

Research article

Records of terrestrial and mangrove snails (Mollusca: Gastropoda) from the Michamwi Peninsula, Unguja (Zanzibar) Island (Tanzania)

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Abstract: During a brief malacological survey, a total of 16 snail species were recorded (four mangrove amphibious, 12 terrestrial). For all the species new localities with GPS coordinates and habitat data are provided. The species *Thapsia insulsa* Preston, 1910 (Urocyclidae) is a new record to the island.

Keywords: Africa, amphibious, Gastropoda, new records, terrestrial

Introduction

Unguja, the main island of the Zanzibar Archipelago, lies about 6° south of the equator and 40 km east of the mainland of Africa and has an area of approximately 1600 km² (Pakenham, 1984). Most of the island is covered by high and low scrub forest, also known as a coral rag forest on ground characterised by numerous outcroppings of fossilised coral (Siex, 2011). This vegetation cover is classified as Eastern African Coastal Scrub Forest according to the Clarke's scheme (Burgess & Clarke, 2000).

The East African coastal land mollusc fauna remains poorly explored (Verdcourt, 2006). The territory of Zanzibar autonomous region (Republic of Tanzania) is one of the best studied in terms of species composition of land snails (Rowson, 2007; Rowson et al., 2010; Gittenberger & Bruggen, 2013) but many species have been reported without exact localities or they are problematic to find considering their names (Rowson, 2007). In this short note, I report of some exact species localities at the poorly known Michamwi Peninsula of

the Unguja Island and one new record to the island malacofauna.

Material and methods

The study was carried out during the period 27.2.2021 – 6.3.2021. A few closely situated localities were surveyed at the northernmost area of the Michamwi Peninsula, east coast of the Unguja Island (Michamwi is situated on the opposite side of the Chwaka Bay from the Jozani Forest). The specimens (dry shells) were collected by hand or by sieving of soil and detritus. Species names are following Rowson (2007) and Gittenberger & Bruggen (2013).

Results and discussion

There were a total of 16 snail species recorded (four mangrove amphibious, 12 terrestrial). One of the terrestrial species is a new record to the fauna of the Un-



Fig. 1. Some of the living snail species recorded on the Michamwi Peninsula: (a) *Truncatella guerinii* (active specimen among detritus at low tide); (b) *Littoraria intermedia* (inactive, attached to a leaf of *Avicennia marina*); (c) *Melampus luteus* (active specimen among detritus and sand at low tide); (d) *Tropidophora zanguebarica* (inactive, attached to a wall); (e) *Rachis punctata* (inactive, attached to a lamp).

guja Island. For the rest of the species new localities with GPS coordinates and habitat data are provided.

MANGROVE AMPHIBIOUS SPECIES

Littorinidae

Littoraria intermedia (Philippi, 1846)

Material examined: 27.2.2021, mangrove dominated by *Avicennia marina* at a river estuary, south of the Michamwi Village, S06° 08' 45.5" E39° 29' 22.9", 5 m a.s.l., 1 shell and many living individuals observed (Fig. 1b); 2.3.2021, among rocks and various bushes at

the periphery of the tidal zone, north-west coast of the peninsula, S06° 07' 39.4" E39° 29' 28.2", 2 m a.s.l., many living individuals observed. This species is widespread in the mangroves of the tropics (Abbott & Dance, 2000). In East Africa, it is rare in the coastal area of the continent but abundant on the nearby Pemba Island (Torres et al., 2008).

Ellobiidae

Melampus luteus (Quoy & Gaimard, 1832)

Material examined: 27.2.2021, mangrove dominated by *Avicennia marina* at a river estuary, south of the

