

Description of a new valvatoïd *Pikasia smenensis* n. gen. n. sp. (Gastropoda, Hydrobiidae) from Morocco

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Abstract

Description of a new valvatoïd *Pikasia smenensis* n. gen. n. sp. (Gastropoda, Hydrobiidae) from Morocco. Recent field surveys conducted in the northern part of Morocco have led to the discovery of a new species belonging to a new genus *Pikasia* n. gen. described here. Photos of the holotype and paratype are presented in addition to the penis morphology and the female sex tract, the map of the sampling area with the type localities, and the habitat description.

Key words: Morocco, Hotspot, Springsnail, *Pikasia smenensis* n. gen. n. sp.

Resumen

Descripción de un nuevo valvátido *Pikasia smenensis* n. gen. n. sp. (Gastropoda, Hydrobiidae) en Marruecos. Los recientes estudios de campo llevados a cabo en el norte de Marruecos han permitido descubrir una nueva especie perteneciente a un nuevo género, *Pikasia* n. gen., que se describe en este artículo. Se presentan fotografías del holotipo y el paratipo, así como la morfología del pene y del aparato genital femenino, el mapa de la zona de muestreo con las localidades tipo y la descripción del hábitat.

Palabras clave: Marruecos, Zona de elevada diversidad, Caracol de agua dulce, *Pikasia smenensis* gen. n. sp. n.

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Introduction

Surrounded by the Mediterranean Sea, the Atlantic Ocean and the Sahara Desert, Morocco is one of the most interesting biogeographical regions in the occidental Mediterranean Basin, representing a contact area between Europe and Africa and between the Palaearctic and Afrotropical region. The country has multiple geographical barriers, such as the Moulouya River Basin, the Sahara, the Rif Mountains and the Atlas Mountains. The latter divide the northern part of the country into two bioclimatic regions, which in turn are associated with high levels of endemism in freshwater fauna (Mabrouki et al., 2019; Taybi et al., 2020), giving the area a privileged place for taxonomical and ecological studies.

The truncatelloidean family Hydrobiidae Stimpson 1865 is a major group of freshwater molluscs and supposedly the largest gastropod family in Morocco. Knowledge of this family continually improving, and many new species have recently been discovered (Taybi et al., 2017; Boulaassafer et al., 2018, 2020; Ghamizi, 2020; Glöer et al., 2020a, 2020b; Mabrouki et al., 2020, 2021a, 2021b).

The valvatiform hydrobiid is a group of minute gastropods with depressed trochiform shells resembling those of the genus *Valvata* O. F. Müller, 1773. Owing to their limited dispersal abilities and high

degree of habitat specialization, most springsnails are narrow-range endemics and face a high risk of extinction (Delicado et al., 2019; Radea et al., 2021). To date, five valvatoid species are known to occur in Morocco, four crenobiotic species that are micro-endemic to their type localities, namely *Ifrania zerroukansis* Glöer, Mabrouki and Taybi, 2020, *Fessia aouintii* Glöer, Mabrouki and Taybi, 2020, *Islamia tiferitensis* Glöer, Mabrouki and Taybi, 2020 and *I. karawiyiensis* Mabrouki, Glöer and Taybi, 2021, and the stygobiont *Rifiya yakoubii* Ghamizi, 2020 inhabits the phreatic waters of the southern border of the Rif region, upstream of Moulouya, Sebou and Loukkos basins. New research conducted recently in northwestern Morocco revealed a new valvatoid genus. The aim of this paper is to describe a new springsnail genus and species.

Material and methods

Sampling. Field surveys were conducted in the northern part of the country, including its great natural barriers such as the Moulouya River basin and the Middle Atlas massif. The samples of benthic fauna (including gastropods) were collected using a kick net and clamps. The samples were fixed in 75 % ethanol.

