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902. A NEW GENUS OF THE MIOGYPSINID FORAMINIFERA FROM SOUTHWEST JAPAN*

KUNITERU MATSUMARU

Department of Geology, Faculty of Education, Saitama University, Urawa 338

Abstract. A new genus of the miogypsinid foraminifera, *Tania* is proposed from the Miocene *Miogypsina* Sandstone of the Lower Formation, Bihoku Group, Okayama Prefecture. *Tania inokosiensis*, n. gen. and n. sp. is selected as the type species.

Key words. *Tania inokoshiensis, Miogypsina* Sandstone, Bihoku Group, Miocene, Okayama Prefecture.

Introduction

Scince Yabe and Mabuchi (1934) described *Miogypsina* cf. *kotoi* Hanzawa in addition to *Operculina* cf. *complanata* Defrance from the *Miogypsina* Sandstone, of the Lower Formation, Bihoku Group exposed at Inokoshi, Koyamaichi Village, Okayama Prefecture, our knowledge of *Miogypsina* from Inokoshi has been extended by Hanzawa (1935), Tan (1937a), Ujiié (1966) and Matsumaru (1973). Most specimens of *Miogypsina* from Inokoshi are identical in every respect with those from many localities of Japan, and have been classified as *Miogypsina kotoi* Hanzawa. *Miogypsina kotoi* containing beds in the Kanto Region, Central Japan was referred to N 8 Zone of the planktic foraminiferal Zone of Blow (1969) by Matsumaru (1977), Takayanagi *et al.* (1978), Chiji and Konda (1978), and Matsumaru and Hayashi (1980), hence the *Miogypsina* Sandstone exposed at Inokoshi may safely be assigned to N 8 Zone, which is considered to Early Miocene of Blow (1969).

Recently, the present author discriminated a new type of *Miogypsina* from the *Miogypsina* Sandstone at Inokoshi, which shows peculiar characteristics intermediate between the genera *Miogypsinoides* Yabe and Hanzawa (1928) and *Miogypsina* Sacco (1893) or *Lepidosemicyclina* Rutten (1911). The author should, therefore, like to propose a new genus name *Tania* for these forms, taking *Tania inokoshiensis*, n. sp. as the type species.

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Family Miogypsinidae Vaughan, 1928
Genus *Tania* Matsumaru, n. gen.

Type species: —*Tania inokoshiensis* Matsumaru, n. sp.

Diagnosis: —Test large, laterally flabelliform to somewhat digitate-form, longitudinally biconvex in outline, exterior surface studded with large raised papillae directly over periembryonic chambers and with small ones arranged in apical portion; composed of layers of flattened lateral chambers on each side of equatorial layer. Embryonic chambers of spherical protoconch and reniform deuteroconch in megalospheric generation apically placed, with no nepionic and equatorial chambers on place between protoconch and marginal fringe of apical portion. Two inequal sets of spiral nepionic chambers are situated along the outer side of deuteroconch,

which is always situated on place between protoconch and normal equatorial chambers of frontal margin. Microspheric generation with spire of nepionic chambers situated apically. Adult equatorial chambers are arcuate, lozengic, hexagonal and spatulate; chambers connected by proximal and distal foramina, and by a system of diagonal and concentric stolons; intraseptal and spiral canal system, and pillars present in central portion of test.

Comparison: —This new genus resembles *Miogypsinoides* in respect to the arrangement of embryonic chambers in the apical portion of test, but it can be distinguished from the latter by having well-developed lateral chambers. Also, *Tania* resembles *Miogypsina* without nepionic and equatorial chambers on place between the embryonic chambers and apical fringe. However, the former is distinguished from the latter by both the arrangement of embryonic chambers in the apical portion, and development of hexagonal to spatulate equatorial chambers. *Tania* resembles *Lepidosemicyclina* in having the hexagonal to spatulate equatorial chambers, but it is distinguished from the latter by the arrangement of embryonic chambers. *Miolepidocyclina* A. Silvestri (1907) and *Miogypsinita* Drooger (1952) resemble *Tania*, but they are distinguished from the latter by having normal nepionic and equatorial chambers on place between the embryonic chambers and marginal to apical fringe.

Etymology: —*Tania* is named in honor of Tan Sin Hok, who introduced the nepionic acceleration theory of the miogypsinid foraminifera (Tan Sin Hok, 1936, 1937b) and is originated with his family name, Tan.

