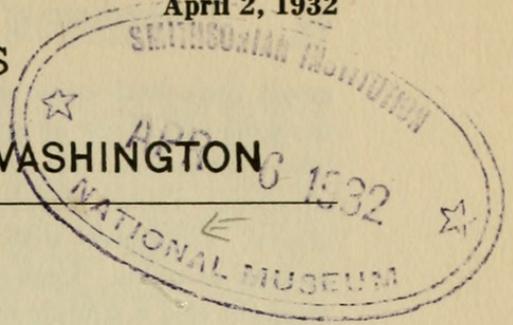


PROCEEDINGS
OF THE
BIOLOGICAL SOCIETY OF WASHINGTON



PRELIMINARY DESCRIPTIONS OF NEW SPECIES
OF JAPANESE CRABS.

BY MARY J. RATHBUN.¹

The crabs here described were collected chiefly by the steamer *Albatross* of the Bureau of Fisheries in 1900 and 1906.

FAMILY MAJIDAE.

Achaeus stenorhynchus, sp. nov.

Type.—Male, U. S. National Museum No. 48255, Ose Saki Light, N. 10° E., 8 miles (32° 28' 50" N., 128° 34' 40" E.), 139 fathoms, gray sand, broken shells, temp. 52.9° F., Aug. 10, 1906, station 4900, *Albatross*.

Carapace with a short "neck," a few strong spines and a rostrum with very slender horns. Two median spines, cylindrical and truncate; the larger one prolongs the conical cardiac region, the other, slenderer, is on the hinder gastric region. Two spines above the interval between the bases of the last two legs; they are triangular, compressed and directed backward, upward and a little outward. Various tubercles on gastric and branchial regions. Hepatic protuberance subrectangular. Rostral spines contiguous. A spinule at upper extremity of eye. Chelipeds stout especially the merus; manus swollen at middle; fingers narrowly gaping. Dactyli of first two pairs of legs nearly straight, of last two pairs curved. A stout, sharp spine on either side of sternum, opposite chelipeds. A spine on first abdominal segment; last four segments with a blunt median elevation which on the seventh segment, fused with the sixth, is bilobed. Length of carapace 11.7, width 8 mm.

Achaeopsis atypicus, sp. nov.

Type.—Female, U. S. National Museum No. 48206; Sata Misaki Light, N. 84° E., 8.5 miles (30° 59' N., 130° 29' 50" E.), 152 fathoms, rocky, temp. 56° F., Aug. 16, 1906, station 4933, *Albatross*.

Carapace very convex, hepatic region inclined obliquely downward. Four large spines with conical bases and long slender tips; one cardiac; three gastric of which two are lateral and in front of the median spine; a

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small branchial spine above lateral angle; posterior and postero-lateral margins spinulose or spinous. Front strongly deflexed; rostrum a small lobe with denticulate margin and a slender median spine; supraorbital hood suberect. Outer terminal spinule on basal antennal article visible from above. Chelipeds with spinous margins; fingers one and one half times as long as palm. Legs similar. A spine on median line of first abdominal segment and a spinule on each of the next five segments; the fused seventh segment is covered with spinules. Length of carapace 8.4, width 6 mm.

***Cyrtomaia septemspinosa*, sp. nov.**

Type.—Male, U. S. National Museum No. 47297, Tsurikake Saki Light, S. 84° E., 17.5 miles (31° 39' 40" N., 129° 20' E.) 391 fathoms, gray globigerina ooze, Aug. 12, 1906, station 4912, *Albatross*.

Dorsal spines seven only, branchial spine longest, next the protogastric and cardiac (paired) are subequal, median gastric shortest. Carapace granulate; hairs on ridges leading back from rostrum toward protogastric spines. Median rostral spine at an acute angle with lateral pair and visible from above. Orbital spines as in *C. horrida*.² Merus of last two pairs of legs without spines. Median length of carapace 23.6, width (spines excluded) 26.6 mm.

***Pleistacantha terribilis*, sp. nov.**

Type.—Male, U. S. National Museum No. 48263, Ose Saki Light, N. 22° E., 6 miles (32° 31' 10" N., 128° 33' 20" E.), 139 fathoms, gray sand, broken shells, Aug. 10, 1906, station 4903, *Albatross*.

