

# On Four Deep-Sea Species of the Anomuran Crustaceans (Lithodidae, Chirostylidae and Galatheidæ) from Sagami Bay, Japan

Kensaku MURAOKA  
(Kanagawa Prefectural Museum)

## 相模湾の深海に生息する異尾類 4 種について

十脚甲殻異尾類のタラバガニ科のコフキエゾイバラガニとニホンイバラガニ、クモエビ科のホクロツノコシオリエビおよびコシオリエビ科のツノナガシンカイコシオリエビの4種を、相模湾の深海からカニ籠を用いて得ることができた。これらはいずれも漸深海帯に生息する種類で、相模湾では初記録、あるいは数例の記録のみであり、さらに分布を考えるうえでも興味ある種と思われるのでここに報告する。(村岡健作)

Recently, I had an opportunity to examine four deep-sea anomuran crustaceans which were obtained by the use of the crab-traps at the upper bathyal depths 230-750m in Sagami Bay. They are assigned to *Paralomis japonica* Balss, 1911, *Neolithodes nipponensis* Sakai, 1971 (Lithodidae), *Eumunida funambulus* Gordon, 1930 (Chirostylidae) and *Munidopsis camelus* (Ortmann, 1892) (Galatheidæ). They have been previously collected and described in some occasions from the Japanese waters, One of them, *E. funambulus*, is recorded for the first time from Sagami Bay.

In this paper, a brief account with illustrations is provided for each species mentioned-above. Measurements used in this paper are the length of carapace including rostrum (CL) and maximum width of carapace (CW). The specimens are deposited in the collections of the Kanagawa Prefectural Museum.

Family Lithodidae  
*Paralomis japonica* Balss, 1911  
Japanese name: Kofuki-ezoibaragani  
PL. 1

*Paralomis japonica* Balss 1911: p. 8, figs. 11-15; Ibid. 1913, p. 77, figs. 49-54, pl. II; Sakai, T. 1971, pp. 20, 40, pl. 19; 1976. p. 703, pl. 249; Miyake, 1978, p. 186; 1982, p. 138, pl. 46, fig. 3.

Material: 1 male, CL, 70 mm.; CW, 68 mm. Off Komekami, Odawara; Crab-trap, depth, 230 m, June 10, 1988. Collected by Mr. S. Tanigawa, an expert fisherman who lives at Odawara in Kanagawa prefecture and sent by Mr. C. Maekawa, research offi-

cer of the Kanagawa Prefectural Fisheries Experimental Station. 1 female, CL, 72 mm.; CW, 70 mm. Off Jyogashima; crab-trap, depth, 400 m, Jan. 26, 1980. Sent by Mr. H. Ikeda.

Diagnosis: The general aspect of carapace very closely resembles that of original description and figure by Balss (1913). In the present male specimen, the carapace is much more longer and wider than that of the female holotype (CL. 39 mm, CW. 36 mm). The carapace is almost pentagonal in outline. The dorsal surface is armed with obtuse protuberances, which are covered with tufts of small tubercles of variable size. The rostrum is very short, projected forward and provided with a pair of dorsomedian spinules. The gastric region is a little convex, and bears a strong spine in the middle portion. The chelipeds are unequal. The right one is stouter, but not much longer than the left; the merus and carpus are armed with large teeth on the inner border; the right palm (42 mm) is slightly longer than left one (36 mm). The first pair of ambulatory legs is slightly shorter than the succeeding two pairs. The left fourth leg has the abnormal dactylus. The abdominal segments are covered with small granules of variable size. The third, fourth, and fifth segments are distinctly subdivided.

Notes: According to Sakai (1971) a female of this stone crab was first obtained by Doflein in Sagami Bay, and its description was made by Balss in 1911. In same locality, the second record was made by Ikeda (1981). The third record is the present male specimen collected by the use of crab-trap at the depth of 230 m, off Komekami, southern part of Odawara.

Distribution: Japan endemic, ranging from Sagami Bay to off Kumanonada Sea (Yamashita, 1980).

