To Dr. Mary J. Rathbun
with best wishes
Sadayoshi Miyake

NOTES ON DECAPOD CRUSTACEANS COLLECTED BY PROF. TEISÔ ESAKI FROM MICRONESIA

SADAYOSHI MIYAKE

Reprinted from Annotationes Zoologicæ Japonenses
Vol. 17, No. 2, June 10, 1938

NOTES ON DECAPOD CRUSTACEANS COLLECTED BY PROF. TEISO ESAKI FROM MICRONESIA[1]

SADAYOSHI MIYAKE (三宅 貞祥)

Zoological Laboratory, Kyushu Imperial University, Fukuoka

ONE TEXTFIGURE

(Received Dec. 4, 1937)

I received a series of material of the Decapod Crustaceans collected by Prof. Teiso Esaki during his trips in Micronesia. Though the number of specimens is not large, they are of much interest, because the Decapod fauna of the Marianas and West Carolines does not seem to have been thoroughly investigated.

The collection was made from various islands of Micronesia as shown in the following list:

I. Saipan, Marianas:
   Cardisoma hirtipes Dana
   Sesarma (*Sesarma*) *meinerti* de Man
   Sesarma (*Parasesarma*) *moluccensis* de Man
   Uca annulipes (Latreille)

II. Rota, Marianas:
   Sesarma (*Chiromantes*) *bidens* (de Haan)
   Atya serrata Spence Bate
   Caridina typus H. Milne-Edwards
   Palaemon lar Fabricius

III. Yap, Carolines:
   Uca annulipes (Latreille)

IV. Babelthaob Island, Palau Islands, Carolines:
   Uca annulipes (Latreille)
   Uca dubia (Stimpson)
   Uca lactea (de Haan)
   Uca novaeguinae Rathbun

V. Peliliou Island, Palau Islands, Carolines:
   Scylla serrata (Forskål)

[1] Results of Professor Teiso Esaki's Micronesia Expedition 1936, No. 14. Contributions from the Zoological Laboratory, Kyushu Imperial University, No 110.

I wish to express my hearty thanks to Prof. Esaki for his courtesy in handing the material over to me. I am also grateful to Prof. Yô K. Okada of the Kyoto Imperial University for allowing me to consult necessary literature. Further I am indebted to Prof. Hiroshi Ohshima for his constant guidance.

1. *Cardisoma hirtipes* Dana

Cardisoma hirtipes Dana, 1852, p. 376, Atlas 1855, Pl. 24, fig. 2—Fiji Islands.
—— Doflein, 1904, p. 406—Marshall Islands.
—— Sakai, 1936, p. 174, Pl. 14, fig. 4– Palau Islands; Formosa.
—— Koba, 1936, p. 159—Amami-Ôsima; Okinawa-zima, Okinawa-Group, Riukiu.

Material examined. 1 female; Saipan; Feb. 3, 1936.

Remarks. This is the new record of Saipan.

2. *Sesarma* (*Chiromantes*) *bidens* (de Haan)

Grapsus (*Pachysoma*) *bidens* de Haan, 1835, p. 60, Pl. 11, fig. 4; Pl, 16, fig. 4—Japan.
Sesarma bidens Bürger, 1893, p. 628– Palau Islands.
Sesarma (*Chiromantes*) *bidens* Balss, 1922, p. 156—Formosa.
—— Maki and Tsuchiya, 1923, p. 179—Formosa.
—— Sakai, 1936, p. 173—Formosa; Palau Islands.

Material examined. 1 male and 2 females; Rota; Feb. 7, 1936.

3. *Sesarma* (*Sesarma*) *meinerti* de Man

Sesarma (*Episesarma*) *meinerti* de Man, 1895, p. 166—Atjeh.
Sesarma (*Sesarma*) *meinerti* Tesch 1917, p. 171 (Literature).
—— Cott, 1929, p. 679, Pl. 1—Beira.

Material examined. 1 female; Saipan; March 3, 1936.