Carapace covered with long slender unequal spines mixed with short spines. Regions fairly well marked. Supraocular spines two, one at the summit very long, suberect and directed a little outward and forward, the other at the posterior angle shorter and directed outward and a little forward; between supraocular and postocular spines two long spines directed outward; three long hepatic spines forming a triangle. Horns widely divergent at base, armed on all sides. Interantennular spine long, very slender, straight and sharp-pointed, inclined forward and downward at an angle of about 45° with the rostrum. Chelipeds and legs armed with many spines mostly long; palms enlarged. Near *P. cervicornis* Ihle³; rostral horns shorter, one-third as long as remainder of carapace; interantennular spine straight; chelipeds stout, palm of male twice as long above as high at distal end; dactyli of legs armed beneath on the proximal half with small spinules. Median length of carapace 14, width 10 mm.

***Pleistacantha simplex*, sp. nov.**

Type.—Male, U. S. National Museum No. 48251, Ose Saki Light, N. 29° E., 5.5 miles (32° 32' N., 128° 32' 50" E.), 106 fathoms, gray sand, broken shells, pebbles, temp. 55.9° F., Aug. 9, 1906, station 4893, *Albatross*. Small. Dorsal surface covered with sharp granules. Rostrum short,

²Rathbun, Proc. U. S. Nat. Mus., vol. 50, 1916, p. 532.

³Zool. Anz., vol. 93, 1931, p. 161.

horns slightly upturned, widely separated at base; outward and forward pointing spine on proximal half of outer margin, followed by a series of slender spinules continued half way over the eye stalk, and by a slender sinuous spine. Postocular spine shorter. Anterior hepatic spine directed more forward than outward. Interantennular septum with two well separated short spines scarcely visible from above. Eyestalks long and slender. Chelae of male stout. First ambulatory leg two and one-half times as long as carapace. Median length of carapace 10, width 7.3 mm.

***Pugettia quadridens pellucens*, subsp. nov.**

Type.—Male, U. S. National Museum No. 49925, Omai Zaki Light, N. 17° E., 14.5 miles, 34–37 fathoms, mud, gravel, rock, May 16, 1900, station 3730, *Albatross*.

Differs from typical *quadridens* in the thin sharp edge of the preorbital hood, postocular cup, upper and lower margins of arm, three crests of wrist and upper margin of palm; in the greater length of the rostrum; in the flattened spines of the hepatic and branchial regions; in the shape of the hepatic sinus which is deep and rectangular instead of shallow and rounded; and in the greater convexity of the upper margin of the palm. Median length of carapace 12.4, width without spines 9.2 mm.

***Pugettia kagoshimensis*, sp. nov.**

Type.—Male, U. S. National Museum No. 48253, Sata Misaki Light, N. 58° E., 4.5 miles (30° 57' 20'' N., 130° 35' 10'' E.), 103 fathoms, stones, temp. 60.6° F., Aug. 16, 1906, station 4935, *Albatross*.

Surface except fingers covered with a flat pavement of round setae. Rostral horns more than half as long as remainder of carapace and diverging at an angle of about 50°. Hepatic spines very long, slender, directed outward and upward. Branchial spines a little shorter, conical. Cardiac region rising in a large high protuberance flattened antero-posteriorly and slightly bifid at tip. Above posterior margin a similar much smaller protuberance flattened sideways and more deeply bifid. Median length of carapace 11.7, width, excluding spines, 7.2 mm.

***Pugettia nipponensis*, sp. nov.**

Type.—Male, U. S. National Museum No. 48254, Doumiki Saki, N. 19° W., 4.5 miles, 61 fathoms, green mud, sand, June 5, 1900, station 3771, *Albatross*.

Carapace concealed by short dense pubescence; when removed the carapace is seen to be rather lumpy; cardiac region high, pyramidal, blunt; three posterior gastric tubercles, one larger, median, the others a little anterior; two tubercles near inner branchial angle, a short spine at outer angle and a tubercle in same transverse line; an elongate, curved tubercle on either side of posterior cardiac region; hepatic produced laterally in a conical spine, a tubercle on upper surface; one intestinal tubercle. Rostral horns little divergent, their outer margins parallel. Preorbital hood acutely pointed and separated by a rounded sinus from the small acute postorbital tooth. Median length of carapace 19, width without spines 14 mm.