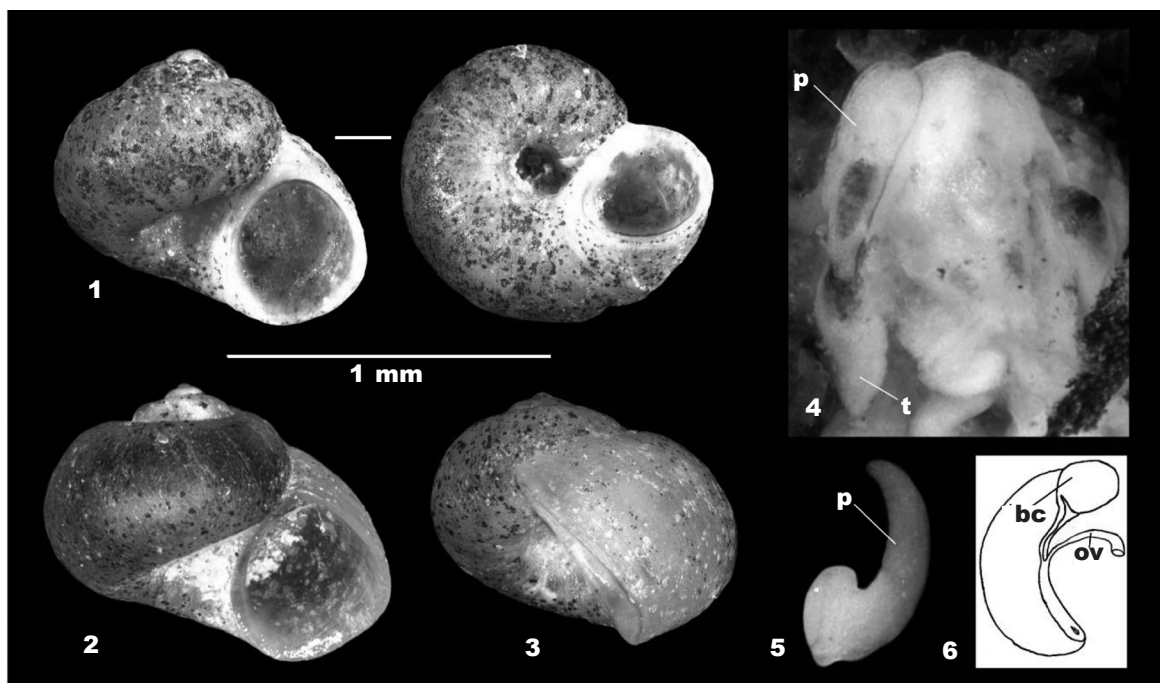


Fig. 1–6. *Pikasia smenensis* n. sp.: 1, holotype; 2–3, paratype; 4, penis in situ; 5, penis; 6, female sex tract; bc, bursa copulatrix; ov, oviduct; p, penis; t, tentacle.

Fig. 1–6. *Pikasia smenensis* n. sp.: 1, holotipo; 2–3, paratipo; 4, pene in situ; 5, pene; 6, aparato genital femenino; bc, bolsa copulatrix; ov, oviducto; p, pene; t, tentáculo.

