

Unknown West European prosobranchs, 9¹.
Some new Spanish freshwater prosobranchs

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I. The Iberian valvatoid Hydrobiidae are listed and *Neohoratia azarum* n. sp. is described from NW. Spain. The eight previously known taxa are all from the eastern part of the peninsula. II. The five Iberian *Belgrandiella* species known from the literature are listed. In addition *B. galaica* n. sp. and *B. asturica* n. sp. are described, from Galicia and Asturia, respectively. III. Three more *Belgrandiella* taxa are provisionally described and listed as formae, pending future research concerning their taxonomic status.

Key words: Gastropoda, Prosobranchia, Hydrobiidae, *Neohoratia*, *Belgrandiella*, taxonomy, Spain.

I

Apart from other genera, the Hydrobiidae are represented on the Iberian peninsula by two valvatoid genera, viz. *Horatia* Bourguignat, 1887, and *Neohoratia* Schütt, 1961. For *Horatia* only *H. gatao* Boeters, 1980, and *H. (?) sturmi* (Rosenhauer, 1856) are known, whereas *Neohoratia* possibly comprises six species: *N. globulus* (Bofill, 1909), *N. ateni* (Boeters, 1969), *N. schuelei* (Boeters, 1981), *N. (?) coronadoi* (Bourguignat, 1870), *N. (?) fezi* (Altimira, 1960), and *N. (?) gasulli* Boeters, 1981. All these species have been described from the eastern part of the peninsula. The following description concerns the first species of the group of valvatoid species from the western part, namely from north-western Spain.

Abbreviations: Boe = H.D. Boeters collection; CZL = Centro de Zoologia de Lisboa, Portugal; MCNM = Museo de Ciencias Naturales de Madrid, Spain.

Neohoratia azarum n. sp.

(Figs. 1-5)

Description. — The shell is small, smooth, whitish, almost transparent and of globular shape, comprising 3.5 whorls; the last whorl forms approximately $\frac{3}{4}$ of the height. The aperture is slightly thickened, but its edge is sharp. In front view the aperture is bluntly ovate, touches the last whorl over a short distance and is only slightly broadened at its base; neither does the aperture ascend nor descend on the last whorl. The umbilicus is narrow but completely open. Height 1.5-1.7 mm, width 1.4-1.7 mm. Operculum paucispiral, with a pale orange nucleus.

¹ 8: Heldia 1 (5/6), in the press.

The animal is completely colourless, except for the eyes. The intestine shows the usual Z-like loop behind the stomach, followed by a second U-like loop, the two legs of which touch each other. The male copulatory organ is a mandrel-like penis supported on a broad base and provided with a drop-like appendix. As regards the female genitalia, a bursa is missing as is usual for *Neohoratia*. The sacculi of the two receptaculi are small, but provided with quite long pedunculi; the pedunculus of the first receptaculum is longer than that of the second one.

Differentiating features. — *N. azarum* is very similar to *N. globulus lagari* (Altimira, 1960). However, this species can be clearly distinguished by its geographical distribution being restricted to the area south of the eastern Pyrenees (Huesca, Lerida, Gerona, Barcelona). In addition, the male copulatory organ of *N. globulus* is equipped with a cucumber-like appendix and thus quite different. Finally, there cannot be any confusion with any other species of *Horatia* or *Neohoratia* since *N. azarum* is geographically completely separated.

Habitat. — *N. azarum* lives in springs with clean water in very shaded places under submerged leaves or branches of trees, at two localities sympatrically with *B. asturica*.

Localities. — TP 60 Oviedo, Trubia, in Soto area behind Aza property, near the railway in a fountain called La Broquera. QJ 30 Oviedo, Grado, Borondes, near to the Bascones river in a fountain called La Fontona; Oviedo, Grado, Bayo, in a small river under a wall near the road.

Types. — Holotype (Trubia) MCNM (No. 11-23-1028); paratypes MCNM/2, CZL/2, Rolan/ca. 50 and Boe 1379/14 + 2 juv. (Borondes).