Pugettia similis, sp. nov.

Type.—Male, U. S. National Museum No. 49531, Ose Zaki, S. 36° W., 0.8 mile, 65–125 fathoms, temp. 66° F., volcanic sand, shells, rocks, May 11, 1900, station 3716, *Albatross*.

Near *P. minor* Ortmann⁴; general surface smooth, hepatic and branchial spines equally slender; cardiac region conical, not spine-tipped; intestinal spine short and blunt; a branchial tubercle in transverse line with lateral spine and cardiac elevation; four small, low gastric tubercles, two median in a transverse line slightly in front of the posterior median tubercle. First movable article of antenna about five times as long as wide. Chelipeds narrow, palms bluntly rounded below, carinate above, becoming blunt at distal end. Median length of carapace 18.3, width exclusive of spines 12.9 mm.

Chionoecetes japonicus, sp. nov.

Type.—Male, U. S. National Museum No. 46640, Sawa Zaki, N. 23° W., 13.6 miles (Sado Island) (37° 37' N., 138° 19' E.), 536 fathoms, green mud, temp. 32.4° F., July 19, 1906, station 4820, *Albatross*.

Near *C. tanneri* Rathbun⁵. Animal smoother. The dorsal surface is tuberculate or granulate rather than spinous, especially in the old. Posterior branchial—nearly transverse—row of prominences very low, composed of groups of granules; anterior row with clusters further apart; the angle of meeting of the branchial crests at the postero-lateral margin is 60°, marked by a short spine, the first of a row which extends forward along the lateral margin and then downward to the buccal cavity. Tubercles of posterior margin low and blunt. Rostral teeth broader than the distance between tips; inner margins sinuous. Entire length of carapace 91.7, width without spines 91.4 mm.

Rochinia debilis, sp. nov.

Type.—Immature female, U. S. National Museum No. 49572, Joga Shima Light, N. 15° W., 4.2 miles (35° 04' 10" N., 139° 38' 12" E.), 197 fathoms, green mud, coarse black sand, pebbles, temp. 47.6° F., Oct. 26, 1906, station 5091, *Albatross*.

Carapace armed with only two long spines, situated at the lateral branchial angles, directed outward and obliquely upward; a short spine on the intestinal region; a conical elevation on the hepatic region terminating in a short spine; a tubercle on the summit of the rounded cardiac region; three low gastric elevations, of which the two lateral are each surmounted by a small tubercle. Rostrum entire for nearly one-third its length, horns slight curved, widely divergent, very slender in their distal half. Preorbital hood terminating in a non-prominent, subacute tooth, directed outward and a little upward; orbital sinus broad; postocular tooth narrow, in dorsal or side view. Basal article of antenna narrowing distally, surface concave, a very small blunt tooth at the antero-external angle. Median length of carapace 11, width without spines 7.3 mm.

⁴Zool. Jahrb. vol. 7, 1893, p. 44.

⁵Proc. U. S. Nat. Mus., vol. 16, 1893, p. 76, pl. 4, figs. 1–4.

***Maja japonica*, sp. nov.**

Type.—Male, U. S. National Museum No. 48252, Seno Umi, N. 13° W., 1.5 miles, 41–31 fathoms, volcanic mud, sand, rocks, May 7, 1900, station 3702, *Albatross*.

Carapace considerably swollen, constricted behind hepatic regions; four median spines, of which the anterior and posterior are very small and two are gastric, one cardiac, one intestinal; one dorsal branchial spine, about four marginal spines, the hepatic and first gastric spine stout, next spine very small, last one long and in transverse line with cardiac spine; orbital spines broad, flat, acute, well separated, the postocular spine as advanced as the tip of the spine on the preorbital hood; rostral spines moderately divergent, about one-fifth as long as remainder of carapace; surface densely granulate, granules not touching one another. Median length of carapace 16.7, width without spines 13.1 mm.