*Neolithodes nipponensis* Sakai, 1971

Japanese name: Nihon-ibaragani

PL. 2

*Neolithodes nipponensis* Sakai, 1971: pp. 7, 31, pl. 8, text-fig. 1; 1976: p. 697, pl. 244, fig. 378; Miyake, 1982, p. 139, 140, pl. 47, fig. 3; Baba, 1986, p. 213, 307, fig. 157.

Material: 1 male, CL, 170 mm; CW, 160 mm. Off Odawara, crab-trap, depth 750 m; Nov. 4, 1988. Sent by Mr. S. Tanigawa.

Remarks: In the fresh specimen, the body is uniformly deep red. The carapace of the present male specimen is a little larger than that of the type male specimen (CL. 168 mm, CW. 142 mm) in the collections of the Kanagawa Prefectural Museum. The carapace is somewhat triangular in shape, a little longer than broad. There are prickles of various sizes on the posterolateral and posterior margins. The chelipeds are asymmetrical, the right side one being heavier than the left one. The first three pairs of ambulatory legs are furnished with numerous spinules on the entire surface. The abdomen is also densely covered with spines and spinules on its surface.

This species was originally described by Sakai (1971) based upon the male holotype and female allotype from off Mikawa Bay, Aichi Prefecture. The first record of this species from Sagami Bay was made by Ikeda (1981) without any accounts. A male

specimen available for the study was newly obtained by the use of crab-trap at 750 m deep, muddy bottom, by Mr. Tanigawa.

Distribution: Sagami Bay, Suruga Bay, Mikawa Bay (Type locality), off Kii Peninsula, Tosa Bay and Okinawa (off Uoturi-jima).

Family Chirostylidae

*Eumunida funambulus* Gordon, 1930

Japanese name: Hokuro-tuno-kosioriebi

PL. 3

*Eumunida funambulus* Gordon, 1930: Baba, 1973: p. 121, fig. 3, pl. 4; 1988, p. 6.

Material: 1 male, CL, 61 mm; CW, 51 mm; Off Odawara, crab-trap, 300 to 500 meters deep. July 20, 1986. Sent by Mr. C. Ohno, research officer of the Kanagawa Prefectural Fisheries Experimental Station, Sagami Bay Branch.

Remarks: A male specimen from Sagami Bay well agrees with the description of the female specimen (CL. 38.8 mm) from Hyuga-nada Sea by Baba (1973), except that the carapace of the former is much larger than that of the later. The chelipeds are asymmetrical, the right side one being much longer than the left one (length of right cheliped, 194 mm., length of left one 100 mm).

Distribution: According to Baba (1973), this species is widely distributed in the tropical Indo-Pacific waters, from Japan, South China Sea, Philippine Islands, Java to the Celebes Sea and the Gulf of Aden, and in Japanese waters, it has been known from Hyuga-nada Sea, east coast of Kyushu. Its known range is extended much more further north by the present record from Sagami Bay.

Family Galatheididae

*Munidopsis camelus* (Ortmann, 1892)

Japanese name: Tunonaga-sinkai-kosioriebi

PL. 4

*Galacantha camelus* Ortmann, 1892;

*Munidopsis camelus* Miyake and Baba, 1967, p. 221, figs. 7, 8; Miyake, 1987, p. 180.

Material: 1 male, CL, 36 mm.; CW, 24 mm. Off Hayama, crab-trap, depth, 250-300 m, May 7, 1986. This specimen was sent by Mr. H. Ikeda of the Hayama Shiosai Park Museum, Kanagawa Prefecture.

Remarks: This species was originally described from Sagami Bay by Ortmann (1892). The second description of this species was made by Miyake & Baba (1967), based on the materials from Sagami Bay which was preserved in the collections of the Biological Laboratory, Imperial Household. The present male specimen is the third record from Sagami Bay at the depth of 250-300 m. In general, it well agrees with the description and figure by Miyake & Baba (1967). The present specimen has a pair of symmetrical



chelipeds (their length, 118 mm.; length of palm, 50 mm.).

Distribution: Known only from Sagami Bay (type locality), 200 to 500 m.

