



東北海道釧路近辺の舌辛層からの古第三紀有孔虫について

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Paleogene Foraminifera from the Sitakara Formation Near Kusiro, Eastern Hokkaidô

(1 Text-figure, 2 plates)

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吉田三郎： 東北海道釧路近辺の舌辛層からの古第三紀有孔虫について

INTRODUCTION

The first note on fossil Foraminifera from the Sitakara formation was recorded by Kiyosi Asano (1952) who collected samples from a number of outcrops along the Uenbetu and Okuyokunnai valley, Akan-mura and at Kusiro city. He found *Cornuspiroides ôinomikadoi*, *Cyclammina pacifica*, *Cyclammina inicica*, *Haplophragmoides* sp., *Trochammina* sp. and *Rotalia* sp., etc. in the middle part of the formation. And he correlated the Sitakara foraminiferal fauna of the Kusiro coal-field to that of the lower part of the Poronai shale of the Isikari coal-field.

ACKNOWLEDGMENTS

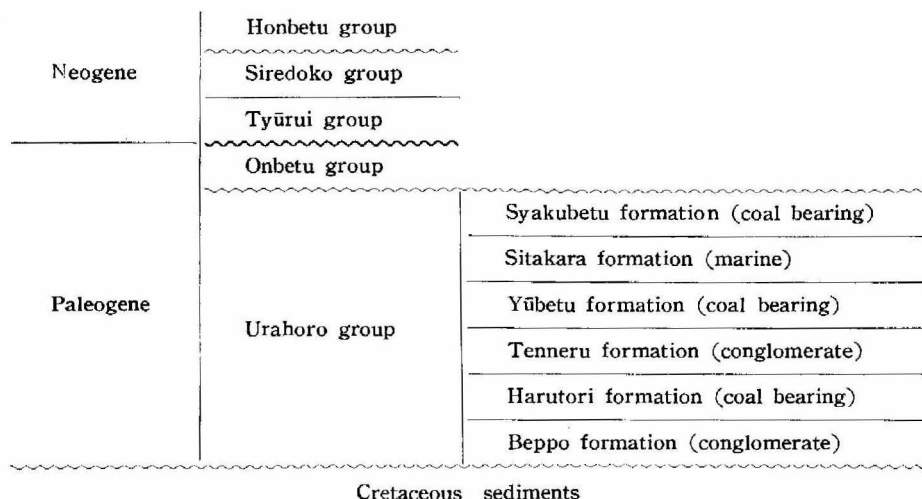
The writer wishes to express his sincere thanks to Professor Kiyosi Asano of the Institute of Geology and Paleontology, Tôhoku University who reviewed the manuscript. He is also indebted to Tosio Yamamoto, Meizi Mining Company and Yosio Okazaki, Geological Institute, Kusiro Branch, Hokkaidô Gakugei University for their able assistance in the collections of the sample.

SITAKARA FORMATION

The stratigraphic succession in the Kusiro coal-field has been given by Y. Sasa(1953) in descending order as follows :

The Sitakara formation is of fossiliferous marine sediments. The age of the formation is not still settled as it is assigned by different authors either to the lower Poronai (middle Oligocene) or to the Hiragisi (lower Oligocene), based on the study of the Foraminifera or Molluscan fauna. The Sitakara formation in the type area has been divided into three members by its lithic character as follows :

- upper.....Ponsitakara sandstone member
- middle.....Yukepira silty sandstone member
- lower.....Tutumizawa sandstone member



At Harutori, Kusiro city, this formation has been regarded as the Musa shale member which corresponds to the above-mentioned middle and the Yonemati sandstone member which corresponds to the lower.

MATERIAL

Some of the specimens here described were collected by the Meizi Mining Company, from the test boring well at Otanosike, Kusiro city. The well is located about 2.5 Km. E. of Otanosike station, Nemuro Main Line. In this section, the Sitakara formation consists of dark gray shale and yellowish gray sandstone, the former probably corresponding to the middle and the latter to the lower of the type area.

DEPOSITORY OF TYPES

The type specimens are deposited in the Micropaleontological Collection of the Geological Institute of Kusiro Branch, Hōkkaidō Gakugei University.