***Choniognathus*⁶, gen. nov.**

Carapace hexagonal, constricted behind the hepatic region; regions deeply separated. Rostral horns short. Orbits well defined; preorbital hood without anterior spine; upper margin with two sinuses; postocular cup continuous with suborbital lobe. Basal antennal article narrow, a tooth on outer margin. Merus of outer maxilliped fused with the ischium for outer half of its width. Chelipeds (of female) no more massive than ambulatory legs, which are short.

***Choniognathus koreensis*, sp. nov.**

Type.—Female, U. S. National Museum No. 48204, Oki Shima, S. 70° W., 7.5 miles (34° 17' N., 130° 15' E.) 59 fathoms, fine gray sand, broken shells, Aug. 2, 1906, station 4879, *Albatross*.

Densely covered with hair; regions of carapace deeply separated by smooth furrows; elevations covered with tubercles and a few cylindrical blunt spines: thirteen tubercles on mesogastric region, nine on each proto-gastric lobe, two dorsal hepatic, ten cardiac tubercles, and a central spine, a cluster of six intestinal tubercles and on either side a longitudinal row of one large tubercle and one spine, the latter above the posterior angle of the carapace; about thirty smaller branchial tubercles and about five spines or larger tubercles of which one is at the summit or near the inner angle of the region, one is further back and three are on the antero-lateral margin. A triangular tooth on hepatic margin. Rostral horns broad at base, rapidly diminishing, outer margins slightly divergent, interspace a broad U. Median length of carapace 8.7, width 6 mm.

FAMILY RETROPLUMIDAE.

***Retropluma denticulata*, sp. nov.**

Type.—Ovigerous female, U. S. National Museum No. 46305, Suruga Gulf, Omai Saki Light, S. 37.5° W., 6.4 miles (34° 40' 45" N., 138° 18' 30" E.), 47 fathoms, gray mud, temp. 74.9° F., station 5074, *Albatross*.

⁶χωνεύω, to fuse; γνάθος, jaw.

Carapace narrow, transversely suboval; lateral margins very finely denticulate, but without a notch or sizable teeth; upper surface crossed by three smooth ridges, the anterior one arched forward on either side behind the antero-lateral tooth, second ridge nearly straight, third near and almost parallel to posterior margin; space between first and second twice as long as between first and anterior margin, this latter space shorter than that between second and third. A short ridge runs inward from the side-margins at the middle or widest part of carapace; another shorter ridge either side of median line behind rostrum. Chelipeds granulate and hairy on merus, carpus and supero-proximal part of palm; outer surface of palms smooth. Length of carapace including rostrum 8.4, width 10.6 mm.

FAMILY GONEPLACIDAE.

***Carcinoplax surugensis*, sp. nov.**

Type.—Male, U. S. National Museum No. 46165, Suruga Gulf, Omai Saki Light, S. 32.5° W., 12.3 miles (34° 46' N., 138° 21' 50'' E.), 148 fathoms, gray mud, temp. 54.6° F., Oct. 16, 1906, station 5073, *Albatross*.

Antero-lateral projections three, the first a blunt tooth next the orbit, its inner margin short and a continuation of the orbital margin, its outer margin convex and separated from the second tooth by a rounded sinus; second tooth about equal in size to first and tipped with a slender spine; distance between second and third projections greater than between first and second; third at lateral angle of carapace, a rather long, regularly tapering spine directed obliquely upward, outward, and forward. Postero-lateral margins strongly convergent. Front sinuous, faintly trilobed, outer lobes more advanced than median; posterior margin of submarginal groove regularly curved; a distinct fronto-orbital notch. Carpus of cheliped with two sharp spines, inner one conical, outer slender; the fine granulation on the manus forms a reticulating pattern; above lower margin of immovable finger a deep groove continued back a little on palm; brown color of fingers on two-thirds their length, but further on prehensile edges. Length of carapace 14, width just in front of lateral spine 18 mm.

Near *C. longimanus* (de Haan)⁷, but carapace more uneven, outer orbital tooth trends inward, anterior margin of front more transverse; sulcus in upper orbit ends in an open notch at margin; male abdomen broader and more triangular, chelipeds much shorter and stouter.

