FOLIA MALACOLOGICA
Folia Malacol. 27(2): 107–110
ISSN 1506-7629 (print) • ISSN 2300-7125 (on-line)
The Association of Polish Malacologists
Faculty of Biology, Adam Mickiewicz University
Bogucki Wydawnictwo Naukowe
Poznań, June 2019
https://doi.org/10.12657/folmal.027.012

A NEW SPECIES OF *EOSTROBILOPS* PILSBRY, 1927 FROM CHINA (GASTROPODA: PULMONATA: STROBILOPSIDAE)

ZHE-YU CHEN

College of Food Science and Engineering, Wuhan Polytechnic University, No. 68 XueFu South Road, Dongxihu District, 430023 Wuhan, P. R. China (e-mail: chenzheyu1998@163.com);
https://orcid.org/0000-0002-4150-8906

ABSTRACT: *Eostrobilops zijinshanicus* sp. nov. [紫金山始球果螺] is described and illustrated from Jiangsu (China), based on shell characters. The new species has strongly ribbed dorsal surface, parietal lamella extending deep into the shell, interparietal lamella nearly touching callus, infraparietal lamella present internally, and three basal folds. A key to extant *Eostrobilops* of mainland China is provided.

KEY WORDS: taxonomy, systematics, new species, Jiangsu

INTRODUCTION

Eostrobilops was originally established by PILSBRY (1927), as a section of *Strobilops* Pilsbry, 1893 with the following diagnosis "The shell is convexly conic, finely striate, with a rather small umbilicus. The parietal and infraparietal lamellae emerge, and deep within their edges have prickly or rugose knots or nodes (and in recent species flare outward); there is no interparietal lamella. Internal barrier consisting of a low columellar and two to four basal folds, sometimes also a palatal fold". A total of 13 extant *Eostrobilops* species are distributed in southeast Russia, the Korean Peninsula, Japan, China, Vietnam, and Borneo Island (PÁLL-GERGELY et al. 2015).

Here I describe a new *Eostrobilops* from Jiangsu, China. The record of the new species represents an important addition to the distribution of the genus in mainland China (for the earlier distribution map see PÁLL-GERGELY et al. 2015), and fills the gap in the potential distribution range of *Eostrobilops* in East China.

MATERIAL AND METHODS

Photographs of the shell were taken using a Nikon D810 camera with Tamron Macro lens and modified in Adobe Photoshop CC 2018. The shells were measured with a digital vernier calliper to the nearest 0.1 mm. Whorls were counted as described by KERNEY & CAMERON (1979). The nomenclature for the internal structure follows PILSBRY (1927). The comparisons of *Eostrobilops zijinshanicus* sp. nov. with other species were mainly based on the original descriptions. Photographs of a syntype of *Eostrobilops diodontinus* (Heude, 1885) (MCZ 167133, China, Tchen-k'eou, leg. Farges, excoll. Musée Heude, 03.01.1946) were obtained from Barna Páll-Gergely.

Abbreviations: HBUMM – Mollusc collection of the Museum of Hebei University (Baoding, China), IZCAS – Institute of Zoology, Chinese Academy of Sciences (Beijing, China), MCZ – Museum of Comparative Zoology (Massachusetts, USA).

Ministry of Science and Higher Education
Republic of Poland

Folia Malacologica is funded by the Ministry of Science and Higher Education, Republic of Poland, under agreement no 534/P-DUN/2018 of April 4th, 2018 allocated to the activities for disseminating science:
Task 1: Preparation of English versions of publications (sum funded by DUN 12,000 PLN) and
Task 2: Digitalisation of publications and scientific monographs to enable their open access in the Internet (sum funded by DUN 11,070 PLN).

SYSTEMATICS

Family Strobilopsidae Wenz, 1915

Genus *Eostrobilops* Pilsbry, 1927

Type species. *Strobilops hirasei* Pilsbry, 1908, by original designation.

Eostrobilops zijinshanicus sp. nov.

