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ANOMURA FROM NORTH CHINA

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中國北部之蝦形歪尾類

喻兆琦

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ON SOME SPECIES OF SHRIMP-SHAPED ANOMURA
FROM NORTH CHINA

BY SHOU-CHIE YÜ

This note contains five species belonging to the family Callianassidae collected by Mr. Chia-Jui Shen, Fan Memorial Institute of Biology, Peiping, from the coast of North China in 1930. The two species of the genus *Upogebia* are new to science and the other three known species of the genus *Callianassa* seem to be first recorded from the Chinese coast.

The five species in the present note may be distinguished by the following key:—

- A1. Rostrum large; first pair of legs equal; no appendix interna on abdominal limbs 3-5 (*Upogebinae*).
Legs of first pair chelate or subchelate and those of second pair simple; last limb not longer than telson (*upogebia*).
- B1. Lower border of rostrum unarmed; no teeth on either border of palm; dactylus of cheliped bearing a row of large flattened tubercles on its outer surface.....*Upogebia Shenchiajuii*, sp. n.
- B2. Lower border of rostrum with three sharp teeth; a row of teeth on upper border of palm; dactylus of cheliped with a broad furrow on the proximal half of outer surface.....*Upogebia Wuhsienweni*, sp. n.
- A2. Rostrum small; first pair of legs unequal; an appendix interna on abdominal limbs 3-5 (*Callianassinae*).
No gill-like filaments on abdominal limbs; ischiopodite and meropodite of third maxilliped broader than carpopodite and propodite of the same appendage (*Callianassa*).
- B3. Merus of larger cheliped with a prominent lobe or tooth at its infero-proximal angle.
- C1. Larger cheliped having its carpus as long as or nearly as long as the palm: its dactylus having two teeth, the obtuse subterminal one nearly half as broad as the truncate basal one.....
.....*Callianassa Harmandi* Bouv.

C2. Larger cheliped having its carpus considerably longer than palm; front broadly triangular.

D1. Infero-proximal lobe of merus of cheliped large
*Callianassa californiensis* Dana, var. *japonica* Bouv.

D2. Infero-proximal lobe of merus of cheliped small, like a tooth.
*Callianassa japonica* Ortm.

Upogebia Shenchiajuii, sp. nov.

A young specimen measured 30 mm. in length.

Front trilobed. Middle lobe or rostrum (fig. I, A, *r.*) triangular, as long as broad at its base, with obtuse rounded tip reaching middle of third antennular article or end of antennal scale; its upper surface having a broad smooth median longitudinal groove, its lateral border armed with four tubercles. Lateral lobes (fig. I, A, *l. f.*) of front, nearly $\frac{1}{3}$ length of rostrum, separated from rostrum by an interspace which is followed by an decurved lateral groove (fig. I, A, *g.*) running backwards on each side of gastric region nearly to cervical groove to mark out two lateral ridges (fig. I, A, *l. r.*) continuous with lateral lobes of front and a proper gastric region (fig. I, A, *ga.*) continuous with rostrum. Lateral ridge armed with 9 tubercles extending as far as tip of lateral frontal lobe. Anterior part of upper surface of gastric region with a row of tubercles on each side of a narrow median longitudinal groove (fig. I, *m.*) which is continuous with median longitudinal groove of rostrum and another row of tubercles along inner border of lateral groove. Front and each lateral ridge thickly covered with hairs which, in anterior part of gastric region, distribute only in surroundings of tubercle, but all grooves and posterior part of gastric region remain smooth and glabrous. Lower surface of front without spines. No acute granules on posterior border of cervical groove above as well as below linear thalassinica; one spine on antero-lateral border of carapace at level of eye (fig. 1, Aa.).

First and second abdominal segments glabrous; somewhere of upper surface of third, fourth and fifth ones covered with tufts of hairs; sixth one having its lateral borders more or less convex, its upper surface with a semicircular groove at either side; telson with lateral margins slightly converged posteriorly, posterior margin arcuate, postero-lateral angles rounded, median furrow prominent.

Eye slightly beyond end of lateral lobe of front.

