

**Remarks on a small collection of terrestrial molluscs from north-west Laos,
with descriptions of three new species
(Mollusca: Pulmonata: Streptaxidae, Vertiginidae)**

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Three terrestrial, pulmonate, species are described as new for science from Laos: *Sinoennea lizae* (Streptaxidae), *Paraboylsidia gittenbergeri*, and *Krobylos clerxi* (Vertiginidae). The material was collected at the entrance of some caves during a cave survey. A surprisingly high number of 32 species was encountered.

Key words: Mollusca, Gastropoda, Pulmonata, Streptaxidae, *Sinoennea*, Vertiginidae, *Paraboylsidia*, *Krobylos*, taxonomy, South East Asia, Laos.

INTRODUCTION

The malacofauna from Laos is hardly known compared with that of the neighbouring countries. In a catalogue, published in 1904, Fischer & Dautzenberg could enumerate only about 50 terrestrial mollusk species for Laos. Since then only a very few new species are described. An overview of the most important literature of the area is published by Maassen (2006).

Through Dr M. Schilthuizen a small collection of terrestrial Mollusca was received for identification, collected by Mrs Liz Price at the entrance of some caves in north-west Laos. She collected the material during cave explorations within a Northern Lao-European Cave Project (see www.laoscaveproject.de for some additional information) at the entrance of the caves visited. The collection consists of mostly large species and some smaller ones, probably accidentally mixed with some litter. Most of the material was damaged and heavily eroded. By breaking some of the most damaged specimens an additional high number of small and very small species could be collected from the dirt inside these shells.

As for most species in the collection, only a very limited number of specimens was available for study. The identification caused a lot of trouble and in most cases was only possible up to genus level. The publication by Panha & Burch (2005) was very helpful as it enumerates all small terrestrial molluscs known from Thailand with nice pictures. After all, however, a surprisingly high number of 32 species could be distinguished in the material (see table 1). Among these a few very interesting species were present, and after searching through the available literature, these seem to be new to science and are described below. The species composition of the collection shows strongly affinities with the fauna of neighbouring countries such as Thailand and especially Vietnam.

Abbreviations. – For shell characters: W, width; H, height. For collections: MD, reference collection W.J.M.Maassen, Duivendrecht (material to be deposited in RMNH); RMNH, National Museum of Natural History (formerly Rijksmuseum van Natuurlijke Historie), Leiden.

Localities (see fig. 11)
1. NW Laos, province Luang Namtha, district Vieng Phouka, Oung (=Khama word for cave) Pra Ngiene, 500 m SE of Ban (=village) Phou Lek, at the entrance of the cave; 8.ii.2006, N 20°32'33.2", E 101°08'12.2", leg. Liz Price (see nos. 5 and 6 in fig. 13).
2. NW Laos, province Luang Namtha, district Vieng Phouka, Tham (=Thai/Lao word for cave) Kuat, 1 km N of Ban Nam Mai, 10.ii.2006, N 20°41'57.0", E 101°00'49.7", leg. Liz Price (see nos. 1 and 2 in fig. 13).
3. NW Laos, province Luang Namtha, district Vieng Phouka, Tham Houay Put, 1.2 km SSW of Ban Nam Sing, 6.ii.2006, N 20°45'00.6", E 101°11'48", leg. Liz Price (see nos. 3 and 4 in fig. 13).
Species list with locality numbers
<i>Geotrochatella</i> spec. – 3
<i>Georissa</i> spec. 1. – 1
<i>Georissa</i> spec. 2. – 1, 2, 3
<i>Cyclophorus</i> spec. – 1
<i>Pterocyclus</i> spec. 1. – 3
<i>Pterocyclus</i> spec. 2. – 1
<i>Riostoma</i> spec. – 3
<i>Pupina</i> spec. 1. – 1
<i>Pupina</i> spec. 2. – 1
<i>Japonia</i> spec. – 2
<i>Systemostoma</i> spec. – 1
<i>Paraboysidia gittenbergeri</i> nov. spec. – 1
<i>Krobylos clerxi</i> nov. spec. – 1
<i>Gyliotrachela</i> spec. – 1
<i>Sinoennea lizae</i> nov. spec. – 1
<i>Haploptychius</i> spec. – 1
<i>Hemiplecta</i> spec. – 1
<i>Megaustenia</i> spec.1. – 1
<i>Kaliella</i> spec. – 1
<i>Macrochlamys</i> spec.1. – 3
<i>Macrochlamys</i> spec. 2. – 2
<i>Macrochlamys</i> spec. 3. – 1
<i>Macrochlamys</i> spec. 4. – 1
<i>Microcystina</i> spec. 1. – 1
<i>Microcystina</i> spec. 2. – 1
<i>Euplecta</i> spec. – 1
<i>Megaustenia</i> spec. 1. – 2
<i>Megaustenia</i> spec. 2. – 2
<i>Glessula</i> spec. – 1, 2
<i>Subulina</i> spec. – 3
<i>Camaena illustris</i> (L.Pfeiffer, 1862). – 1, 2, 3
<i>Chloritis</i> spec. – 1