***Hephthopelta aurita*, sp. nov.**

Type.—Female, U. S. National Museum No. 46405, Suruga Gulf, Omai Saki Light, S. 37° W., 11.7 miles (34° 44' 55'' N., 138° 22' 20'' E.), 284–148 fathoms, gray mud, temp. 44.1° F., station 5072, *Albatross*.

A strong sharp spine on either side of the carapace is a distinguishing feature. Carapace high, its sides converge gradually forward to the spines, in advance of which the sides and front form a regular arch interrupted by the eyes, the corneae protruding; margins bluntly rounded; posterior

⁷*Cancer (Curtonotus) longimanus* de Haan, Fauna Japonica, Crust., p. 50, pl. 6, fig. 1, 1835.

margin sinuous, a little concave at middle. Cardiac region very tumid; it and the metagastric region are set off by deep grooves. Carapace abruptly deflexed before spines; front truncate. Eyestalks stout, a little constricted before the corneae. Merus of cheliped armed with two sharp spines near middle of lower margin and a strong, subdistal falciform spine on inner margin. Length of carapace 8.6, width 10 mm.

Hepthopelta cribrorum, sp. nov.

Type.—Male, U. S. National Museum No. 46388, Sagami Bay, Joka Sima Light, E. 14 miles ($35^{\circ} 08' 15''$ N., $139^{\circ} 20'$ E.), 292 fathoms, green mud, coarse black sand, temp. 43.7° F., Oct. 23, 1906, station 5086, *Albatross*.

Carapace pubescent and on branchial regions finely frosted. Front almost vertically deflexed, edge visible in dorsal view. Eyestalks strongly constricted next the cornea. Basal article of antennules very large and prominent. Antero-external angle of merus of maxilliped rounded and produced outward. Merus of cheliped with four conical spines on lower margin, a subterminal spine on inner margin, a tubercle at end of inner surface; wrist broad, a long, acuminate, inner spine; hand high, thick, with short upper margin and prominent proximal angles on both outer and inner surfaces so that there is a pronounced lower surface; major dactylus strongly arched. Abdomen with segments three to five fused, angles of three blunt, sides of six parallel except at rounded distal angles. Length of carapace 13.6, width 17.2 mm.

Xenophthalmodes morsei, sp. nov.

Type.—Male, U. S. National Museum No. 46403, Wakanoura, Province of Kii, from Imperial University of Tokyo, through Prof. E. S. Morse.

Shape much as in *X. moebii* Richters⁸; posterior margin more arcuate, orbits cut deeper in carapace. Eyes blind and almost wholly dorsal, the lateral margin of carapace nearly in line with lower margin of orbit. Mesogastric region distinctly defined; surface near lateral borders finely granulate. Epistome deep. Manus high, especially at distal end and with a sharp and finely granulated lower margin. Sixth segment of abdomen widens distally, terminal segment equilaterally triangular; appendages of first segment almost straight, reaching nearly to inner margin of maxilliped. Length of carapace 5.3, width 6.8 mm.

FAMILY XANTHIDAE.

Heteropanope pearsei, sp. nov.

Type.—Male, U. S. National Museum No. 62910, Misaki, Aug. 5, 1929, A. S. Pearse collector.

Near *H. indica* de Man⁹. Differs as follows: Front granulate, bounded posteriorly by a transverse, granulate and hairy ridge; margin of lobes straight, without tooth at outer ends; protogastric ridges further forward,

⁸See Alcock, Jour. Asiat. Soc. Bengal, vol. 69, 1900, p. 324, for description and synonymy.

⁹Jour. Linn. Soc., Zool., vol. 22, 1888, p. 53, pl. 3, figs. 1 and 2.

one on either side; hepatic ridge more longitudinal than in *indica*; posterior lateral tooth smaller. Fingers of major chela less elongate, fixed finger much shorter. Carpus and manus of minor chela indistinctly granulate, the fine granules of the manus restricted to the upper surface and the proximal end of the outer surface. Fingers brown, the color not entirely covering proximal end. Length of carapace 7, width 9.4 mm.

FAMILY ATELECYCLIDAE.

