

Bulletin of the Mizunami Fossil Museum, no. 47, 41–44, 1 fig.

©2020, Mizunami Fossil Museum

Manuscript accepted on May 8, 2020; online published on June 30, 2020

<http://zoobank.org/urn:lsid:zoobank.org:pub:005BFC33-BEE3-4104-93F3-BDDA5976C6F7>

A new species of *Munidopsis* (Decapoda: Anomura) from the Miocene Higashibessho Formation, Japan

Hiroaki Karasawa*

*Mizunami Fossil Museum, Yamanouchi, Akeyo, Mizunami, Gifu 509-6132, Japan

<GHA06103@nifty.com>

Abstract

Munidopsis kaedetatsuyai, a new species of the squat lobster genus *Munidopsis* Whiteaves (Decapoda: Anomura) is described from the Higashibessho Formation (uppermost Lower–lowermost Middle Miocene) of the Yatsuo Group in Toyama Prefecture, central Japan. This is the first recognized species of the genus and the second record for Munidopsidae Ortmann from the Cenozoic of Japan.

Key words: Galatheoidea, Munidopsidae, Miocene, Higashibessho Formation, Japan

Introduction

Takeda, Mizuno, and Yamaoka (1986) and Mizuno and Takeda (1993) reported an unnamed species of *Munidopsis* Whiteaves, 1874 (Galatheoidea: Munidopsidae) from the Lower Miocene Morozaki Group of central Japan. Karasawa et al. (2017) erected the new munidopsid *Mizunotengus makiguchimai* Karasawa and Ando in Karasawa et al., 2017, based upon re-examination of their specimens. Therefore, *Munidopsis* as a fossil has not yet been known from Japan. The purpose of this note is to describe a new species of *Munidopsis* from the Miocene Yatsuo Group of Toyama Prefecture, central Japan. The specimen described herein was collected from the mudstone of the Higashibessho Formation of the Yatsuo Group exposed at Kajio (=Loc. 4 of Shimizu et al., 2000, p. 44, fig. 1), Yatsuo-machi, Toyama City, Toyama Prefecture. The specimen occurred in deposits, associated with fragments of crinoids and scleractian corals. The detailed information on geology and paleontology for the locality has been given by Shimizu et al. (2000). Nakajima et al. (2019) showed that the Higashibessho

Formation was latest Early–earliest Middle Miocene (NPD3B–NPD4A Zone of Yanagisawa and Akiba's (1998) scale of diatoms).

The specimen described here is deposited in the Mizunami Fossil Museum (MFM).

Systematics

Superfamily Galatheoidea Samouelle, 1819

Family Munidopsidae Ortmann, 1898

Genus *Munidopsis* Whiteaves, 1874

Type species: *Munidopsis curvirostra* Whiteaves, 1874, by monotypy.

Fossil species included: *Munidopsis canadensis* Nyborg, Garassino, De Angeli, and Ross, 2015 (Eocene, Canada); *M. foersteri* Feldmann, Tshudy, and Thomson, 1993 (Upper Cretaceous (Campanian), Antarctica); *M. kaedetatsuyai*, new species (Lower–Middle Miocene); *M. lieskovensis* Hyžný and Schlögl, 2011 (Lower Miocene, Slovakia); *M. palmuelleri* Hyžný, Gašparič, Robins, and Schlögl, 2014 (Middle Miocene, Slovenia); *M. salinaria* Gašparič, Hyžný,

Jovanović, Ćorić, and Vrabcac, 2019 (Middle Miocene, Bosnia and Herzegovina); *M. scabrosa* Feldmann and Wilson, 1988 (Upper Eocene, Antarctica).

