

X. PALEONTOLOGICAL NOTE OF MEGAFOSSILS

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The many megafossils, most of which are molluscs, were found in the D218 and D219 gravel samples from Sts. 754 and 756 by the dredge. These fossil specimens are repositied at the Chugoku Office of the Geological Survey of Japan, Hiroshima City.

Megafossils at St. 754: The megafossils were obtained from the gravels of hard to soft, gray or yellowish brown, and very coarse to fine sandstone, some of which are rich in shell fragments and calcareous. The megafossils at St. 754 are listed on Table X-1. Among of them, the echinoid *Scaphechinus mirabilis* was discriminated by Professor Akira MORISHITA of the Nagoya University.

The fossils listed will attract the Tertiary paleontologist's attention with very interest because of the association of fossil molluscs. That is to say, the molluscs indicate Pliocene in age and the mixed and bridge association of the Omma fauna from the Pliocene on the

Table X-1 Fossils from D 218 Samples at St. 754.

Bivalvia

Anadara amicula (YOKOYAMA) (s.l.)

A. sp.

Chlamys farreri nipponensis KURODA

Amussiopecten praesignis (YOKOYAMA)

Patinopecten (Mizuhopecten) tokyoensis hokurikuensis AKIYAMA

P. (M.) cf. *yessoensis yokoyamae* MASUDA

P.? sp.

Lucinoma cf. *annulata* (REEVE)

L. sp.

Venericardia (Cyclocardia) cf. *ferruginea* CLESSIN

Miodontiscus prolongatus nakamurai (YOKOYAMA)

Clinocardium? sp.

Mactra? sp.

Callista? sp.

Anisocorbula sp.

Scaphopoda

Striodentalium cf. *rhabdotum* (PILSBRY)

Gastropoda

Turritella sp.

Serpulorbis? sp.

Brachiopoda

Coptothyris grayi (DAVIDSON)

