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On Two Fossil Corbiculids from the Palaeogene Coal-bearing Tertiary of Obirasibé, Tesio Province, Hokkaidô

By

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With 6 Text-figures

(Contribution from the Department of Geology and Mineralogy, Faculty of Science, Hokkaidô Imperial University, Sapporo. No. 305).

The material which forms the subject of the present paper was collected by Mr. K. Nisikawa from the Palaeogene coal-bearing deposits in the upper course of Tan-unnai-sawa, a tributary of Simo-Kinebetu-gawa, Obirasibé-mura, Rumôé-gun, Tesio Province¹⁾ during his geological survey at the time when he was a geologist of Hokkaidô Tankô-Kisen Co. about twenty-five years ago. The fossil corbiculids described in the present paper were derived from the Uryû Series of Obirasibé and comprise the following two species:

Corbicula tokudai (YOKOYAMA)

Batissa nisikawai ÔTATUME, nov. sp.

Corbicula tokudai is one of the most common species of corbiculids in the Isikari Series of the Isikari Coal-field and in the Uryû Series of the Uryû Coal-field, however, it has never been found in the equivalent deposits of the Kusiro Coal-field in the northeastern Hokkaidô and of Karahuto. The present discovery of this species in the Uryû Series in Obirasibé is in no small degree interesting in view of the faunal correlation of the Uryû Series of the Isikari Series. The Isikari Series in the Isikari Coal-field is somewhat rich in fossil corbiculids, and Prof. NAGAO and the present writer²⁾ already described three forms of *Geloina*, one of *Batissa* and two of *Corbicula*.

1) 天鹽國留萌郡小平薬村下紀念別川支流タンウンナイ澤上流

2) T. NAGAO and K. ÔTATUME: The Fossil Corbiculids from the Palaeogene Isikari Series in the Isikari Coal-Field, Hokkaidô. This number of this Journal.

Batissa nisikawai nov. sp. may probably represent a typical form of this genus. *B. muratai* NAGAO and ÔTATUME¹⁾ from the Isikari Series differs from the present form in outline. *B. sitakaraensis* (SUZUKI)²⁾ originally of the Sitakara Bed in the Urahoro Series³⁾ of the Kusiro Coal-field of Hokkaidô and later having been described from the Naibuti Series of Karahuto together with an allied type *B. sakakibarae* ÔTATUME⁴⁾ differ also from the present species in many features.

Batissa is one of the tropical and subtropical shells, living mainly in the Indo-Pacific region. *Batissa* appears to be common in the Palaeogene deposits of Japan, and very little is known from the Neogene. Therefore it may be suggestive that the water in which *Batissa* lived in the Palaeogene time of Hokkaidô and Karahuto may have been much warmer than it is now.

Before going on the description, the present writer wishes to express his sincere thanks to Assistant Prof. S. ÔISHI of our department for his kindly reading of the manuscript. His cordial thanks are also due to Mr. S. TAKAO of the Tankô-Kisen Co., who kindly put the material in the writer's disposal for study.

Description of Species

Family Corbiculidae

Genus *Corbicula*, MERGERLE, 1811

Corbicula tokudai (YOKOYAMA)

Text-fig. 4.

1890. *Cyrena* sp., JIMBO: Hokkaidô Tisitu Ryakuron, p. 42, pl. I, fig. 5.

- 1) T. NAGAO and K. ÔTATUME: 1942, op. cit., this number of this Journal.
- 2) K. SUZUKI: Three New Species of Non-Marine Shells from the Tertiary Formation of Hokkaidô and Karahuto. Jap. Jour. Geol. and Geogr., vol. XVIII, nos. 1-2, 1941, p. 57, pl. IV, figs. 1a-b. In this paper, SUZUKI described as *Corbicula sitakaraensis*. But he suggested that *C. sitakaraensis* differs distinctly from all of the other Eastern Asiatic species of *Corbicula*, and rather has the appearance of *Polymesoda* and *Batissa* than *Corbicula*.
- 3) Y. SASA: Notes on the Stratigraphy of the Kusiro Coal-Field etc. (in Japanese). Hokkaidô Sekitan Kôgyô Kai Kaihô, No. 307, 1940, pp. 15-18; no. 308, pp. 20-26.
- 4) K. ÔTATUME: Three species of Fossil Corbiculids from the Tertiary Formation of Karahuto. This number of this Journal.

1932. *Circe tokudai*, YOKOYAMA: Tertiary Mollusca from the Coal-field of Uryû, Hokkaidô. Journ. Fac. Sci., Imp. Univ., Tôkyô, Sec. II, vol. III, pt. I, p. 240, pl. II, figs. 3, 4 (non 2).
1941. *Corbicula atrata tokudai*, SUZUKI: Some Non-Marine Shells from the Oligocene Isikari Series in the Isikari Coal-Field, Hokkaidô. Ibid., vol. VI, pt. I, p. 9, pl. I, figs. 11, 12; pl. II, figs. 1-26.
1941. *Corbicula atrata tokudai*, SUZUKI: Notes on the Tertiary Non-Marine Mollusca from the Coal-Field of Uryû, Hokkaidô. Ibid., pl. II, figs. 6-12.
1941. ?*Corbicula atrata tokudai*, SUZUKI: Tertiary Non-Marine Shells illustrated in K. JIMBO's Hokkaidô Tisitu Ryakuron. Journ. Geol. Soc. Japan, vol. XLVIII, No. 578, p. 524, text-figs. 1a-2.