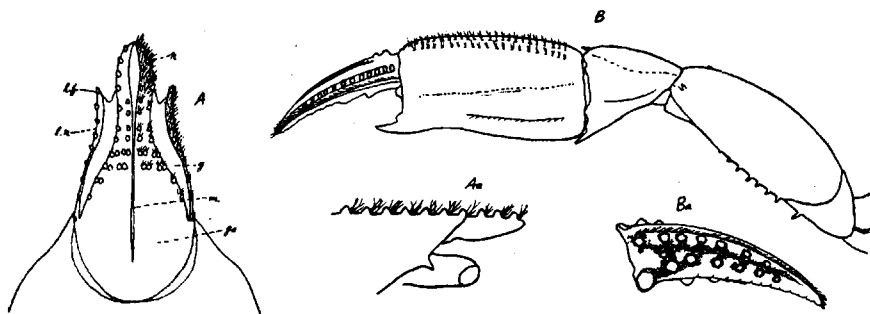


Fig. 1. *Upogebia shenchiajuii* sp. nov.: A, dorsal view of anterior part of cephalothorax $\times 4.8$; r, rostrum; l.f., lateral frontal lobe; l.r., lateral ridge; g, lateral groove; m, median groove; ga, gastric region. Aa, side view of the same, $\times 6.4$ B, cheliped, view from outer surface, $\times 4.8$ Ba, dactylus, view from inner surface, $\times 6.4$

Inner antenna a little more than $\frac{1}{2}$ length of carapace with rostrum, its first segment longer than second which is the shortest, third longest about 4 times as long as the latter; thicker flagellum almost as long as thinner one which is a little shorter than its peduncle.

Antennal peduncle longer than antennular one; its first segment with a sharp spine; scaphocerite much longer than broad, not truncate.

Cheliped (fig. 1, B.) extending beyond rostrum by its whole length of its carpus. Coxa bearing on its lower margin a small spine.

Ischium with a spine near distal end of its lower margin. Merus 5 mm. long, its outer surface 2 mm. and armed with 7 unequal spines on its lower border, its subdistal end of curved upper border of inner surface with a rather minute spine which is remote from the end. Carpus very short, armed with 2 strong spines on distal margin of inner surface and a rather large one on distal extremity of lower border. Palm rectangular in shape, without spine, 4.5 mm. long measured near upper border; upper border with two parallel ridges fringed with long hairs. Fixed finger bearing 2 tubercles at base of prehensile border. Dactylus 3.5 mm. long, about 2.5 times as long as fixed finger, its outer surface bearing a row of flattened tubercles, its lower border being a ridge accompanied on inner side with a furrow fringed with long hairs; its improminent upper border provided with 2 large tubercles at proximal end, another ridge on outer surface of dactylus submarginal to upper border. Inner surface of dactylus (fig. 1, Ba.) bearing a row of 7 large tubercles below its upper border and another row of rather strong ones at raised middle part; lower border with 2 large blunt teeth of which the second one is placed just in opposite to the tip of the fixed finger; rest of lower border widely denticulated.

Second leg almost extending to proximal end of fixed finger. Coxa with a spine on its lower border, of which the projected distal end has an appearance of a tooth. Ischium unarmed; its distal end of lower border also projected out. Merus 5.5 mm. long, $3\frac{2}{3}$ times as long as broad, with a spine near proximal end of its lower border and a minute one near distal end of curved upper border. Carpus unarmed, slightly shorter than propodus and longer than dactylus. Both propodus and dactylus unarmed.

Third leg extending to distal end of propodus of second. Merus bearing 5 minute spines along its lower border, rest segment unarmed.

Locality: Kiaochow bay.

Upogebia Wuhsienweni sp. nov.

Two young specimens; a male measured 31 mm., female 4.6 mm. in length.