Dimensions (in mm)

Distance between external orbital angles	30.8
Distance between epibranchial teeth	33.2
Length of carapace	27
Breadth of front	17.2
Posterior margin of carapace	14
Horizontal length of chela Right	24.5
Horizontal length of chela Left	23.5
Height of palm Right	14.5
Height of palm Left	12.8
Length of movable finger Right	16.5
Length of movable finger Left	16
Length of merus of penultimate pair of legs	18.8
Breadth of merus of penultimate pair of legs	9.1

Remarks. The proportion of the distance between the external orbital angles and the length of the carapace is 100 : 87.66. The ratio of the greatest breadth to the length of carapace is 100 : 81.32. The

length of the posterior margin is larger than the length of the carapace.

The specimen seems to be of importance on account of its distribution; this being the northernmost record ever traced.

4. *Sesarma* (*Parasesarma*) *moluccensis* de Man

Sesarma (*Parasesarma*) *moluccensis* de Man, 1895, p. 202; 1897, Pl. 31, figs. 36 a-f—Flores.
—— Tesch, 1917, p. 177—No new record.

Material examined. 2 males; Saipan; March 22, 1936.

Remarks. New to the fauna of Micronesia.

5. *Scylla serrata* (Forskål)

Portunus (*Scylla*) *serratus* de Haan, 1833, p 11; 1835, p. 44—Japan.
Scylla serrata Terazaki, 1903, p. 440—Yaéyama-Group, Riukiu; Formosa.
Scylla tranquebarica Stimpson, 1907, p. 75—Okinawa-Group, Riukiu.
Scylla serrata Maki and Tsuchiya, 1923, p. 140, Pl. 17, fig. 2—Formosa.
—— Sakai, 1936, p. 162—Palau Islands.

Material examined. 2 specimens (carapace only); Peliliou Island, Palau Islands, mangrove swamp; March 6, 1936.

Remarks. This large edible crab is very common, being found in its enormous hole in mangrove swamps. It is commonly captured for food in the named district.

6. *Uca annulipes* (Latreille)

Uca pulchella Parisi, 1918, p. 93—Ogasawara Islands.
Uca annulipes Balss, 1922, p. 142—Formosa.
—— Sakai, 1936, p. 170—Palau Islands.
—— Miyake, 1936, p. 511—Yaéyama-Group, Riukiu.

Material examined. 2 males and 1 female; Yap; Feb. 15, 1936. 3 males and 3 females; Ngardok, Babelthaob Island, Palau Islands; Feb. 24, 1936.

7. *Uca dubia* (Stimpson)

Gelasimus dubius Stimpson, 1907, p. 104, Pl. 14, figs. 4 a-b—Okinawa-Group, Riukiu.
Uca dubia Sakai, 1936, p. 170—Palau Islands.
—— Miyake, 1936, p. 511—Yaéyama-Group, Riukiu.

Material examined. 1 female; Ngardok, Babelthaob Island; Feb. 24, 1936.

8. *Uca lactea* (de Haan)

Ocypode (*Gelasimus*) *lactea* de Haan, 1835, p. 26; p. 54, Pl. 15, fig. 5—Japan.
Uca lactea Parisi, 1918, p. 92—Formosa; Ogasawara Islands.
—— Balss, 1922, p. 143—Formosa.
—— Maki and Tsuchiya, 1923, p. 211, Pl. 24, figs. 9-10—Formosa.

—— Sakai, 1936, p. 171—Palau Islands.
—— Miyake, 1936, p. 511—Yaéyama-Group, Riukiu.

Material examined. 1 male; Ngardok, Babelthaob Island; Feb. 24, 1936.

9. *Uca novaeguineae* Rathbun

Uca noveguineae Rathbun, 1913, p. 617, Pl. 76—New Guinea.
—— Sakai, 1936, p. 171, fig. 6—Palau Islands.

Material examined. 1 male and 2 females; Ngardok, Babelthaob Island; Feb. 24, 1936.