Table 1. Localities and species list.

SYSTEMATIC PART

Family Streptaxidae Gray, 1860

Sinoennea Kobelt, 1904

Type species *Ennea strophioides* Gredler, 1881 (Hunan, China)

Sinoennea lizae spec. nov. (figs 1-4)

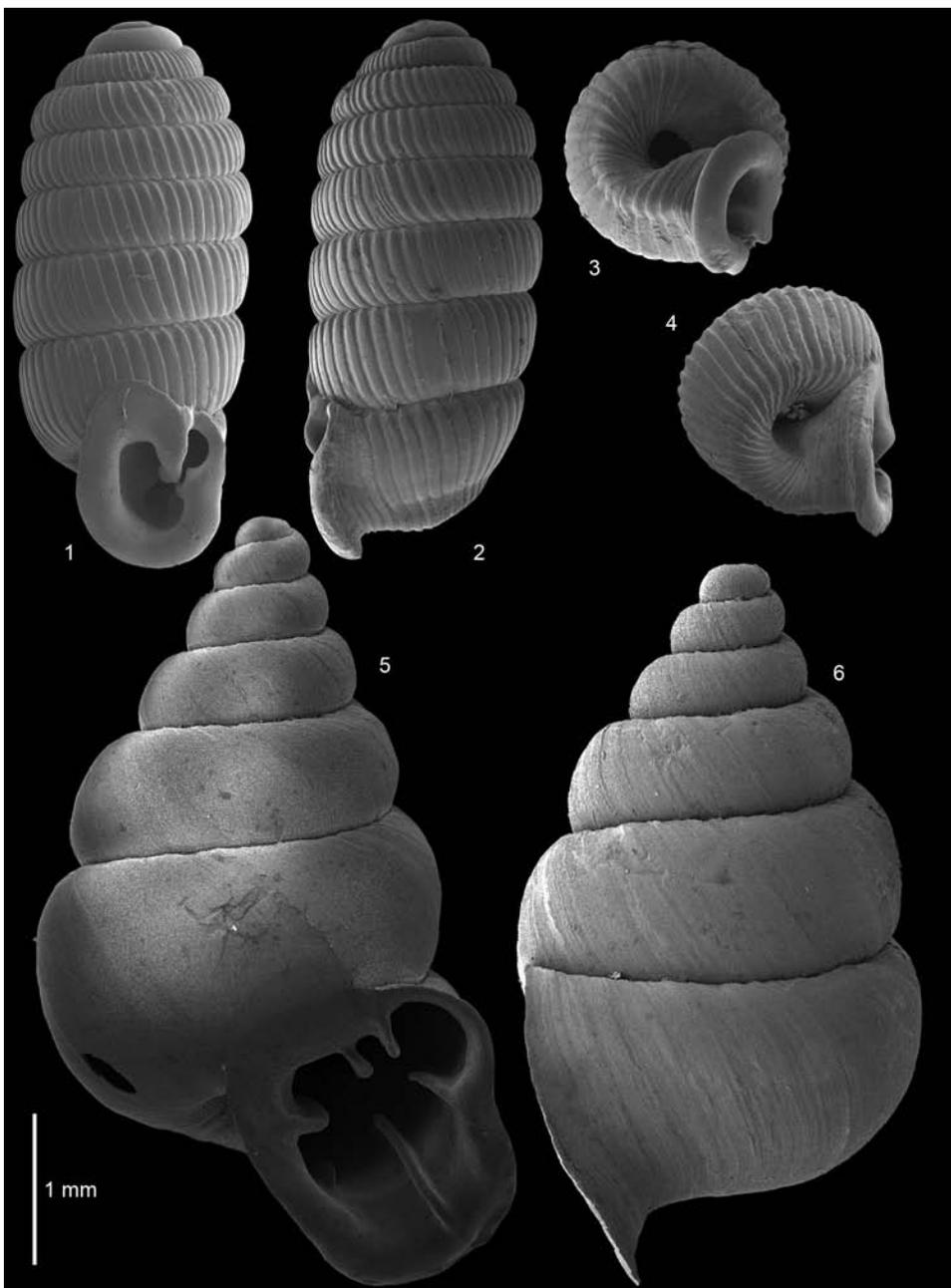
Material examined. – NW Laos, province Luang Namtha, district Vieng Phouka, Oung (= Khama word for cave) Pra Ngiene, 500 m SE of Ban (= village) Phou Lek, at the entrance of the cave; 8.ii.2006, N 20°32'33.2", E 101°08'12.2", leg. Liz Price (RMNH 109522/holotype, MD/1 paratype).

