41. *Pliocene Shells from the Teshio Oil Field, Hokkaidō**

By

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General remarks

The rocks developed in the Teshio Oil Field of Hokkaidō are, in the main, the so-called "Upper" and "Uppermost" Tertiary Series. According to K. WATANABE¹⁾ of our Survey, the "Upper Series" is divided into three beds, namely, enumerated from the lower, Wakkanai Hard Shale, Koitoiye Sandstone, and Yūchi Sandstone. They yield molluscan fossils, those collected by him being preserved in our Survey, and which the writer describes in this paper.

The determined species are as follows:

	Wakkanai	Koitoiye	Yūchi
<i>Solemya (Acharax) tokunagai</i> YOKOYAMA	r		
<i>Acila (Truncacila) kuroai</i> KANEHARA, n. sp.			a
<i>Yoldia</i> cfr. <i>lischkei</i> SMITH			r
<i>Yoldia thraciaeformis scapha</i> YOKOYAMA	f		
<i>Navicula</i> sp.			r
<i>Pecten (Patinopecten) yessoensis</i> JAY			r
<i>Pecten (Patinopecten) poculum</i> YOKOYAMA			r
<i>Venericardia tokunagai</i> YOKOYAMA?			r
<i>Thyasira nipponica</i> YABE et NOMURA	f	f	
<i>Cardium (Cerastoderma)</i> sp.	r		
<i>Serripes notabilis</i> (SOWERBY)	r		
<i>Chione astartoides</i> (BECK)			r
<i>Macoma calcarea</i> GMELIN			a
<i>Macoma nasuta</i> CONRAD	r		
<i>Spisula polynyma alaskana</i> DALL			r

* By the permission of Dr. S. YAMANE, Director of the Imperial Geological Survey of Japan.

(¹⁾ K. WATANABE: Expl. Text. Oil-Fields. Japan. Empire, Sec. XXXI, (Imp. Geol. Surv. Japan.) 1936.

<i>Panomya arctica</i> LAMARCK ?	r
<i>Mya cuneiformis</i> (BÖHM)	f
<i>Periploma yokoyamai</i> MAKIYAMA	r
<i>Turritella</i> (<i>Haustator</i>) <i>saishuensis</i> YOKOYAMA	f
<i>Turritella</i> (<i>Haustator</i>) <i>nipponica</i> YOKOYAMA	f
<i>Natica</i> (<i>Tectonatica</i>) <i>janthostoma</i> DESHAYES	f
<i>Ranella</i> (<i>Priene</i>) <i>oregonensis</i> (REDFIELD)	r
<i>Neptunea vinosa</i> (DALL)	r
<i>Plicifusus yanamii</i> (YOKOYAMA)	r
<i>Trophon</i> (<i>Boreotrophon</i>) <i>beringi</i> (DALL)	r
<i>Ancistrolepis peulepis</i> KANEHARA, n. sp.	r

(r—rare, f—frequent, a—abundant.)

This fossil fauna, although quite small in number, seems to be a typical boreal one. Deducting four which have not been accurately determined, of the twenty-six species above enumerated, there remain twenty-two of which eleven are still living and the remaining eleven not yet known as living. The "Upper Series" is underlain by the "Middle Series" of Miocene age. From these considerations and from the stratigraphical standpoint, we may say that the age of the beds containing these fossils is Pliocene.

Description of the Species

Genus *Solemya* LAMARCK, 1818.

Subgenus *Acharax* DALL, 1908.

Solemya tokunagai YOKOYAMA

Solemya tokunagai YOKOYAMA: Jour. Coll. Sci. Imp. Univ. Tokyo., Vol. XLV, Art. 5, p. 31, Pl. VI, figs. 1, 2, 3.

Remarks:—A large specimen was obtained, which is measured over 100 mm. long and 40 mm. high.

Locality:—Southern tributary of Tokotnai (Mibu-no-Minamizawa) Chūwō-Sarakishi.

Geological horizon:—Wakkanai Hard Shale.

Occurrence:—rare.

Genus *Acila* H. and A. ADAMS, 1858.