SYSTEMATIC DESCRIPTION

Family LITUOLIDAE

Genus *Cyclammina* H. B. Brady, 1876

Cyclammina ezoensis Asano

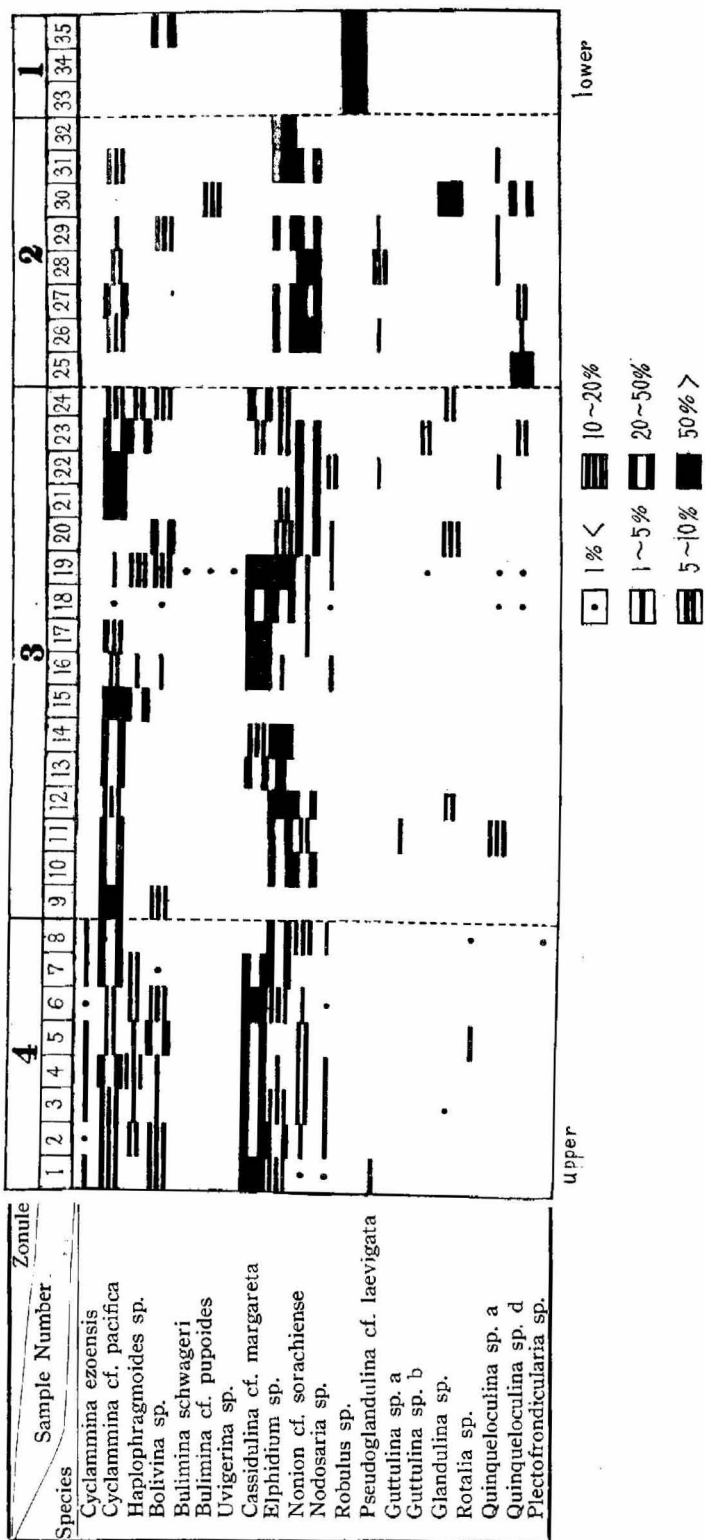
Pl. 1, figs. 4, 5, 6, 7.

