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**A New Species of the Arcturid Isopod Crustacean
from Gokasho Bay, Central Japan***

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中央日本から発見されたオニナナフシ科（甲殻綱，等脚目）の1新種

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オニナナフシ科について従来、我が国からほとんど知見がなかったが、このたび三重県の五ヶ所湾から *Astacilla* 属の個体が採集され、新種 *Astacilla serrata* として記載した。本種はノルウェイのジョージバンク、ミケロン島、ニューファウンドランド等から知られている *Astacilla granulata* Sars と類似するが、(1) 腹部側縁の突起が存在していること、(2) 第2触角の先端に剛毛が少ないこと、(3) 胸脚側縁部が波状になっていること、(4) 胸脚に剛毛が少ないこと、(5) 尾肢に剛毛が少ないこと等によって区別される。本種はまた、ノルウェイのロフォーテン諸島等から知られている *Astacilla spusilla* Sars と最もよく類似するが、(1) 腹節の側縁に突起があること、(2) 第1触角の側縁部が鋸歯状になっていること、(3) また最終節の剛毛数が少ないこと、(4) 胸肢の形態、特に剛毛が少ないこと等で区別される。

During the faunal survey on the benthos at Gokasho Bay, Mie Prefecture, Pacific Side of Central Japan, Dr. Hisashi Yokoyama happened to find a queer looking isopod. He handed the specimens to me for identification. At closer examination of mine, it proved to be a new species of the genus *Astacilla*. Holotype (TOYA Cr-12479) and a paratype (TOYA Cr-12480) are deposited at the Toyama Science Museum.

***Astacilla serrata* n. sp.**

(Jap. Name : Namiberi-hime-nanafushi, new)

(Fig.A-R)

Material examined : 2♂♂ (1♂ holotype, 4.0 mm in body length, 1♂ paratype 4.6 mm in body length) 28 m in depth, mouth of Gokasho Bay, off Mie Prefecture, coll. Hisashi Yokoyama and Koichi Konishi. Nov. 29, 1995.

Description of male : Body slender, 8.5 times as long as wide. Color purple in alcohol. Cephalon with a shallow concavity on anterior margin, and protruded antero-lateral part. Eyes small and round, each eye composed of 30 ommatidia. Pereonal somites 1~3 short. Pereonal somite 4 very long. Pereonal somites 5~7 distinct. Pleonal segment 1 distinct. Pleotelson with a pair of sharp projection.

Antennule (Fig.C) short and four-segmented ; segment 1 rectangular ; segment 2 with several small spines on lateral margin ; segment 3 with 2-3 spines on lateral margin ; terminal segment club-shaped with 6 aesthetascs on distal area and many spines on lateral margin. Antenna (Fig.D), very long, reaching the posterior end of fourth pereonal somite. Peduncle very long ; first and second segments square ; third segment rectangular, 3 times as long as the second ; fourth segment much longer than the third ; fifth segment as long as the fourth. Flagellum relatively short and three-segmented.

Key word : *Astacilla*, Arcturidae, Valvifera, Isopoda, taxonomy, Gokasho Bay, Taxonomy

