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TO THE KNOWLEDGE OF THE ANATOMY AND TAXONOMY OF TWO SPECIES FROM GENUS *VITREA* FITZINGER, 1833 *(GASTROPODA, ZONITIDAE)*

Atanas A. Irikov

Uneversity of Plovdiv "Paisii Hilendarski", Department of Ecology and Environmental conservation, Tsar Assen 24, 4000 Plovdiv, Bulgaria

Abstract: Anatomical studies of *Vitrea neglecta* Damjanov & Pinter and *Vitrea bulgarica* Damjanov & Pinter were carried out. There were not observed any differences between the structure of the genital systems of these two species. For this reason, we consider *Vitrea bulgarica* a **syn. n.** of *Vitrea neglecta.*

Key words: *Zonitidae,* Vitrea bulgarica, Vitrea neglecta, anatomy, taxonomy, Bulgaria.

INTRODUCTION

DAMJANOV & PINTER (1969) have described a couple of new species of the genus *Vitrea* from the valley of Chepelarska river in Western Rodopi Mountains:

Vitrea neglecta Damjanov & Pinter, 1969

Damjanov & Pinter, 1969: 35, fig. 1-3; Pinter, 1972: 240, fig. 52-57, taf. 4, fig. 49-54.

Locus typicus: Bulgaria, Rodopi Mountains, at a kilometer away by southwest from the Bachkovski monastery, in a shady area of the valley of Chaia river (Chepelarska river).

Vitrea bulgarica Damjanov & Pinter, 1969

Damjanov & Pinter, 1969: 36, fig. 4-6; Pinter, 1972: 237, fig. 49-51, taf. 4, fig. 61-63.

Locus typicus: Bulgaria, Rodopi Mountains, in the valley of Chepelarska river (=Chaia river), a left tributary between Asenovgrad and Bachkovo.

According to these authors exact determination of juvenile specimens is very hard to be done. Several characteristics are used for differentiation between adult specimens of the two species: differences in the growth of the curves, the width of the last curve, compared with the one before the last curve, the shape of the lower side of the shell and the shape of the navel, the sculpture of the shell.

In the valley of Chepelarska river the two species are located together and the living area of *neglecta* very much covers the one of *bulgarica* (see DAMJANOV & LIHAREV, 1975).

DEDOV (1998) suggested that it is needed an anatomical examination of the two species to verify their status.

MATERIALS AND METHODS

Material: Rodopi Mountains, Bachkovo, Locus typicus of *V. neglecta,* leg. A. IRIKOV 5.11.2001, 37 specimens; Rodopi Mountains, between Asenovgrad and Bachkovo, Locus typicus of *V. bulgarica,* leg. A. IRIKOV 5.11.2001, 45 specimens; Rodopi Mountains, Dobrostanski ridge, the valley of Mostovska Sushitza river, Slivov dol and from Asenovgrad to the "Bezovo" hut, leg. A. IRIKOV in the period 04. - 11.1998, 1999, 2000, 176 specimens; Lukovitska river, tributary of Chepelarska river near Asenovgrad, leg. A. IRIKOV 23.11.2001, 36 specimens.

All of the material is stored in 70% ethanol. The anatomy is studied with dissection, using a binocular stereoscope. The empty shells and intact genital systems are stored in the author's collection.

DISCUSSION

In the studied material taken from Locus typicus of the two species, and from various locations in the Dobrostanski ridge, we have established great variations in structure of the shell. Between the typical *neglecta* and *bulgarica* there are many transitional forms, creating a flowing series.

Due to comparatively anatomical examination of *neglecta* and *bulgarica* of Locus typicus with typical shell and transitional forms, we have established identical structure in the genital systems of the both species.

Anatomy of the genital system: 37 specimens were anatomically examined.