### Acknowledgements

I would like to thank Prof. Keiji Baba of the Kumamoto University, for his valuable suggestions for identification of the specimens, and Prof. Sigeo Gamô of the Yokohama National University, for his critical reading of the manuscript.

Thanks are also due to Messrs. Chihiro Maekawa and Chitao Ohno of the Kanagawa Prefectural Fisheries Experimental Station, Sagami Bay Branch, Mr. Shinji Tanigawa of the expert fisherman, and Mr. Hitoshi Ikeda of the Hayama Shiosai Park Museum, for providing me with the interesting specimens described herein.

### References

- BABA, K., 1973. Remarkable species of the Chirostylidae (Crustacea, Anomura) of Japanese waters. *Memoirs Fac. Educa., Kumamoto Univ.*, 22, Sec. 1; 117-124.
- BABA, K., 1986. Astacidea, Palinura, Anomura and Brachyura; 149-231, 279-316, figs. 100-176. In: Baba, K., Hayashi, K. and M. Toriyama, *Decapod crustaceans from continental shelf and slope around Japan*. 336 pp. with illustrations. Japan Fisheries Resource Conservation Association, Tokyo.
- BABA, K., 1988. Chirostylid and galatheid crustaceans (Decapoda: Anomura) of the "Albatross" Philippine Expedition 1907-1910. *Researches on Crustacea*, Special No. 2, 1-203.
- BALSS, H., 1913. *Ostasiatische Decapoden I. Die Galatheiden und Paguriden* Abh. d. II. Kl. d. Akd. Wiss. II. suppl.-Bd. 9. pp. 1-85. pls. I-II.
- IKEDA, H., 1981. Crabs collected from Sagami Bay. The catalogue of crab collection of Sagami Bay (1). *Natu. Hist. Rep. Kanagawa*, 2: 11-22. (In Japanese).
- MIYAKE, S. and K. BABA, 1967. New and rare species of the family Galatheididae (Crustacea, Anomura) from the Sagami Bay in the collection of the Biological Laboratory, Imperial Household, Japan. *J. Fac. Agr. Kyushu Univ.*, 14(2): 213-224.
- MIYAKE, S., 1978. The crustacean anomura of Sagami Bay, collected by His Majesty the Emperor of Japan, edited by Biological Laboratory, Imperial Household, Tokyo. Hoikusha, Osaka. 200 pp., 72 text-figs., 4 pls.
- MIYAKE, S., 1982. Japanese crustacean decapods and stomatopods in color. Vol. 1. Hoikusha, Osaka. 261 pp., 56 pls. (In Japanese).
- SAKAI, K., 1987. Biogeographical records of five species of the family Lithodidae from the abyssal valley off Gamoda-Misaki, Tokushima, Japan. *Researches on Crustacea*, 16: 19-24, pls. 1-3.
- SAKAI, T., 1971. Illustrations of 15 species of crabs of the family Lithodidae, two of which are new to science. *Researches on Crustacea*, nos. 4, 5: 1-49, pls. 1-21.
- SAKAI, T., 1976. Crabs of Japan and the adjacent seas. 773 pp., 379 text-figs., 251 pls. Kodansha, Tokyo.
- YAMASHITA, T., 1980. Umi, Sakana, Hito. Toba Aquarium, Toba. (In Japanese). 119 pp.

### Explanation of Plates

Plate 1

*Paralomis japonica* Balss. Male, CL, 70 mm.

A: dorsal view, B: ventral view, C: lateral view, D: abdomen.

Plate 2

*Neolithodes nipponensis* Sakai. Male, CL, 170 mm.

A: dorsal view, B: ventral view.

Plate 3

*Eumunida funambulus* Gordon. Male, CL, 61 mm.

A: dorsal view, B: ventral view.

Plate 4

*Munidopsis camelus* (Ortmann). Male, CL, 36 mm.

A: dorsal view, B: ventral view.

