Three new species of the Anomura from Japan (Crustacea, Decapoda)

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Three new species of the Anomura from Japan (Crustacea, Decapoda)[1]

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In the course of a study on Japanese Anomura three new species were found recently. This short report is based upon the specimens from Amakusa and Sagami Bay deposited in the Amakusa Marine Biological Laboratory, Kyushu University and the Biological Laboratory, Imperial Household.

It is great many pleasure to extend my hearty thanks to the staff of the above-mentioned Laboratories for affording me the facilities to the study.

CHIROSTYLIDAE

Uroptychus kudayagi sp. nov.

Japanese name: Kudayagi-waraebi

Holotype: Male, Biological Laboratory, Imperial Household (BLIH), Cat. No. 899 (Det. No. 96), from Kannonzuka-dashi, Amadaiba, Eastern Sagami Bay, 70–80 m deep, Feb. 1, 1955.

Allotype: Ovigerous female, BLIH, Cat. No. 542 (Det. No. 39), from the same locality, 70–90 m deep, June 6, 1950.

Paratypes: One male, BLIH, Cat. No. 1219 (Det. No. 155), from the same locality, 65 m deep, Jan. 17, 1957; one ovigerous female, BLIH, Cat. No. 576 (Det. No. 43), from Maruyama-dashi, Amadaiba, Eastern Sagami Bay, 70–80 m deep, July 25, 1950; one ovigerous female, Zoological Laboratory, Kyushu University (ZLKU), Cat. No. 7029, from the west coast of Tomioka, Amakusa, Kyushu, 30–50 m deep, collected by a gill-net for spiny lobsters, May 3, 1959.

[1] Contributions from the Zoological Laboratory, Faculty of Agriculture, Kyushu University, No. 303.

Description: Carapace excluding rostrum is a little broader than long in the holotype and allotype, but almost equal in length in the paratypes; it is convex in both directions; its outer surface smooth; there is a strong, curved tooth at one-third of the lateral margin. The outer orbital angle with an acute tooth. Rostrum triangular, deeply concave dorsally; it reaches to the distal segment of the antennular peduncle.

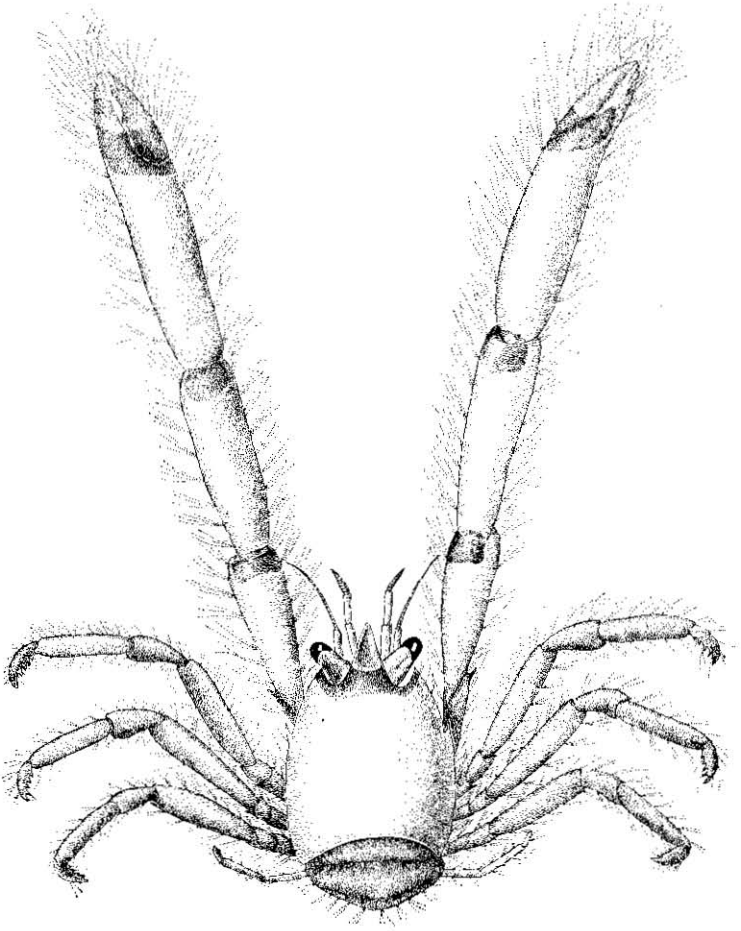

Fig. 1. *Uroptychus kudsyagi* sp. nov., holotype, male, ×6.5.

