material: 1 ♀ (ovig.), (No. 4493); Tsangkou (滄口), on muddy shore, in the tube of a Polychæeta, *Potamilla* sp.; 3/X/1936.



Text fig. 10. *Pinnixa penultipedalis* Stimpson, a, dorsal view of ♀; b, third maxilliped; c, third ambulatory leg; d, cheliped; e, ♀ abdomen; f, dactylus of first leg; g, dactylus of second leg.

Characters: Carapace more than twice as broad as long, it is broadest at the points above the bases of the third ambulatory legs. Surface smooth, with a transverse gastro-cardiac groove, another shallow one is in front of the gastric region. Behind the outer orbital

angle or say at the beginning of the antero-lateral margin of carapace, there is an oblique groove curving downwards to the suborbital region. And a small depression is just situated behind the oblique groove on the dorsal surface (fig. 10, *a*). Antero-lateral margin strongly arched, the postero-lateral margins converging backwards (fig. 10, *a*).

Front narrow, truncate, with a shallow incision at middle and a median groove on dorsal surface (fig. 10, *a*).

Buccal cavity divergent backwards. Merus-ischium joint of the third maxilliped broadened distally. Carpus long. Propodus broadened basally. Dactylus long spatulated, articulated to the propodus on the inner side (fig. 10, *b*). All segments are furnished with long feathered hairs on the borders.

Chelipeds small and hairy on borders. Hand longer than movable fingers, it bears 6-8 tubercles on the dorsal margin and 4-5 on that of the movable finger. Outer surface of hand with a line of hairs near upper region (fig. 10, *d*).

First ambulatory legs small and slender, propodus with a series of spinules on the distal portion of the posterior border, dactylus with 5-6 denticles on the anterior border and a tuft of setæ near the apex. Second ambulatory leg longer, merus granulate on the posterior border, propodus is same as that of the first one, dactylus with 5 denticles on the anterior border and a series of spinules on the posterior border, also furnished with a tuft of setæ near the apex (fig. 10, *f, g*). Third leg longest, merus very stout as shown in the text fig. 10, *c*. Fourth leg smallest, merus with 4-5 blunt denticles on the posterior border, dactylus with three denticles on the anterior border.

Female abdomen seven-segmented, covering the whole surface of sternum. Second segment with a line of hairs along the distal margin. Seventh segment truncate distally (fig. 10, e).

Measurements: Length of carapace 2.3 mm., breadth 5 mm.

Distribution: Japan; China (north and south), Hong Kong.

Subfamily **XENOPHTHALMINÆ** Alcock

Genus **Xenophthalmus** White

Xenophthalmus pinnotheroides White

Text fig. 11

Xenophthalmus pinnotheroides White, 1846, p. 178, pl. 2, fig. 2.

Xenophthalmus pinnotheroides Alcock, 1900, pp. 332-3.

Xenophthalmus pinnotheroides Rathbun, 1910, p. 338, fig. 22.

Xenophthalmus pinnotheroides Tesch, 1918, pp. 272-274.

Material: 1 ♂ (No. 2136); Station 231, at depth of 5 m., bottom muddy and shelly; 28/IV/1936.

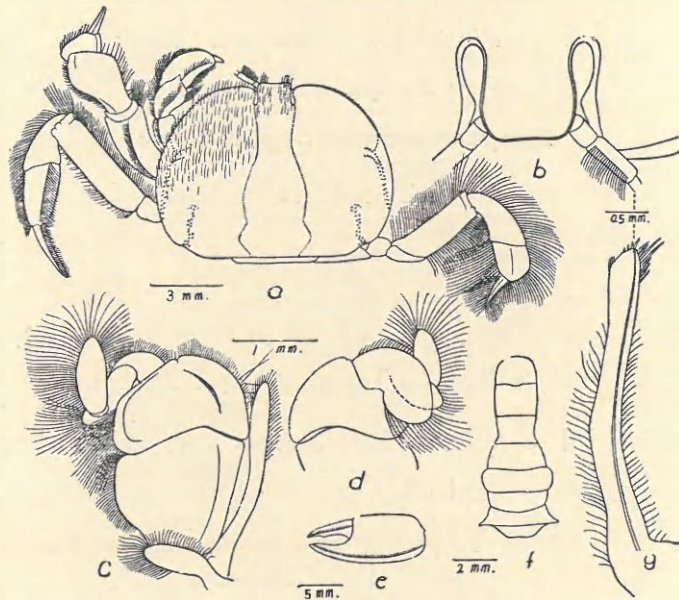
1 ♀ (No. 4500); Yingtao (陰島), on sand-muddy shore; 4/X/1936.