Figs 1–4

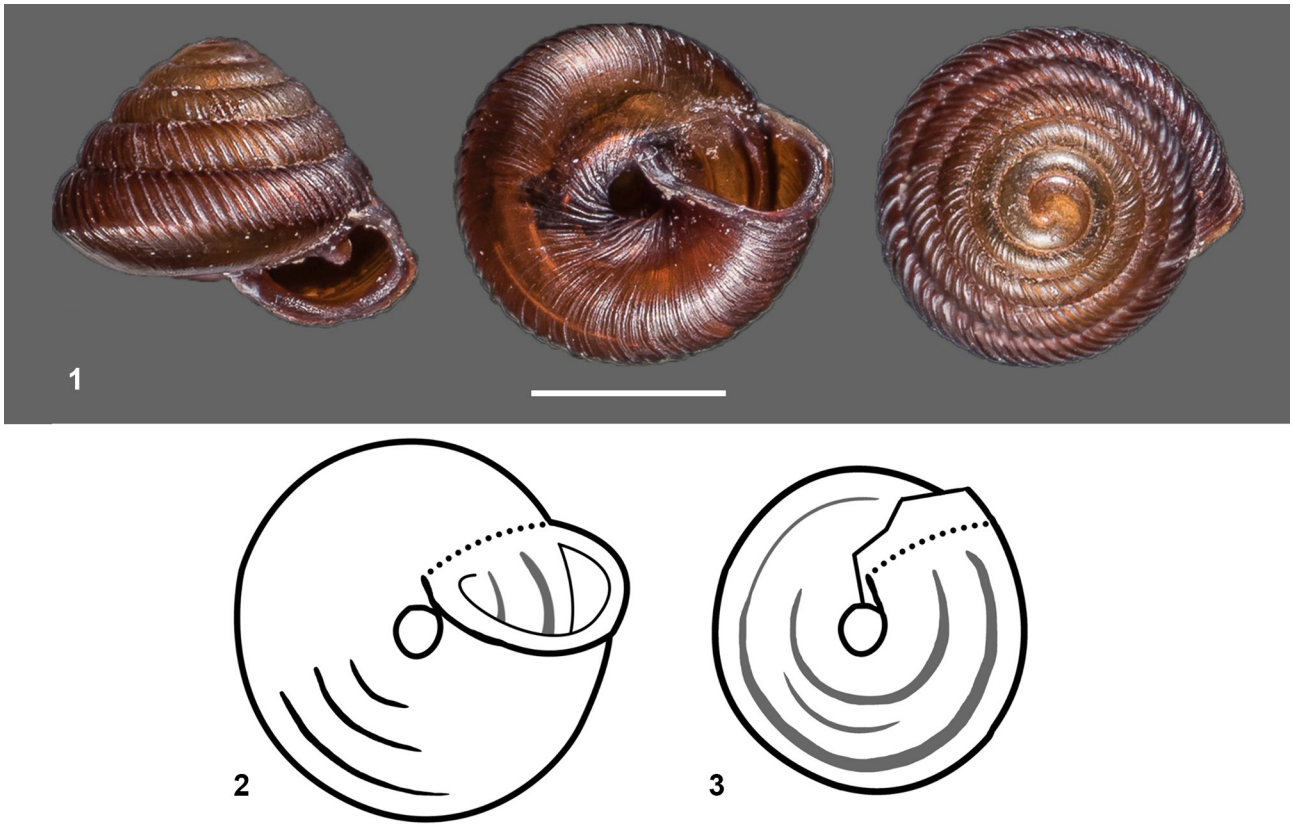
Type material. China, Jiangsu (江苏), Nanjing City (南京市), Mount Zijinshan (紫金山), 32°04'29"N, 118°51'32"E, alt. 135 m, leg. De-Yao Zhou, 10-Mar-2019. HBUMM 10010 (Holotype), HBUMM 10011-10013 (5 paratypes, after measurements one shell was broken to expose the internal structure). The type specimens now in HBUMM will be transferred to IZCAS in the future.