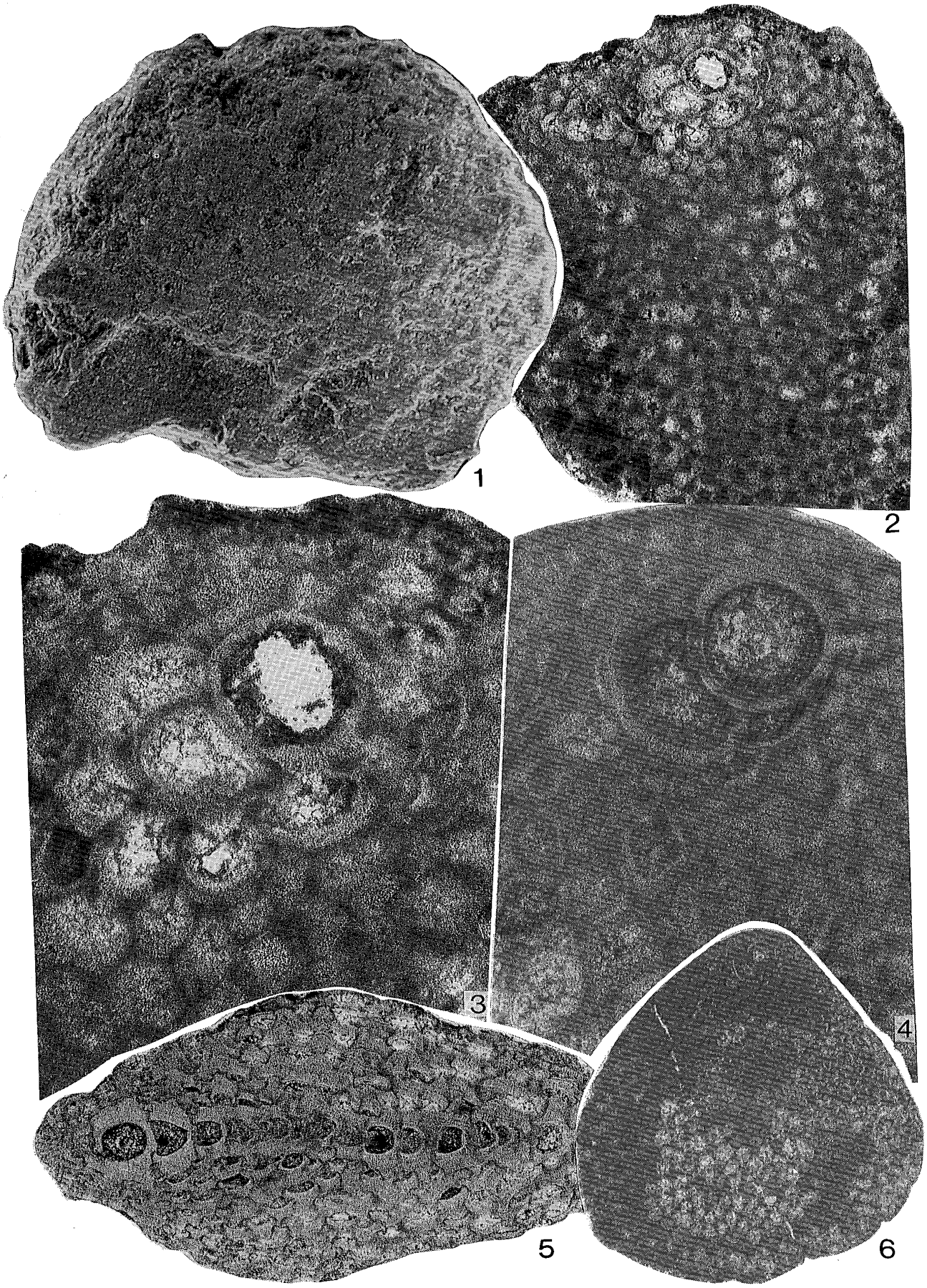
Tania inokoshiensis Matsumaru, n. sp.

Figures 1-1—6

Type material: —Holotype, equatorial section, Saitama University Coll. no. 8803 (Figures 1-4, 6); Paratype specimen, Saitama University Coll. no. 8804 (Figure 1-1); Paratype, equatorial section, Saitama University Coll. no. 8805 (Figures 1 - 2, 3); Paratypes, vertical section, Saitama University Coll. no. 8806 (Figure 1-5).