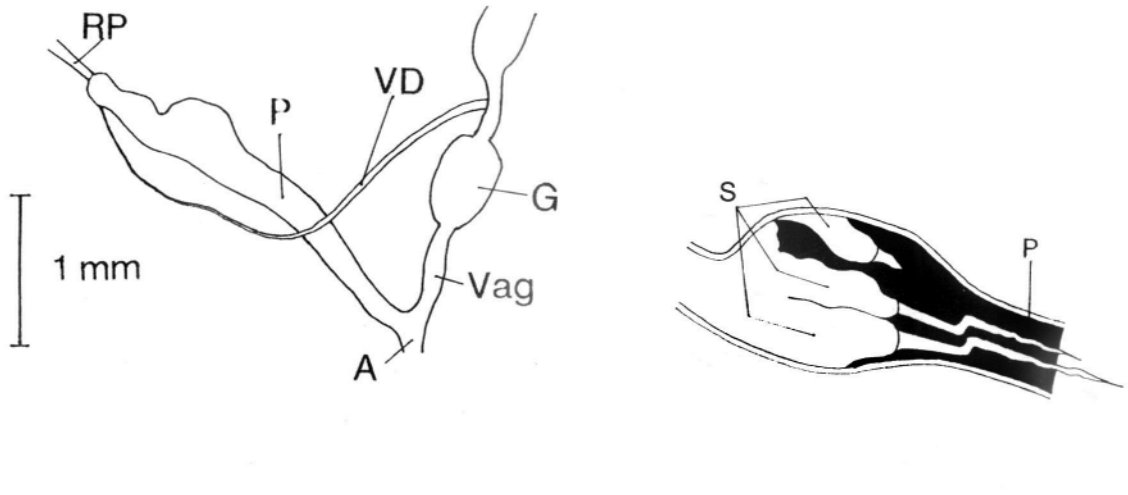
The penis (P) is cylindrical (Fig. 1, A), with irregular shape, swollen at the distal end, slimmer at the atrium (A). At the back end of the penis is located the sperm-conduit, (Vas Deferens - VD), near the situated apical retractor of the penis (RP). Sperm-conduit is threadlike at the side of the penis and getting thicker at the side of the free oviduct. The vagina (Vag) is long. The perivaginal glandulla (G) is well developed, ring-like, surrounding the vagina and the base of free oviduct. There is no sperm-receptacle.

Inner structure of the penis: The inner walls of the penis at the basal part is located a big and long sarcobelum (stimulator) with complex structure. Its length is about 1/3 of the length of the penis. At its base it is divided in three parts – one small and two bigger with joint base (Fig. 1, B). From these three parts draw out folded tentacles with spike like shape. The length of the tentacles is relevant to the size of the base parts of the sarcobelum. There is no penispaille.

The inner structure of the penis is identical in both of *neglecta* and *bulgarica.*

CONCLUSSION

We consider that *neglecta* and *bulgarica* are identical, and also that *Vitrea bulgarica* is **syn. n.** of *Vitrea neglecta*.



A) **B)**

Fig. 1. A) Genital system of *Vitrea neglecta* Damjanov & Pinter (orig.) (simplified); **B)** Internal structure of the penis (orig).

Abbreviation: A = Atrium; G = Perivaginal Glandulla; P = Penis; S = sarcobelum (stimulator); RP = Retractor Penis; Vag = Vagina; VD = Vas deferens.

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Uneversity of Plovdiv "Paisii Hilendarski", Department of Ecology and Environmental conservation, Tsar Assen 24, 4000 Plovdiv, Bulgaria

(Summary)

The studied material was taken from the Rodopi Mountains, Bulgaria. A subject of our investigations was the organization of the genital systems of two species of the genus *Vitrea* Fitzinger, 1833, i.e. *Vitrea neglecta* Damjanov & Pinter and *Vitrea bulgarica* Damjanov & Pinter. It was established that the genital systems and the specific structure of the penis in these two species were identical. We suggest that, *V. neglecta* Damjanov & Pinter and *V. bulgarica* Damjanov & Pinter are two identical species which manifest great variability in the form of their shells, and also that *Vitrea bulgarica* is a **syn. n.** of *Vitrea neglecta.*