Abdomen smooth and polished. Telson is laterally subdivided into two lobes; the proximal lobe is slightly broader than the terminal one, but one half as long as the terminal lobe; the distal margin of the terminal lobe is rather convex (Fig. 2A).

Anterior margin of the thoracic sternum with a deep sinus at the center; there are three transverse ridges ornamented with fine, long hairs. Antennular peduncle reaches beyond the antennal peduncle by the distal segment (Fig. 2B). Antennal peduncle reaches almost to the tip of the rostrum; the antennal acicle broad, tapering to a sharp point, it extends to the level of the tip of the rostrum (Fig. 2C). Merus of third maxilliped without teeth on the inner margin (Fig. 2D).

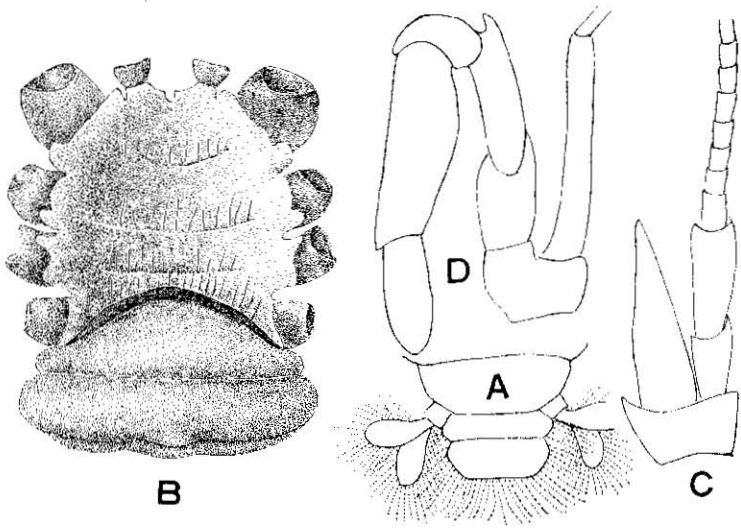

Fig. 2. *Uroptychus kudayagi* sp. nov.,
A. Telson, ×5, B. Sternum, ×12, C. Left second antenna, dorsal view, ×40, D. Left third maxilliped, ventral view, ×25.

Chelipeds five times as long as the carapace excluding rostrum, the right chela slightly larger than the left in the holotype. In the allotype and paratypes chelipeds about four times as long as the carapace. The ischium armed with an acute, stout spine on the inner margin; merus, carpus and chela are slightly depressed, without spines, smooth, but ornamented with tufts of hairs; merus and carpus are equal in length, and they are five-eighths as long as the chela; palm more than twice as long as fingers; fingers armed with one or two teeth on the cutting margins; there is no gap between fingers in both sexes.

Ambulatory legs are furnished with similar hairs and without spines on the margins except the dactylus; the inner margin of the dactylus armed with about four spines which increase in size distally.

Dimensions (in mm):

	Male (Holotype)	Ov. female (Allotype)	Male (Det. No. 155)	Ov. female (Det. No. 43)	Ov female (Cat. No. 7029)
Length of carapace (excluding rostrum)	4.0	4.5	3.8	4.3	3.3
Breadth of carapace	4.3	5.0	3.8	4.3	4.0
Length of rostrum	1.8	2.0	1.2	1.7	1.5
Length of left cheliped	20.0	18.0	16.0	17.0	16.0
Length of right cheliped	21.0	18.5	15 0	17.0	16.0

Colour in life: The ground colour of the carapace and legs are pale orange. Front and dorsal surface of the eyestalk are deep red. The distal parts of merus, carpus, palm and the proximal ends of the fingers are of the similar red colour.