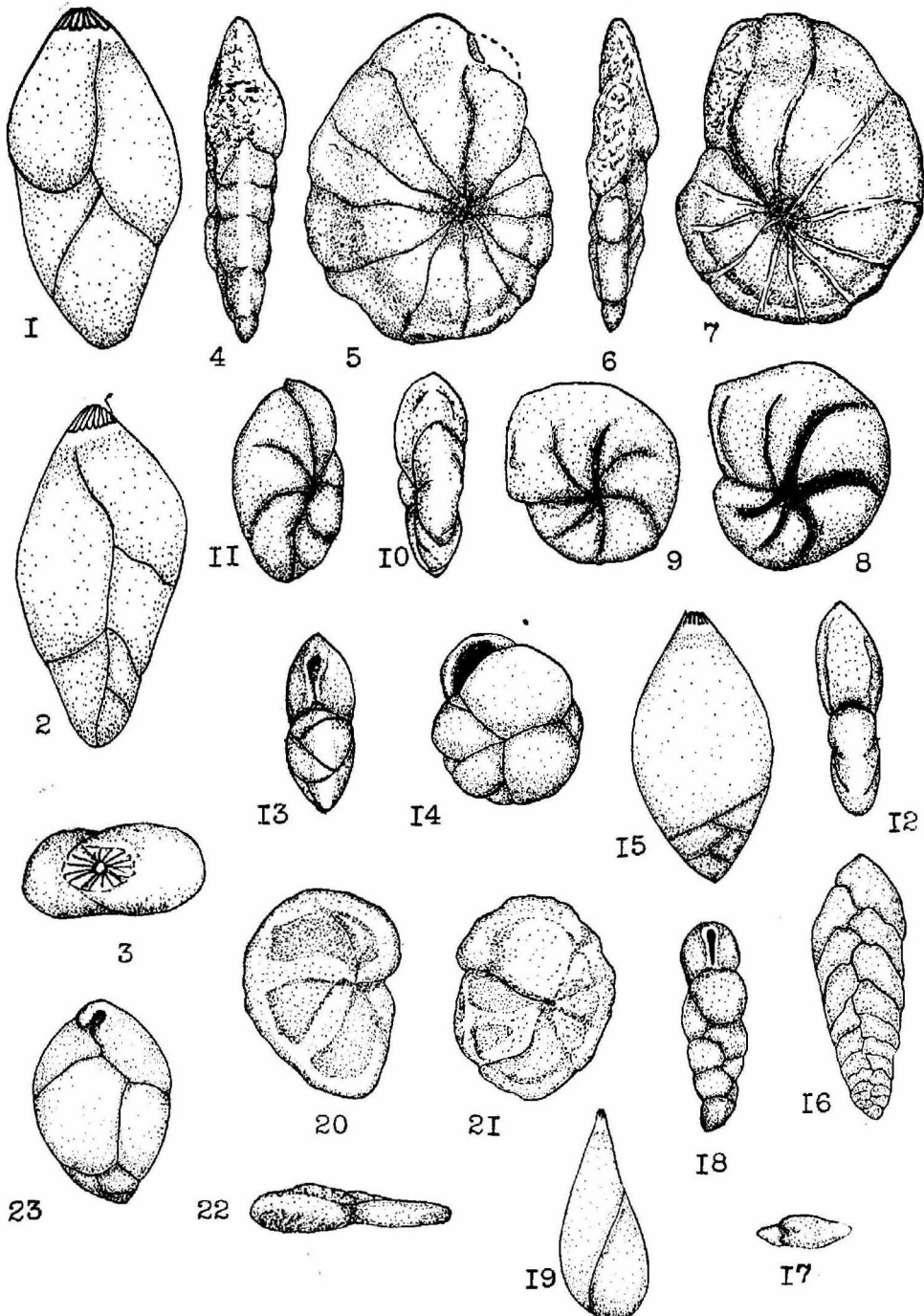
Cyclammina ezoensis Asano, 1951. Short Papers Inst. Geol. Pal. Tohoku Univ., 3, p. 20, pl. 3, figs. 2a, b.

Test oval, much compressed, evolute, periphery subacute, angled, faintly lobulate; chambers numerous, usually 12-14 in last whorl; sutures distinct, nearly radial, slightly compressed; wall finely arenaceous, smoothly finished; aperture a curved slit at the base of apertural face, supplementary pores indistinct. Diameter up to Imm.