Subgenus *Truncacila* SCHENCK, 1931.

Acila kurodai KANEHARA, n. sp.

Pl. 22 (10), figs. 4–10.

Nucula cobboldiae SOWERBY, YOKOYAMA: Jour. Fac. Sci. Imp. Univ. Tokyo, Sec. II, Vol. 1, Pt. 7, p. 246, Pl. XXXI, figs. 3, 4.

Acila "*cobboldiae* (YOKOYAMA)", KURODA: Venus Vol. I, No. 3, Appendix p. 8.

Acila insignis (GOULD), SCHENCK (partim.): Geol. Soc. America Spec. Papers No. 4, p. 99.

Holotype:—A left valve from the Yuichi Sandstone; preserved in the Imperial Geological Survey of Japan.

Remarks:—This species was once examined by T. KURODA, according to whom it has erroneously identified as *Nucula cobboldiae* SOWERBY by Dr. M. YOKOYAMA, with which, however, it resembles neither in outline nor in sculpture. Dr. H. G. SCHENCK has united this species to *Acila insignis* (GOULD). But *Acila insignis* (GOULD) is much thicker and of less height with finer sculpture than the present species. Further, the former has no area of obsolete radial ribbing, which is very distinctly developed on the latter. The line of primary bifurcation of *Acila insignis* (GOULD) is situated much farther behind than that of the present species. The cordate-escutcheonal view of the latter is a remarkable contrast to the almost rounded view of *A. insignis* (GOULD). The writer proposes the name *Acila kurodai* for YOKOYAMA's "*Nucula cobboldiae* SOWERBY", reported from Embets and Teshio of Hokkaidō and Kurosawa, Akita-Pref.

A description of *Acila* (*Truncacila*) *kurodai*, n. sp. follows:

Shell thick, longer than high, moderately inflated, ovate-rounded in outline. Antero-dorsal margin gently convex. Anterior end more acutely rounded than posterior. Ventral margin broadly convex. Posterior margin convex because of pouting in escutcheonal area. Beaks appressed and opisthogyrate. Escutcheonal area ill-defined by blunt ridge running posteriorly. Lunule narrow, more or less distinct. Rostral sinus almost indistinct. Shell smooth until it reaches height of 1.5 mm., then bifurcating radial ribs appear, separated by narrower interspaces. Ribs rough and gradually widen. Secondary bifurcation developed, although rarely, on the antero-dorsal area, especially on full grown specimens. Inner margin crenate on younger shells and not on adult ones, on which is developed distinctly the area of obsolete radial ribbing. Interior nacreous, smooth and shining. Hinge with narrow triangular chondrophore directed forward. The anterior line of teeth long, started from the beak, slightly arched, increasing in height distally, about two-thirds the length of dorsal margin, with about 22 teeth; the posterior one meeting the anterior at nearly 100 deg., short and straight, with about 12 teeth; the first teeth is parallel to the lower edge of the chondrophore.

Dimensions:—	Length	Height	Thickness	Semi-thickness
Holotype	32.0 mm.	26.4 mm.		8.5 mm.
Paratype No. 1.	30.5	25.0	16.8	
No. 2.	23.8	18.2	11.0	
No. 3.	22.0	18.0	10.8	
No. 4.	25.0	25.8		5.3
No. 5.	34.0	29.0		10.5

Locality:—Ainu-zawa Yoshida-zawa, both tributary to Paromautnai; Higashi Hassen-no-sawa, Nishi-Onupnai, Onupnai.

Geological horizon:—Yüchi Sandstone.

Occurrence:—rare.

Genus *Mya* LINNAEUS, 1758.

Subgenus *Mya* s. s.

Mya cuneiformis (BÖHM)

Pleuromya cuneiformis BÖHM: Jahrb. Preuss. Geol. Land., p. 557, Pl. 29, figs. 1, 2.

Mya donaciformis KURODA: HOMMA's Geol. Central Shinano, p. 63, Textfig. 7.

Remarks:—The largest specimen is measured 120 mm. long, 87 mm. high and 55 mm. thick.