Measurements (in mm). Shell width – 2.0–2.4, shell height – 1.5–1.8 (n = 6).

Diagnosis. A small *Eostrobilops* with a strongly ribbed dorsal surface, parietal lamella extending deep into the shell, interparietal lamella nearly touching callus, infraparietal lamella present internally, and three basal folds.

Description. Shell small; dark brown to purple; conical, somewhat flattened ventrally. Suture shallow. Whorls 5 3/8 (n = 3), slowly expanding. Dorsal ribs high and strong. Umbilicus narrow and deep, approximately 1/6 of shell width. Ventral surface with densely rib-like striation which becomes stronger near umbilicus. Aperture crescent-shaped. Peristome thickened and reflexed. Parietal callus weak; parietal lamellae strong, extending along ca. 7/8 whorl, but weaker in the innermost 1/3 whorl; infraparietal lamellae extending for nearly 2/3 whorl, but weaker towards the aperture; a short interparietal lamella deeply situated at ca. 1/3 whorl from the aperture; one short columellar lamella present; three basal folds visible through fresh translucent shell.

Differential diagnosis. *Eostrobilops hirasei* (Pilsbry, 1908), *E. nipponicus* (Pilsbry, 1927) and *E. taiwanicus* (Minato et Tada, 1992) differ from *E. zijinshanicus* sp. nov. in their larger shells. *E. diodontinus* (Heude,



Figs 1–3. *Eostrobilops zijinshanicus* sp. nov.: 1 – holotype, scale bar 1 mm; 2–3 – drawings showing the lamellae and folds of *Eostrobilops zijinshanicus* sp. nov. (2 – observation through translucent shell, 3 – observation after partial removal of body whorl). Basal folds indicated in black; grey colour denotes parietal, infraparietal and interparietal lamellae. Dotted line indicates the supposed position of parietal callus

1885) has shorter and less deeply situated folds than the new species. The new species has a more elevated spire than *E. humicolus* Páll-Gergely et Hunyadi, 2015, a distinctly longer parietal lamella, and stronger ribs on the dorsal side.

Etymology. The species name *zijinshanicus* is derived from the type locality, Mount Zijinshan.

Type locality. China, Jiangsu (江苏), Nanjing City (南京市), Mount Zijinshan (紫金山), 32°04'29"N, 118°51'32"E, alt. 135 m a.s.l.

Distribution. *E. zijinshanicus* sp. nov. is known from the type locality only (Fig. 2).

Ecology. The species was found in decaying wood where also termites were observed.

Remarks. With the increasing number of species described, the original diagnosis of *Eostrobilops* became somewhat imprecise. For example, the presence of interparietal lamella and the absence of serrated nodes on the lamellae in *E. zijinshanicus* sp. nov. are shared by the species described in recent decades (Vermeulen 1992, Páll-Gergely et al. 2015).

Nomenclature. The gender of the generic name *Eostrobilops* was not indicated in the original publication; the species names in this genus are masculine as well as feminine. According to Article 30.1.4.3. of ICZN (1999), a compound genus-group name ending in *-ops* is to be treated as masculine. This means that the gender of some species names in *Eostrobilops* has to be changed, i.e. *E. coreanus* (Pilsbry, 1927), *E. diodontinus* (Heude, 1885), *E. nipponicus* (Pilsbry, 1927) and *E. taiwanicus* (Minato et Tada, 1992) should be used instead of their feminine-gender counterparts. The nomenclature of species within *Strobilops* and related genera requires a revision.

