BASTERIA, supplement 3: 69-72, 2006

Gulella (Silvigulella) kuiperi spec. nov., a new minute land snail from Cameroon (Gastropoda, Pulmonata, Streptaxidae)

A.J. DE WINTER

Nationaal Natuurhistorisch Museum *Naturalis*, P.O. Box 9517, NL 2300 RA Leiden, the Netherlands; Winter@naturalis.nnm.nl

A new, minute species of Streptaxidae from southwest Cameroon, *Gulella kuiperi* spec. nov., is described. The systematic position of this apparently rare species is discussed. Since information of the soft parts is lacking, as is the case for the vast majority of the numerous species of *Gulella* s.l. described to date, its generic position remains unclear. On the basis of some conchological characters, the species is provisionally assigned to the subgenus *Silvigulella.*

Key words: Gastropoda, Pulmonata, Streptaxidae, *Gulella*, *Silvigulella*, taxonomy, West Central Africa, Cameroon.

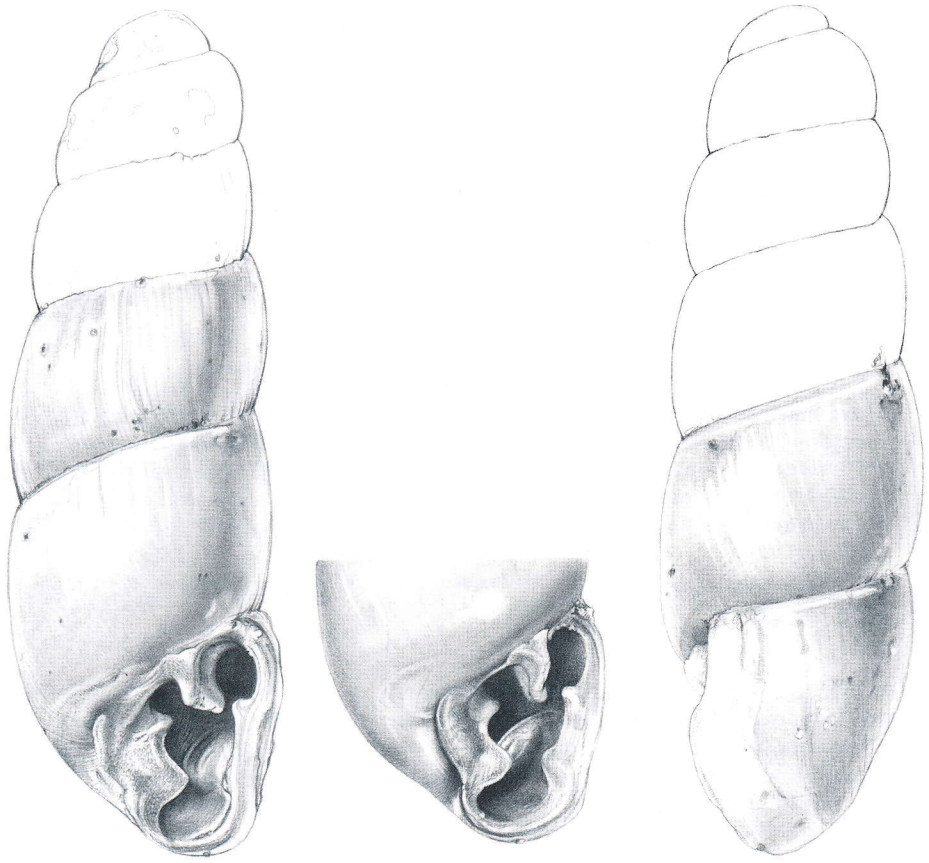
In 1996, the author collected two specimens of a peculiar tiny land snail in leaf litter samples from two different localities, about 30 km apart, in Southwest Cameroon. Since over 80 bags of litter from these two sites were searched, the species must be either genuinely rare or inhabiting an unusual, not readily accessible micro-habitat. Scrutiny of the relevant literature on African land snails, as well as consultation of colleagues, failed to bring up a suitable name, and the species is described as new hereafter. Unfortunately, only empty shells were available. The author is therefore reluctantly forced to assign the species to the speciose and heterogeneous genus *Gulella* L. Pfeiffer, 1856, in which it only fits by the absence of characters typical for other non-*Gulella* taxa recognised within the Streptaxidae. It deviates in many characters from species of *Gulella* s.s. and other recognised subgenera, and its generic position will inevitably have to change in the future.

DESCRIPTION

Gulella (Silvigulella) kuiperi spec. nov. (figs 1-3)

Gulella n. sp.; De Winter & Gittenberger, 1998: 240.