***Munidopsis kaedetatsuyai*, new species**

(Fig. 1.A–1.C)

[New Japanese name: Kaede-sinkai-kosiori-ebi]

Diagnosis: Carapace excluding rostrum subrectangular, longer than wide, weakly convex side to side; fronto-orbital margin wide; rostrum triangular, about 20 percent of carapace length, with weakly rimmed, unarmed lateral margins and dorsal medial keel; upper orbital margin sinuous, entire, oblique towards anterolateral angle; antennal projection present, but subtle. Anterolateral spine short, directed anteriorly. Lateral margins slightly sinuous, subparallel, with spine behind anterolateral spine; spine well developed, acutely triangular, directed anteriorly. Posterior margin slightly concave, fringed with transverse ridge. Dorsal regions poorly defined, ornamented with interrupted, transverse ridges which vary in width; cervical groove and transverse depression on cardiac region deep.

Etymology: The specific name is derived from Tatsuya Kaede, who is my best friend and collaborator of my work.

Material examined: MFM83084 (1 carapace); Kajio (=Loc. 4 of Shimizu et al., 2000, p. 44, fig. 1), Yatsuomachi, Toyama City, Toyama Prefecture; mudstone of the Higashibessho Formation; latest Early–earliest Middle Miocene, NPD3B–NPD4A Zone of Yanagisawa and Akiba's (1998) scale of diatoms (Nakajima et al., 2019); collected by T. Kaede.

Description: Carapace excluding rostrum subrectangular, longer than wide, weakly convex side to side. Fronto-orbital margin wide, 75 percent of maximum carapace width. Rostrum triangular with acute tip, horizontal in lateral view, about 20 percent of carapace length, about 12 percent of carapace width; lateral margin nearly straight, weakly rimmed, unarmed; dorsal surface with medial keel. Upper orbital margin sinuous, entire, oblique towards anterolateral angle; antennal projection present, but subtle. Anterolateral spine short, directed anteriorly. Lateral margins slightly sinuous, subparallel, with spine behind anterolateral spine; spine well developed, acutely triangular, directed anteriorly. Posterior margin slightly concave, fringed with transverse ridge. Dorsal regions poorly defined, ornamented with interrupted, transverse ridges which vary in width. Fronto-orbital and hepatic regions depressed. Epi-, proto-, and mesogastric regions not differentiated. Cervical groove deep, U-shaped, extending from margin just anterior lateral spine to posteriorly along margins of gastric region; lateral elements nearly straight; axial element shallow, concave. Cardiac region with deep transverse depression anteriorly. Epibranchial region separated from other brachial regions by shallow posterior cervical groove; mesobranchial and metabranchial regions not differentiated.