1 ♂, 1 ♀ (No. 3826); at depth of 5 m., bottom sand-muddy; 19/IX/1936.

Characters: Carapace broader than long, surface for the most part smooth, but towards the anterior portion and along the anterolateral margins covered with feathered hairs. Regions faintly indicated. Two gastro-branchial deep grooves extend from the orbits backwards almost through the whole carapace (fig. 11, a).

Front narrow, strongly deflexed and slightly constricted at the base, anterior margin straight, lateral angles rounded (fig. 11, *a*, *b*).

Orbits slit-like, longitudinally placed dorsally along the lateral margins of the front, and almost at right angles to the frontal border, and the eye-stalks are immovably embedded in them (fig. 11, *a*, *b*).



Text fig. 11. *Xenophthalmus pinnotheroides* White, *a*, dorsal view of ♂; *b*, anterior view of front, orbit and antenna; *c*, third maxilliped; *d*, inner view of the *c*; *e*, chela; *f*, ♂ abdomen; *g*, ♂ appendage.

Antennulæ very small, folded beneath the front. Antennæ are large, standing in front of the orbits, its first and second basal segments very short, third very long, bearing a series of long feathered hairs (fig. 11, *b*).

Lateral margin of carapace granulate, it is separated by a constriction at the middle region, into two portions, the anterior portion curved, posterior portion straight and divergent backwards. There is another longitudinal granular line on the metabranchial region (fig. 11, *a*).

Third maxilliped broad, ischium and merus subequal in length. Palp jointed at the inner distal angle of merus, all segments flattened, dactylus pointed anteriorly. Exognath slender (fig. 11, *c*, *d*).

Chelipeds equal, small (very slender in female). Hand longer than fingers. Ambulatory legs stout, all hairy. Third pair longest, posterior margin of merus granulate (fig. 11, *a*, *e*).

Male abdomen narrow elongate, seven-segmented, fifth segment slightly constricted, seventh broadly rounded distally (fig. 11, *f*). Male appendage bears a series of strong spines at the apex (fig. 11, *g*). Female abdomen large, seven-segmented, forming a round shield but not covering the whole surface of the sternum.

<i>Measurements:</i>	♂ (No. 2136)	♀ (No. 4500)
Length of carapace	7 mm.	8.8 mm.
Breadth of carapace	9	11
Length of third ambulatory leg	15.2	—

Distribution: North China; Philippine Islands (type locality); Hong Kong; Java; Sumatra; Siam and Gulf of Martaban.

Remarks: It is closely resembling *Pinnotheres obscurus* Henderson* but they are quite distinct from each other by the characters as shown in the following table:

* Henderson, 1893, Trans. Linn. Soc. London, Zoel., Sec. Ser., Vol. 5, p. 394.

*X. pinnotheroides**X. obscurus*

- | | |
|---|---|
| 1. Carapace hairy at least in the anterior portion. | glabrous. |
| 2. Metabranhial region with a granular line. | without granular line. |
| 3. Front with lateral margins not parallel to each other. | lateral margins parallel to each other. |
| 4. Orbits longitudinal and parallel to each other. | oblique and divergent backwards. |
| 5. Ambulatory legs hairy throughout. | hairy only at the tips. |
| 6. Propodus of first leg as broad as long. | longer than broad. |
| 7. Merus of each leg granulated on posterior margin. | spinulose on posterior margin. |

