Bull. Mizunami Fossil Mus., no. 21 (1994), p. 73-75, pls. 20, 21.

Aetobatus arcuatus (Agassiz, 1844) (Chondrichthyes: Elasmobranchii: Myliobatiformes) from the Bihoku Group (Miocene), Southwest Japan

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Key words: *Aetobatus arcuatus* (Agassiz), Myliobatiformes, Elasmobranchii, Middle Miocene, Bihoku Group, Japan.

Introduction

Fossil teeth of the genus *Aetobatus* were rarely known from the Oligocene Ashiya Group, and Miocene Mizunami and Tomikusa Groups from Japan (Itoigawa *et al.*, 1985), but they were not determined at the species level. In 18, March, 1994, YO and AN of the authors collected a well preserved upper dental plate of the myliobatid from the Bihoku Group (Middle Miocene) of Ohsa-cho, Okayama Prefecture. In this paper, we describe it as an upper dental plate of *Aetobatus arcuatus* (Agassiz, 1844). We thank Mr. Yoshiaki Mizuno of Nagoya City and Mr. Shinji Sakamoto of Toba Aquarium for allowing access to the teeth specimens of *Aetobatus narinari* in their collections.

Description

Superfamily Myliobatoidea Bonaparte, 1848
Family Myliobatidae Bonaparte, 1848

Genus *Aetobatus* Blainvelle, 1816

Type species: *Raja narinari* Euphrasen, 1790 by monotypy.

Aetobatus arcuatus (Agassiz, 1844)
(Pl. 20, Figs. 1a, b; Pl. 21, Figs. 1a-c)

Aetobatis arcuatus Agassiz, 1844, p. 427; Leriche, 1942, p. 61, pl. 4, figs. 10-15; Leriche, 1957, p. 44, pl. 4, figs. 10, 11; Radwański, 1965, p. 272, pl. 1, fig. 7; Glikman and Ischchenko, 1967, figs. 1-6, 8; Cappetta, 1970, p. 105, pl. 24, figs. 6-9; Schultz, 1971, p. 422, pl. 4, fig. 22; Jonet *et al.*, 1975, p. 207, pl. 2, fig. 21; Suraru *et al.*, 1978, p. 44, pl. 4, figs. 28-35.

Aetobates arcuatus Agassiz; Llueca, 1919, p. 45, pl. 14, fig. 5, pl. 14, figs. 1, 2, pl. 15, figs. 1, 2.

Aetobaties arcuatus baripadensis Ghosh, 1959, p. 678, pl. 88, figs. 12, 17, 18.

Aetobatus arcuatus (Agassiz); Cappetta, 1986, p. 196, figs. 8A, B; Cappetta, 1987, p. 170.

Aetobatis sp., Itoigawa *et al.*, 1985, p. 50, pl. 25, figs. 20, 21.

Aetobatus sp., Long, 1994, p. 122, pl. 1, fig. g.

Locality: Todani, Tajibe, Ohsa-cho, Okayama Prefecture (=Locality G6, Itoigawa and Nishikawa, 1976; Locality 22, Taguchi et al., 1979).

Stratigraphic position: Lower Formation of the Bihoku Group (early Middle Miocene).

Description: The upper dental plate composed of seven teeth, is rectangular in outline and the width is equal to the length (about 9 cm). The occlusal face of

the plate is strongly convex longitudinally and transversely, whilst the basal face is transversely convex and longitudinally concave. The anterior part of the occlusal face wears thin. The teeth with about 60 shallow, longitudinal grooves on the basal face, are rectilinear except for the lateral edges gently curved backwards.

Discussion: *A. arcuatus* differs from the extant, *A. narinari* (Euphrasen) (Pl. 21, Figs. 2a-e, 4), from the Atlantic and Indo-Pacific Ocean in having a wide tooth without shallow, lateral grooves on the occlusal face. *A. arcuatus* has the tooth width/length ratio of 1.5-1.7, while *A. narinari* has about 1.0. The number of teeth of the upper dental plate in *A. arcuatus* is 7, whilst it in *A. narinari* is 14. *Aetobatis* sp. from the Oligocene Ashiya Group, and the Miocene Mizunami and Tomikusa Groups (Itoigawa *et al.*, 1985) should be identical with *A. arcuatus* by having a wide tooth.