## Plate 1

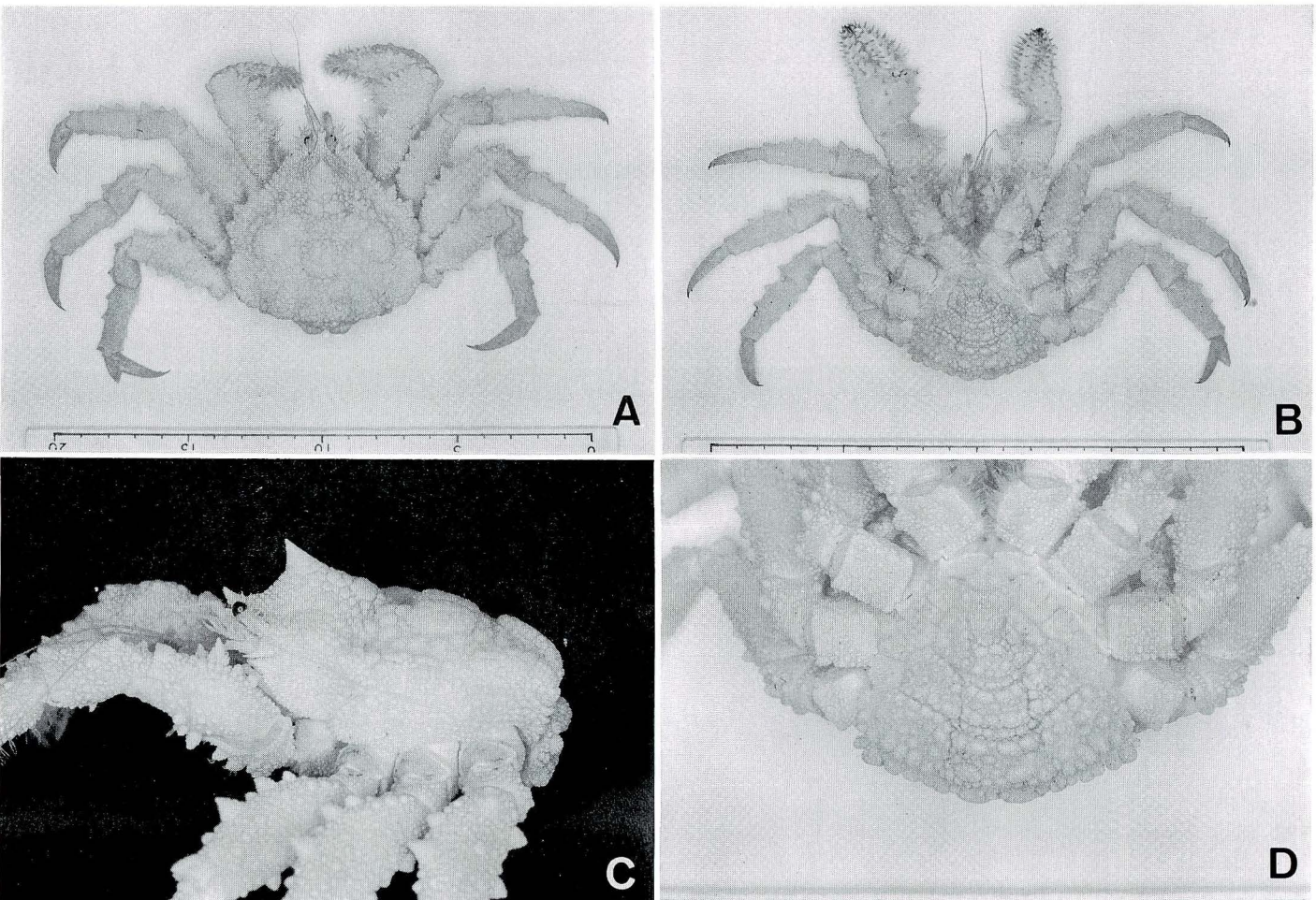