Ecology: This species from Amakusa is commensal with *Siphonogorgia dipsacea* (Wright and Studer)[1] or "Akabana-kudayagi" in Japanese name.

Relationships: This species is closely related to *U. nitidus* (A. Milne Edwards), but can be easily distinguished by the living colour and laterally armed carapace.

PORCELLANIDAE

Porcellana habei sp. nov.

Japanese name: Habe-kanidamashi

Types: Holotype, male, Zoological Laboratory, Kyushu University, Cat. No. 7400; paratype, one male, ZLKU, Cat. No. 7401, from the west coast of Tomioka, Amakusa, Kyushu (Lat. 32° 32′ N, Long. 130° 02′ E), 30–50 m deep, sandy mud bottom, in Nov. 1959, collected by a gill-net for spiny lobsters, leg. Dr. T. Habe.

Description: Carapace smooth, polished on the upper surface, and strongly convex laterally; the gastric region is highest; the cervical groove faintly distinct. Front is tridentate and directed forwards; the median tooth with a distinct longitudinal groove; it is more produced than the lateral teeth and separated from them by a wide U-shaped notch. The outer orbital angle is produced into a large, acute tooth. The lateral margin with a distinct notch at the cervical groove; the epibranchial tooth acute.

[1] According to the kind information by Dr. H. Utinomi.

The first segment of the antennular peduncle longer than broad; its upper margins provided with three teeth with apex acute; its upper plate furnished with spiny granules; its ventral surface ornamented with transverse ridges which bear long, fine hairs (Fig. 4A). The first

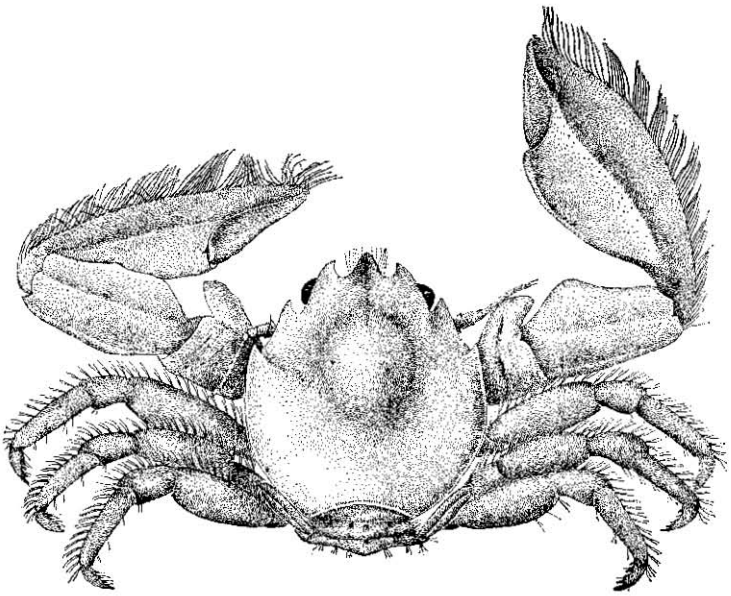

Fig. 3. *Porcellana habei* sp. nov.,
holotype, male, ×6.5

segment of the antennal peduncle much broad, considerablly produced inwards; its upper outer angle is visible in dorsal view (Fig. 4B). The laminate crest of the merus of third maxilliped rounded; it bears transverse ridges on the ventral surface (Fig. 4C); anterior margin of the sternum of third maxilliped rounded, its lateral process triangular with apex pointed (Fig. 4D).

Chelipeds smooth, glabrous and subequal, right one slightly larger in the holotype; the upper distal angle of the arm rounded, very prominent; the upper surface of the wrist and palm with a median longitudinal ridge; wrist with a broad, rounded tooth on the anterior margin; the palm triangular, slender at the base; its outer margin nearly straight, acute and serrated beneath the marginal series of ciliae; the lower side of the fingers ornamented with a tuft of hairs at the base (Fig. 4E).

Ambulatory legs sparsely provided with pulmose setae; each segment of the legs not armed spines or spinules on the posterior margin except

the dactylus which bears three or four spines, the distal one largest (Fig. 4F).

Telson seven-lobed; the central lobe being rather large and an equal triangle-shaped (Fig. 4G).

