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ON THE ECHINOID CALLED "*SINAECHINUS*  
*KAWAGUCHII*"

By

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(With 1 plate)

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Among the Tertiary echinoids of Taiwan recently described<sup>1)</sup> a spatangid species from the supposedly lower Pliocene formation of southwestern part of the island was introduced as a new species of a new genus, and was named "*Sinaechinus kawaguchii*"<sup>2)</sup>. The fossil is a partly broken specimen, but has a few peculiar features. The most conspicuous is the tube-like peristome which is horizontal, with an anteriorly projected labrum (Pl. 14, fig. 5).

In the mean time, a very beautiful and complete test of a Recent echinoid was presented to the writer by KAWAGUCHI who dredged it with several other echinoids and asteroids in the Bay of Tonkin (figs. 1, 2, 3). It happened that the fossil specimen just referred to coincides with it in point of the characteristic shape of the test and the peculiar disposition of the peristome. Seeing that the latter specimen has a peripetalous fasciole duplicated in the front, the fossil specimen was re-examined with much more care as to whether it also has the peripetalous fasciole of the similar type or not. By etching and brushing it was ascertained that it also does have a duplicate peripetalous fasciole. Thus, it is beyond doubt that the peculiar echinoid found in the southern sea of Eastern Asia occurs as fossil in the younger Tertiary formation of Taiwan.

As the present writer remarked in one of his recent papers<sup>3)</sup>, he was engaged in collecting invertebrate animals along the beach of Taiwan in the past years, with the hope of facilitating the paleonto-

logical studies of the Tertiary and younger formations of the island by using them for comparison with fossils; because there was available little knowledge concerning the beach fauna of Taiwan up to that time.

It was stated by the present writer in his previous note on the Recent echinoids of Taiwan<sup>1)</sup> that many reference works important for the systematic investigation of mollusca, echinoidea, etc. are lacking in Taiwan. It was possible to do only provisional work in the taxonomic studies both of fossil and Recent forms in general. With only a limited number of reference works on Recent echinoids, the existence of forms with a duplicate peripetalous fasciole had been beyond the author's knowledge.

After the publication of the papers describing *Sinaechinus kawaguchii*<sup>1,2)</sup>, and on the present writer's repatriation from Taiwan in August, 1949, NISHIYAMA, then of Sendai (now Matsue) kindly sent a memorandum that the similar, double-fascioled Recent echinoid has been known from Eastern Asiatic seas since 1851 when J. E. GRAY described *Faorina chinensis*. To the writer's deep gratification NISHIYAMA prepared for him copies of the descriptions of the genus and the species by GRAY<sup>5)</sup>, KOEHLER<sup>6)</sup> and CLARK<sup>7)</sup>, as well as of the pictures in the works of the first two authors. He suggested that the new form might well be identical with *Faorina*.

Perusing the descriptions of these authors and examining the pictures the present writer is convinced that the specimens described by him as *Sinaechinus kawaguchii* are, and especially the Recent specimen from the Bay of Tonkin is, nothing but *Faorina chinensis* GRAY. Thus, the name *Sinaechinus kawaguchii* has to be abandoned.

The Recent specimen of the present material is 72 mm, 66mm and 54.5 mm in length, width and height, respectively. KOEHLER's specimens are mostly 60 mm in the average of length, the largest example measuring 70 mm long. CLARK gives the ratio h/1 to be 3/4 in his specimens. Therefore, the specimen from the Bay of Tonkin equals in size the largest of KOEHLER's specimens, and in the h/1 ratio (1/3.9) almost coincides with the value given by CLARK.

The fossil from Taiwan is an incomplete specimen having the posterior portion of the test broken off, and the test as a whole is more or less markedly compressed antero-posteriorly, and deformed. The

width is measured to be about 58 mm. and the height about 43 mm, but evidently these do not seem to represent true values. But for these dimensional disproportions the fossil also is an example of *Faorina chinensis* GRAY: otherwise, it might be a subspecies or possibly another species.

**Localities.** The Recent specimen is from the Bay of Tonkin, southwest of Hainan Island (Kuantung Province, China), dredged by Dr. Shirô KAWAGUCHI, now Professor of Zoology, Okayama University. The fossil specimen was obtained by Dr. Yoshirô TOMITA, now Professor of Geography, Tôhoku University, Sendai, along the bank of the Tachuchi, a tributary of the Tsengwenchi, Tapuchuang, Chaichu, Tainanhsien, Taiwan<sup>3)</sup>, in the pale-green, fine-grained sandstone, possibly corresponding to the lower part of the Byôritu group (earlier Pliocene). This perhaps is the first fossil record of the species.

These specimens are in the Department of Geology, National Taiwan University, Taipei, Taiwan, China.

In conclusion the writer wishes to acknowledge his great indebtedness to the authority of Dr. NISHIYAMA in writing this note of amendment.