A CHECK LIST OF THE SPECIES RECORDED IN
NORTH CHINA

Phylum Arthropoda

Class Crustacea

Order Decapoda

Tribe Brachyura

Subtribe Oxystomata

Family Dorippidæ

1. *Dorippe polita* Alcock & Anderson
2. *Dorippe japonica* von Siebold
3. *Dorippe granulata* de Haan

Family Leucosiidæ

Subfamily Leucosiinæ

4. *Philyra peitaihoensis* Shen
5. *Philyra pisum* de Haan
6. *Philyra carinata* Bell
7. *Philyra carinata chefooensis* Shen
8. *Nursia sinica* Shen

Subfamily Iliinæ

9. *Arcania globata* Stimpson
10. *Arcania undecimspinosa* de Haan

Family Calappidæ

11. *Orithya mammillaris* Fabricius

Family Matutidæ

12. *Matuta planipes* Fabricius

Subtribe Brachygnatha

Superfamily Oxyrhyncha

Family Parthenopidæ

- 13.
- Lambrus validus*
- de Haan

Family Maiidæ

Subfamily Inachinæ

- 14.
- Achæus tuberculatus*
- Miers

- 15.
- Oregonia gracilis*
- Dana

Subfamily Acanthonychinæ

- 16.
- Pugettia quadridens*
- (de Haan)

- 17.
- Pugettia minor*
- Ortmann

Subfamily Pisinæ

- 18.
- Hyastenus pleione*
- (Herbst)

Family Hymenosomidæ

- 19.
- Rhynchoplax sinensis*
- Shen

- 20.
- Halicarcinus yangi*
- Shen

Superfamily Brachythyncha

Family Portunidæ

- 21.
- Neptunus*
- (
- Neptunus*
-)
- trituberculatus*
- Miers

- 22.
- Neptunus*
- (
- Neptunus*
-)
- pelagicus sinensis*
- Shen

- 23.
- Charybdis*
- (
- Goniosoma*
-)
- japonica*
- (A. M. Edw.)

24. ?
- Charybdis*
- (
- Gonioneptunus*
-)
- peichihliensis*
- Shen

- 25.
- Charybdis*
- (
- Gonioneptunus*
-)
- bimaculata*
- Miers

Family Potamonidæ

- 26.
- Potamon*
- (
- Potamon*
-)
- denticulatus*
- (H. M. Edw.)

- 27.
- Potamon*
- (
- Geothelphusa*
-)
- dehaani*
- (White)

Family Cancridæ

28. *Cancer pygmæus* Ortmann

Family Xanthidæ

Subfamily Xanthinæ

29. *Actæa rüppelli orientalis* Odhner
30. *Leptodius exaratus* (H. M. Edw.)
31. *Xanthodius distinguendus* (de Haan)
32. *Parapanope euagora* de Man

Subfamily Menippinæ

33. *Menippe convexa* Rathbun
34. *Heteropanope makiana* Rathbun

Subfamily Pilumninæ

35. *Pilumnus spinulus* Shen
36. *Heteropilumnus cristadentatus* Shen

Family Goneplacidæ

Subfamily Pseudorhombilinæ

37. *Carcinoplax vestita* (de Haan)
38. *Eucrate crenata* de Haan

Subfamily Rhizopinæ

39. *Typhlocarcinus nudus* Stimpson

Family Pinnotheridæ

Subfamily Asthenognathinæ

40. *Tritodynamia rathbuni* Shen
41. *Tritodynamia intermedia* Shen
42. *Tritodynamia horvathi* Nobili

Subfamily Pinnotherelinae

- 43. *Pinnixa tumida* Stimpson
- 44. *Pinnixa penultipedalis* Stimpson

Subfamily Pinnotherinae

- 45. *Pinnotheres sinensis* Shen
- 46. *Pinnotheres cyclinus* Shen
- 47. *Pinnotheres affinis* Bürger
- 48. *Pinnotheres dilatatus* Shen
- 49. *Pinnotheres serrignathus* Shen
- 50. *Pinnotheres haiyangensis* Shen
- 51. *Pinnotheres tsingtaoensis* Shen
- 52. *Pinnotheres gordonii* Shen