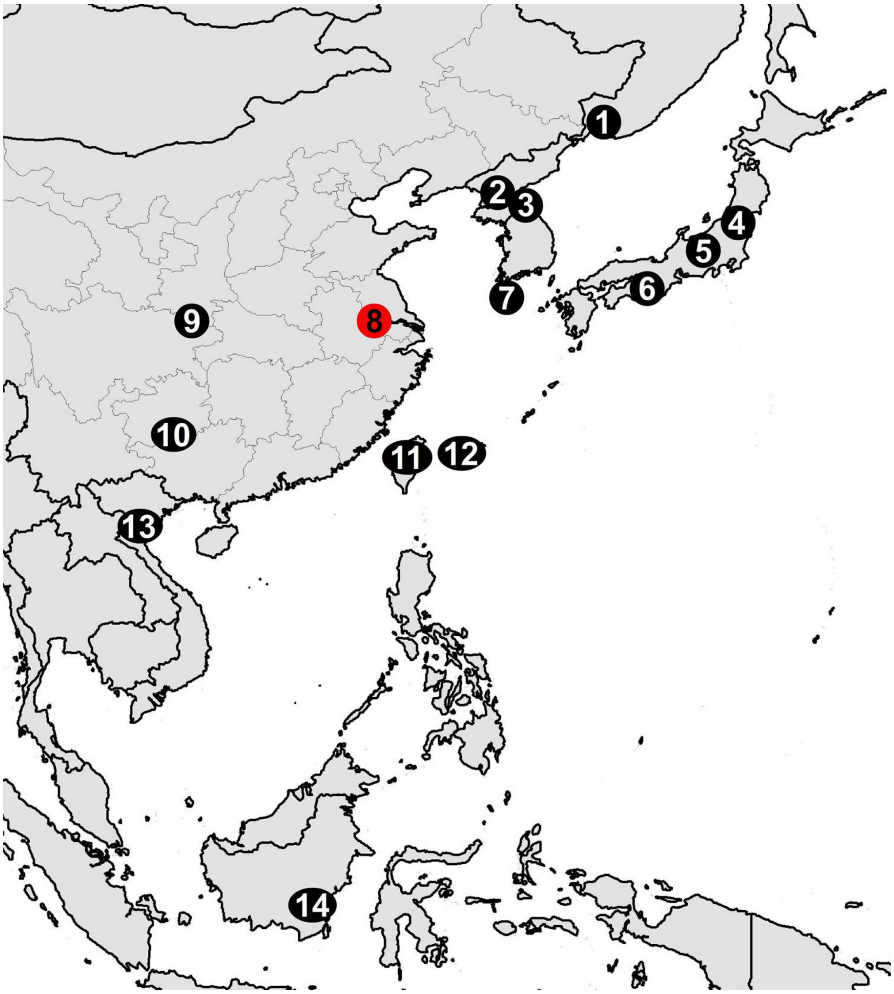


Fig. 4. Distribution of *Eostrobilops* species: 1, 2 – *Eostrobilops coreana* (Pilsbry, 1927); 3 – *E. coreana echo* (Kuroda et Miyanaga, 1939) and *E. kongoensis* (Kuroda et Miyanaga, 1939); 4, 5 – *Eostrobilops nipponica* (Pilsbry, 1927); 6 – *E. nipponica reikoae* Matsumura et Minato, 1980; 7 – *E. hirasei* (Pilsbry, 1908); 8 – *Eostrobilops zijinshanicus* sp. nov. 9 – *E. diodontina* (Heude, 1885); 10 – *E. humicolus* Páll-Gergely et Hunyadi, 2015; 11 – *E. kanjiokuboi* (Minato et Tada, 1992) and *E. taiwanica* (Minato et Tada, 1992); 12 – *E. yaeyamensis* (Habe et Chinen, 1974); 13 – *E. infrequens* Maassen, 2006; 14 – *E. triptychus* Vermeulen, 1992. Map: Barna Páll-Gergely

Key to the extant species of *Eostrobilops* in mainland China

1. Umbilicus large. Basal folds extending for 1/4 body whorl: *Eostrobilops diodontinus* (Heude, 1885).
1a. Umbilicus small. Basal folds extending for 1/2 body whorl: 2
2. Spire low, shell height ca. 1.45–1.5 mm. Dorsal ribs fine: *Eostrobilops humicolus* Páll-Gergely et Hunyadi, 2015.
2a. Spire high, shell height ca. 1.5–1.8 mm. Dorsal ribs strong and coarse: *Eostrobilops zijinshanicus* sp. nov.

