

cannot be approximated.

47. *Ancistrolepis* cf. *mogamiensis* (Nomura & Zinbô, 1935) [Japanese name of *A. mogamiensis*: Mogami-wadachi-bai] (Fig. 15E-F). Fig. 15E and F are each of paired halves of the single nodule. The shell material is mostly absent, but the character of external sculpture is well preserved. There are at least six prominent spiral ribs separated by grooves with similar thickness. The specimen is probably from the Upper Miocene Furukuchi Formation in Dewa (= Yamagata Prefecture). Kinouchi (1773) listed “Dewa, Yudonosan” as one of the localities of “long whelks”. This specimen is also similar to *A. grammatus* (Dall) (Amano *et al.*, 1996) but differs in having a larger apical angle. The Recent species of the genus inhabit the lower part of continental shelves and deeper level in temperate to cold-water region.

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References

- Amano, K., Ukita, M. & Sato, S. 1996. Taxonomy and distribution of the subfamily Ancistrolepidinae (Gastropoda: Buccinidae) from the Plio-Pleistocene of Japan. *Transactions and Proceedings of the Palaeontological Society of Japan, New Series* (182): 467-477.
- Hatai, K. & Nisiyama, S. 1952. Check list of Japanese Tertiary marine Mollusca. *Science Reports of the Tôhoku University, Sendai, Japan, Second Series (Geology), Special Volume* (3): 1-464.
- Harte, M. E., 1998. The evolution of *Mercenaria* Schumacher, 1817 (Bivalvia: Veneridae). In: Johnston, P. A. & Haggart, J. W. (eds.) *Bivalves: An Eon of Evolution. Paleobiological Studies Honoring Norman D. Newell*. pp. 305-315. University of Calgary Press, Calgary.

- Hayami, I. & Kase, T. 1977. A systematic survey of the Paleozoic and Mesozoic Gastropoda and Paleozoic Bivalvia from Japan. *The University Museum, The University of Tokyo, Bulletin*, no. 13, 132 pp. + 154 pls.
- Itoigawa, J. & Akagi, S. 1978. Baiseki Gafu—An illustrated book of fossils in Yedo Period—. *Bulletin of the Mizunami Fossil Museum* (5): 183-185, pl. 21. (in Japanese)
- Itoigawa, J. & Nobuhara, T. 1991. Research report on Cenozoic molluscan fossils of Southeast Asia and Japan deposited in the National Museum of Natural History of the Netherlands, Leiden. *Journal of Geography* 100: 795–797. (in Japanese)
- Itoigawa, J., Shibata, H. & Nishimoto, H. 1974. “Molluscan fossils from the Mizunami Group”. *Bulletin of the Mizunami Fossil Museum* 1: 43-203, pls. 1-63. (in Japanese)
- Kase, T. 1984. *Early Cretaceous Marine and Brackish-water Gastropoda from Japan*. 199 pp. + 31 pls. National Science Museum, Tokyo.
- Kinouchi, S. 1773. [*Kojô Sekiwa, Unkonshi. Zenpen. Kan-no-San. Henkwa-no-Rui*] [*Stone Story in the Lakeside, or, Records of Roots of Clouds. First Part, Volume 3. Metamorphic Kinds*]. 2 + 22 pp. Ôsaka. (in Japanese) 木内小繁重暁 [石亭]. 1773. 湖上石話 雲根志 . 前編 , 卷之三. 變化類
- Kochibe, T. 1882. Geologic outlines of north Hitachi. *Rika-Kai-Sui* [*Memoirs of the Science Department, Tokio Daigaku (University of Tokio), Japanese Edition*] (4), Supplement: 1-153 + 1-2 + pls. 1-9. (in Japanese) [概測 常北地質編. 理科會粹 (4) 附録]
- Kotaka, T. 1951. Recent *Turritella* of Japan. *Short Papers from the Institute of Geology and Paleontology, Tôhoku University, Sendai* (3): 70-86 + pls. 11-12.
- Kotaka, T. 1959. Cenozoic *Turritellidae* of Japan. *Science Reports of the Tohoku University, Sendai, Japan, Second Series (Geology)* 31(2): 1–135 + pls. 1–15.
- Kôundô, K. 1804a. “*Kansôroku*” (*Records under the Silent Window*). 41 pp. Kitsusendô, Kyôto. (in Japanese)* 耕雲堂灌圃 , 1804a. 閑窓録 .
- Kôundô, K. 1804b. “*Baiseki Gafu*” (*Illustrated Handbook of Shell Stones*). 2 + 23 pp. Kyôto. (in Japanese)* 耕雲堂灌圃 , 1804b. 貝石画譜
- Makiyama, J. 1926. Tertiary fossils from north Kankyôdô, Korea. *Memoirs of the College of Science, Kyoto Imperial University, Series B* 2(3):143-160 + pls. 12-13.
- Masuda, K. 1972. *Swiftopecten* of the northern Pacific. *Transactions and Proceedings of the*