Description – The shell is white, glossy and transparent when fresh, rather solid, and of normal size for the genus. The shell is cylindrical to subcylindrical with a more or less conical apex, with narrowly open umbilicus and with 8½ somewhat flattened whorls with quite deep sutures. Apex smooth, following whorls sculptured with sharp, straight axial ribs; no spiral striation is present. The peristome is expanded, reflected, and continuous. The parietal side of the peristome descends until the middle of the penultimate whorl. The aperture is fairly large, roughly long rectangular in shape, obstructed by a strongly dentition. The dentition consists of a strong, large parietal lamella, a two-tooth labrum complex and a large columellar lamella, situated deeply inside. The parietal lamella is running down until midway the labrum, almost touching the two teeth of the labrum, leaving only a very narrow fissure and creating a small sinus at the angular corner. Just after the peristome the body-whorl is swollen in the umbilical region, which swelling is caused by the columellar lamella. The labrum shows a small but distinct groove at the outside of the body-whorl; below this groove, the body-whorl is distinctly keeled.

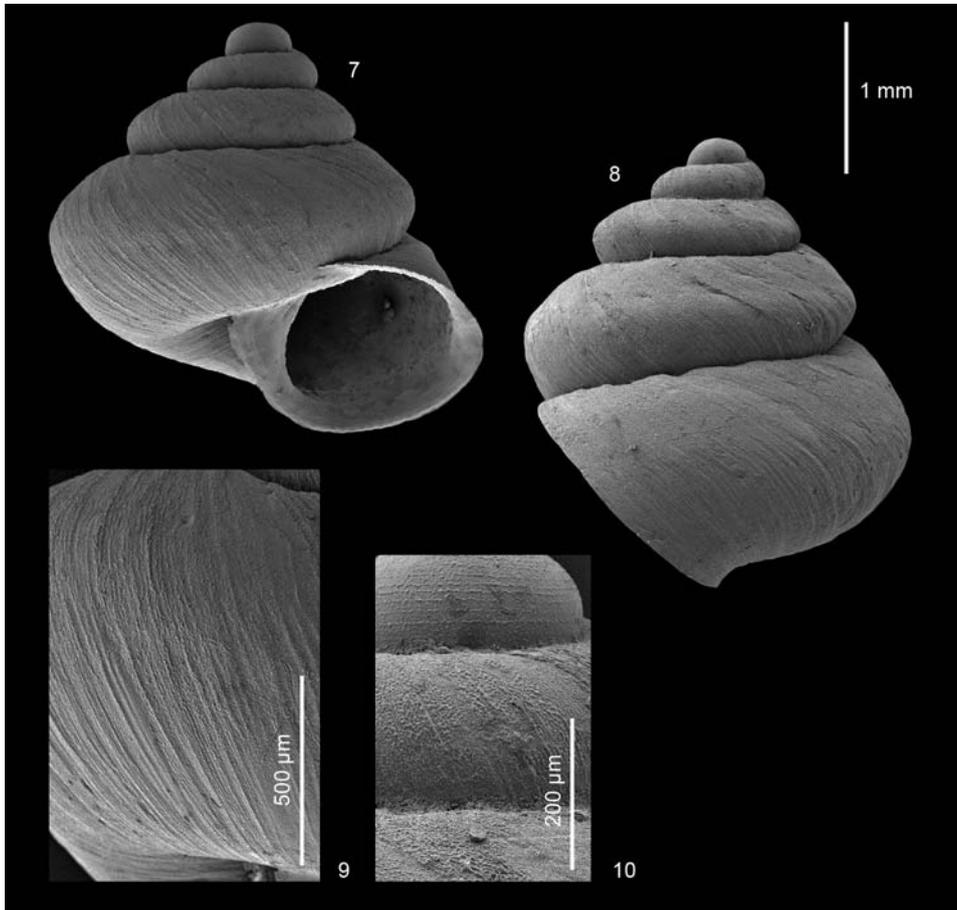
Dimensions: H 3.4-3.6 mm; W 1.5-1.7 mm; H/W 2.23-2.33.

Derivatio nominis. – The species is named in honour of its collector, Mrs Liz Price, who discovered this and the following species and donated this collection for research. She is a well-known researcher of limestone areas in South-East Asia. More information about her research can found at www.cavesofmalaysia.com