This species is found at the top of this section. It is common in the Miocene formations of Hokkaidō. Rare in the middle part of the Poronai shale (middle Oligocene).

Figure 1. Quantitative analyses of the foraminifera from the Sitakara formation.

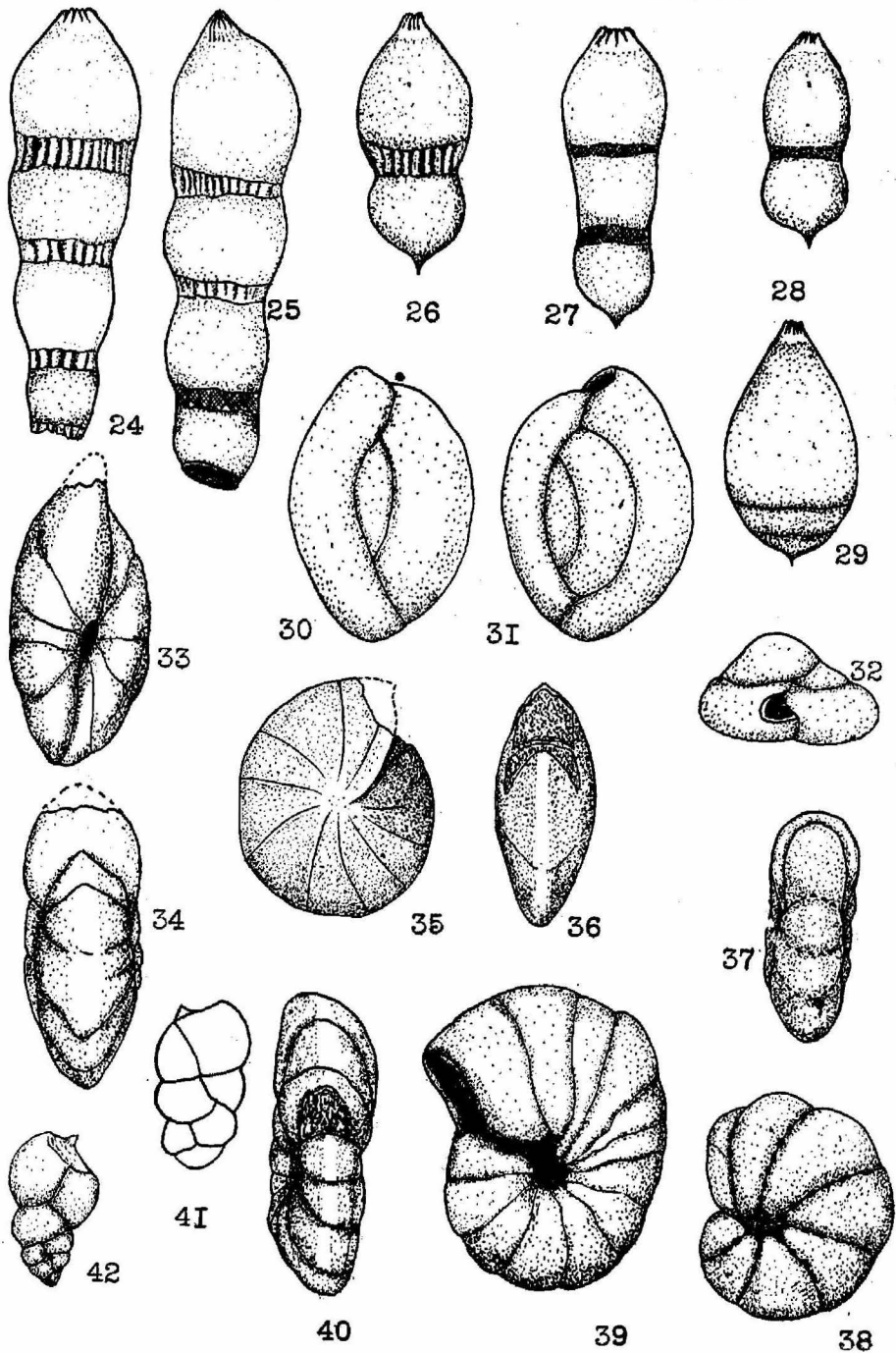




Yosida : Sitakara Foraminifera

EXPLANATION OF PLATE I

Figs. 1, 2, 3. *Guttulina* sp. a x 35. 4, 5, 6, 7. *Cyclammina ezoensis* x 37. 8, 9, 10, 11, 12. *Nonion* cf. *sorachiense* x 68. 13, 14. *Cassidulina* cf. *margareta* x 75. 15. *Glandulina* sp. x 73. 16, 17. *Bolivina* sp. x 115. 18. *Bulimina schwageri* x 46. 19. *Guttulina* sp. b x 78. 20, 21, 22. *Haplophragmoides* sp. x 40. 23. *Bulimina* cf. *pupoides* x 35.



Yosida : Sitakara Foraminifera

EXPLANATION OF PLATE 2

- Figs. 24, 25, 26, 27, 28. *Nodosaria* sp. a x 46. 29. *Pseudoglandulina* cf. *laevigata* x 43
 30, 31, 32. *Quinqueloculina* sp. a x 40. 33, 34, 39, 40. *Cyclammina* cf. *pacifica* x 25.
 35, 36. *Robulus* sp. x 62. 37, 38. *Elphidium* sp. x 93. 41, 42. *Uvigerina* sp. x 80.

Cyclammina cf. *pacifica* Beck

Pl. 2, figs. 33, 34, 39, 40.

Cyclammina pacifica Beck, 1943. Jour. Pal., vol. 17, no. 6, p. 591, pl. 98, figs. 2, 3.

Test slightly compressed, periphery broadly rounded; chambers numerous, about 13 in last whorl, some what irregular in size; sutures distinct, slightly incised, nearly radial; wall finely arenaceous, smoothly finished; aperture indistinct. Diameter up to 1.2mm.

This species is a good time-marker ranging from the upper Eocene to lower Oligocene, and occurs in the 2, 3 and 4 zonule of this section.

Genus *Haplophragmoides* Cushman, 1910

Haplophragmoides sp.

Pl. 1, figs. 20, 21, 22.

This species referred to this genus are abundant in 3 and 4 zonule, but being usually deformed by fossilization, their specific determination is very difficult.