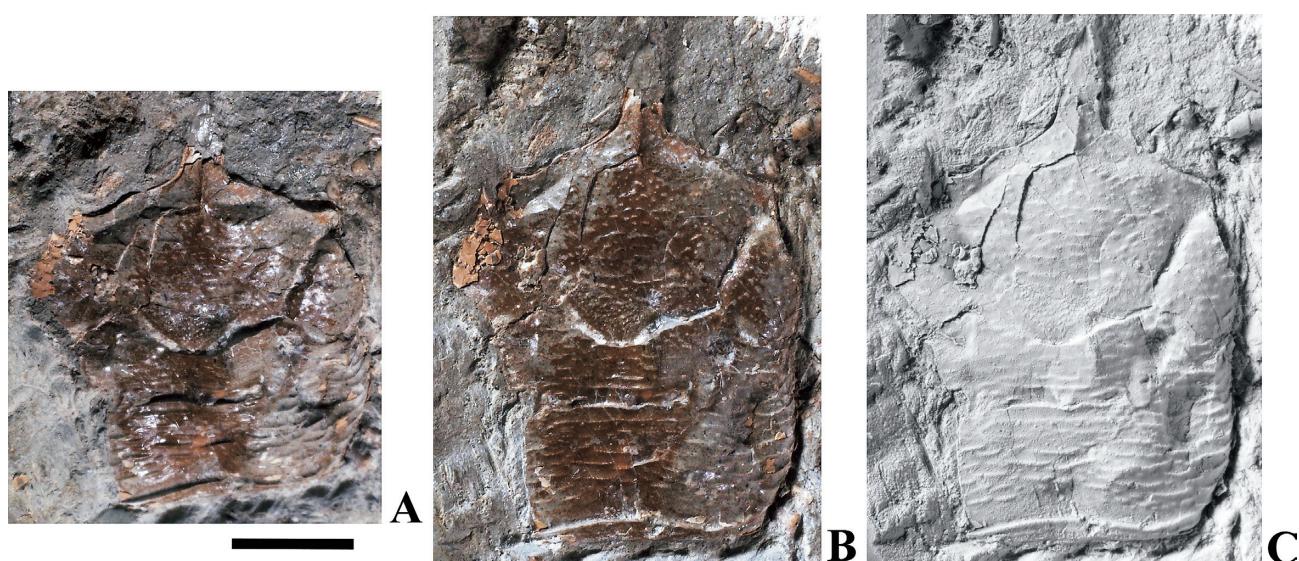


Fig. 1. *Munidopsis kaedetatsuyai*, new species. Holotype (MFM83084), carapace. A, frontal view; B, dorsal view. Scale bar = 5 mm. C is a whitening image coated with ammonium chloride sublimate.

Remarks: The present new species is most similar to *Munidopsis palmuelleri* Hyžný et al., 2014, from the Middle Miocene of Slovenia, but differs in that the rostrum has the axial keel, the upper orbital margin is oblique with a subtle antennal projection, the lateral margins possess a well-developed spine behind the anterolateral spine, and the fronto-orbital and hepatic regions are depressed. The poorly-defined dorsal regions with a lateral spine readily distinguish the new species from other five fossil species, *M. canadensis* Nyborg et al., 2015, from the Eocene of Canada, *M. foersteri* Feldmann et al., 1993, from the Upper Cretaceous of Antarctica, *M. lieskovensis* Hyžný and Schloegl, 2011, from the Lower Miocene of Slovakia, and *M. salinaria* Gašparič et al., 2019, from the Middle Miocene of Bosnia and Herzegovina, and *M. scabrosa* Feldmann and Wilson, 1988, from the Upper Eocene of Antarctica.

This species represents the first record for *Munidopsis* from the Cenozoic deposits of Japan.

Acknowledgements

I thank T. Kaede (Mizunami) for providing the specimen. A. Garassino (Department of Earth and Biological Sciences, Loma Linda University, USA) is gratefully acknowledged for his review of the manuscript.