Description: —Test large in size measuring 2.3 to 2.5 mm., 2.3 to 2.8 mm. and 0.9 to 1.1 mm. in largest diameter, smallest diameter and thickness, respectively, from 12 specimens. Test usually flabelliform (Figure 1-6), but sometimes with digitate-form (Figure 1-1), and biconvex in vertical section (Figure 1-5). Large raised papillae measuring from 65 to 80 μm are distributed at thickest portion over periembryonic chambers with respect to apical parts of test. Outer and inner diameters of protoconch being 268 to 313 μm and 214 to 264 μm, respectively, from 4 specimens in equatorial section. Outer and inner diameters of deuteroconch being 211 to 398 μm and 170 to 313 μm, respectively, from 4 specimens. Proportion between protoconch and deuteroconch diameters given 0.92 to 1.22 and 1.10 to 1.23 in outer and inner diameters, respectively. Angle ($=\gamma$) between axis of two embryonic chambers and apical frontal line giving 135 to 140 degrees. Number of primary and secondary protoconchal nepionic chambers giving 5 to 6 and 3 to 4, respectively, until both nepionic chambers attaining to a stout wall on place between protoconch and marginal fringe of apical portion. Number of primary and secondary deuteroconchal chambers and counting 1/2 for closing chamber are 2.5 to 3.5 and 2.5 to 4.5, respectively. Equatorial chambers in equatorial section arcuate to ogival, lozengic, and hexagonal to spatulate in shape, with dimensions of 108×67 μm to 135×102 μm, 122×135 μm to 139×178 μm, and 104×157 μm to 113×178 μm, respectively. Lateral chambers differentiated from equatorial chambers, arranged in 7 to 10 regular layers in adult specimens. Lateral chambers with dimension of 82×47 μm to 129×65 μm in width and height.

Locality: —Inokoshi, Koyamaichi Vil-



lage, Kawakami-Gun, Okayama Prefecture (34°45′N. Lat., 133°24′E. Long.).

Stratigraphic horizon : —*Miogypsina* Sandstone, Lower Formation, Bihoku Group.

Geological age : —Early Miocene of Blow, (1969).

Remarks : —*Tania inokoshiensis*, n. sp. represents more primitive arrangement of embryonic chambers and more advanced hexagonal to spatulate equatorial chambers than each one of *Miogypsina kotoi* Hanzawa, respectively. The present new species represents the same hexagonal to spatulate equatorial chambers as *Lepidosemicyclina thecidaeformis* (Rutten) which has more advanced equatorial chambers than *Miogypsina kotoi*. However, this new species has more primitive arrangement of embryonic chambers than *L. thecidaeformis*. Also, *Tania inokoshiensis*, n. sp. has the same arrangement of embryonic chambers as *Miogypsina gunteri* Cole from the Oligocene bed at Port St. Joe, Florida (Cole, 1938) that has its deuteroconch situated on place between the protoconch and main equatorial chambers in frontal margin. However, the latter is distinguished from the former by the arrangement of nepionic chambers in a single spiral. Thus, *Tania inokoshiensis*, n. sp., whose arrangement of embryonic chambers is characterized in having more than 135 degrees in γ value, is considered to be more rationary close to *Miogypsina gunteri* than to *Lepidosemicyclina thecidaeformis*.

In the Pacific Region, *Miogypsina gunteri* Cole is found from the Late Oligocene to Early Miocene Tagpochau Limestone at Locality M107, Saipan, Micronesia by Matsumaru (1976, pl. 4, figs. 1, 9). Also, the present author (in Hashimoto *et al*., 1977) identified *Miogypsina gunteri* from the limestone of sample 11413 collected at around Bugton Point, Mindoro, Philippines. This limestone is known as the Early Miocene Paclasan Limestone by Hashimoto and Matsumaru (1984, p. 158). Matsumaru (in Hashimoto *et al*., 1982, pl. 10, figs. 9, 10) described *Miogypsina gunteri* in association with *Nephrolepidina praetournoueri* H. Douville from limestone sample of the Escalante Formation at Locality 7682906, Negros, Philippines. Though Hashimoto *et al*. (*op. cit*.) regarded this limestone sample to be probably Early Miocene, the age of the limestone at Loc. 7682906 is thought probably to be Late Oligocene, based on the occurrence of *Nephrolepidina praetournoueri*. As a result of the present study, it is concluded that *Tania inokoshiensis*, n. sp. may have a close phylogenetic relationship to *Miogypsina gunteri*, based on both the arrangement of embryonic chambers and the relationship of the occurrence between both species.

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← **Figure 1.** *Tania inokoshiensis* Matsumaru, n. gen. and n. sp. **1.** Equatorial view of a paratype, Saitama University Coll. no. 8804, ×30. **2**—**4**, **6.** Equatorial sections, **2.** ×37, paratype, Saitama University Coll. no. 8805. **3**, enlarged from **2**, ×93, showing the arrangements of embryonic chambers, and nepionic and equatorial chambers in the apical portion. **4.** Holotype, Saitama University Coll. no. 8803. enlarged from **6**, ×70, showing the arrangements of embryonic, nepionic and equatorial chambers. **6.** ×23, showing the whole test of the holotype with the hexagonal to spatulate equatorial chambers. **5.** Vertical section, paratype, Saitama University Coll. no. 8806, ×43.

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西南日本産の Miogipsinid 有孔虫の新属：岡山県川上郡高山市村飯越の中新世備北層群下部層 *Miogipsina* 砂岩から *Tania inokoshiensis* を記載した。この新属・新種は *Miogypsina gunteri* Cole に近い系統のものと推察される。

松丸国照