Family LAGENIDAE

Genus *Pseudoglandulina* Cushman, 1929

Pseudoglandulina cf. *laevigata* d'Orbigny

Pl. 2, fig. 29.

Nodosaria (*Glandulina*) *laevigata* d'Orbigny, 1826. Ann. Sci. Nat., 7, p. 252, pl. 10, figs. 1-3.

Test sub-fusiform, tapering rapidly toward either end; apical end usually round, not spines; chamber few, embracing, last formed one making up two-third or more of visible test; sutures distinct, flush; aperture radiate. Length up to 0.6mm.

Genus *Nodosaria* Lamarck, 1812

Nodosaria sp.

Pl. 2, figs. 24, 25, 26, 27, 28.

Test elongate, straight linear series, slightly curved in the early stage, comparatively short, apical end with a spine, composed of a few subcircular chamber, increasing gradually in size as added; chamber inflated, separated by constrictions which sometimes ornamented with numerous longitudinal costae that are not continuous over chambers. Length up to 1.5mm.

This species is found in the 3 and 4 zonule in this section.

Genus *Robulus* Montfort, 1808

Robulus sp.

Pl. 2, figs. 35, 36.

Several incomplete specimens were found in the material, their specific determination is very difficult. Diameter up to 0.45mm.

Family CASSIDULINIDAE

Genus *Cassidulina* d'Orbigny, 1826

Cassidulina cf. *margareta* (Karrer)

Pl. 1, figs. 13, 14.

Cassidulina margareta Karrer, 1877. K. K. Geol. Reichs. Abb. Wien, Bd. 9, p. 386, pl. 16, fig. 52.

Test small, subcircular in outline, elliptical in lateral view; 4 pairs of chambers in last whorl, slightly inflated; sutures distinct, depressed, gently curved; wall smooth; aperture large, elongate, nearly parallel to plane of coiling. Diameter up to 0.3mm.

This species occurs in 3 and 4 zonule in this section.