References

- Feldmann, R. M., D. M. Tshudy, and M. R. A. Thomson. 1993. Late Cretaceous and Paleocene decapod crustaceans from James Ross Basin, Antarctic Peninsula. The Paleontological Society Memoir 28: 1–41.
- Feldmann, R. M., and M. T. Wilson. 1988. Eocene decapod crustaceans from Antarctica. Memoirs of Geological Society of America 169: 465–488.
- Gašparič, R., M. Hyžný, G. Jovanović, S. Čorić, and S. Vrabac. 2019. Middle Miocene decapod crustacean assemblage from the Tuzla Basin (Tušanj, Bosnia and Herzegovina), with a description of two new species and comparison with coeval faunas from Slovenia. Palaeontologia Electronica 22.1.9: 1–21.
- Hyžný, M., R. Gašparič, C. M. Robins, and J. Schloegl. 2014. Miocene squat lobsters (Decapoda, Anomura, Galatheoidea) of the Central Paratethys – a review, with description of a new species of *Munidopsis*. Scripta Geologica 147: 241–267.
- Hyžný, M., and J. Schloegl. 2011. An early Miocene deep-water decapod crustacean faunule from the Vienna basin (Western Carpathians, Slovakia). Palaeontology 54: 323–349.
- Karasawa, H., Y. Mizuno, K. Hachiya, and Y. Ando. 2017. Reappraisal of anomuran and brachyuran decapods from the lower Miocene Morozaki Group, Japan, collected by the Tokai Fossil Society. Bulletin of the Mizunami Fossil Museum 43: 47–69.
- Mizuno, Y., and M. Takeda. 1993. 6-3. Crustacea. In Tokai-kaseki-morozaki-sougun-kankou-kai, ed., Fossils from the Miocene Morozaki Group—Fossils of Aichi Prefecture, no. 2—. Tokai Fossil Society. Nagoya. p. 77–90.
- Nakajima, T., H. Iwano, T. Danhara, T. Yamashita, Y. Yanagisawa, Y. Tanimura, M. Watanabe, T. Sawaki, S. Nakanishi, H. Mitsuishi, O. Yamashina, and S. Imahori. 2019. Revised Cenozoic chronostratigraphy and tectonics in the Yatsuo Area, Toyama Prefecture, central Japan. The Journal of the Geological Society of Japan 125: 483–516.
- Nyborg, T. G., A. Garassino, A. De Angeli, and R. L. M. Ross. 2015. A new squat lobster (Crustacea, Anomura, Munidopsidae) from the Middle–Late Eocene of British Columbia (Canada). Neues Jahrbuch für Geologie und Paläontologie, Abhandlungen 275: 357–361.
- Ortmann, A. E. 1898. Crustacea, Malacostraca. In A. Gerstäcker and A. E. Ortmann, eds., Die Klassen und Ordnungen der Arthropoden wissenschaftlich dargestellt in Wort und Bild, in H.G. Bronn's Die Klassen und Ordnungen der Thier-Reichs wissenschaftlich dargestellt in Wort und Bild, C. F. Winter'sche Verlagshandlung, Leipzig 5(2): 1057–1168, pls. 109–116.
- Samouelle, G. 1819. The entomologist's useful compendium, or an introduction to the British insects, etc. T. Boys. London. 496 p.
- Shimizu, M., S. Fujii, and T. Hamuro. 2000. Newly found *Aturia* and molluscan fossil assemblages from Higashibessho Formation, Hokuriku Group, Toyama, central Japan. Chikyu Kagaku 54: 43–48.
- Takeda, M., Y. Mizuno, and M. Yamaoka. 1986. Some fossil crustaceans from the Miocene Morozaki

- Group in the Chita Peninsula, central Japan. *Kaseki-no-tomo* (Publication of the Tokai Fossil Society) 28: 12–22.
- Whiteaves, J. F. 1874. On recent deep-sea dredging operations in the Gulf of St. Lawrence. American Journal of Science, series 3 7: 210–219.
- Yanagisawa, Y., and F. Akiba. 1998. Refined Neogene diatom biostratigraphy for the northwest Pacific around Japan, with an introduction of code numbers for selected diatom biohorizons. The Journal of the Geological Society of Japan 104: 395–414.

Appendix

Munidopsis kaedetatsuyai Karasawa, new species LSID: urn:lsid:zoobank.org:act:C48EAC2F-4848-457F-9DD7-ABD1A2142AB7
新称: カエデシンカイコシオリエビ

Erratum

Bulletin of the Mizunami Fossil Museum, no. 47, 44.
©2020, Mizunami Fossil Museum
Manuscript accepted on May 8, 2020; online published on June 30, 2020

Erratum: Cenozoic pedunculate barnacles (Cirripedia: Thoracica) deposited in the Mizunami Fossil Museum, Japan

Hiroaki Karasawa*

*Mizunami Fossil Museum, Yamanouchi, Akeyo, Mizunami, Gifu 509-6132, Japan
<GHA06103@nifty.com>

There was a typographical error in a species name (page 32, left 5th line). The incorrectly spelled name, *sistinctum*, should be replaced with the correct name, *distinctum*. Thank J. S. Buckeridge (Earth & Oceanic Systems Group, RMIT, Melbourne) for his advice.