Remarks. – The species is characterized by the very narrow fissure (sinus) between the labrum and the very large angular lamella. The species had to be compared with the species known from Vietnam and Thailand. Both the species known from Thailand are quite different (*S. primus* Panha & Burch, 2002, possesses only a small angular lamella and has a much larger shell; *S. ranongensis* Panha, 2005, is more cylindrical and is smaller, and has only one tooth on the labrum). The only really similar species is *Sinoennea macrodonta* Bavay & Dautzenberg, 1912, from Vietnam. This species has only 6½ instead of 8½ whorls as in *S. lizae*. A further distinctly distinguishing feature is the construction of the parietal side of the peristome: in *S. lizae* this part is descending until the middle of the penultimate whorl while in *S. macrodonta* it runs parallel with the suture.



Figs 1-6. *Sinoennea* and *Paraboyssidia* from NW Laos, province Luang Namtha, district Vieng Phouka, Ung Pra Ngiene, 500 m SE of Ban Phou Lek, at the entrance of the cave; 8.ii.2006, N 20°32'33.2", E 101°08'12.2", leg. Liz Price. 1-4. *Sinoennea lizae* spec. nov.; 1, holotype, front view (RMNH 109522, height 3.4 mm); 2, do., dorsal view; 3-4, paratype, umbilical view from different sides. 5-6. *Paraboyssidia gittenbergeri* spec. nov.; 5, holotype, front view (RMNH 109521, height 5.1 mm); 6, paratype, dorsal view (RMNH 109523, height 4.8 mm).



Figs 7-10. *Krobylos clerxi* from NW Laos, province Luang Namtha, district Vieng Phouka, Oung Pra Ngiene, 500 m SE of Ban Phou Lek, at the entrance of the cave; 8.ii.2006, N 20°32'33.2", E 101°08'12.2", leg. Liz Price.; 7, holotype, front view (RMNH 109519, height 2.9 mm); 8, paratype, dorsal view; 9, paratype, microsculpture near umbilical region; 10, paratype, microsculpture top whorls.