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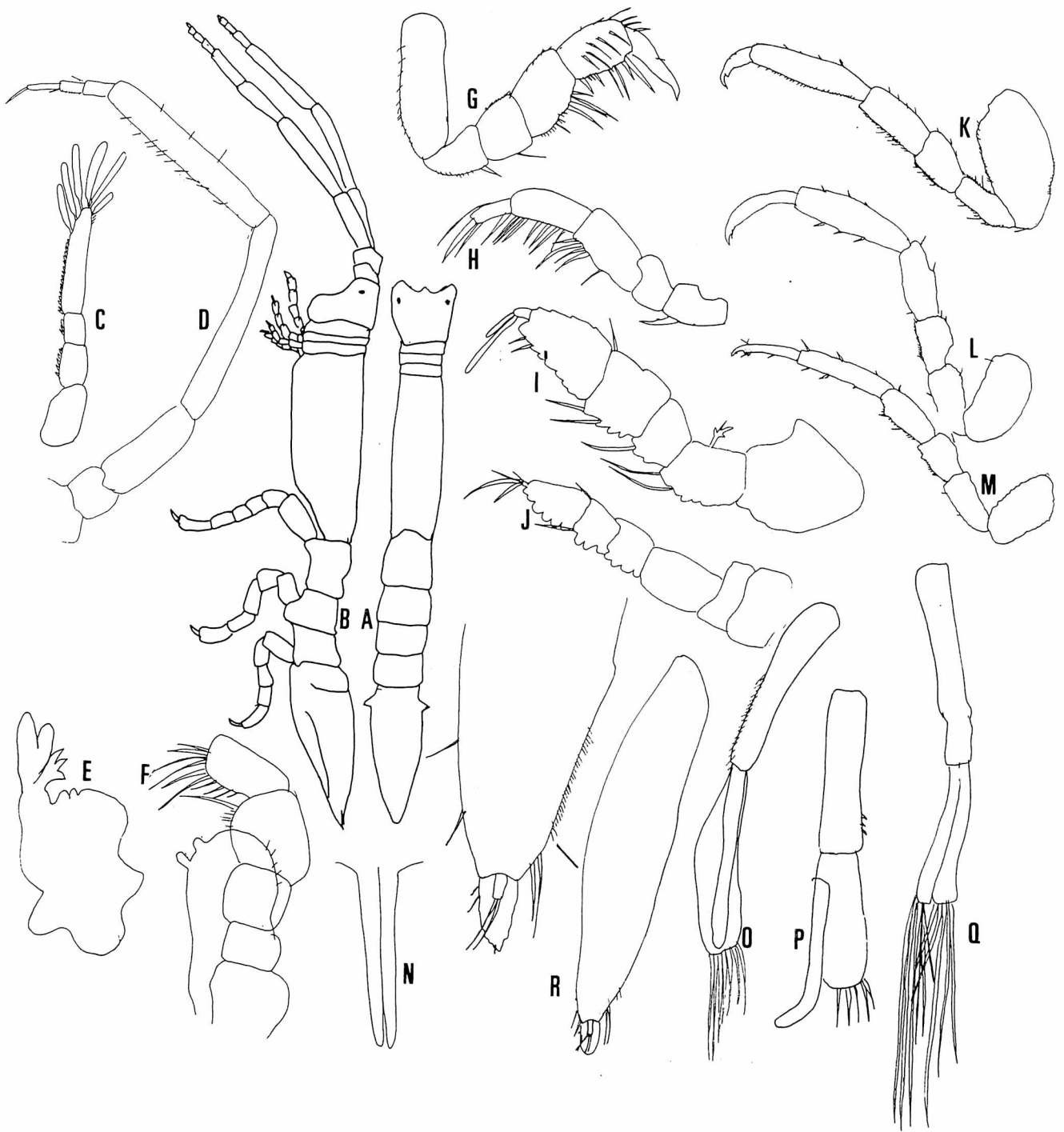


Fig. A. *Astacilla serrata*, n. sp.

A. Dorsal view ; B. Lateral view ; C. Antennule ; D. Antenna ; E. Mandible ; F. Maxilliped ; G. Pereopod 1 ; H. Pereopod 2 ; I. Pereopod 3 ; J. Pereopod 4 ; K. Pereopod 5 ; L. Pereopod 6 ; M. Pereopod 7 ; N. Penes ; O. Pleopod 1 ; P. Pleopod 2 ; Q. Pleopod 3 ; R. Uropod (All : Holotype male).

Mandible (Fig.E) Pars incisiva 2-headed, lacinia mobilis 3-toothed ; processus molaris wide. Maxillula Exopod with 6 teeth at the tip.. Maxilla Endopod with 2 single and 3 longer spines ; both lobes of exopod with 2 long spines. Maxilliped (Fig.F). Endite round with 2 coupling hooks on inner lateral border. Pap 5-segmented, terminal segment with 6~8 aesthetascs at the tip.

Pereopod 1 (Fig.G). Basis rectangular with many short setae on inner margin ; ischium shorter than basis with a long seta and many short setae on inner margin ; merus square with a seta and many short setae on inner margin ; carpus square with 3~4 setae on inner margin ; propodus rectangular with many relatively long setae on inner margin, outer margin and lateral surface. dactylus relatively long.

Pereopod 2 (Fig.H). Basis rectangular with a seta on inner margin ; ischium short ; merus rectangular with 5 setae on inner margin ; carpus rectangular with 7-8 setae on inner margin ; propodus with a seta on inner margin and a long seta on outer margin 3 dactylus sharp.

Pereopod 3 (Fig.I). Basis stout ; ischium a little shorter than basis with 2 long setae on inner margin ; merus with a seta and sinuate inner margin ; carpus stout with sinuate inner margin, bearing 2~3 setae on inner margin ; propodus stout with 2, 3 setae ; dactylus small with 2 long setae.

Pereopod 4 (Fig.J). similar to pereopod 3 but narrower than that. Basis stout but short ischium rectangular ; merus with sinuate margin ; carpus with sinuate inner margin bearing one longer and 5~6 shorter setae ; propodus rectangular with protuberances on inner margin and 2 setae at outer distal corner ; dactylus small and round.

