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First record of a Miocene matutid crab (Crustacea: Decapoda: Brachyura) from Japan

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Abstract

A Miocene matutid crab, *Ashtoret* sp., is described from the Kurosedani Formation of the Yatsuo Group in Toyama Prefecture, Honshu, Japan. Recognition of this species extends the geologic range for the genus back to the early Middle Miocene and represents the first record for the Matutidae from Cenozoic deposits of the Indo-West Pacific regions.

Key words: Crustacea, Decapoda, Brachyura, Matutidae, Miocene, Japan

Introduction

The family Matutidae MacLeay, 1838, is a small group including five genera, *Ashtoret* Galil and Clark, 1994, *Izanami* Galil and Clark, 1994, *Matuta* Weber, 1795, *Mebeli* Galil and Clark, 1994, and *Szaboa* Müller and Galil, 1998 (Galil and Clark, 1994; Müller and Galil. 1998; Schweitzer and Feldmann, 2000). Among these, *Szaboa* from the middle Miocene of Hungary is only known in the fossil record (Müller and Galil, 1998).

The purpose of this paper is to describe a matutid crab from the Yatsuo Group. The material was collected from Iguridani (Loc. YTO-2 of Karasawa, 1993), Yatsuo-cho, Toyama Prefecture (35° 3'5''N, 134° 4'1''E). Pebbly conglomerate of the Kurosedani Formation of the Yatsuo Group is exposed at the locality. Hayakawa and Takeyama (1987) assigned the Kurosedani Formation to the Zone N8b (earliest middle Miocene) of Blow's scale of planktonic foraminifera. Karasawa (1993) and Karasawa (1997) reported five decapod species from the locality and recognized the assemblage characterized by the predominance of *Eucalliax yatsuoensis* (Karasawa, 1993).

Systematics

Family Matutidae MacLeay, 1838

Genus *Ashtoret* Galil and Clark, 1994

Type species: *Matuta picta* Hess, 1865, by original designation.

Geologic range: Miocene-Recent.

Ashtoret sp.

(Fig. 1)



Fig. 1. *Ashtoret* sp. (MFM83366), × 2.0.

Material examined: A broken carapace (MFM83366). The specimen is housed in the Mizunami Fossil Museum.

Description: Front about as long as orbit, trilobate; median lobe projecting, slightly emarginated medially. Upper orbital margin without fissures. Outer orbital tooth produced. Inner suborbital tooth visible in dorsal view. Eye stalk preserved, elongate, tapering distally. Anterolateral margin with 3 broad, anterolaterally directed teeth. Lateral spine short; tip missing.

Posterolateral margin with well marked mid-posterolateral tubercle. Posterior margin missing. Dorsal carapace gently convex, largely smooth; regions poorly defined. Central tubercles (Galil and Clark, 1994) present; protogastric tubercles obsolete; mesogastric tubercle well marked.

Remarks: The present species resembles *Ashtoret picta*, *A. lunaris* (Forskål, 1775), and *A. obtusifrons* (Miers, 1877) by the presence of a mid-posterolateral tubercle on the posterolateral margin, but differs in having a short lateral spine and three broad anterolateral teeth. A further specific identification of this species awaits the discovery of better material including the carapace and chelipeds.

Recognition of the present species extends the known geologic range for *Ashtoret* back to the early middle Miocene. A sole known fossil species, *Szaboa inermis* Brocchi, 1883, has been recorded from the Badenian of Hungary (Müller, 1984; Müller and Galil, 1998). Among the recent genera, *Ashtoret*, *Izanami*, and *Matuta* are known from the Indo-West Pacific, and *Mebeli* occurs from the West coast of Africa (Galil and Clark, 1994). Therefore, Schweitzer and Feldmann (2000) suggested that the Matutidae may have arisen in the Miocene in Europe and was subsequently dispersed to the Indian and Pacific Oceans via the Tethys. However, the discovery of *Ashtoret* from the Miocene of Japan implies a reconsideration of their hypothesis.

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