(April 20, 1952)

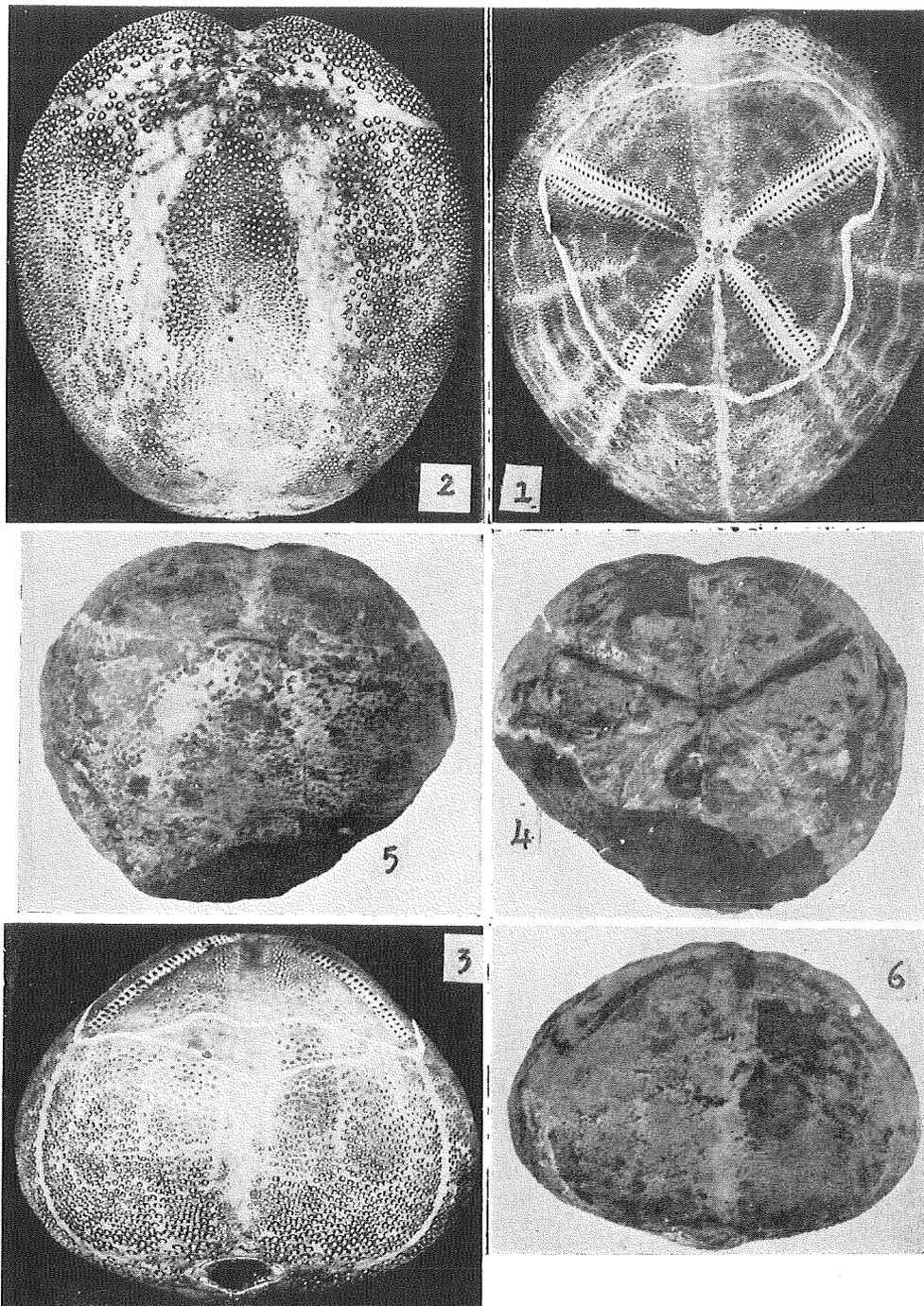
### References

- 1) HAYASAKA, Ichirô (1948). Notes on some Fossil Echinoids of Taiwan, pt. 4: Acta Geologica Taiwanica, vol. 2, no. 2, pp. 85-124, 5 pls.
  - 2) *Ditto*, pp. 93-96, pl. 3, figs. 1-5: pl. 4, figs. 1a-c.
  - 3) HAYASAKA, Ichirô (1948). Notes on Some Echinoids of Taiwan: Bull. Oceanogr. Inst. Taiwan, no. 4, pp. 1-35, 6 pls.
  - 4) HAYASAKA, Ichirô (1949). *Sinaechinus Kawaguchii* gen. et sp. nov., a New Spatangid Echinoid from the Bay of Tonkin: Bull. Oceanogr. Inst. Taiwan, no. 5 pp. 20-22. 1 pl.
  - 5) GRAY, J. E. (1851). Description of some New Genera and Species of Spatangidae in the British Museum: Annals and Magazine of Natural History, ser. 2, vol. 7, pp. 130-134.
- GRAY, J. E. (1857). Catalogue of Recent Echinoids in the Collection of the British Museum, pt. 1, p. 57, pl. 6 figs. 1-1a. The duplication of the peripetalous fasciole is not recognized in these pictures.

- 6) KOEHLER, R. (1914). Echinodermata of the Indian Museum, Echinoidea, pt. 1, pp. 129-132, pl. 13, figs. 14-15.
- 7) CLARK, H. L. (1925). A catalogue of the Recent Sea-Urchins (Echinoidea) in the Collection of the British Museum (Natural History), p. 203.
- 8) 臺南縣嘉義區大浦庄曾文溪支流大竹溪.

## Explanation of Plate

14



HAYASAKA: On "*Smaechinus kawaguchii*"