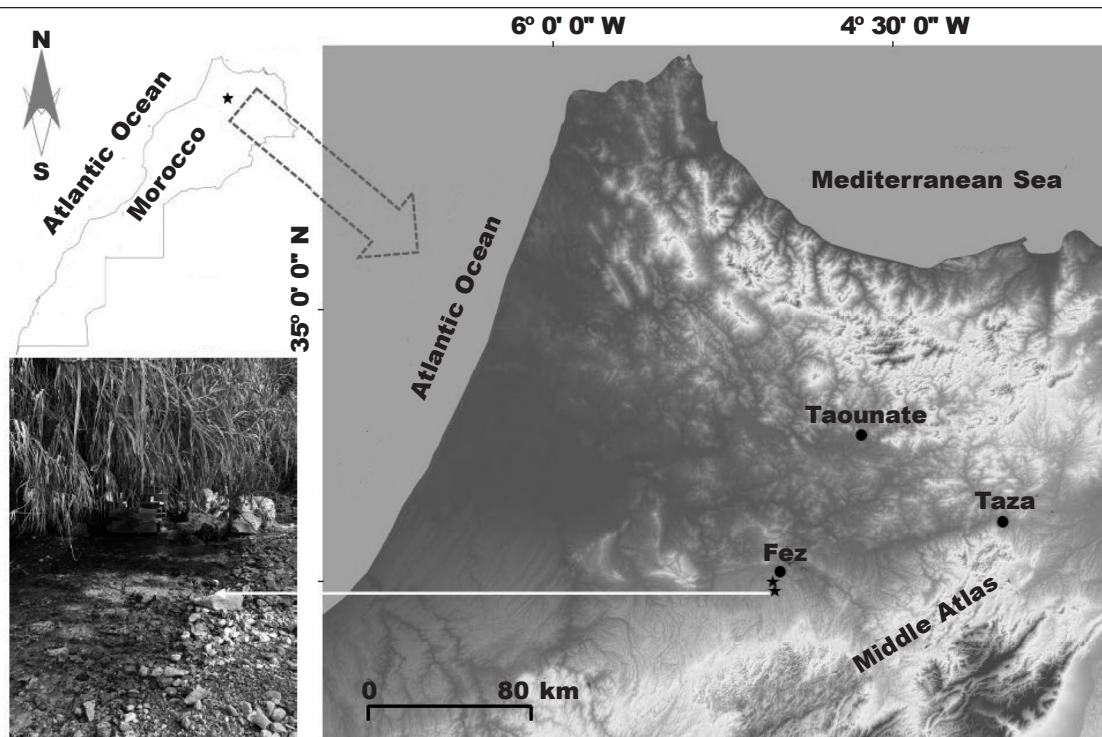


Fig. 7. The sampling sites and habitat of *Pikasia smenensis* n. gen. n. sp.

Fig. 7. Los sitios de muestreo y el hábitat de *Pikasia smenensis* n. gen. n. sp.

The genital organs were dissected and the shells were measured using a stereo microscope (Leica M205C); photos were taken with a Leica M205C microscope with a digital camera Leica DMC5400. The type material is stored in the Zoological Museum of Hamburg (ZMH).

Results

Phylum Mollusca Cuvier, 1795
 Class Gastropoda Cuvier, 1795
 Superorder Caenogastropoda Cox, 1960
 Superfamily Truncatelloidea Gray, 1840

Family Hydrobiidae Stimpson, 1865

Pikasia n. gen.

ZooBank LSID <http://zoobank.org/urn:lsid:zoobank.org:act:3A261C25-8002-4045-8991-69104B043BE2>

Pikasia smenensis n. sp.

ZooBank LSID: <http://zoobank.org/urn:lsid:zoobank.org:act:4A1C6BC3-8529-4832-B315-67473083D69B>

Holotype

From Ain Smen spring (33° 57' 56.5" N–5° 01' 18.5" W): shell height 0.97 mm, shell width 1.1 mm, ZMH 140880.

Paratypes

From Ain Chqef spring (34° 00' 05.8" N 5° 01' 51.6" W): 5 specimens ZMH 140881, 18 specimens in coll. Glöer, from site 5: 2 specimens coll. Glöer, from site 6: 30 specimens coll. Glöer.

Description

Valvatoid shell with 3.5 slightly convex whorls and a prominent body whorl (fig. 1, 2). The spire low and conical, diameter of the whorls fast and regularly increasing. Aperture roundish from frontal view and touches in some specimens the body whorl over a short distance or is detached from the shell wall. From lateral view the border of the aperture appears clearly inclined (fig. 3). The diameter of the body whorl near the aperture about 2.5 times broader than the umbilicus. Operculum dark yellowish. Dimensions: shell height 0.97–1.0 mm, shell width: 1.0–1.1 mm.

Animal

Eyes present, head and mantle blackish, pigmented, as were parts of the tentacles.

Female sex tract

The bursa copulatrix spherical (fig. 6), receptaculum absent.

Penis

In its relaxed state the simple penis broad and elon-

gate flat with an acute penis tip. The distal part of the penis with an elongated triangular blackish spot (fig. 4, 5).

Differentiated characters

The shells are a little similar to *Aretiana wolffi* (Boeters and Glöer, 2007) from S–Spain but *A. wolffi* is much larger (1.6–1.8 mm in diameter), and the penis in *A. wolffi* is smaller and hook shaped (Delicado et al., 2021). In addition, *A. wolffi* has a receptaculum, *Pikasia smenensis* has not.

Etymology

The genus name *Pikasia* n. gen. is given in honor of the late father of the first author (El Pikas). The specific name refers to one of the type localities Ain Smen.

Habitat

The species occurs in rheocrenous springs only, in the upper part of Ain Chkef catchment area (a tributary of Sebou River). The grain size of the bottom consists of stones, pebbles and sand, the banks are covered with dense vegetation (fig. 7). The entire area is under anthropogenic impact.

Distribution

Morocco; only known from type localities.

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