- Palaeontological Society of Japan, New Series* (87): 395-408 + pls. 48-49.
- Matsubara, T. 2004. Catalogue of the Pliocene Mollusca from the Tônohama Group in Kôchi Prefecture, Shikoku, Japan, in the Museum of Nature and Human Activities, Hyogo (Takao Sendô Collection). *Nature and Human Activities* 8: 49-95.
- Matsubara, T., Sasaki, T., Ito, Y. & Amano, K. 2009. Illustrations of Cenozoic molluscan type specimens preserved in The University Museum, The University of Tokyo. *Chiribotan* 39(3-4): 176-181. (in Japanese)
- Matsukuma, A. 1986. *Glycymeris cisshuensis* (Mollusca: Bivalvia), an ancestral species of temperate glycymeridids from Japan and Korea. *Monograph of the Mizunami Fossil Museum* (6): 59-74 + pls. 6-7.
- Noda, H. 1966. The Cenozoic Arcidae of Japan. *Science Reports of the Tohoku University, Sendai, Japan, Second Series (Geology)* 38: 1-161 + pls. 1-14.
- Noda, H. & Nakashima, R. 2003: Geological and geographical distribution of molluscan bivalve *Anadara granosa* and its related species. In: Ratanasathien, B., Rieb, S. L. & Chantraprasert, S (eds.), *8th International Congress on Pacific Neogene Stratigraphy, Pacific Paleoenvironments and Their Evolution*, pp. 102–110. Chang Mai University, Chang Mai.
- Nomura, S. & Hatai, K. 1936. Fossils from the Tanagura Beds in the vicinity of the Town Tanagura, Hukusima-ken, Northeast Honsyû, Japan. *Saito Ho-on Kai Museum Research Bulletin* (10): 109-155 + pls. 13-17.
- Nomura, S. & Zinbô, N. 1935. Fossil Mollusca from the vicinity of Hurukuti, Mogami-gun, Yamagata-ken, Northeast Honsyû, Japan. *Saito Ho-on Kai Museum Research Bulletin* (6): 1-17 + pls. 1.
- Ozawa, T., Tanaka, T. & Tomida, S. 1998. Pliocene to Early Pleistocene warm water molluscan fauna from the Kakegawa Group, central Japan. *Nagoya University Furukawa Museum, Special Report* (7): 1-205.
- Tagai, T. & Mikouchi, A. 2008. Mineral Collection and ‘Lapidographia Japonica’ by Philip Franz von Siebold. *The University Museum, The University of Tokyo, Bulletin* (44): 1-282.
- Tashiro, M. 1992. “*Illustrated Reference Books of Fossils, Bivalves from the Mesozoic Cretaceous in Japan*” Published by the author. Kochi, Japan. viii + 307 pp. (in Japanese)
- Ueda, T. & Sugiyama, M. 1984. Fossil *Conchocele bisecta* (Conrad) from Dôgo, Oki Islands.

Geological Report of Shimane University 3: 145-154 + pls. 1-2. (in Japanese)

Yabe, H. 1970. "Memory of Japanese geology and my biography with a record of travels in Europe" In: Kobayashi, T. & Shikama, T. (eds.) "*Reminiscences of Japanese Paleontology.*" Paleontological Society of Japan, Tokyo. pp. 9-33. (in Japanese)

Yabe, H. & Nomura, S. 1925. Notes on the Recent and Tertiary species of *Thyasira* from Japan. *Science Reports of the Tôhoku Imperial University, Sendai, Japan, Second Series (Geology)* 7: 83-95 + pls. 23-24.

Yokoyama, M. 1922. On a new species of *Pecten* from the Neogene of Japan. *Journal of the Geological Society of Tokyo* 29:1-2, pl. 5.

*not seen.