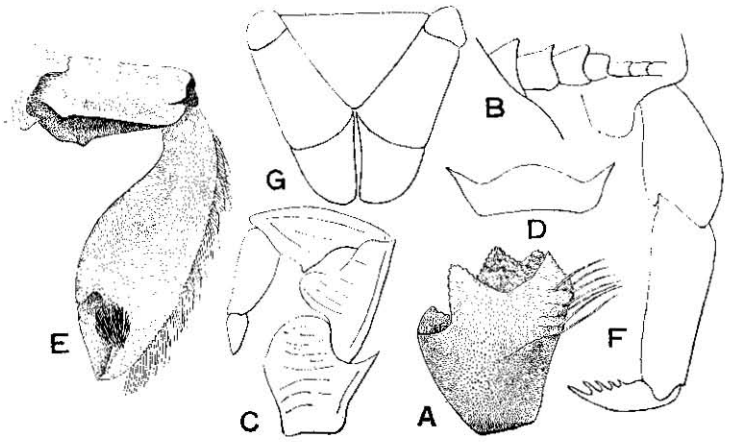

Fig. 4. ***Porcellana habei*** sp. nov.,

A. Basal segment of left antennule, ventral view, ×33,
B. Right antenna, dorsal view, ×33,
C. Left third maxilliped, ventral view, ×16,
D. Sternum of third maxilliped, ×22,
E. Right cheliped of the holotype, ventral view, ×7,
F. Right third thoracic leg, ×16,
G. Telson of the holotype, ×16.

Dimensions (in mm):

	Holotype Male	Allotype Male
Length of carapace (including rostrum)	5.8	5.3
Breadth of carapace	5.3	4.5

Colour: Specimens preserved in alcohol were pale orange.

Ecology: Associated with a hermit crab, *Pagurus japonicus* (Stimpson) and small, flat gastropod shells, *Syphopatella walshi* (Reeve), inside of a gastropod shell, *Hemifusus teranatus* (Gmelin).

Relationships: This species is closely allied to *Porcellana pulchra* Stimpson, but differs from the latter in the shape of rostrum, basal segment of first antennular peduncles and the armature of the lateral margin of carapace.

PAGURIDAE

Paguristes japonicus sp. nov.

Japanese name: Buchi-himeyokobasami

Holotype: Male, cl. 7, cb. 5 mm, Zoological Laboratory, Kyushu University, Cat. No. 5191, from Tomioka, Amakusa, on the west side of Kyushu (Lat. 32° 32′ N, Long. 130° 02′ E), 30–50 m deep, sandy mud bottom, in Apr. 1959.

Allotype: Female, cl. 5, cb. 4 mm, Biological Laboratory, Imperial Household, Det. No. 369, from 2.5 km S.E. off Jogashima, Eastern Sagami Bay, 75–80 m deep, on June 6, 1960, living in a shell of *Siphonaria mikado* (Melvill).

Paratypes: One male, cl. 10, cb. 8 mm, ZLKU, Cat. No. 7683, off Shimabara, the Sea of Ariaké, 10 m deep, on Sept. 15, 1957; one male, cl. 6.5, cb. 5 mm, ZLKU, Cat. No. 4579, from Tomioka, Amakusa, Kyushu. 20–40 m deep, sandy mud bottom, on Aug. 22–24, 1959, living in a shell of *Baryspira albocallosa* (Lischke); six males, cl. 4–6.3 mm, ZLKU, Cat. No. 7393, from Tomioka, Amakusa, 30–50 m deep, sandy mud bottom, on Nov. 8, 1958, in young shells of *Hemifusus ternatanus* (Gumelin) and *Fusius ferrugineus* Kuroda; one male, cl. 6.5, cb. 5.8 mm, BLIH, Det. No. 340, from west of Kameki-sho, Eastern Sagami Bay, 120 m deep, on June 1, 1960, in a shell of *Siphonaria mikado* (Melvill).

Description: Carapace almost smooth except the antero-lateral part which is rugose to naked eye, while it is ornamented with depressed tubercles microscopically; its maximum breadth across the branchial regions is two-thirds the length. The rostrum is well developed, triangular with an acute point; it reaches to the middle of the ophthalmic scales.