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中新統備北層群より産した *Aetobatus arcuatus* (Agassiz, 1844)

奥村好次・成瀬　篤・柄沢宏明

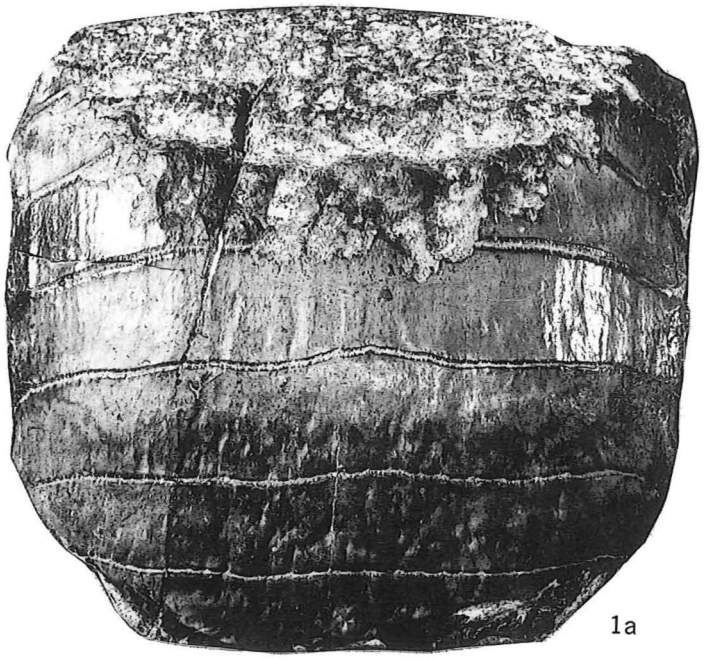
要　　旨

岡山県大佐町戸谷に分布する中部中新統備北層群下部層より産出した *Aetobatus arcuatus* (Agassiz, 1844) の上顎歯板を報告する．この保存良好な歯板の発見により，これまでに日本の漸新・中新統から知られていた種名未定の *Aetobatus* 属の化石に対して *A. arcuatus* の種名が適用出来る．

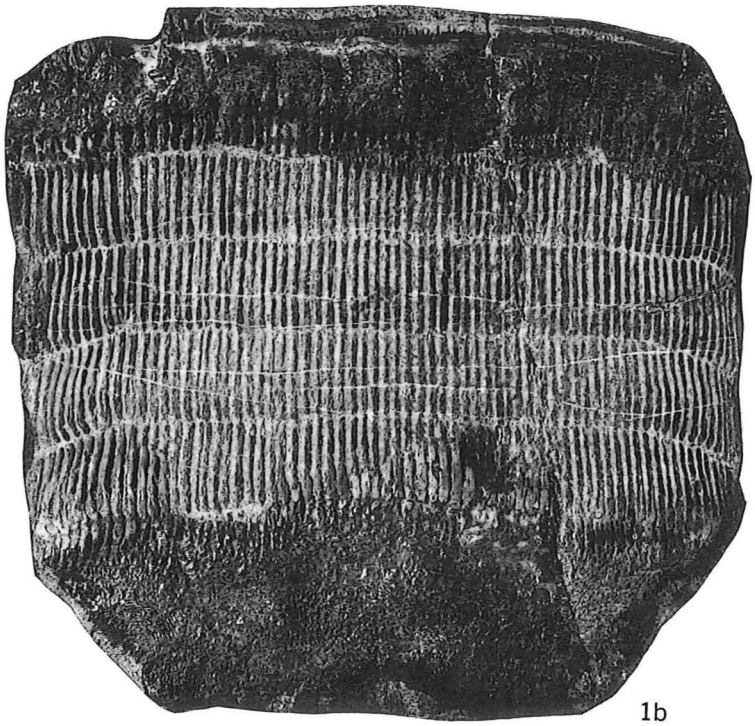
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Plate 20

Figs. 1a, b. *Aetobatus arcuatus* (Agassiz), upper dental plate, Bihoku Group (early Middle Miocene), × 1.0. a, occulusal; b, ventral view.