Locality:—Yoshida-zawa, a tributary of Paromautnai, Onupnai.

Geological horizon:—Yüchi Sandstone.

Occurrence:—abundant.

Genus *Neptunea* BOLTEN, 1798.

Neptunea vinosa (DALL)

Pl. 22 (10), fig. 1

Chrysodomus vinosus DALL: Proc. U. S. Nat. Mus., Vol. 56, p. 323., Vol. 66, Art. 17, p. 10, Pl. 6, fig. 3.

Remarks:—The morphological variations of shell characters are frequently observed especially on the shells of the northern sea. The specimens now under consideration seems slightly more slender compared to the illustrated figure given by DALL.

Locality:—Ainu-zawa, a tributary of Paromautnai.

Geological horizon:—Yüchi Sandstone.

Occurrence:—rare.

Genus *Plicifusus* DALL, 1902.

Plicifusus yanamii YOKOYAMA

Bela yanamii YOKOYAMA: Jour. Coll. Sci. Imp. Univ. Tokyo, Sec. II, Vol. I, Pt. 8, p. 261, Pl. XXXII, fig. 11.

Locality:—Yoshida-zawa, a tributary of Paromautnai.

Geological horizon:—Yūchi Sandstone.

Occurrence:—rare.

Genus *Trophon* MONTFORT, 1810.

Subgenus *Boreotrophon* FISCHER, 1884.

Trophon beringi DALL

Pl. 22 (10), fig. 3

Trophon (Neptunea) beringi DALL: Proc. U. S. Nat. Mus., Vol. 24, p. 544, Smiths. Inst. U. S. Nat. Mus. Bull., 112, p. 109, Pl. 10, fig. 6.

Locality:—Northwest of Onupnai-Pass, Onupnai.

Geological horizon:—Yūchi Sandstone.

Occurrence:—rare.

Genus *Ancistrolepis* DALL, 1894.

Ancistrolepis peulepis KANEHARA, n. sp.

Pl. 22 (10), fig. 2

Holotype:—An example from the Yūchi Sandstone; preserved in the Imperial Geological Survey of Japan.

Description:—Shell conic, rather thick, with about seven turreted whorls. Nucleus smooth, of one whorl. Suture distinct and linear, with wide channel in front owing to first spiral rib. Axial sculpture of faint lines of growth. Spiral sculpture between the sutures of four strong, squarish, prominent ribs, with slightly narrow channeled interspaces, of which there are about seven on last whorl. Aperture ovate. Outer lip not thickened, undulated by ends of ribs. Thin callus on inner lip. Columella short and reflected. Canal twisted, rather narrow, deeply recurved, forming strong fasciole.

Occurrence and comparison:—Only one well preserved specimen was obtained by WATANABE. An allied species is *Buccinum eugrammatum* DALL¹⁾, which was reported from the Petrol Bank of Bering Sea. The present species is distinguished from *B.*

(1) W. H. DALL: Smiths. Miscel. Coll., Vol. L., Publ. No. 1725, p. 153, (1907). Smiths. Inst. U. S. Nat. Mus. Bull. 112, p. 98, Pl. 12, fig. 2.

eugrammatum by its lower spires, nonbeaded posterior spiral rib and shorter columella. Apparently the latter has a thinner shell.

Dimensions:—30 mm. high and 19 mm. in maximum diameter.

Locality:—Yoshida-zawa, a tributary of Paromautnai.

Geological horizon:—Yūchi Sandstone.

Explanation of Plate 22 (10)

(All figures are in natural size)

1a and 1b. *Neptunea vinosa* (DALL)

2a and 2b. *Ancistrolepis peulepis* KANEHARA, n. sp.

3a and 3b. *Trophon* (*Boreotrophon*) *beringi* DALL.

4, 5a, 5b, 5c, 6a, 6b, 7, 8, 9a, 9b 9c.

Acila (*Truncacila*) *kurodai* KANEHARA, n. sp. (Paratypes).

10. *Acila kurodai* KANEHARA, n. sp. (Holotype).

天鹽油田産鮮新期貝化石 (摘要)

金 原 均 二

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