Trachycarcinus Faxon.

Balss in 1922¹⁰ refers two Japanese specimens to *T. corallinus* Faxon with a reservation. They prove to be different from each other and from the type species. No. 1 of Balss (p. 99, pl. 2, fig. 4) may be called

Trachycarcinus sagamiensis, nom. nov.

Type.—Male, Sagami Bay, 180 meters.

Carapace broader than long, covered all over with pearly granules between which are hairs visible only with a lens. Regions plainly marked by swellings separated by furrows. Rostrum three-toothed, the middle tooth no more advanced than the lateral. Side margins of carapace oval, the forward half not plainly separated from the hinder; on it three large spines ornamented with pearly granules which are in part upstanding. Length 24, width 26 mm. (After Balss.)

No. 2 of Balss (p. 100, pl. 2, fig. 6) may be called

Trachycarcinus balssi, sp. nov.

Type.—Male, U. S. National Museum No. 65063, Cape Rollin, Simushir Island, W. by N., 5 miles (46° 46' 40" N., 151° 41' E.), 107 fathoms, coarse black sand, pebbles, June 24, 1906, station 4801, *Albatross*.

Golden Hind, 40 meters (Balss).

Carapace longer than broad, suboval, widest in front of middle; convex, rough with tubercles or granules having pointed, articulated tips, easily broken off; tubercles arranged in close clusters on median regions, on two inner branchial lobes and three small lateral teeth; elsewhere the tubercles are scattered; regional grooves smooth. Rostrum three-toothed, teeth spinulous on margins, median tooth longer and stouter than the lateral, which point obliquely outward. Orbits with four teeth, rough with spinules, preorbital prominent, suborbital large. Major cheliped massive, palm three times as high as minor palm. Length 22.4, width 19.4 mm.

FAMILY LEUCOSIIDAE.

Ebalia gotoensis, sp. nov.

Type.—Female, U. S. National Museum No. 65060, Ose Zaki, S. 55° W., 2.25 miles, 60–70 fathoms, green mud, volcanic sand, ash, May 8, 1900, station 3708, *Albatross*.

Surface closely covered with flattened granules; intestinal region conical,

¹⁰Arch. f. Naturg., Jahrb. 88, Abt. A, p. 99.

tipped with a tubercle; a similar, smaller cone on the cardiac region, from which a compound row of raised granules extends forward, narrowing toward the front. Front bidentate with shallow ∇ margin. Subhepatic region produced to a sharp granule and followed posteriorly by a rounded sinus; remainder of antero-lateral margin obscurely crenulate, with a prominent granule at lateral angle; posterior margin arcuate, a small shallow lobe at either end. Cheliped slender, twice as long as carapace, merus thickest at proximal third, margins roughly granulate; palm swollen, twice as long as wide, upper edge sinuous; fingers as long as palm. A sharp, three-sided downward-pointing tooth on penultimate segment of male abdomen. Length of carapace 7, width 8 mm.

***Ebalia japonica*, sp. nov.**

Type.—Male, U. S. National Museum No. 65059, off Niigata Light ($38^{\circ} 16' N.$, $138^{\circ} 52' E.$), 70 fathoms, dark green sand, temp. $51^{\circ} F.$, July 18, 1906, station 4815, *Albatross*.

Carapace as broad as long on median line, somewhat hexagonal; hepatic region swollen, margin bluntly angled; intestinal region high, conical posterior slope arcuate, twice as long as anterior; a narrow groove separates branchial from intestinal and cardiac regions and intestinal from cardiac; two broad shallow lobes on hind margin; dorsal surface covered with coarse granules which form a crenulate border on lateral margins; five finely granulated tubercles in center of carapace of which three form a triangle on gastric region, the median tubercles behind the lateral; a branchial tubercle near inner angle and almost in line with the median tubercle but a little behind it; front with a small median ∇ , each lobe subtruncate but with a shallow bay, outer angles rounded and produced outward. Ventral surface, also chelipeds and legs granulate. Chelipeds twice as long as carapace; palms longer than fingers, upper margin sinuous. Penult segment of abdomen with backward-pointing spine. Length and breadth of carapace 8 mm.



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