The eyestalk rather stout, dilated proximally; it reaches to the middle of the distal segment of the antennular peduncle, and slightly shorter than the length of the frontal margin of the carapace; its dorsal surface is ornamented with some hairs basally. The ophthalmic scale has a broad base; its inner part of the scales is produced anteriorly to a slender process, which ends in two pointed teeth and practically touches the rostrum (Fig. 5).

The antennal peduncle almost or not attain the base of the cornea. The second segment of the antennal peduncle bears a distinct antero-internal spine, while the antero-external angle is produced anteriorly to a distinct process ending in a sharp tooth; its outer margin bears three teeth. The antennal acicle (=scaphocerite) is slender, spinose and setose, and armed with five spinules on the inner margin, while on outer two spinules are present distally; the flagellum is less than the length of the carapace; it is about three-fourths in the holotype.

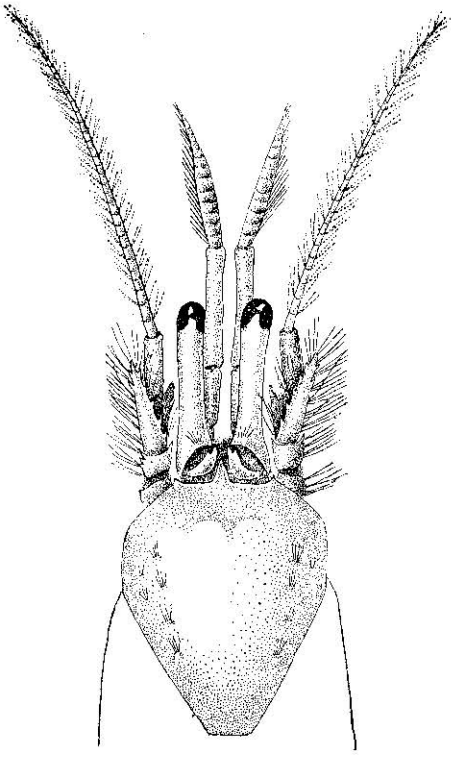

Fig. 5. *Paguristes japonicus* sp. nov., anterior part of the body, ×10.

The chelipeds are similar and subequal, rather thickly covered with long hairs; the inner lower marin of the merus is serrated; the upper surface of the wrist, hand and fingers is ornamented with sharp granules which on the inner margin of the wrist and hand become strong teeth. The fingers are armed with small teeth, when closed leave a little gap at the base; the outer surface of the movable finger is very closely beset with fine granules and short hairs (Fig. 6A).

The second and third legs on the left side slightly beyond, those on the right side almost half a dactylus length beyond the chelipeds; the anterior margin of the carpus and propodus of the second pair is strongly spinose, while on the carpus of the third pair there is only one distal spine; propodus and dactylus are furnished with tufts of hairs on both anterior and posterior margins and on inner surface; the dactylus of the second and third legs is almost equal to that of propodus; its posterior margin armed with spinules distally (Fig. 6B).

The telson of abdomen is strongly asymmetry; the left lobe is much longer than the right one; there are four teeth and seven spinules on the left lobe, while the right one is unarmed in the holotype.

The distal segment of first pleopods of the male bears three lobes or blades. The lower lobe is dilated distally, and furnished with spinules on the distal and outer margins in distal half of the lobe; its inner margin is ornamented with long, fine hairs. The inner lobe is slender and unarmed; it is the longest of them. The upper lobe is broad and bears long hairs on the distal margin (Fig. 6C). The second pleopod of the male is slender and long; its distal segment is less than the length of the penultimate segment; it is about seven-tenths in the holotype; it is very closely beset with long hairs.

