New Species of Neogene Foraminifera from the Toyama Basin, Japan. (Microbiostratigraphic Study of Cainozoic Strata in Japan. Part III)

By

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Neogene deposits, containing a large number of molluscan and foraminiferal fossils, are very widely exposed in Toyama- and Ishikawa-Ken (so-called "Toyama Basin").

The geological and microbiostratigraphical studies of these deposits have been working out systematically, since 1947 by many members of Kyoto University.

The authors have been devoted themselves to the microbiostratigraphical study in cooperation with N. Ikebe, M. Morishima, M. Maruhashi, H. Inoue, H. Fujita and K. Sawai.

The outline of the microbiostratigraphy of the western "Toyama Basin" established in 1948 is as follows.¹⁾

	Age	Class (or Stage)	Faunizone
Middle Neogene	H ₁	Tonamian.....	O S T Zone
	G	Kamisyoan	<i>Epistominella pulchella</i> Zone
			<i>Martinottiella cf. communis</i> Zone
	F ₃	Onomian	<i>Nodosaria insecta</i> Zone
			<i>Miogypsina kotoi</i> Zone

The purpose of this paper is to describe some foraminiferal new species discovered during this study.

Bolivina himiensis Chiji and Nakaseko, n. sp.

(Fig. 1a-b)

Test moderately compressed, about twice as long as broad, periphery rounded, chambers comparatively few, biserial throughout, gradually inflated, in the adult with a slight re-entrant at the middle portion of the lower margin; sutures indistinct, slightly depressed; wall smooth, perforate; aperture an elongate, narrow opening, extending the inner margin

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1) The detailed paper about this study will be published by K. Nakaseko in near future.

of the last chamber. Length 0.30 mm; breadth 0.18 mm; thickness 0.10 mm.

Holotype from the Takado mudstone at Ajikawa, Goishi-mura, Himi-gun, Toyama-ken (G 10010)¹⁾. *Miogypsina kotoi* Zone, Onomian.

This species differs from *Bolivina bedensis* (Hantken) by the sutures and from *B. incompressa* Reuss by the number of chambers.

This species was provisionally named *Bolivina* k4 by H. Inoue and K. Nakaseko in 1948.

Fig. 1

1a-b *Bolivina himiensis* Chiji and Nakaseko, n. sp. ($\times 107$).

2a-b *Elphidium tsudai* Chiji and Nakaseko, n. sp. ($\times 60$).

3a-b *Robulus yoshitakiensis* Chiji and Nakaseko, n. sp. ($\times 40$).

4a-b *Robulus himiensis* Chiji and Nakaseko, n. sp. ($\times 76$).

1) Kyoto University locality number.

Elphidium tsudai Chiji and Nakaseko, n. sp.

(Fig. 2 a-b)

Test equally biconvex, somewhat compressed, periphery narrowly rounded, umbilical region smooth; chamber distinct, 7 or 8 in the adult coil, of uniform shape, increasing very slightly in size in the adult coil, sutures distinct, not or very slightly depressed, gently curved, retral processes very short, difficult to distinguish, about 15 in adult chamber; wall smooth and polished; aperture a low opening at the apertural face. Diameter 0.37-0.44 mm; thickness 0.20-0.27 mm.

Holotype from the Sunagozaka tuffite at Futamata, Asakawa-mura, Kahoku-gun, Ishikawa-Ken. *Miogypsina kotoi* Zone, Onomian.

This species differs from *Elphidium falunicum* (Allix) Cushman in number of the chamber, size of the umbilical region and the width of sutures.

Robulus yoshitakiensis Chiji and Nakaseko, n. sp.

(Fig. 3a-b)

Test relatively small, biconvex, thinly lenticular in peripheral view, involute; chambers comparatively few, 5-6 in the last whorl, periphery distinctly keeled; sutures not or very slightly depressed, gently curved, stellate pattern in the center; wall smooth and vitreous; aperture radiate, at peripheral angle, usually with a ventral slit. Diameter about 0.30 mm; thickness about 0.13 mm.