ACKNOWLEDGEMENTS

I thank Mr. DE-YAO ZHOU (Shanghai, China) for providing type material and Mr. XIAO-DI SHI (Nanjing Forestry University) for his assistance in the field. Thanks go to Dr. BARNA PÁLL-GERGELY (Hungarian Academy of Sciences) for sending the literature and map, and for reviewing the manuscript. I thank Prof. DR. MIN WU (Nanjing University) and two anonymous reviewers for their helpful comments on the manuscript. This study was funded by the National Natural Science Foundation of China (NSFC 31872196).

REFERENCES

HABE T., CHINEN M. 1974. Land molluscan fauna of Ishigaki and Iriomote Islands, with notes on biogeography of Ryukyu Archipelago. Memoirs of the National Science Museum 7: 121–128.

HEUDE P. M. 1885. Mémoires concernant l'histoire naturelle de l'Empire Chinois par des pères de la Compagnie de Jésus. Notes sur les mollusques terrestres de la vallée du Fleuve Bleu. III; Mission Catholique, Chang-Hai, 89–132. http://www.biodiversitylibrary.org/item/106316#page/121/mode/1up

ICZN 1999. International Code of Zoological Nomenclature, 4th ed. London.

KERNEY M. P., CAMERON R. A. D. 1979. A field guide to the land snails of Britain and north-west Europe. Collins, London.

KURODA T., MIYANAGA M. 1939. New land shells from Northern Tyōsen (Korea). Venus 9: 66–85.

MATSUMURA I., MINATO H. 1998. *Eostrobilops nipponica reikoae* n. ssp. (Pulmonata: Strobilopsidae) from the Northern Region of Osaka, Japan. Venus 57: 39–47.

MINATO H. 1975. Genital studies of Japanese land snails – V. The genitalia of *Eostrobilops nipponica* (Pilsbry, 1927) from Nagano Prefecture, Japan. Venus 33: 207–209.

MINATO H. 1982. *Eostrobilops* and *Enteroplax* from Japan (Strobilopsidae). Chiribotan 13: 28–32.

MINATO H., TADA A. 1992. Two new species of the genus *Enteroplax* from Taiwan (Pulmonata: Strobilopsidae). Venus 51: 159–162. [In Japanese with English summary]

PÁLL-GERGELY B., HUNYADI A., ASAMI T. 2015. A new Chinese species of *Eostrobilops* Pilsbry, 1927 with a checklist of *Eostrobilops* and *Enteroplax* Gude, 1897 species (Gastropoda, Pulmonata, Strobilopsidae). ZooKeys 508: 85–95. https://doi.org/10.3897/zookeys.508.10004

PILSBRY H. A. 1908. Two genera of land snails new to Japan and Korea. The Conchological Magazine 2: 39–42.

PILSBRY H. A. 1927–1935. Manual of Conchology, structural and systematic, with illustrations of the species. Second series: Pulmonata. Volume 28. Geographic distribution of Pupillidae; Strobilopsidae, Valloniidae and Pleurodiscidae. Conchological Department, Academy of Natural Sciences of Philadelphia, Philadelphia 28(1): 1–48 (1927), 28(2): 49–96 (1931), 28(4): 161–226 (1935). http://www.biodiversitylibrary.org/item/29025

VERMEULEN J. J. 1992. Notes on the non-marine molluscs of the island Borneo 4. The genus *Eostrobilops* (Gastropoda: Pulmonata: Strobilopsidae). Basteria 56: 65–68.

Received: April 12th, 2019
Revised: May 5th, 2019
Accepted: May 23rd, 2019
Published on-line: June 12th, 2019