Remarks: Only one specimen is examined. It is associated with *Batissa nisikawai* ÔTATUME. Although its ventral portion is more or less imperfect and the hinge plate is unknown, the superficial feature is very similar to *Corbicula tokudai* (YOKOYAMA), one of the most common species in the Palaeogene Isikari Series of the Isikari Coal-field and Uryû Series in the Uryû Coal-field, Hokkaidô.

Locality and geological horizon: The Upper course of Tan-un-nai-sawa, a tributary of Simo-Kinebetu-gawa, Obirasibé-mura, Rumôé-gun, Tesio Province. Uryû Series.

Genus *Batissa*, GRAY, 1852

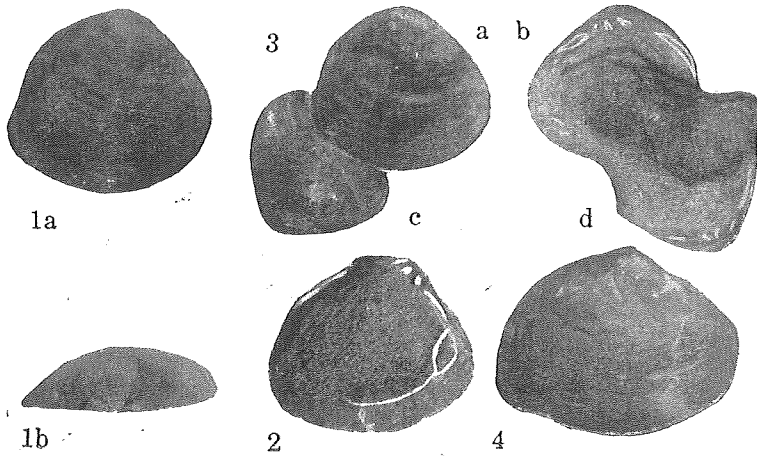
Batissa nisikawai, nov. sp.

Text-figs. 1-3.

Description.—Shell rather small, subrounded pentagonal in outline, a little longer than high, slightly inequilateral, the posterior portion slightly longer than the anterior, short and round in front, truncated behind; thick-tested. Antero-dorsal margin steeply sloping forwards, nearly straight; postero-dorsal margin moderately sloping backwards, short, almost straight. Anterior margin well rounded, passing gradually into the antero-dorsal margin and ventral one; the posterior margin much steeply sloping backwards, forming a obtuse angle with the postero-dorsal margin, slightly concave, and descending abruptly into the ventral margin, and forming a sub-angular postero-dorsal corner in each other. Ventral margin evenly arched. Umbo blunt, and not so produced much from the hinge margin. Lunule ovate and large. Ligamental groove relatively long; ligament external, projecting much from the postero-dorsal margin behind the umbo.

Surface ornamented with indistinct, but rather crowded, fine line of growth. A distinct angle runs from umbo to the postero-ventral corner.

The hinge plate is thick, provided with three divergent cardinal teeth and crenulated lateral teeth on both sides of the former. The cardinal teeth are situated at about one-third of the shell length from the anterior extremity. On the left valve the anterior cardinal tooth nearly vertical, bifid, smallest of all; the middle one sloping



Figs. 1 a-b; 2; 3 a-d. *Batissa nisikawai*, nov. sp. 1, 2, 3 a: holotype. Reg. No. 9312.

Fig. 4. *Corbicula tokudai* (YOKOYAMA). Reg. No. 9313.

Locality and geological horizon: the upper course of Tan-unnai-sawa, a tributary of Simo-Kinebetu-gawa, Obirasibé-mura, Rumôé-gun, Tesio Province; Palaeogene Coal-bearing Tertiary formation (Uryû Series).

backwards and bifurcated; the posterior one tends extremely backward, very narrow, and longest of all; the anterior lateral narrow, about a half as long as the posterior, and its anterior end does not reach the anterior muscle-scar; the posterior lateral long; nymph platy, and distinct. On the right valve, the anterior cardinal obsolete small, slightly tending forwards; the middle one nearly vertical, and bifid; the posterior one much obliquely tending backwards, also bifurcated, and longest of all. The lateral teeth on both sides provided with two ridges with a socket between the upper and lower ridges; the anterior one short, while the posterior one long.

Nymph platy, distinct, and slightly projecting from the ligamental groove.

The inner margin of the shell is smooth. The umbonal cavity shallow. The anterior muscle-scar ovate; the posterior one and the posterior half of the pallial line being invisible.

Dimensions		
Length (m.m.)	Height (m.m.)	Thickness of one valve (m.m.)
29	25	8
24	22	7

Remarks.—The holotype is right valve. One of the paratypes is represented by an internal mould of the right valve whose hinge teeth and the inner character are also observable. Another paratype is the right valve whose hinge teeth is well examined.

The present species resembles somewhat *Polymesoda (Geloïna) hokkaidoensis* NAGAO and ÔTATUME¹⁾ from the Wakkanabé Bed of the Isikari Coal-field in outline, however, the former is distinguished from the latter not only in having more flattened shell, lower umbo, shorter postero-dorsal margin, and concave posterior margin, but also fundamentally in the hinge teeth.

The specific name is dedicated to Mr. K. NISIKAWA²⁾ formerly a geologist of Hokkaidô Tankô-Kisen Co., collected the specimens about twenty-five years ago during his geological survey.

Locality and geological horizon: The upper course of Tan-un-naisawa, a tributary of Simo-Kinebetu-gawa, Obirasibé-mura, Rumcégun, Tesio Province, Uryû Series.

1) NAGAO, T. and ÔTATUME, K. 1942, op. cit., p. 2, pl. I, figs. 1-4; pl. II, figs. 1-7.

2) 西川冠次郎 學士