Vertiginidae Fitzinger, 1833

Paraboylsidia Pilsbry, 1917

Type species *Boysidia pavei* Bavay & Dautzenberg, 1912 (Vietnam, Tonkin, Phong-Tho).

Paraboylsidia gittenbergeri spec. nov. (figs 5-6)

Material examined. – NW Laos, province Luang Namtha, district Vieng Phouka, Oung (=Khama word for cave) Pra Ngiene, 500 m SE of Ban (= village) Phou Lek, at the entrance of the cave; 8.ii.2006, N 20°32'33.2", E 101°08'12.2", leg. Liz Price (RMNH 109521/holotype, RMNH 109523/1, MD/3).

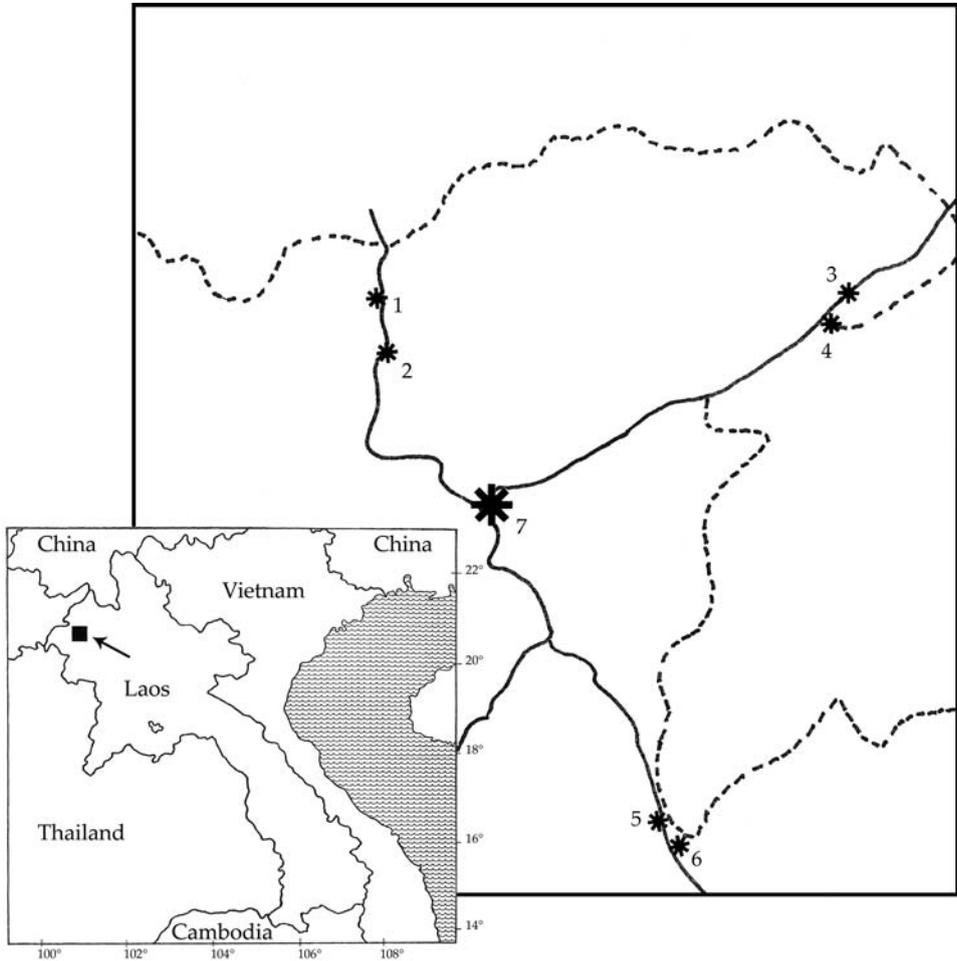


Fig. 11. Map of NW Laos. 1, Tham Kuat; 2, Ban Nam Mai; 3, Ban Nam Sing; 4, Tham Houay Put; 5, Ban Phou Lek; 6, Oung Pra Ngiene; 7, Vieng Phouka.