Colour in life: The eyestalk is brownish purple. On the surface of the antennule, antenna, cheliped, legs and the anterior half of the

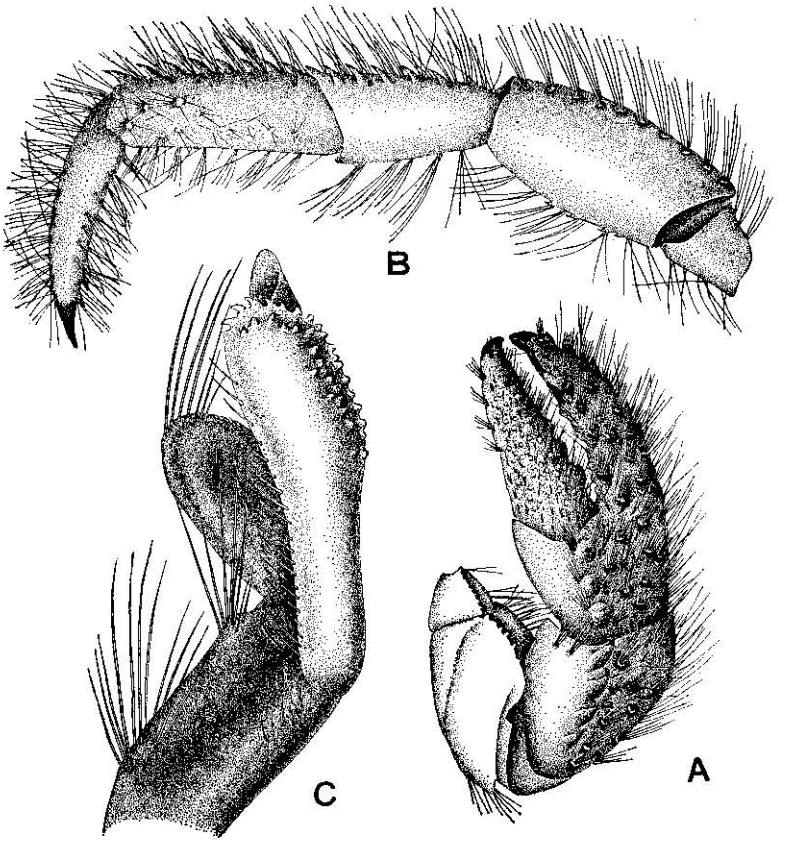

Fig. 6. *Paguristes japonicus* sp. nov.,
A. Right cheliped, ×7,
B. Right second thoracic leg, inner side, ×7,
C. Left first pleopod, ventral view, ×75.

carapace there are well defined dark red patches and rings on a faint pink ground. The posterior half of the carapace and abdomen are greenish brown. Hairs are brownish.

Relationships: This species is to be distinguished from all other known Japanese species of Digitalis group of the genus by the following key.

Key to the Digitalis group of *Paguristes* of Japan

1. Antennal flagellum distinctly longer than carapace ...
   ... ... Seminudus group
   1. *setosus* H. Milne Edwards, 1848. 2. *seminudus* Stimpson, 1858,
   3. *acanthomerus* Ortmann, 1892, 4. *palythophilus* Ortmann, 1892,
   5. *kagoshimensis* Ortmann, 1892, 6. *balanophilus* Alcock, 1905.
— Antennal flagellum shorter than carapace ... 2. Digitalis group
2. Eyestalk longer than antennular peduncle ...
   ... ... *pusillus* Henderson, 1196
— Eyestalk equal to or shorter than antennular peduncle 3
3. Eyestalk almost equal to or a little shorter than
   antennular peduncle ... ... *barbatus* Ortmann, 1892
— Eyestalk decidedly shoter than antennular peduncle 4
4. Outer surface of movable finger of cheliped with
   seven granular oblique-lines ... ... *digitalis* Stimpson, 1858
— Outer surface of movable finger of cheliped with
   granules being not arranged in lines ... ... *japonicus* sp. nov.

Literature

Alcock, A. 1905. Catalogue of the Indian decapod crustacea in the collection of the Indian Mueum. Pt. 2, Anomura, Fasc. 1, Pagurides.

Balss, H. 1913. Ostasiatische Decapoden I. Die Galatheiden und Paguriden. Abh. K. B. Akad. Wiss., München, math.-phys. Kl., suppl. Bd. 2, Abh. 9.

Benedict, J. E. 1903. Description of a new genus and forty six new species of crustaceans of the family Galatheidae, with a list of the known marine species. Proc. U. S. Nat. Mus., vol. 26.