Rostrum (fig. II, A.r.) triangular, slightly broader than long, with rounded tip, and grooved in median line of upper surface. Lateral lobe (fig. II, A. l. f.) of front nearly $\frac{1}{2}$ length of rostrum. Lateral groove (fig. II, A.g.) running backwards at both sides of gastric region (fig. II. A. ga.) nearly to cervicle groove. Lateral ridge (fig. II, A. l. r.) incised by a notch; before the latter 8(δ) or 9 (♀) teeth extending to tip of lateral frontal lobe, and behind, 6 or 7

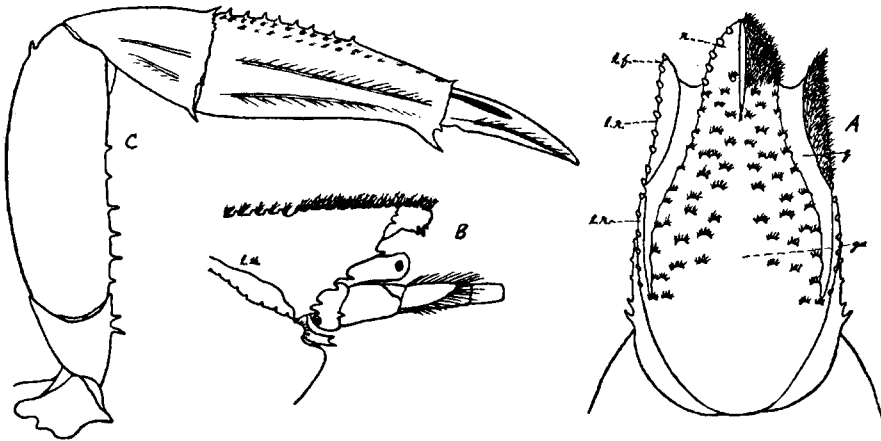


Fig. II. *Upogebia Wuhsienweni* sp. nov.: A, dorsal view of anterior part of cephalothorax, $\times 7.5$; r, rostrum; l.f., lateral frontal lobe; l.r., lateral ridge; g., lateral groove; ga, gastric region. B, side view of the same, $\times 7.5$; l.th., line thalassinica. C, cheliped, $\times 7.5$, view from outer surface.

(δ) to end of lateral groove. Rostrum armed with 5 obtuse equidistant tubercles on lateral border of its upper surface, a smaller one on each side of median line at base. Gastric region having three rows of scale-like tubercles on each side, outer row along inner border of lateral groove. Upper surface of rostrum,

lateral frontal lobes and anterior part of lateral ridge all thickly covered with rigid hairs; tubercles of gastric region besetted also with them; middle portion and posterior half of gastric region smooth and glabrous. Lower surface of rostrum with 2 (♂) or 3 (♀) small sharp spines directed downward; second largest and just ventral to anterior pair of tubercles of upper surface. Lower surface of lateral frontal lobe with 2 small spines, followed by 6 unequal-sized spines on lower margin of carapace. Posterior border of cervical groove above *linea thalassinica* without spine, but below the lines there are 2 large acute spines preceded by many smaller ones and extended to lower margin of carapace (fig. II, B.).

Upper surface of first and second abdominal somites glabrous, that of third and fourth densely hairy on their lateral parts. Sixth somite, on each side of its upper surface, having a rather deep furrow which runs from anterior border backwards and obliquely to lateral; a rounded lobule in middle of lateral border of same somite. Telson as long as sixth somite, with distinct carinae and median groove; its anterior part being widest, its anterior two thirds of lateral margins oblique and convergent, its posterior third parallel, with its posterior end more or less rounded. Basal joint of uropod with two small sharp spines posteriorly; outer uropod bearing a tooth at base of its lateral margin, inner uropod having a rather grand one at anterior thirds of its lateral margin.

Eye extending slightly beyond end of lateral lobe of front. Peduncle of inner antenna with third article longest, as long as its inner flagellum which is longer than the outer one; Scaphocerite extending almost to distal end of penultimate segment of antennal peduncle (fig. II, B.).

Outer maxilliped slightly extending beyond terminal segment of peduncle of outer antenna.