Material examined.– Holotype (RMNH 101335): Cameroon, Sud province, Minwo area, c. 15 km S of Lolodorf, old secondary forest, 3° 06'N 10° 44'E, 420 m alt., leg. A.J. de Winter & E.J. Semengue 14.IV.1996.; one specimen: Sud province, SW of Ebimimbang, newly established field on a recently slashed and burned patch of secondary forest, approx. 3°03'N 10°26'E, < 100 m alt., leg. A.J. de Winter & E.J. Semengue, 27.V.1996 (this specimen was accidentally lost, luckily after measuring and study of the important characters, and is not part of the type series).



Figs **1-3**. Holotype shell of *Gulella (Silvigulella) kuiperi* De Winter (RMNH, Leiden 101335), actual shell height 2.5 mm; I. van Noortwijk del.

Diagnosis.– Shell minute, elongate-clavate, without conspicuous sculpture, transparent when fresh. Aperture obstructed by strong barriers: an angularis; an inrunning palatal fold with two tubercles on the labrum; a deeper set, short, transverse palatal plica; and a rather conspicuous, bifid columellaris. There are no external pits or furrows on the back of the shell.

Description.– Shell (figs 1-3) dextral, minute, imperforate. Spire elongate, narrow and gradually tapering from last whorl to apex, straight (holotype) or somewhat curved (lost specimen), with 5-5.2 slightly convex, regularly increasing whorls. Shell height 2.3-2.5 mm, width 0.8 mm (holotype tallest). Apex small and rounded. Embryonic shell appearing smooth even at higher (40×) magnification, not clearly demarcated from the later whorls. Whorls sculptured by very shallow, radial, curved striae, only visible at higher magnification. Just behind the aperture on the outer side of the body whorl some close-set, fine ribs may be present (only in the lost specimen). Suture simple, impressed. Outer lip somewhat callose in the holotype. Aperture obstructed by conspicuous barriers: a particularly strong, bifid columellaris (or, a fused upper and lower columellaris), a strong angular tooth, and a not very deeply inrunning, low, palatal plate with two tubercles on

the palatal wall close to the peristome. The upper palatal process and the angular tooth define a roundish sinulus. Deeper inside, the palatal wall carries a narrow and short, about transversely situated plica. Outer margin of the peristome arches forward in lateral view. There is no conspicuous external depression behind the peristome on the back of the shell. Shell colourless, transparent and somewhat glossy when fresh (lost shell), cream-coloured and dull when older (holotype).

Derivatio nominis.– The species is named in honour of Dr J.G.J. Kuiper at the occasion of his 90th birthday, in recognition of his important contributions to the field of malacology, in the Netherlands and abroad.

Discussion.– In the following it is assumed that the new species belongs to the Streptaxidae, although on the basis of shell characters alone, the assignment to some pupilloid lineage would not seem too improbable. Still, the family assignment is relatively secure in view of the dominant position and diversity of the streptaxid radiation in Central Africa, where streptaxid species can make up to a third of the local malacofauna (see e.g. Emberton et al., 1997; De Winter & Gittenberger, 1998).

Assuming that the species belongs to the Streptaxidae, the assignment to the genus *Gulella* is undoubtedly incorrect, in view of the very differently shaped, sculptured, and much larger type species of the genus, *Gulella menkenana* (L. Pfeiffer, 1856). Numerous African streptaxid species are included in *Gulella* s.l. only because they lack certain characters that define other enneid streptaxid genera. Many subgenera of *Gulella* have been erected, but these accommodate only a part of the hundreds of *Gulella* species recognised to date, and none of these subgenera seem to closely match the new species.

With respect to its narrow, tapering spire, and in various aspects of the apertural dentition *G. kuiperi* somewhat resembles *G. (Silvigulella) osborni* Pilsbry, 1919, but the latter is larger, has a sculpture of strong, sharp ribs on the later whorls and a basal tooth (Pilsbry, 1919; Van Bruggen & Van Goethem, 1997). Still, both *G. kuiperi* and *G. osborni* have a smooth apex and lack a pit-like depression on the back of the shell, and differ thereby from most other species attributed to *Gulella* s.l., and the new species may therefore be attributed to *Silvigulella* Pilsbry, 1919.

In shell shape *G. kuiperi* also resembles *G. sphincterocochlion* Verdcourt, 1985, type of the monotypic subgenus *Sphincterocochlion* Verdcourt, 1985, which has a larger shell with fine spiral sculpture and, judging from Verdcourt's description and drawing, different apertural barriers. A number of species from West Africa, which were included in the subgenus *Molarella* Connolly, 1922, by e.g. Connolly (1928) and Degner (1934a, b), have a complex columellar and often palatal dentition with more or less elongate shells, but most are larger, more cylindrical and distinctly ribbed.

