



## The Cumacean *Dimorphostylis elegans* Gamô, 1960 (Crustacea), *D. bathyelegans* n. sp. and *D. brevicarpus* n. sp. from Japan

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### Abstract

*Dimorphostylis elegans* Gamô, 1960 and two related new species, *D. bathyelegans* n. sp. and *D. brevicarpus* n. sp. are described. *Dimorphostylis elegans* were collected from the Pacific coasts of Honshu and Shikoku Islands, and the East China Sea, Japan, 74–443 m. As a result, *D. latifrons* Harada, 1960 from the Izu Peninsula, Japan is declared a junior synonym of *D. elegans*. Morphological variation of the carapace is discussed. *Dimorphostylis bathyelegans*, from southern coast of the Honshu Island and the East China Sea, is very similar to *D. elegans*, but is distinguished from the latter by the long telson and the third peduncle article of antenna 1 with more short setae. Depth of the habitat ranges from 495–918 m, which is the deepest known species in the genus. *Dimorphostylis brevicarpus* was collected from Kyushu and Nansei Islands, East China Sea, on sandy bottoms, 165–236 m deep. This species also resembles *D. elegans*, but is distinguished from the latter by (1) short carpus of pereopods 3–5, (2) anterior end of dorsolateral carina with 2 or 3 teeth, and (3) maxilliped 1 with a group of sharp spines on the ventral surface of basis, and (4) carapace covered with numerous small pits, with a tiny seta in each.

**Key words:** Cumacea, Crustacea, *Dimorphostylis*, new species, Japan, Northwest Pacific

### Introduction

The cumacean genus *Dimorphostylis* (Diastylidae), including 27 known species, is distributed in the Indo-West Pacific and eastern coast of Australia. Hale (1936, 1945) and Foxon (1932) described 9 species collected from Australian waters. From Japanese and Korean waters, in the Northwest Pacific, 15 species have been reported (Zimmer 1903; Gamô 1960, 1962, 1968; Harada 1960; Lee and Lee 2002). From the Indian Ocean, 4 species have been reported (Kurian 1954, 1965; Mühlenhardt-Siegel 1996; Petrescu 2002). All known *Dimorphostylis* are shallow water inhabitants (Bacescu 1992), with the deepest previous record of 183 m in *D. longitelson* Kurian, 1965.

From Sagami Bay, southern coast of Honshu Island, Japan, Gamô (1960, on 15 March) described 5 *Dimorphostylis* species collected at Manazuru, north of Izu Peninsula. Nearly at the same time, Harada (1960, on 25 March) reported 10 species of Japanese *Dimorphostylis*, dominantly collected off Shimoda, Izu Peninsula, only 50–60 km south of Gamô's sampling site. Gamô (1968) regarded Harada's 5 new species, *D. exigua*, *D. triplicata*, *D. tagoensis*, *D. denticulata* and *D. latifrons* as synonyms of *D. hirsuta*, *D. manazuruensis*, *D. quadriplicata*, *D. coronata* and *D. elegans*, respectively. The synonymies were accepted by Bacescu (1992) except for *D. latifrons*, which was regarded as a good species. However, Harada's description of *D. latifrons* (1960) agrees with the description of *D. elegans* by Gamô (1960), except that the telson of *D. latifrons* is subequal in length to pleonite 6, whereas the telson is shorter than pleonite 6 in *D. elegans*. In addition, depth of the habitats were very similar (40 m in *D. elegans* and 50 m in *D. latifrons*). Unfortunately, the type specimen of *D. latifrons* appears to have been lost (Aoki, personal communication).

In 1999–2009, cumacean specimens matching the descriptions of *Dimorphostylis elegans* or *D. latifrons* were collected from southern Japan and the East China Sea, including specimens from the eastern Izu Peninsula, very near to the type locality of *D. latifrons*. The specimens were examined to clarify the taxonomic status of *D. latifrons*. A female specimen from the Izu Peninsula is wholly illustrated and described herein, because both original descriptions of female *D. elegans* and *D. latifrons* were not sufficient for further taxonomic study. The present