Cheliped (fig. II, C.) having its whole carpus extending beyond rostrum. Coxa with a small spine on its lower border. Ischium

bearing 2 spines of which the second one is the largest and just placed in the middle of lower border. Merus $2\frac{1}{2}$ times as long as broad; its lower border with 6(♀) or 7(♂) spines, its upper border decurved and rounded distally, with a spine at its distal fifth. Carpus having a longitudinal furrow on outer surface, both upper and lower border unarmed; distal margin of inner surface with 3 large spines of which the upper and lower ones are placed on the distal end of the upper and lower borders; distal margin of outer surface with 4 small spines dorsally and another small one ventrally with some distance to lower marginal spine of inner surface. Palm with proximal portion nearly 2 times as broad as its distal portion; upper border bearing a spine at its distal end and 8 (♀) equidistant ones in two thirds of its length or 10 (♂) in nearly its whole length; proximal margin of inner surface bearing a spine immediately below first spine of its upper border; lower border rather prominent; distal margin of outer surface bearing a spine with some distance to fixed finger which is very small. Dactylus nearly $\frac{1}{2}$ length of palm, its proximal half of outer surface with a broad furrow, its inner surface with a ridge immediately inferior to its upper border and an incisive border below.

Second leg having half of its carpus extending beyond rostrum. Lower border of merus armed with 5 or 6 spines, that gradually decreasing in size anteriorly; upper border with a spine on curved distal part. Carpus bearing a spine near distal extremity of both upper and lower borders of which the upper one is larger; distal margin of outer surface with a spine near upper distal one; distal margin of inner surface with another one near lower distal spine. Rest segments unarmed.

Third leg having its whole propodus extending beyond rostrum; its merus armed with 2 or 3 spines; dactylus a little longer than propodus.

Locality: Kiaochow bay.

Callianassa (Trypaea) Harmandi Bouv.

1901. *C. Harmandi*, Bouv. Bull. Mus. hist. nat. Paris, p. 332

1917. *C. Harmandi*, Parisi, Atti. Soc. Ital. Sci, Nat. LVI, p. 24, fig. 7.

1928. *C. Harmandi*, de Man, Capit. Zool., II, 6, p. 13, fig. 6-6 j.

Five specimens from Kiaochow-bay, appear to belong to this species (fig. III) differing from the latter only in the presence of distinct frontal lobe of the carapace. The detail characters of these specimens may be noted as follows:

(1) Frontal border of carapace somewhat projected as rostrum though it is blunt; while Dr. de Man says (Capit. Zool. p. 13, 1928): "Frontal border devoid of a rostrum, but presenting on either side of the middle line a slight rounded prominence, between which the border appears concave".

(2) Eye obtusely rounded at tip; its inner margin straight; outer margin oblique and a little concave at anterior fourth and then with a rounded curve passing backwards; remaining part straight and obliquè.

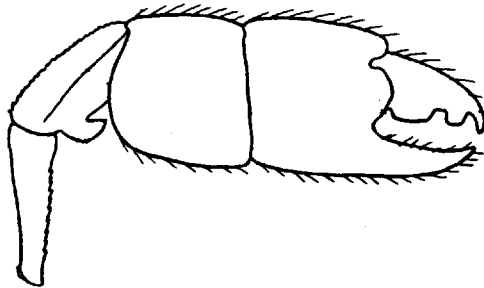


Fig. III. *Callianassa (Trypaea) harmandi* Bouv., larger cheliped, $\times 1.5$.

(3) First segment of antennular peduncle barely beyond eye stalk; second segment a little longer than first; third segment twice as long as second; thinner flagellum as long as peduncle.

(4) Peduncle of outer antenna slightly shorter than that of inner antenna, its fourth and fifth segments subequal.

(5) External maxilliped broad, operculiform, its ischium triangular with lateral margins converging posteriorly, its merus having upper portion longer than lower.

(6) Telson slightly longer than broad, its lateral margins nearly parallel; its postero-lateral angle rounded; its posterior margin slightly concave and with a median and two postero-lateral spines.