Description. – The shell is conical, horn-brown, quite solid, opaque, large for the genus, regularly increasing in height and width of the whorls. Shell with $6\frac{1}{2}$ convex whorls, separated by a deep suture. The protoconch is smooth without any microsculpture. The sculpture of the teleoconch consists only of some irregular growth-lines with a microsculpture of very fine granules, giving the surface a somewhat silky shine. The peristome is widely expanded and reflected, somewhat ascending along the last whorl, tilted for about 30% with regard to the axis, adnate, connected by a delicate callus. There is a very narrow umbilicus present. The aperture is strongly asymmetric with regard to the axis and the palatal side is not well defined from the basal side. In the aperture six lamellae are present: a strong straight columellaris, a small basalis, a large lower palatalis, a large upper palatalis, a large angularis, and a small parietalis. The peristome is distinctly indented just opposite the upper palatalis.

Dimensions: H 4.9-5.8 mm; W 3.1-3.5 mm; H/W 1.58-1.66.

Derivatio nominis. – The species is named in honour of Prof. Dr Edi Gittenberger on the occasion of his 65th birthday and inevitable retirement from museum duties. It is also an expression of gratitude for more than 40 years of friendship and, at long last, to keep an old promise!

Remarks. – The only *Paraboylsidia* with a comparable size is *B. robusta* Bavay & Dautzenberg, 1912, from Vietnam, Tonkin (see Bavay & Dautzenberg, 1912, for a number, more or less, similar species). However, *B. robusta* can be distinguished easily from *P. gittenbergeri* because of its descending parietal side of the peristome.

Krobylos Panha & Burch, 2002

Type species *Krobylos pomjuk* Panha & Burch, 2002 (Thailand, Pang Ma Pa District, Lod Cave).

Krobylos clerxi spec. nov. (figs 7-10)

Material examined. – NW Laos, province Luang Namtha, district Vieng Phouka, Oung (=Khama word for cave) Pra Ngiene, 500 m SE of Ban (=village) Phou Lek, at the entrance of the cave; 8.ii.2006, N 20°32'33.2", E 101°08'12.2", leg. Liz Price (RMNH 109519/holotype, MD/2).

Description. – The shell is large for the genus, horn-brown, rather fragile, opaque. The spire is low-conical, regularly increasing in height and width. Shell with 4.25-4.75 convex whorls, separated by a deep suture. The last two whorls have a vague indication of peripheral angulation. The protoconch consists of 1.2 protruding whorls, ornamented with a very fine spiral sculpture, only visible at a high magnification. The teleoconch is dull, with oblique, irregularly pronounced, growth-lines that give the shell surface a somewhat rough appearance; no spiral sculpture present. Umbilicus open, rather narrow, partly covered by the reflected peristome at the columellar side. The peristome is incomplete, interrupted at the parietal side, rounded, a little expanded and adnate, reflected at the columellar margin, where it partly covers the umbilicus. The peristome descends a little, and is tilted for about 45% with regard to the axis. The aperture lacks any indication of dentition.

Dimensions: H 3.0-3.2 mm, W 2.9-3.2 mm; H/W 0.93-1.07.

Derivatio nominis. – The epithet is in honour of my friend John P.M. Clerx. We started to collect molluscs in the Netherlands in the early sixties and published our first results in 1966. After a terrible accident some years ago his active malacological career unfortunately ended.

Remarks. – So far this genus was only known from Thailand from seven described species (Panha & Burch, 2005). It is with some hesitation that I regard this new species as belonging to the genus *Krobylos*, because in the original description a sharp, unexpanded peristome is mentioned whereas in *K. clerxi* the peristome is somewhat expanded. However, the species meets the other conchological features as described for the genus. Apart from the dimensions, this species can be distinguished easily from other *Krobylos* species by the somewhat expanded peristome.

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