Gulella stolidodea Degner, 1934 from Liberia – also a minute species with two large (but unfused) columellar teeth but not assigned to *Molarella* by its author – is similar in shell size and sculpture (including the smooth apex) to *G. kuiperi*, and has a somewhat similar palatal dentition that Degner (1934a: 255) described as horseshoe-shaped ("hufeisenförmigen Palatalfalten"). However, the outlines of the shells are very different.

The new species also resembles *G. mongolae* Ortiz de Zárate Lopez & Ortiz de Zárate Rocandio, 1955, which its authors tentatively include in the subgenus *Molarella*. This species is known by a single shell from the island of Fernando Poo (now Bioko, Equatorial Guinea). Judging from the description and crude original illustation, *G. mongolae* has a similarly-sized, narrow shell with a somewhat curved spire (like in the lost specimen of *G. kuiperi*), and especially the palatal plate reminds of that in *G. kuiperi*. It has strong columellar teeth too, which seem to differ in details. The shell of *G. mongolae* is less tapering towards the apex, the apex is relatively wider and the whorls are less convex.

Gulella mongolae, *G. kuiperi* and *G. stolidodea* could make up a separate genus of minute

western African streptaxid species, characterised by the presence of strong plicae on the columella, a peculiar complex of palatal plicae with two denticles on the outer lip, the absence of an external pit-like depression on the shell, and smooth embryonic whorls. At least in *G. stolidodea*, the aperture of juvenile shells has strong teeth (unpublished observations). However, since these shell characters are hardly unique, and since none of the species is as yet known anatomically, the erection of such a genus seems unwarranted. Perhaps the species can be best, if only temporarily, lodged in *Silvigulella*, a taxon that is "probably not a natural grouping" (Verdcourt, 1985: 110).

ACKNOWLEDGEMENTS

Drs A.C. van Bruggen, E. Neubert and B. Verdcourt kindly shared their opinion on this species. The shell drawings were executed by Mrs. I. van Noortwijk (Nationaal Natuurhistorisch Museum Naturalis, Leiden). E.J. Semengue is thanked for his enthusiastic guiding and collecting activities. The specimens were collected during a project funded by the Netherlands Foundation for the Advancement of Tropical Research, for which the Tropenbos Cameroon Programme provided facilities.

REFERENCES

BRUGGEN, A.C. VAN & J.L. VAN GOETHEM, 1997. Dr. William Adam's iconography of Central and West African *Gulella* species (Gastropoda Pulmonata: Streptaxidae). Part 1: nominal taxa. – Bulletin de l'Institut Royale des Sciences Naturelles de Belgique, Biologie 67: 5-30.

CONNOLLY, M., 1928. The non-marine Mollusca of Sierra Leone. – Annals and Magazine of Natural History (10) 1: 529-551.

DEGNER, E., 1934a. Westafrikanische Landschnecken. I. Streptaxiden, Helicarioniden, Vaginulide. – Zoologische Jahrbücher, Abteilung. für Systematik 65: 209-308.

DEGNER, E., 1934b. Streptaxiden aus Liberia. – Revue de Zoologie Botanie Africaines 24: 369-379.

EMBERTON, K.C., T. PEARCE, P.F. KASIGWA, P. TATTERSFIELD & Z. HABIBU, 1997. High diversity and regional endemism in land snails of eastern Tanzania. – Biodiversity and Conservation 6: 1123-1136.

PILSBRY, H.A., 1919. A review of the land mollusks of the Belgian Congo, chiefly based on the collections of the American Museum Congo Expedition, 1909-1915. – Bulletin of the American Museum of Natural History 40: 1-370.

ORTIZ DE ZÁRATE LOPEZ, A. & A. ORTIZ DE ZÁRATE ROCANDIO, 1955. Contribuciones al conocimento de la fauna malacológica terrestre de la isla de Fernando Poo. II.- Familia "Streptaxidae". – Boletin de la real Sociedad espanola de Historia natural 53: 75-140.

VERDCOURT, B., 1985. New taxa of *Gulella* L. Pfr. and *Ptychotrema* Mörch (Mollusca, Streptaxidae) from Eastern Africa. – Journal of Conchology 32: 109-121.

WINTER, A.J. DE & E. GITTENBERGER, 1998. The land snail fauna of a square kilometer patch of rainforest in Southwest Cameroon: high species richness, low abundance and seasonal fluctuations. – Malacologia 40: 231-250.