(7) Ischium of large cheliped thrice as long as broad, narrowing towards its base, its lower border with 10 teeth along its median portion, its upper border with a sharp tooth at proximal extremity. Merus twice as long as broad, a little shorter than ischium, its upper border slightly decurved, 19 or 20 teeth along its whole length, its lower border with a finely denticulated lobe as large as that of *Callinassa californiensis* Dana var *japonica* Bouv. and preceded by many small teeth; upper surface of merus having a ridge-like crest, parallel to upper border, terminating posteriorly into a subacute angle which is separated by a narrow notch from thickened proximal part. Carpus nearly as broad as long and a little broader than length of its upper border, its proximal part expanded backwards beyond meral articulation; both upper and lower border finely serrulate on inner side. Palm as broad as carpus and slightly longer than broad, its distal border having a lobe which is separated from fixed finger by a notch. Fixed finger more than half as long as palm. Dactylus a little longer than fixed finger, its tip strongly curved downwards, its prehensile border with a large, truncate tooth occupying nearly its basal half and a smaller conical one near its tip, both finely denticulated.

(8) Small cheliped having its ischium longer than its merus which is twice as long as broad and with a sharp tooth in middle of lower border; carpus $1\frac{1}{2}$ times as long as merus, 2.4 times as long as broad; chela as long as carpus, with fingers as long as palm.

Locality: Shantung Peninsula.

Callianassa (Trypaea) californiensis Dana
var. *Japonica* Bouv.

1901, *Callianassa californiensis* Dana var. *Japonica* Bouv., Bull. Mus. hist. nat., Paris, p. 332.

1928, *Callianassa californiensis* Dana var. *Japonica*, de Man, Capita. Zoologica, II, Afl. 6, p. 18, fig. 9—9e.

This variety has a close resemblance to *Callianassa japonica* Ortm., but differs from the latter by the carpus of the larger cheliped being much longer than the palm (fig. IV).

The specimens collected from the chinese coast will be noted briefly as follows:

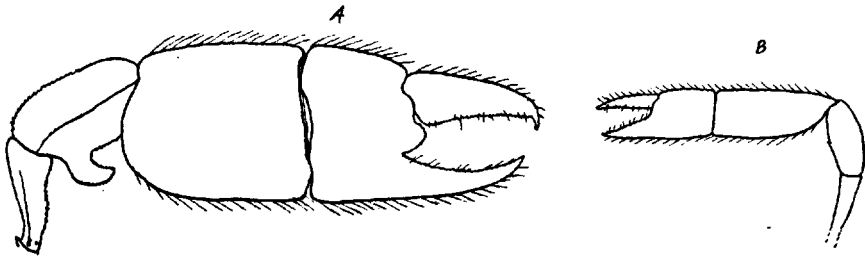


Fig. IV. *Callianassa (Trypaea) californiensis* Dana, var. *japonica*, Bouv A, larger cheliped, $\times 2$; B, small cheliped, $\times 2$.

Ischium of larger cheliped bearing 9 small teeth on proximal two thirds of lower border and two small granules, one behind another near proximal end of outer surface. Merus a little longer and much broader than Ischium, its whole upper border bearing a row of small teeth, lower border a large subacute serrated lobe. Carpus longer than broad; its upper border nearly $\frac{2}{3}$ as long as chela. Chela with palm shorter than dactylus which bends abruptly downwards and slightly inwards at its acuminate tip. both dactylus and immovable finger having their prehensile borders finely denticulated, a large space left between them when closed.

Of smaller cheliped, ischium much longer than merus and a little shorter than carpus; upper border of carpus as long as chela; palm nearly as long as dactylus.

Locality: Peitaiho.

Callianassa (Trypaea) japonica, Ortm.

1891. *Callianassa subterranea* (Montag.) var. *Japonica* Ortm, Zool Jahr, Syst., 55, Taf, I, fig, 10a,
 1901. *Callianassa subterranea* var. *Japonica*, Bouv., Bull. Mus, hist. nat., Paris, p. 332,
 1914. *Callianassa subterranea* (Montag.) var. *Japonica*, Balss, Abh. Math-phys. Klasse der K. Bayer Cad. d. Wiss. II, suppl. Bd. 10, p. 91.
 1924. *Callianassa japonica*, Balss, Archiv. f. Naturgesch., 90, Jahrg. Abt. A. 5 Heft. p. 52.
 1928. *Callianassa japonica*, de Man, Cap. Zool., II, Afl. 6. p. 19, fig. 10-10.
 ? 1860. *Callianassa petalura*, Stimpson, Proc. Acad. Nat. Sc. Phil., p. 23.