10. *Palaemon lar* Fabricius

Palaemon lar Cowles, 1914, p. 380, Pl. 2, figs. 7 a-h—Guam, Marianas.
Macrobrachium lar Maki and Tsuchiya, 1923, p. 56, Pl. 5, fig. 1—Formosa.
—— Ohshima, 1935, p. 974—Yaéyama-Group, Riukiu.

Material examined. 2 males; Rota, Marianas; Feb. 7, 1936.

Remarks. There is a wide range of variation in chelipeds of this species. A careful examination has convinced me that our specimens are to be referred to *Palaemon lar.* Distinct characters of the specimens from Rota are the following:—The rostrum reaches to the tip of the peduncle of the first antenna. The upper border of the rostrum shows a slight upward curve of the tip and a gentle convexity to the eye. The dental formula is as follows: $\frac{9\,(2)}{2}$, $\frac{9\,(2)}{3}$. The whole of the propodus of the first leg extends beyond the tip of the antennal scale in both specimens. The chelipeds are subequal in length, both of them showing no gaping between the fingers.

Dimensions (in mm)

	No. 1		No. 2	
	Left	Right	Left	Right
Propodus of 1st leg	10.5	10.5	10.5	10.5
Carpus „	6.5	6.5	6.5	6.5
Finger of 2nd leg	14.5	14	11	11.3
Chela „	35	34.8	25.8	26
Palm „	21.2	21	14.5	14.5
Carpus „	15	15	10.9	10.8
Merus „	16.8	16	12	12
Ischium „	12	12	10.8	11
Total length, being with ischium	80	77	60	61
Dactylus of 3rd leg	3.5	3.5	3.2	3.2
Propodus „	11.3	11.3	11	11
Merus „	13	13	13	13
Body length (tip of rostrum to end of telson)	130		128	

11. *Caridina typus* H. Milne-Edwards

(Textfig. 1.)

Caridina typus H. Milne-Edwards, 1837, p. 362, Pl. 25, figs. 4–5—Locality unknown.
Caridina exilirostris Stimpson, 1860, p. 98—Okinawa-Group, Riukiu.
Caridina typus form *typica* Bouvier, 1925, p. 249, figs. 272–295—Marianas.

Material examined. 2 specimens (1 ovig. female), Rota; Feb. 5, 1936.

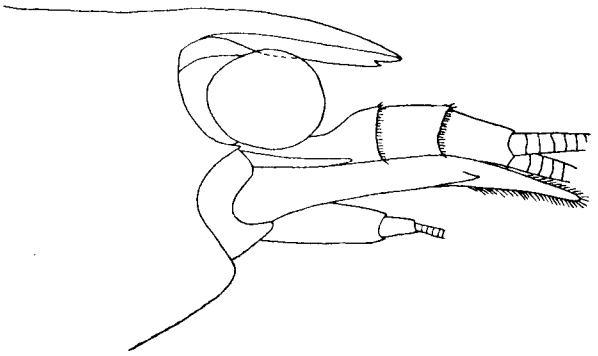

Fig. 1. *Caridina typus*, outline of beak, ×16.

Remarks. I refer the Rota specimens to *Caridina typus* form *typica*, because they almost agree with Bouvier's description. The important characters of our specimens are as follows: Our specimens have rostrum gradually curved downwards, and the tip of rostrum extends to the first segment of the antennular peduncle. The lower border of the rostrum is armed with a tooth. The dactylus of the third leg is 1/4 the length of the propodus. The dactylus of fifth leg is 4/15 the length of the propodus.

12. *Atya serrata* Spence Bate

Atya serrata Spence, Bate, 1888, p. 699, Pl. 119, fig. 2—Cape Verde Islands.
—— Bouvier, 1925, p 294, figs. 611–615; figs. 630–633—Marianas.

Material examined. 10 specimens; Rota; Feb. 5, 1936.

LITERATURE

Balss, H. (1914) Ostasiatsche Decapoden II. Die Natantia und Reptantia. Abh. bayer. Akad. Wiss. Math.-Phys. Kl. Suppl.-Bd. 2, Abh. 10.