Dam, A. J. van 1933. Die Chirostylidae der Siboga-Expedition. Résultes des explorations zoologiques, botaniques, océanographiques et géologiques entreprises aux Indes Néerlandaises orientales en 1899-1900. Monographie 39, a7, 119.

Dam, A. J. van 1937. Einige neue Fundorte von Chirostylidae. Zool. Anz., Bd. 120, Heft 5-6.

Dam, A. J. van 1939. Ueber einge *Uroptychus*-Arten des Museums zu Kopenhagen. Bijdr. Dierk., vol. 27.

Dam, A. J. van 1940. Anomura, gesammelt vom Damfer "Gier" in der Java-See. 1. *Uroptychus*-Arten. Zool. Anz., Bd. 129, Heft 3-4.

Forest, J. 1954. Les *Paguristes* des côtes occidentales et médionales d'Afrique. Ann. South Afr. Mus., vol. 41, pt. 4.

Forest, J. 1954. Sur un Pagure littoral nouveau de la Martinique, *Paguristes cadenati* sp. nov. Bull. Mus. Hist. Nat., ser. 2, vol. 26, no. 3.

Gee, N. G. 1925. Tentative list of Chinese decapod crustacea. Lingnan Agr. Rev., Canton, vol. 3.

Haig, J. 1960. The Porcellanidae (Crustacea Anomura) of the Eastern Pacific. Allan Hancock Pacific Expeditions vol. 24.

Kamita, T. 1955. Studies on the decapod crustaceans of Corea. Part II. Hermit-crabs. Sci. Rep. Shimane Univ., Matsue, no. 5.

Melin, G. 1939. Paguriden und Galatheiden von Prof. Dr. Sixten Bocks Expedition nach den Bonin-Inseln 1914. Kungl. Svenska Vetensk. Akad. Handl., vol. 18, no. 2.

Miyake, S. 1942. Studies on the decapod crustaceans of Micronesia. III. Porcellanidae. Palao Trop. Biol. Stat., Studies, vol. 2, no. 3.

Miyake, S. 1943. Studies on the crab-shaped Anomura of Nippon and adjacent waters. Jour. Dep. Agr., Kyushu Imp. Univ., vol. 7, no. 3.

Miyake, S. 1957. A new porcellanid crab from Middle Japan. Publ. Seto Mar. Biol. Lab., vol. 6, no. 1.

Ortmann, A. E. 1892. Die Dekapoden-Krebse des Strassburger Museums. IV. Die Abtheilungen Galatheidea und Paguridea. Zool. Jahrb., Syst., Jena, Bd. 6.

Parisi, B. 1917. I Decapodi giapponesi del Museo di Milano. V. Galatheidea e Reptantia. Atti Soc. Ital. Sci. Nat., vol. 56.

Stimpson, W. 1858. Prodromus descriptionis animalium evertebratorum, quae in Expeditione ad Oceanum Pacificum Septentrionalem, a Republica Federata missa, Cadwaladaro Ringgold et Johanne Rodgers Ducibus, observavit et descripsit. Pars VII. Crustacea Anomoura. Proc. Acad. Nat. Sci., 1858.

Stimpson, W. 1907. Report on the Crustacea (Brachyura and Anomura) collected by the North Pacific Exploring Expedition, 1853-1856. Smithsonian Misc. Coll., vol. 49.

Terao, A. 1913. A catalogue of hermit-crabs found in Japan (Paguridea excluding Lithdidae), with description of four new species. Annot. Zool. Jap., Tokyo, vol. 8.

Yokoya, Y. 1933. On the distribution of decapod crustaceans inhabiting the continental shelf around Japan, chiefly based upon the materials collected by S. S. Soyo-maru, during the year 1923-1930. Jour. Coll. Agr., Tokyo Imp. Univ., vol. 12, no. 1.

Yokoya, Y. 1939. Macrura and Anomura of Decapod Crustacea found in the neighbourhood of Onagawa, Miyagi-ken. Sci. Rep. Tohoku Imp. Univ., ser. 4, vol. 14, nos. 2-3.

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