The Chinese specimens of this species show the following characters (fig. V):

Frontal border of carapace projected as a short, broad and triangular rostrum. Second joint of antennular peduncle as long as first; third joint nearly twice as long as second. Inner flagellum of antennule thin and fringed with very long hairs, about as long as peduncle and slightly longer than outer flagellum. Antennal peduncle slightly shorter than that of inner antennae. Telson as long as broad

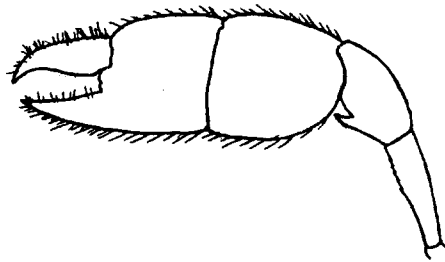


Fig. V.—*Callianassa (Trypaea) japonica* Ortmann: larger cheliped, $\times 3$.

anteriorly; lateral margin parallel anteriorly and converged posteriorly; postero-lateral angles rounded; posterior border concave and armed with a spine at middle.

Ischium of large cheliped with a row of sharp teeth, its distal half broader than proximal; upper border of merus slightly

decurved and armed with a row of small acute granules that diminished in size distally, its proximal half of lower border with an acutely pointed lobe or tooth, of which the lower border is decurved and finely denticulated. Carpus a little longer than merus, becoming narrow proximally, its depth (or width) near distal articulation a little shorter than its length, that of female broader than that of male, Palm shorter than carpus, as long as broad in female but a little longer than broad in male, its width near carpal articulation almost equal to that of carpus; fingers a little shorter than palm, without hiatus between them when closed; fixed finger nearly straight; dactylus with tip curved downwards, distinctly longer than fixed finger, slightly shorter than palm.

Merus of small cheliped having both upper and lower borders convex, a small sharp tooth at middle of the latter. Carpus 1.5 times as long as merus, 2 (in male) or $2\frac{1}{2}$ (in female) times as long as broad, its proximal end narrower than distal. Chela as long as carpus in female or a little shorter in male, its palm a little longer than its finger in male but as long as the latter in female.

Locality: Chefoo, Chinwangtao, Hainan.

中國北部之蝦形歪尾類

喻兆琦

此篇所述,共有五種,均屬於 *Callianassidae* 科,其中有二種,屬於 *Upogebia* 屬,均為新種;其他三種,屬於 *Callianassa* 屬,均得分布上之新紀錄,

此五種在本篇內,可以下列之檢索表分別之:

- A1.** 額角 (*Rostrum*) 大,第一對步足對稱,腹足無附屬肢.
Upogebinae 亞科
第一對步足呈鉗形,或近於鉗形,第二對步足單簡,最後一對足不長過於尾節.....*Upogebia* 屬
- B1.** 額角之腹緣無齒,掌節 (*Palm*) 之兩緣亦無齒,可動指外側有一行大而扁之粒狀體.....*Upogebia shenchiajuii*, 新種
- B2.** 額角之腹緣有三銳齒,掌節之上緣有齒,可動指外側後半部有一闊溝.....*Upogebia wuhsienweni*, 新種
- A2.** 額角小,第一對步足不對稱,腹足有附屬肢.
Callianassinae 亞科
腹足無腮狀肢體,第三顎足之座節 (*Ischium*) 及長節 (*Merus*) 比其腕節 (*Carpus*) 及前節 (*Propodus*) 為寬. *Callianassa* 屬
- B3.** 鉗足長節基部之腹面有一齒.
- C1.** 大鉗足腕節與掌節大致等長.
可動指有二齒,後者之寬大於前者二倍.....
.....*Callianassa Harmandi* Bouv.
- C2.** 大鉗足腕節較掌節甚長.
- D1.** 鉗足長節基部腹面之齒大.....
Callianassa californiensis Dana, var. *japonica* Bouv.
- D2.** 鉗足長節基部腹面之齒小.....
.....*Callianassa japonica* Ortmann.