1a

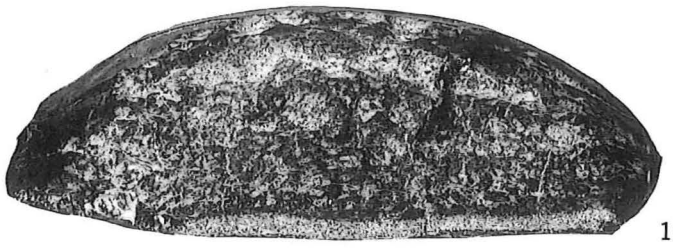


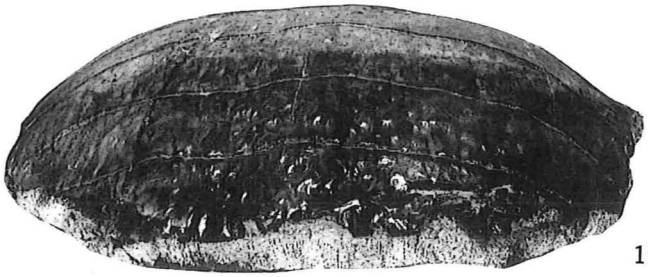
1b

Plate 21

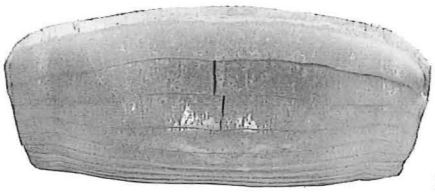
Figs. 1a-c. *Aetobatus arcuatus* (Agassiz), upper dental plate, Bihoku Group (early Middle Miocene), × 1.0. a, anterior; b, posterior; c, lateral view.

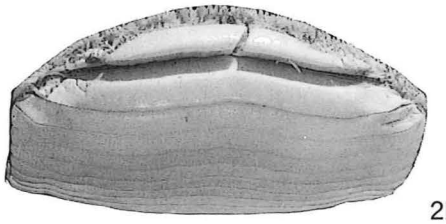
Figs. 2a-e, 3. *Aetobatus narinari* (Euphrasen), Mizuno collection, × 1.0.
Figs. 2a-e. Upper dental plate. a, anterior; b, posterior; c, lateral; d, occulusal; e, ventral view.
Fig. 3. Lower dental plate, occulusal view.

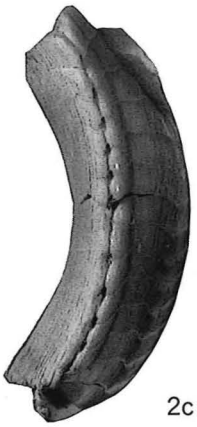

1a


1b

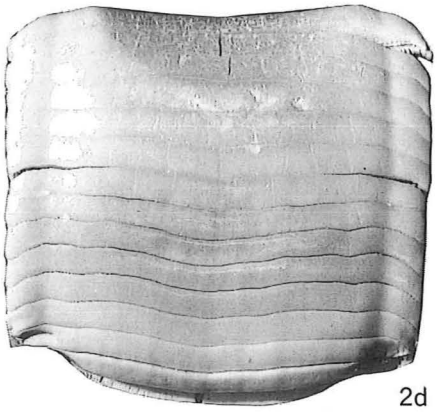

1c

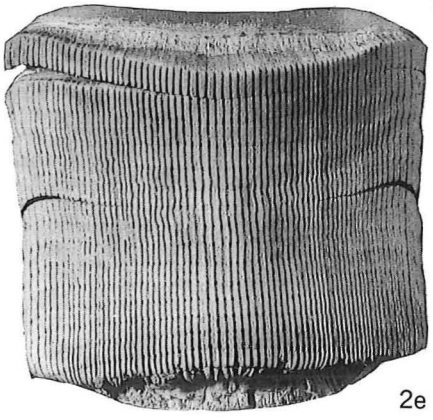

2a


2b


2c


3


2d


2e