Holotype from the Sugata mudstone at Kurodani, Yashiro-mura, Himi-gun, Toyama-Ken (G 10018). *Nodosaria insecta* Zone, Onomian.

This species is quite characteristic in its suture and wall.

This species was provisionally named *Robulus* k 6 by H. Inoue and K. Nakaseko in 1948.

Robulus himiensis Chiji and Nakaseko, n. sp.

(Fig. 4a-b)

Test comparatively large, biconvex, lenticular in peripheral view, involute, periphery distinctly keeled and broad; umbilicus relatively small; chambers usually 7-8 in the last coil; sutures distinct, gently curved or nearly straight; aperture radiate, at peripheral angle, usually with a distinct ventral slit characteristic of *Robulus*; wall smooth and polished. Diameter 0.50-0.80 mm; thickness 0.36 mm.

Holotype from the Takado mudstone at Sugaike, Kumanashi-mura, Himi-gun, Toyama-Ken. *Miogypsina kotoi* Zone, Onomian.

This species differs from *Robulus pseudorotulatus* Asano by its broader peripheral margin and smaller umbilicus. It differs from *Robulus nikobarensis* Schwager in a distinctly keeled periphery.

This species was provisionally named *Robulus* k3 by H. Inoue and K. Nakaseko in 1948.

抄 録

大石三郎：東亞古植物分類圖説，本冊 235 頁，別冊圖版 53，1950 年，京都，地學出版始生社

故大石三郎教授の遺著の上梓を聞くこと久しかつたが遂に茲に之が完成された。先生は病床にあつて生涯の著として身心を費してその完成に當られ，校了なるや卒然としてその翌日他界された。いうまでもなく，大石教授は化石植物學の第一人者であり，その研究は多く，古生代より新生代に至つた。化石圖鑑に世に出ることをまつ我々には 1 つの救いである。330 餘種を分類系統に従つて配列して，一々記載があり，圖版がついていることは何といつても有難い。卷末の文献目録も主要なもののみであるが助かる。勿論之等は東北大學なり北大でなくては見ることの出来ないものが多い。それだけに一方地方に住む我々にとつても，これからの若い學徒にとつても，やはり助かると思う。

大石教授の仕事は分類學であつた。地史學というより古生物學であり，特にそのうち分類形態學であつ

た。勿論本邦・朝鮮・滿洲・華北各地の植物化石を 1 つ 1 つ刻明に記載して行かれる仕事が完成して行くにつれて，植物群，植物區，古氣候の問題まで行かれるものと考えていたが，遂にそこまで行かれなくて他界されたのは残念である。勿論 Mesozoic Flora of Japan の大集成に於て，植物群に就いての論議はあつたが，野外の層序的研究が追いつかない時代であつたので，深くは觸れられなかつたのは止むを得ない。

本書のため遠藤誠道・今野圓藏・奥津春雄の諸氏が材料を呈供され，遺稿の印刷校正の責任を藤岡一男氏がとられたことは洵によろこぶべきことであり，出版の犠牲を益富壽之助氏が負われたことには，深甚の謝意を表しなくてはならぬ。

中國の斯行健氏の近業を聞かず，インドの SAHNI 逝き，川崎繁太郎氏すでに亡し。今や故大石教授の遺著出ずるに及んで，東亞化石植物學界の再興隆を願うや切なものがある。（價格 600 圓）。（高橋英太郎）

正 誤 表

大久保雅弘：岩手縣氣仙郡日頃市村のゴトランド・デボン兩系について
地質學雜誌，第 56 卷，第 657 號

頁	行	正	誤
346	24	113.3	Very coarse-grained schalstein.....113
347	6	sandstone の 1 部には，	Sandstone の部には，
347	17	<i>paucispinosa</i>	<i>quaeispinosa</i>
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