Family POLYMORPHINIDAE

Genus *Guttulina* d'Orbigny, 1839

Guttulina sp. a

Pl. 1, figs. 1, 2, 3.

Test rather elongate, fusiform; chamber inflated, arranged in a clockwise, quinqueloculine series, each succeeding one farther removed from base; sutures distinct, slightly depressed; wall smooth; aperture radiate. Length up to 1.5mm.

This form is found a single specimen.

Guttulina sp. b

Pl. 1, fig. 19.

Test small, elongate, greatest width near base; chamber elongate; sutures slightly depressed; wall smooth; aperture radiate. Length up to 0.4mm.

Genus *Glandulina* d'Orbigny, 1826

Glandulina sp.

Pl. 1, fig. 15.

Test broadly fusiform, circular in cross section; chamber inflated, much overlapping, arranged in a biserial series; sutures not depressed; wall smooth; aperture radiate. Length up to 0.55mm.

Family NONIONIDAE

Genus *Nonion* Montfort, 1808

Nonion cf. *sorachiense* Asano

Pl. 1, figs. 8, 9, 10, 11, 12.

Nonion sorachiense Asano, 1954. Jour. Geol. Soc. Japan, vol. LX, no. 701, p. 48, figs. 4a-4c, 5a-5c.

Test nearly circular, slightly longer than broad, periphery round; chambers distinct, usually about 7 in last whorl, sometimes irregular in size; sutures strongly curved, depressed, sometimes indistinct; wall smooth; aperture a narrow slit at the base of apertural face. Diameter up to 0.4mm.

This species is of the characteristic species and occurs throughout 2, 3 and 4 zonule, and closely related to *N. sorachiense* Asano described from the Wakkanabe formation, Akabira coal-field.

Genus *Elphidium* Montfort, 1808

Elphidium sp.

Pl. 2, figs. 37, 38.

Test nearly circular in outline, periphery broadly rounded; chamber inflated, 7-8 in last whorl, somewhat irregular in size, umbilical region depressed, without granular material; sutures gently curved, with numerous cephal pores; aperture a basal slit with cribrate openings at base of apertural face. Diameter up to 0.3mm.

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Family BULIMINIDAE

Genus *Bulimina* d'Orbigny, 1826

Bulimina schwageri Yokoyama

Pl. 1, fig. 18.

Bulimina schwageri Yokoyama, 1890. *Paleontographica*, 36, p. 190, pl. 24, figs. 6—8.

Test elongate, subcylindrical, 3—4 times as long as broad; chambers small, numerous, inflated, increasing fairly in size as added, later ones uniform, in two rows about the elongate axis; sutures distinct, much depressed, oblique; wall smooth; aperture comma-shaped in a depressed apertural face. Length up to 0.7mm.

This species is a single specimen and common in the upper part of the Poronai shale.

Bulimina cf. *pupoides* d'Orbigny

Pl. 1, fig. 23.

Bulimina pupoides d'Orbigny, 1846. *Foram. Vienne*, p. 185, pl. 11, figs. 11, 12.

Test ovate, nearly twice as long as broad; chambers somewhat inflated; sutures distinct, depressed, running right angle with the vertical axis of the test; wall smooth; apertural face ovate, with a comm-shaped aperture.

This species has been recorded from the Nuibetu formation (lower Oligocene) by K. Asano and it is rare in the Sitakara formation.

Genus *Bolivina* d'Orbigny, 1839

Bolivina sp.

Pl. 1, figs. 16, 17.

Test elongate, tapering, initial end bluntly pointed; periphery subacute; chamber narrow, numerous, somewhat inflated; sutures slightly depressed; wall ornamented with coarse punctate; aperture indistinct. Length up to 0.35mm.

Genus *Uvigerina* d'Orbigny, 1826

Uvigerina sp.

Pl. 2, figs. 41, 42.

A few broken specimens, probably of this genus, were found.

Family MILIOLIDAE

Genus *Quinqueloculina* d'Orbigny, 1826

Quinqueloculina sp. a

Pl. 2, figs. 30, 31, 32.

Test elongate-ovate in outline, triangular in transverse section; chamber distinct; periphery round; with a single teeth. Length up to 1.0mm.

REFERENCE

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