Pereopod 5 (Fig.K). Basis stout with several short setae on inner margin and short setae on outer margin ; ischium slender with short setae on inner margin ; merus square with many short setae on inner margin. ; carpus rectangular with a little longer than ; propodus long with several setae and many short seta on inner margin and 4 setae on outer margin ; dactylus relatively short.

Pereopod 6 (Fig.L). Basis stout ; ischium a little shorter than basis with 2 seta on inner margin and as seta on outer margin ; merus square with, many short. setae on inner margin ; carpus a little longer than merus with 2 setae on outer margin ; propodus long with 3 seta on both margins ; dactylus long.

Pereopod 7 (Fig.M). Basis stout with sinuate margin ; ischium narrower than basis, with 2 setae on inner margin ; merus with many setae on inner margin ; carpus a little longer than merus, with many setae on inner margin ; propodus long with 3 setae on both margins ; dactylus long. Penes (Fig.N) long and straight

Pleopod 1. Basis and both rami rectangular. Pleopod 2 (Fig.P). Endopod with stylus whose tip bends innerward. Pleopods, 3-5 (Fig.Q) basis and both rami rectangular.

Uropod (Fig.R) long and fusiform 4 times as long as wide. ; basis with a seta near the distal area ; the larger ramous with sinuate margin ; the smaller ramus with a long seta,

Etymology : serrata/serratus-serrate. The appendages with serrate margins.

Remarks : The present new species is most closely allied to *Astacilla granulata* (G. O. Sar) reported from George banks, Banqueroau, Miquelon Island, south of Newfound land, off Norway. But the present new species is separated from *granulata* in the following features : (1) presence of lateral projections of pleonal segments (2) less numerous aesthetascs on the terminal segment of antenna, (3) serrated lateral margin of pereopods, (4) less numerous setae on pereopod I, (5) less numerous seta on the smaller ramous of uropod.

This species is also allied to *Astacilla pusilla* Sars reported from Norway Storeggen Bank, Lofoten Islands, but the former is separated from the latter in the following features : (1) presence of a pair of projection on lateral border of Pleotelson. (2) serrated lateral margin of pereopods 1~4, and less numerous segments of pereopods, (3) less numerous setae on pereopods.

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References

- Brandt, A., 1990. Antarctic valviferans (Crustacea, Isopoda, Valvifera). New Genera New Species, E. J. Brill : pp. 1-177. Leiden.
- Guiler, E. R., 1949. New Species of *Astacilla* from Tasmanian Waters. Proc. Roy. Soc. Tans. For the year 1948 pp. 45-64, fig. 1-8.
- Hale, H. M., 1924. Note on Australian Crustacea. No. III. Trans. R. Soc. South 1946. Austr. XLVIII, 1924 : 209-225, figs. 1-10.
- Hale, H. M., 1946. Isopoda Valvifera, British Australian and New Zealand Antarctic Research Expedition 1929-19. 31. Rept Ser. B (Zool. Bot.) V. Part. July 15 th 1946,. 162-212, fig1-30.
- Harger, O., 1878. Descriptions of new genera and species of Isopoda from New England and adjacent regions. Amer. Jour Sci and Art (3) XV 337-379. New Haven.
- Harger, O., 1879. Note on New England Isopoda Proc. U. S. Nat. Mus. 157-165.
- Sars, G. O., 1877. Prodrumus descriptionis Crustaceorum et Pycnogidarum quae in expeditione Norvegica anno 1876 observavit G. O. Sars. Arch math. Naturv. II, 237-271 (337-371), Christiana.
- Kensley, B. 1978. Guide to the Marine Isopod of Southren Africa.
- Kensley, B. and M. Schotte, 1989. Guide to the Marine Isopod Crustaceans of the Caribbean. Smithonian Institution Press Washington DC. 1-308.
- Koehler, R. 1911. Arcturides nopusveaux. Bull. Linst. Oceanogr. 1-65.
- Monod, Th., 1971. Sur querequs Isopodes Marine d'Australie. Bull. Mus. Nat. Hist. Nat.. 2°, 42 (5) : 1127-1142.
- Poore, G. C. B. and T. M. Bendsley, 1992. Austraidellidae (Crustacea, Isopoda, Valvifera) a New Family form Invettebrate. Taxon. 6 : 843-908.
- Yokoyama H., S. Toda, K. Abo and S. Yamamoto, 1996. Macrobenthic fauna of Gokasho Bay : Comparison of 1993 and 1941 surveys. Bull. Natl. Res. Inst. Aquacult. 25 : 23-42.