



A new species of the genus *Guadiella* Boeters, 2003 (Gastropoda, Hydrobiidae) from SW Spain

Una nueva especie del género *Guadiella* Boeters, 2003 (Gastropoda, Hydrobiidae) del SO de España

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ABSTRACT

A new species of the genus *Guadiella* from Huelva, SW Spain, is described. The new species is compared with some other species of the genus, from which differs by some conchological characters.

RESUMEN

Se describe una nueva especie del género *Guadiella* procedente de Huelva, en el sudoeste de España. La nueva especie es comparada con otras especies congénéricas de las cuales se diferencia por ciertos caracteres conchiliológicos.

INTRODUCTION

The genus *Guadiella* Boeters, 2003 includes species of small size, conical/cylindrical and elongated shape, and interstitial habitat. At present, only four species are known in this genus, all coming from different parts of Spain (BOETERS, 2003; ALBA ET AL., 2009).

The four species already described until now are: *Guadiella andalucensis* (Boeters, 1983), the type species of the genus, distributed in the middle and upper basin of the Guadalquivir river, in the provinces of Jaén and Sevilla; *Guadiella ramosae* Boeters, 2003, only known from a spring in the province of Jaén; *Guadiella arconadae* Boeters, 2003,

whose generic status is still unresolved (see ARCONADA, ROLÁN & BOETERS, 2007), known from a single locality in the province of Burgos; and *Guadiella ballesterosi* Alba et al., 2009, from a single spring in the province of Tarragona. Little is known about the anatomy and biology of these species, and in consequence the attribution of taxa to this genus is still mainly done on the basis of conchological traits (ALBA ET AL., 2009).

In the present work, a new species of the genus *Guadiella* is described, found in a spring in the municipality of Sanlúcar de Guadiana (province of Huelva, SW España).

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MATERIAL AND METHODS

The specimens for this study were collected in sediments from Manantial del Pilar, in the municipality of Sanlúcar de Guadiana (Huelva). The water running out of this spring is derived into two different fountains within the village (Fuente del Pilar Nuevo and Fuente del Pilar Viejo). The spring was prospected, previously obtaining the specific permissions from authorities. It is to remark that the spring is presently enclosed in a walled premise.

Samplings were carried out in the years 2016-2017. Sediments were sieved *in situ*, by using a mesh of three different ranges (2.0, 1.0 and 0.5 mm), and shells were later sorted under the stereomicroscope in the lab, and cleaned with the help of a small brush and water.

Abbreviations

MNCN Museo Nacional de Ciencias Naturales, Madrid
MHNS Museo de Historia Natural of the University of Santiago de Compostela
SEM Scanning Electron Microscopy

SYSTEMATICS

Family HYDROBIIDAE Genus *Guadiella* Boeters, 2003

Type species: *Belgrandiella andalucensis* Boeters, 1983 by original designation.

Guadiella pilelongata n. sp. (Figures 1, 2)

Type material: Holotype (Fig. 1A) in MNCN (15.05/200015); 1 paratype in MNCN (15.05/200016), 2 paratypes in MHNS (100630-31), 7 paratypes in the authors' collections, all from the type locality.

Type locality: Manantial del Pilar, Sanlúcar de Guadiana, Huelva [29SPB34], altitude 30 m.

Etymology: The specific name refers to the elongated shell (*-elongata*), and the use of the prefix "*pil-*" referring to the spring of the type locality (Manantial del Pilar).

Description: Shell small, elongated, fragile, whitish in color, with about 4 whorls which are somewhat convex, with a very clear suture, only slightly stepped. Protoconch with little more than one whorl, about 300 μ m in diameter, and a nucleus of about 100 μ m. An irregular microsculpture can be seen only at high magnification, formed by abundant polygonal microdepressions. Teleoconch of 3½ whorls of slow growth, without sculpture except for slightly prosocline growth marks. Ovoid and tilted aperture, angular in the upper part. The peristome is simple and continuous, adherent in a small stretch with the former whorl. Columella slightly curved. Umbilicus reduced to a narrow stitch.

Dimensions: The holotype is 1.72 mm in height x 0.62 mm in diameter. The last whorl measures 1.02 mm,

which represents 59% of the maximal height (see Table I).

Habitat: Stygobiotic. No live material was found, the shells were transported from the groundwater to the surface by the water current. No other stygobiotic mollusks were found in the sample.

Distribution: Only known from the type locality.

Remarks: The new species here described differs from *Guadiella ramosae* because its shell is larger, with a shape more conical than cylindrical; the last whorl is also proportionally smaller (59% of total height, compared to 67% in *G. ramosae*). The peristome in this last species is also more projected. Additionally, the new species has on average an additional whorl. Its high conical shape safely distinguishes it from all the other species in the genus.