Balss, H. (1922). Ostasiatische Decapoden IV. Die Brachyuren, Cancridea. Arch. Naturgesch. Berlin. Jg. 88, Abt. A.

Bate, C. Spence (1888). Report on the Crustacea Macrura collected by H.M.S. Challenger. vol. 24 (text), vol. 25 (atlas).

Bouvier, E. L. (1925). Recherches sur la morphologie les variations, la distribution géographique des crevettes de la famille des Atyidés. Encylopédie Entomologique IV. Paris.

Bürger, O. (1893). Beiträge zur Kentnis der Gattung Sesarma. Zool. Jahrb., Syst. Bd. 7.

Cott, H. B. (1929). The Zoological Society's Expedition to the Zambezi 1927. No. 2. Proc. Zool. Soc. London. 1929.

Cowles, R. P. (1914). Palaemons of the Philippine Islands Philippine Journ. Sci. Sec. D, vol. 9, no. 4.

Dana, J. D. (1852). Crustacea in U. S. Exploring Expedition; and Atlas (1855).

Doflein, F. (1904). Krebse: in Die Landfauna der Marschall-Inseln nebst einigen Bemerkungen zur Fauna der Inseln Nauru. Zool. Jahrb., Syst. Bd. 20.

Edmondson, C. H. (1935). Atydae of Southern Polynesia. Bernice P. Bishop Museum. Occasional Papers, vol. 11, no. 3.

de Haan, W. (1833–1850). Crustacea: Fauna Japonica.

Koba, K. (1936). Occurrence of the land crab *Cardisoma hirtipes* Dana in the Ryûkyû (Loo Choo) Islands, Japan. Bull. Biograph. Soc. Japan, vol. 6, no. 15.

Maki, M. & Tsuchiya, H. (1923). [Decapod Crustaceans from Formosa. Department of Agriculture, Goverment Research Institute, Formosa. Report No. 3] (in Japanese).

de Man, J. G. (1895). Ueber die von Herrn Schiffscapitän Storm zu Atjeh, an den westlichen Küsten von Malakka, Borneo und Celebes so wie in der Java-See gesammelten Decapoden und Stomatopoden. Zool. Jahrb., Syst. Bd. 9.

Milne-Edwards, H. (1937). Histoire naturelle des Crustacés. Paris. tome 2.

Miyake, S. (1936). Report on the Brachyura of Riukiu Islands collected by the Yaéyama Expeditions during the years 1932–1934. A list of the known species of the Brachyura from Ishigaki-shima. Annot. Zool. Japon. vol. 15, no. 4.

Ohshima, H. (1935). A glimpse on animals of the Yaéyama group, Riukiu (5). Botany and Zoology. Tokyo. vol. 3, no. 3 (in Japanese).

Parisi, B. (1918–19). I Decapodi giapponesi del Museo di Milano VI, VII. Atti Soc. ital. Milano. vol. 57–58.

Rathbun, M. J. (1907). Report on the scientific results of the Expedition to the tropical Pacific by the U. S. Fish Comm. steamer "Albatross", IX, X. The Brachyura. Mem. Mus. Comp. Zoöl. Cambridge Mass. vol. 35.

Rathbun, M. J. (1913) Description of new species of crabs of the family Ocypodidae. Proc. U. S. Nat. Mus. vol. 44.

Sakai, T. (1936). Report on the Brachyura collected by Mr. F. Hiro at Palao Islands. Sci. Rep. Tokyo Bunrika Daigaku, Sec. B. vol. 2, no. 37.

Stimpson, W. (1907). Report on the Crustacea collected by the North Pacific Exploring Expedition. Smithson. Misc. Coll. vol. 49.

Terazaki, T. (1903). [Crabs of Japan.] Dobuts. Zasshi, Tokyo. vol. 15 (in Japanese).

Tesch, J. J. (1917). Synopsis of the genus *Sesarma*, *Metasesarma*, *Sarmatium* and *Clistocoeloma*, with a key to the determination of the indo-pacific species. Zool. Meded. Leiden. Deel 3.