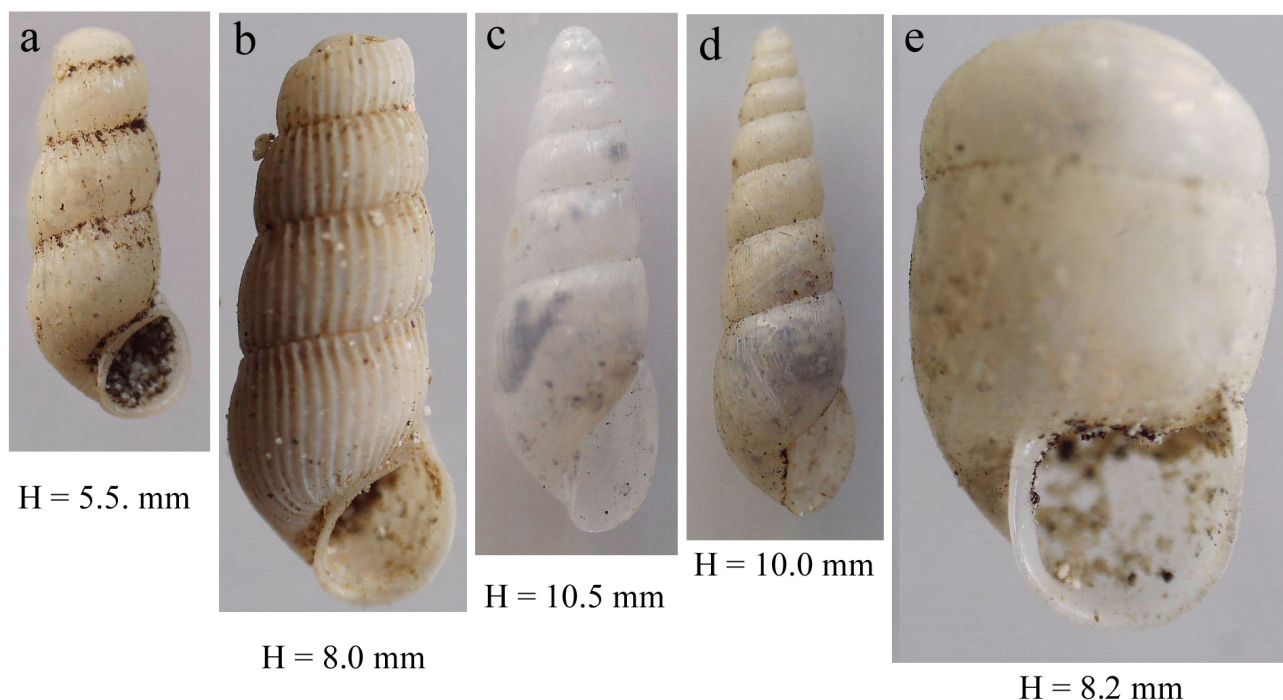


Fig. 2. Shells of some of the species collected: (a) *Truncatella marginata*, (b) *T. guerinii*, (c) *Opeas lamoense*, (d) *Allopeas gracile*, (e) *Gonaxis gibbonsi*.

Michamwi Village, S06° 08' 45.5" E39° 29' 22.9", 5 m a.s.l., 5 shells and many living individuals observed (Fig. 1c). Common estuarine species in the Indo-Pacific Region (Abbott & Dance, 2000).

Truncatellidae

Truncatella guerinii A. & J.B. Villa, 1841

Material examined: 27.2.2021, mangrove dominated by *Avicennia marina* at a river estuary, south of the Michamwi Village, S06° 08' 45.5" E39° 29' 22.9", 5 m a.s.l., 1 shell and many living individuals observed (Fig. 1a, 2b); 4.3.2021, Michamwi Village area, scattered bushes and trees on a sandy terrain, under rocks of a limestone hill, far from the tidal zone, S06° 08' 17.5" E39° 29' 38.8", 5 m a.s.l., 9 shells. Verdcourt (2006) mentioned *T. guerinii* from Zanzibar.

Truncatella marginata Küster, 1855

Material examined: 4.3.2021, Michamwi Village area, scattered bushes and trees on a sandy terrain, under rocks of a limestone hill, S06° 08' 17.5" E39° 29' 38.8", 5 a.s.l., 5 shells (Fig. 2a). The species has a coastal dis-

tribution from South Africa to the South Pacific (Muratov, 2010). Verdcourt (2006) mentioned *T. marginata* (as *T. teres* Pfeiffer, 1856, see Gittenberger & Bruggen, 2013) from Zanzibar.

TERRESTRIAL SPECIES

Pomatiasidae

Tropidophora zanguebarica (Petit, 1850)

Material examined: 28.2.2021, Michamwi Village area, yard of a hotel, S06° 08' 25.9" E39° 29' 26.4", 3 m a.s.l., 3 living individuals, attached to a wall (Fig. 1d); 4.3.2021, Michamwi Village area, scattered bushes and trees on a sandy terrain, under rocks of a limestone hill, S06° 08' 17.5" E39° 29' 38.8", 5 m a.s.l., 14 shells and many more observed in the area. The species was known from the coastal regions of continental Africa (Kenya, Tanzania and Mozambique) and the closely situated islands. From the Unguja Island it has been recorded with an exact locality at the Jozani Forest (Rowson, 2007; Rowson et al., 2010; Muratov, 2010; Gittenberger & Bruggen, 2013).

Pupillidae

Pupoides coenopictus (Hutton, 1834)

Material examined: 28.2.2021, Michamwi Village area, yard of a hotel, S06° 08' 25.0" E39° 29' 33.0", 7 m a.s.l., 2 living individuals, attached to a wall. Widespread in sub-Saharan Africa, North Africa and Asia (Seddon, 1994). Reported for Zanzibar with no exact locality mentioned (Verdcourt, 1983). Considering Rowson et al. (2010), it is the first recent precise record of the species on the Zanzibar Archipelago.