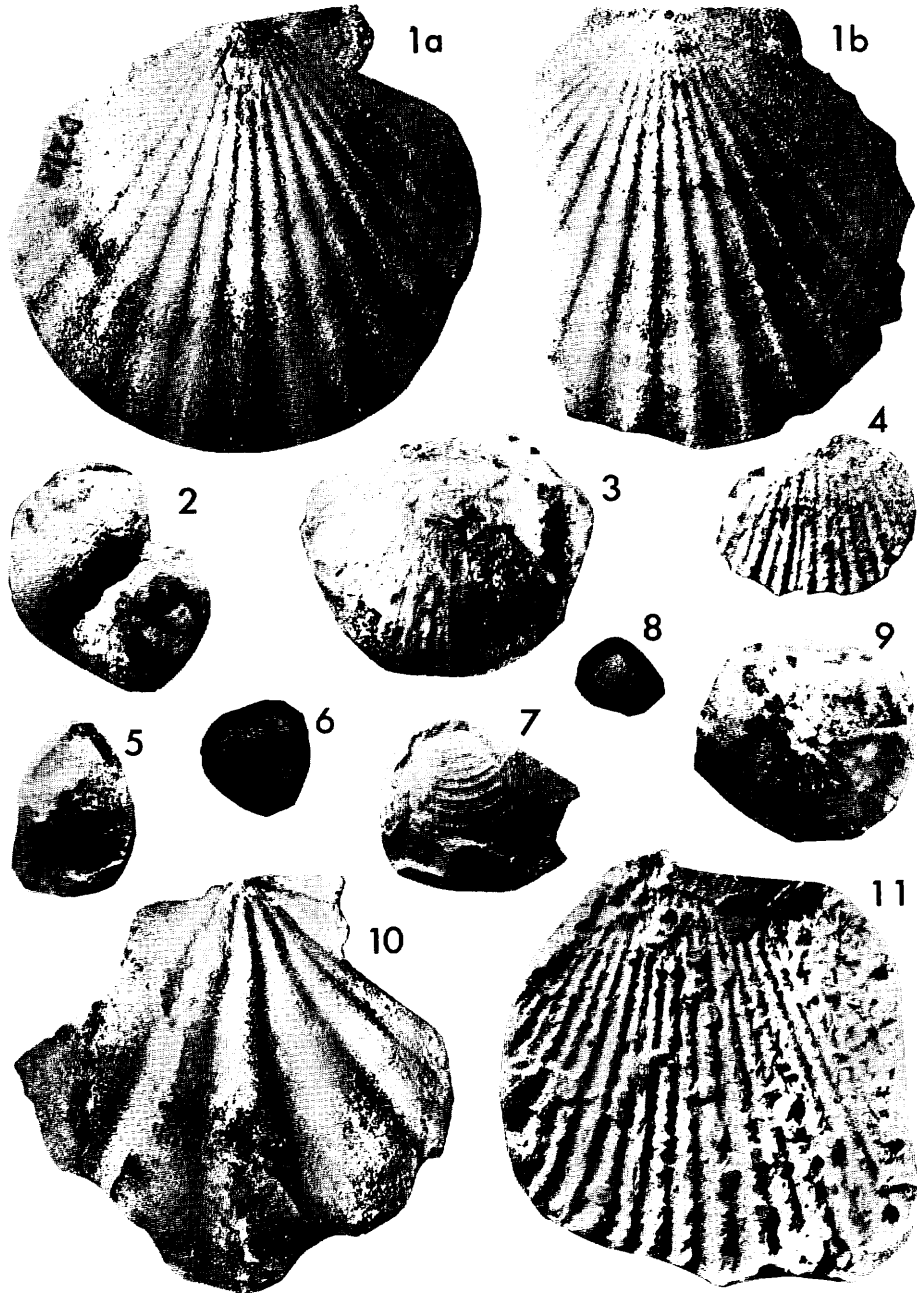
Echinoidea

Scaphechinus mirabilis A. AGASSIZ**

Bryozoa

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**Discriminated by MORISHITA, A.



1a, 1b *Amussiopecten praesignis* (YOKOYAMA), $\times 0.8$, St. 754. 2 *Cryptonatica?* sp., $\times 1$, St. 756.
 3 *Coptothyris gravi* (DAVIDSON), $\times 1$, St. 754. 4 *Chlamys farreri nipponensis* KURODA, $\times 1$, St. 754.
 5 *Anadara amicula* (YOKOYAMA) (s.l.), $\times 1$, St. 754. (Silicone rubber cast). 6 *Lucinoma* cf. *annulata* (REEVE), $\times 2$, St. 754. 7 *Lucinoma* sp. cf. *L. annulata* (REEVE), $\times 1$, St. 756. (Silicone rubber cast).
 8 *Miodontiscus prolongatus nakamurai* (YOKOYAMA), $\times 2$, St. 754. 9 *Scaphechinus mirabilis* A. AGASSIZ, $\times 1$, St. 754. 10 *Patinopecten* (*Mizuhopecten*) *tokyoensis hokurikuensis* AKIYAMA, $\times 0.8$, St. 754.
 11 *Patinopecten* (*Mizuhopecten*) cf. *yessoensis yokoyamae* MASUDA, $\times 1$, St. 754. (Silicone rubber cast).

Fig. X-1 Megafossils in the offshore area of the San-in.

Japan Sea coast and the Kakegawa fauna from the Pliocene on the Pacific coast. In the fossil species, *Anadara amacula* (s.l.), *Patinopecten* cf. *yessoensis yokoyamae*, *Miodontiscus prolongatus nakamurai*, *Anisocorbula* sp., and *Scaphechinus mirabilis* were collected from the Omma formation in the Hokuriku district (MORISHITA, 1960; KASENO and MATSUURA, 1965; OGASAWARA, 1977). On the other hand, *Amussiopecten praesignis* was found in the Kakegawa group, the Nobori formation, and the Takanabe formation of the Miyazaki group on the Pacific coast (SHUTO, 1961; TSUCHI, 1961; AOKI, 1966). *Chlamys farreri nipponensis*, *Patinopecten tokyoensis hokurikuensis*, *Lucinoma* cf. *annulata* etc. are common to the Pliocene strata in both the Japan Sea and Pacific coasts.

The find of *Amussiopecten praesignis* in the southwestern Japan Sea area suggests that the warm Paleo-Tsushima current flowed into the Japan Sea through the Paleo-Tsushima strait at a Pliocene. The strata containing these fossils are probably correlated to the lower part of the Tsunozu group in the San-in district (IMAMURA, 1964; TSUNOZU Research Group, 1972).

On the Japan Sea coast to the southwest of the Hokuriku district there are scarcely distributed the marine Pliocene formations. Accordingly the fossils at St. 754 will have a important bearing on the younger Neogene geohistory of Japan.

Megafossils at St. 756: A small number of fossil molluscs were collected from the gravels of hard, green or light gray, and fine sandstone or mudstone. The fossil molluscs at St. 756 are as follows.

Saccella? sp., *Portlandia* sp., *Anadara amacula* (YOKOYAMA) (s.l.), *A.* sp., *Lucinoma* sp. cf. *L. annulata* (REEVE), *Callista?* sp., *Cryptonatica?* sp., Gastropoda gen. et sp. indet., and Sand-pipe.

Compared with the fossils at St. 754, these molluscs are ill-preserved and fewer in number of specimens and species. Some species, i.e., *Anadara amacula* (s.l.) and *Lucinoma* cf. *annulata* occurred in both Sts. 754 and 756. Therefore, the strata yielding these molluscs are perhaps assigned to a Pliocene in age, though there is no a index fossils.

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