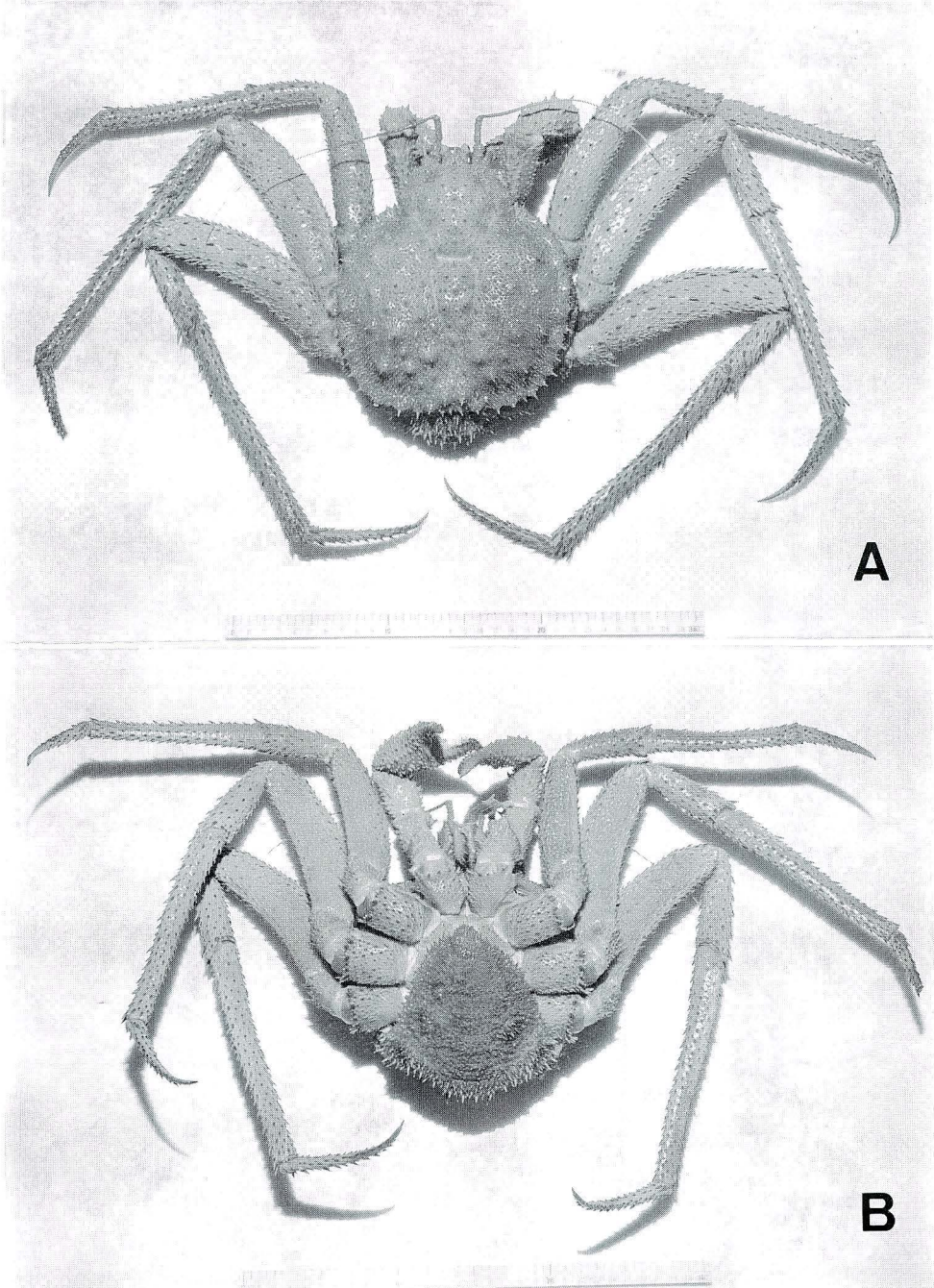