Subfamily Xenophthalminae

- 53. *Xenophthalmus pinnotheroides* White

Family Grapsidae

Subfamily Varuninae

- 54. *Acmæopleura balssi* Shen
- 55. *Hemigrapsus sanguineus* (de Haan)
- 56. *Hemigrapsus penicillatus* (de Haan)
- 57. *Hemigrapsus longitarsis* (Miers)
- 58. *Hemigrapsus sinensis* Rathbun
- 59. *Eriocheir sinensis* H. M. Edw.
- 60. *Eriocheir rectus* Stimpson
- 61. *Gæfice depressus* (de Haan)

Subfamily Grapsinae

- 62. *Metopograpsus quadridentatus* Stimpson

Subfamily Sesarminæ

63. *Sesarma* (*Sesarma*) *gordoni* Shen
64. *Sesarma* (*Parasesarma*) *picta* (de Haan)
65. *Sesarma* (*Parasesarma*) *plicata* (Latreille)
66. *Sesarma* (*Holometopus*) *dehaani* H. M. Edw.
67. *Sesarma* (*Holometopus*) *hæmatocheir* (de Haan)
68. *Helice tridens tridens* (de Haan)
69. *Helice tridens wuana* Rathbun
70. *Helice tridens tientsinensis* Rathbun

Family Ocypodidæ

Subfamily Macrophthalminæ

71. *Macrophthalmus japonicus* de Haan
72. *Macrophthalmus dilatatus* de Haan
73. *Macrophthalmus eratus* de Man
74. *Camptandrium sexdentatum* Stimpson
75. *Paracleistostoma cristatum* de Man
76. *Cleistostoma dilatatum* de Haan

Subfamily Scopimerinæ

77. *Ilyoplax deschampsi* (Rathbun)
78. *Ilyoplax pingi* Shen
79. *Ilyoplax dentimerosa* Shen
80. *Scopimera globosa* de Haan
81. *Scopimera longidactyla* Shen
82. *Scopimera bitympana* Shen
83. *Scopimera tuberculosa* Stimpson

Subfamily Ocypodinæ

84. *Ocypode stimpsoni* Ortmann
85. *Uca arcuata* (de Haan)

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華北蟹類補遺第二

沈嘉瑞

華北因天氣地勢關係，沿海所產蟹類，至今所知者不過八十五種耳，（種名可參閱本篇第三〇五頁至第三〇九頁），然山東半島南岸所產種類，較之北岸，實為衆多，而且有多數種類與華南所產者相同。

作者以前所得研究材料，大半皆採自海邊及淺海之處，此次國立北平研究院與青島市政府合組之動物採集團，努力調查膠州灣之水產動物，所獲甲殼類動物標本，甚為豐富，且大半皆得自較深海底，今特承該院動物研究所所長陸惟一先生，研究員張璽先生以及助理劉永彬先生之熱誠委託研究該項一部分標本，查大半皆為新奇種類，為作者以前所未曾記載者，作者謹當藉此對上述諸先生鳴謝。

本篇所述種類，共有十二，其中有一種 (*Nursia sinica* Shen) 已證明為新種；四種 (*Arcania globata* Stimpson, *Arcania undecimspinosa* de Haan, *Parapanope etagora* de Man, *Typhlocarcinus nudus* Stimpson) 為第一次發見於華北者；五種 (*Achæus tuberculatus* Miers, *Pugettia minor* Ortmann, *Actæa rüppelli orientalis* Odhner, *Pinnixa penultipedalis* Stimpson, *Xenophthalmus pinnotheroides* White) 為第一次發見於中國海內者；尚有兩種 (*Philyra carinata chefooensis* Shen, *Pilumnus spinulus* Shen) 為作者以前

至於上列各種之特性，習性，分布等等，可參閱本篇之插圖及英文記載。