Cerastidae

Rachis punctata (Anton, 1839)

Material examined: 28.2.2021, Michamwi Village area, yard of a hotel, S06° 08' 25.0" E39° 29' 33.0", 7 m a.s.l., 5 living individuals, attached to a wall and a lamp (Fig. 1e); 4.3.2021, Michamwi Village area, scattered bushes and trees on a sandy terrain, under rocks of a limestone hill, S06° 08' 17.5" E39° 29' 38.8", 5 m a.s.l., 3 shells. Widespread and common species along the coasts of many countries bordering the tropical Indian Ocean and introduced to some areas of the Atlantic coast (Pilsbry, 1919; Rowson, 2007).

Subulinidae

Allopeas gracile (Hutton, 1834)

Material examined: 4.3.2021, Michamwi Village area, among grasses near a concrete wall, S06° 08' 20.8" E39° 29' 28.8", 3 m a.s.l., 2 shells (Fig. 2d). Verdcourt (1983) recorded it from the Unguja Island without mentioning an exact locality.

Homorus usagarica (E. A. Smith, 1890)

Material examined: 2.3.2021, Michamwi Village area, among grasses near a concrete wall, S06° 08' 20.8" E39° 29' 28.8", 3 m a.s.l., 1 shell; 4.3.2021, Michamwi Village area, scattered bushes and tree on a sandy terrain, under rocks of a limestone hill, S06° 08' 17.5" E39° 29' 38.8", 5 m a.s.l., 5 shells. The species was reported for the island by Germain (1918) as "Zanzibar" (type locality of *insularis* syn. of *usagarica*, see

Rowson, 2007). Exact localities of this species on Unguja were not known till now.

Opeas lamoense Melvill & Ponsonby, 1892

Material examined: 4.3.2021, Michamwi Village area, among grasses near a concrete wall, S06° 08' 20.8" E39° 29' 28.8", 3 m a.s.l., 2 shells (Fig. 2c). Verdcourt (1983) recorded it from Unguja Island without mentioning an exact locality. Rowson (2007) reported it from the Jozani Forest.

Pseudoglessula subolivacea (E. A. Smith, 1890)

Material examined: 4.3.2021, Michamwi Village area, scattered bushes and trees on a sandy terrain, under rocks of a limestone hill, S06° 08' 17.5" E39° 29' 38.8", 5 m a.s.l., 7 shells. This species is common on the Unguja and Pemba Islands (Rowson, 2007; Rowson et al., 2010).

Achatinidae

Achatina (Lissachatina) allisa (L. Reeve, 1849)

Material examined: 4.3.2021, Michamwi Village area, scattered bushes and trees on a sandy terrain, under rocks of a limestone hill, S06° 08' 17.5" E39° 29' 38.8", 5 m a.s.l., 6 shells. Common along the East African coast and in the adjacent areas, including the islands (Mead, 1995). The only exact locality (Jozani Forest) on the Unguja Island was reported by Rowson (2007).

Achatina (Lissachatina) reticulata (L. Pfeiffer, 1845)

Material examined: 27.02 – 6.3.2021, Michamwi Village area, many shells observed (often broken and at fire sites with traces of possible human consumption or other use). Native to East Africa, mainly coastal species reported from many localities on the Unguja Island (Bequaert, 1950; Rowson, 2007).

Streptaxidae

Gonaxis gibbonsi Taylor, 1877

Material examined: 3.3.2021, Michamwi Village area, scattered bushes and trees on a sandy terrain, under



Fig. 3. Shell of *Thapsia insulsa* from the Michamwi Peninsula, Unguja Island (D = 3.8 mm).

rocks of a limestone hill, S06° 08' 17.5" E39° 29' 38.8", 5 m a.s.l., 2 shells; 4.3.2021, same locality, 3 shells (Fig. 2e). The species was known from continental Tanzania (Usambara Mts) and Kenya (Taita Hills), and from Zanzibar (without an exact locality) (Taylor, 1877; Verdcourt, 1983; Rowson, 2007). It was reported from the Unguja Island at the Chwaka Bay area by Rowson (2007).

Ariophantidae

Sitala jenynsi (L. Pfeiffer, 1845)

Material examined: 4.3.2021, Michamwi Village area, scattered bushes and trees on a sandy terrain, under rocks of a limestone hill, S06° 08' 17.5" E39° 29' 38.8", 5 m a.s.l., 8 shells, and many more observed at the area. Lowland coastal species, known from Kenya, Tanzania and Mozambique and some closely situated islands (Verdcourt, 1963). From the Unguja island it was reported with an exact locality only by Rowson (2007) at the Jozani Forest.

Urocyclidae

Thapsia insulsa Preston, 1910

Material examined: 3.3.2021, Michamwi Village area, scattered bushes and trees on a sandy terrain, under rocks of a limestone hill, S06° 08' 17.5" E39° 29' 38.8",

5 m a.s.l., 2 shells (Fig. 3). The type locality of this species is in Kenya and was recently recorded from the nearby Pemba Island by Rowson et al. (2010). New record for the Unguja Island.

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