Plate 2





## Plate 3

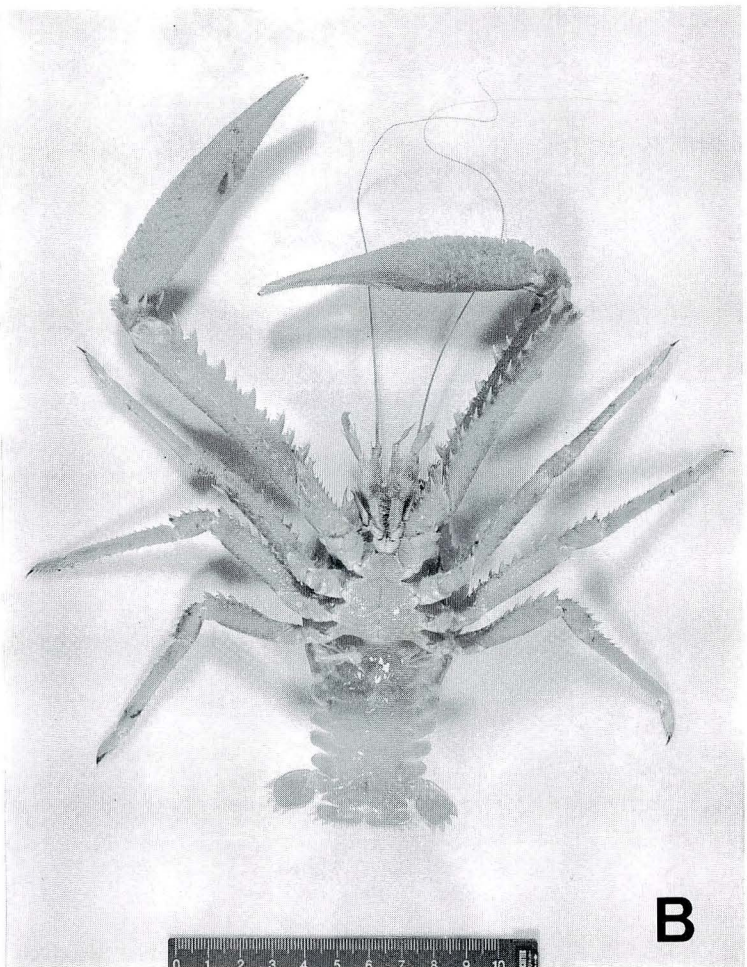
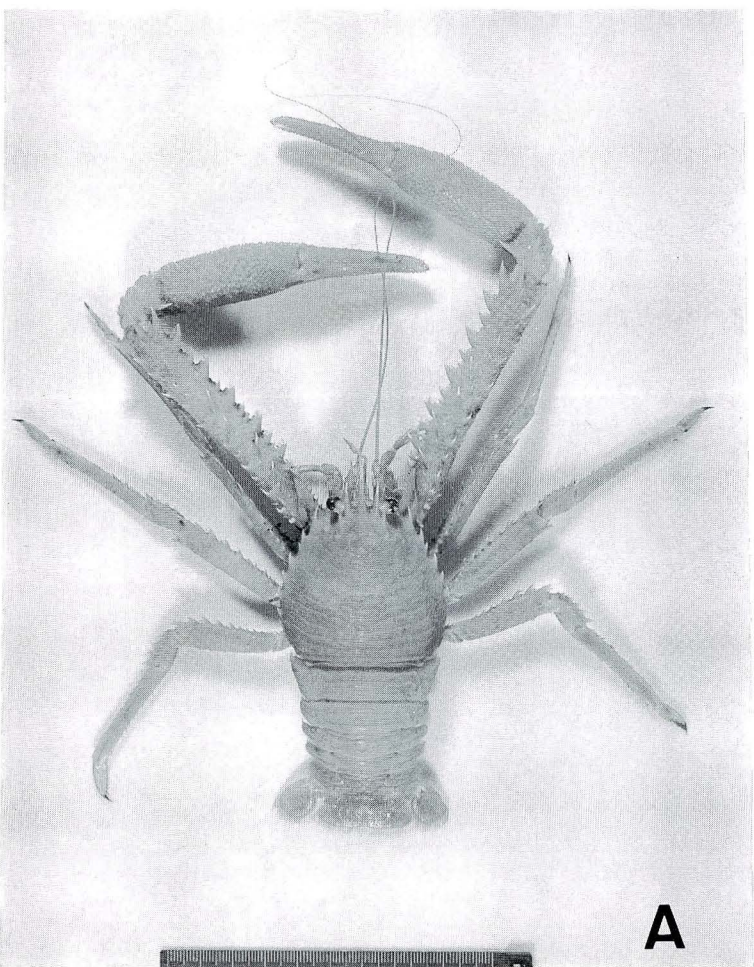




Plate 4

