

Some notes on the land snails of the Andrafiarana-Andavakoera protected area, northern Madagascar

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Abstract

Five land snail species are recorded from the Andrafiarana-Andavakoera protected area from recent survey work carried out in late 2023: *Tropidophora cuvieriana*, *T. deliciosa*, *T. thesauri*, *Sitala* sp., and *Ampelita* cf. *stilpna*. This includes a significant range extension for *T. cuvieriana*.

Keywords: snails, species list, new records, Andrafiarana-Andavakoera

Résumé

Cinq espèces d'escargots terrestres ont été recensées dans l'aire protégée d'Andrafiarana-Andavakoera à partir de travaux d'enquête récents réalisés fin 2023 : *Tropidophora cuvieriana*, *T. deliciosa*, *T. thesauri*, *Sitala* sp. et *Ampelita* cf. *stilpna*. Cela comprend une extension significative de l'aire de répartition de *T. cuvieriana*.

Mots clés : escargots, liste des espèces, nouvelles observations, Andrafiarana-Andavakoera

The limestone karst areas of Madagascar are extremely rich in land snails in terms of both abundance and diversity (Griffiths & Herbert, 2013). Some taxa can be widespread (e.g. *Embertoniphanta oviformis*) and some endemic to specific isolated areas of limestone (*tsingy*). By way of example, a snail survey of the Ankarana Massif in 1994 yielded 40 species of terrestrial molluscs and 10 freshwater species (Griffiths, 1995). A survey of the northern parts of the Tsingy de Bemaraha in 1996 yielded 71 species or subspecies of terrestrial molluscs and 11 freshwater species (Griffiths, 1997).

Much of what is known about the land snails of Andrafiarana-Andavakoera comes from surveys carried out by Kenneth Emberton in the area north of Betsiaka in August 1995. Unfortunately, a full species list for that area has not been published.

Species recorded from north of Betsiaka by Emberton:

- 1) *Cyathopoma diegoense* E. Fischer-Piette, F. Blanc & D. Vukadinovic, 1974. Listed in Emberton (2003).
- 2) *Boucardicus andavakoerae* K. C. Emberton, 2002.
- 3) *Omphalotropis griffithsi* K. C. Emberton 2004.
- 4) *Gulella ambrensis andavakoerae* K. C. Emberton, 2001.
- 5) *Edentulina minor* (Morelet, 1851). Listed in Emberton (1999).
- 6) *Parvedentulina andavakoerae* K. C. Emberton, 2002.
- 7) *Parvedentulina betsiakae* K. C. Emberton, 2002.
- 8) *Ampelita andavakoerae* K. C. Emberton & J. A. Rakotondrazafy, 2020.
- 9) *Ampelita gaudens* (Mabille, 1884). Listed in Emberton and Rakotondrazafy (2020). Given that this is a highly variable species with significant variation in shell form, even within populations, Emberton did not assign this to any of the morphs described by Fischer Piette *et al.* (1994).

Fischer-Piette *et al.* (1993, 1994) also recorded five species from what they referred to as 'Ankara-Analamera'. While the exact position of this area is not completely clear, based on the maps published in Fischer-Piette *et al.* (1993, 1994), this lies to the east of the Ankarana Massif and falls within today's Andrafiarana-Andavakoera protected area. However, Fischer-Piette's reference to just 'Ankara' is considered to equal Ankarana.

These are as follows:

- 1) *Tropidophora denselirata* E. Fischer-Piette, F. Blanc & F. Salvat, 1969.
- 2) *Tropidophora deshayesiana* (Petit de la Saussaye 1844).
- 3) *Tropidophora humberti* E. Fischer-Piette, 1949.
- 4) *Embertoniphanta oviformis* (Grateloup, 1840).
- 5) *Tanychlamys stumpfii* (O. Boettger, 1889).

The recent survey work by Steve Goodman and colleagues in November and December 2023 (see Tahinarivony & Goodman, 2025, herein) of different areas of Andrafiarana-Andavakoera has turned up the following additional species, and some ecological notes can also be presented:

- 1) *Tropidophora cuvieriana* (Petit de Saussaye, 1841) - SMG 22364, Forêt d'Antsahabe, 2.8 km NW Anjakely, exposed limestone massif and in dry deciduous (*tsingy*) forest.
- 2) *Tropidophora deliciosa* (G.B. Sowerby, 1850) - SMG 22364, Forêt d'Antsahabe, 2.8 km NW Anjakely, exposed limestone massif and in dry deciduous (*tsingy*) forest, and SMG 22370, Forêt d'Anjakely, 1.3 km SE Anjakely (village) in leaf litter of dry semi-deciduous forest.
- 3) *Tropidophora thesauri* Fischer-Piette, 1949 - SMG 22370, Forêt d'Anjakely, 1.3 km SE Anjakely (village) in leaf litter of dry semi-deciduous forest.
- 4) *Sitala* sp. - SMG 22290, Forêt d'Antsahabe, 2.8 km NW Anjakely, exposed limestone massif and in dry deciduous (*tsingy*) forest. Found in late afternoon after a rain shower and climbing up the tree trunk of *Delonix* sp. (Family Fabaceae).
- 5) *Ampelita* cf. *stilpna* (Mabille, 1884) - SMG 22290, Forêt d'Antsahabe, 2.8 km NW Anjakely, exposed limestone massif and in dry deciduous (*tsingy*) forest. Found in late afternoon after a rain shower and climbing up the tree trunk of *Delonix* sp (Family Fabaceae); SMG 22364, Forêt d'Antsahabe, 2.8 km NW Anjakely, exposed limestone massif and in dry deciduous (*tsingy*) forest; and SMG 22370, Forêt d'Anjakely, 1.3 km SE Anjakely (village) in leaf litter of dry semi-deciduous forest.

The record of *Tropidophora cuvieriana* is interesting. That species was only previously recorded from Ankarana. The specimens (SMG 22370) all have a wide-open umbilicus, which separates them from *T. occlusa*. They are however significantly smaller than those from Ankarana with a maximum diameter of only 33-37 cm.

To date 19 forms of land snails have been found in the Andrafiarana-Andavakoera area, which given its geological complexity (see Tahinarivony & Goodman, 2025, herein), is certainly not approaching the real diversity of the site. This protected area is presumed to have considerable diversity of terrestrial snails and is worth further exploration and documentation.

References

- Emberton, K. C. 1999.** *Edentulina* of Madagascar. *American Malacological Bulletin*, 15 (1): 97-108.
- Emberton, K. C. 2001.** Dentate *Gulella* of Madagascar. *American Malacological Bulletin*, 16 (1/2): 71-129.
- Emberton, K. C. 2002.** The genus *Boucardicus*, a Madagascar endemic. *Archiv für Molluskenkunde*, 130: 1-199.
- Emberton, K. C. 2002.** *Parvedentulina* and edentate *Gulella* of Madagascar. *Archiv für Molluskenkunde*, 131: 67-165.
- Emberton, K. C. 2003.** Madagascar *Cyathopoma* sensu lato. *Archiv für Molluskenkunde*, 132: 9-91.
- Emberton, K. C. 2004.** Madagascar *Georissa*, *Cyclotus*, *Omphalotropis* and so-called *Chondrocyclus*. *Archiv für Molluskenkunde*, 133: 69-107.
- Emberton, K. C. & Rakotondrazafy, J. A. 2020.** Rhytidoid land snails collected in 2007 at 21 sites in northern Madagascar, with descriptions of 13 new species and two new subspecies. *Basteria*, 84 (4-6): 170.
- Fischer-Piette, E., Blanc, P., Blanc, F. & Salvat, F. 1993.** Gastéropodes Terrestre Prosobranches. *Faune de Madagascar*, 80: 1-281.
- Fischer-Piette, E., Blanc, P., Blanc, F. & Salvat, F. 1994.** Gastéropodes Terrestre Pulmones. *Faune de Madagascar*, 83: 1-551.
- Griffiths, O. L. 1995.** Ankarana snail survey. *The Papustyla*, 9: 1-7.
- Griffiths, O. L. 1997.** A survey of the non-marine Mollusca of the central and northern parts of the Réserve naturelle intégrale du Tsingy de Bemaraha in the central west of Madagascar. *The Papustyla*, 11: 4-14.
- Griffiths, O. L. & Herbert, D. G. 2013.** New species of land snails (Mollusca: Gastropoda) from two isolated karst formations in central western Madagascar: Tsingy Beanka and Antsingimavo, with additional notes on other regional endemics. *African Invertebrates*, 54 (1): 1-48.
- Tahinarivony, J. A. & Goodman, S. M. 2025.** Description of the Paysage Harmonieux Protégé d'Andrafiarana-Andavakoera, Madagascar, and the 2023 biological inventory of the protected area. In A floral and faunal inventory of the Andrafiarana-Andavakoera protected area of northern Madagascar, eds. S. M. Goodman & J. A. Tahinarivony. *Malagasy Nature*, 19: 1-31.