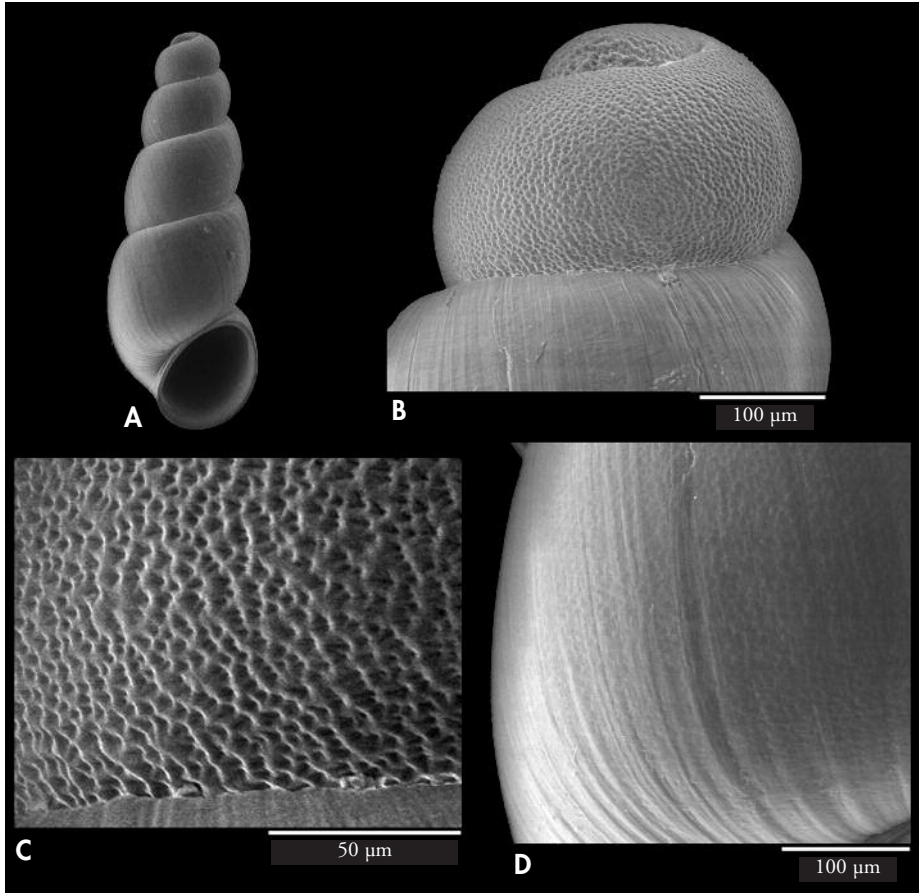


Figure 1. *Guadiella pilelongata* n. sp. A: holotype, height 1.72 mm; B, C: protoconch and detail; D: detail of teleoconch.

Figura 1. *Guadiella pilelongata* n. sp. A: *holotipo* 1,72mm; B, C: *protoconcha* y *detalle*; D: *detalle de la teleoconcha*.

DISCUSSION AND CONCLUSIONS

This description of a new species of the genus *Guadiella* raises the number of known species to five. It also adds a new hydrological basin (Guadiana) where the genus is present.

The adscription of the new species to the genus *Guadiella* is based on its conchological similarity to other species, in the absence of anatomical or molecular criteria still very poorly worked for this genus (ALBA *ET AL.*, 2009). In this sense, future research could change this assign-

ation in the light of live collected material, so its generic classification should be considered only provisional.

The fact that a number of species of the genus have been described in recent years, the geographical distance among their populations (including citations in Castilla y León, Cataluña, central and eastern Andalucía, and now western Andalucía), their stygobiotic, poorly accessible habitat, and the overall very limited knowledge of their biological characteristics (including for example anatomy or habitat preferences) raises the question if we are still far

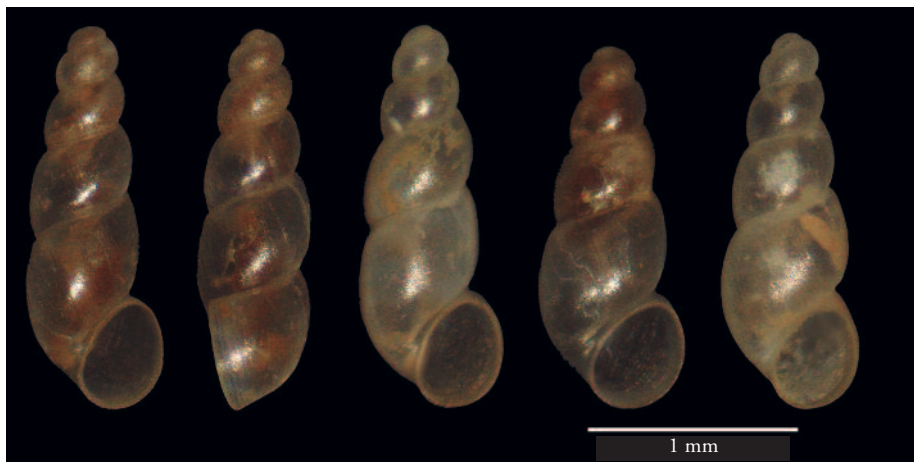


Figure 2. *Guadiella pilelongata* n. sp. Paratypes. Collections of the authors.
 Figura 2. *Guadiella pilelongata* n. sp. Paratipos. Colecciones de los autores.

from a good knowledge of this genus in Spain, so it is feasible that new species could be described in the years to come. In this sense, the authors of this study are actively searching in different springs from the same area for new populations.

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Table I. Measurements of the shell (performed on 10 shells) of *Guadiella pilelongata* n. sp. Min: minimum. Mx: Maximum. AV: Average. SD: standard deviation. COEF. VAR: variance coefficient. L: length. D: diameter. Ha: aperture height. Wa: aperture width.

Tabla 1. Medidas de la concha (efectuadas en 10 conchas) de *Guadiella pilelongata* n. sp. Min: mínimo. Mx: máximo. AV: media. SD: desviación estándar. COEF. VAR: coeficiente variación. L: longitud. D: diámetro. Ha: altura de la boca. Wa: anchura de la boca.

	Min	Mx	AV	SD	COEF. VAR.
L	1,66	2,31	1,91	0,16	0,08
D	0,62	0,82	0,70	0,06	0,08
Ha	0,49	0,62	0,57	0,03	0,06
Wa	0,39	0,51	0,44	0,03	0,08

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