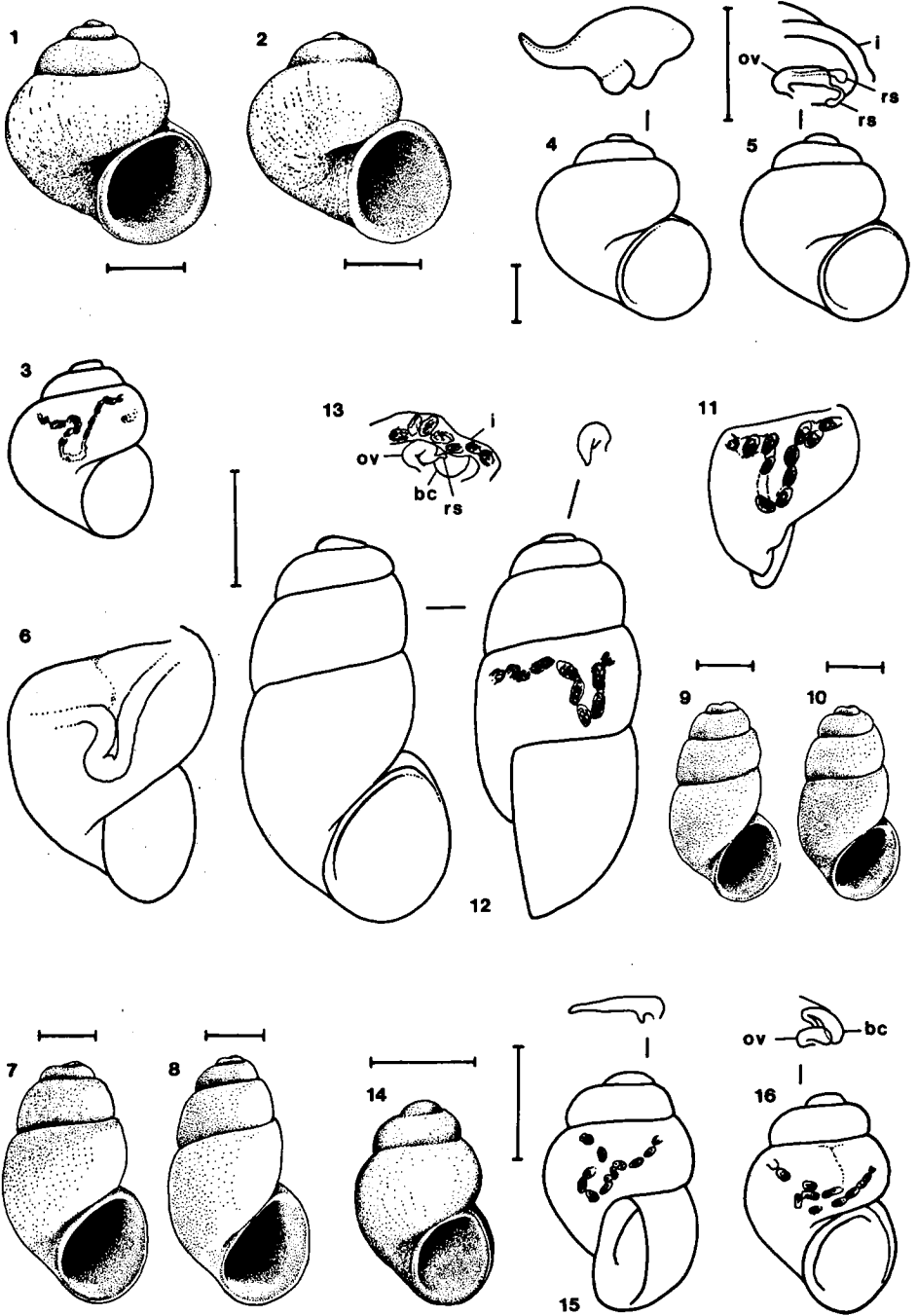
Derivatio nominis. — This new species is dedicated to the Aza family; they have supported the collecting activities not far from their property.

Discovery. — This new species was discovered by E. Rolan on August 1, 1987.

II

Up to now the following five species of *Belgrandiella* A.J. Wagner, 1927, are known from the Iberian peninsula: *B. andalucensis* Boeters, 1983, *B. cantabrica* Boeters, 1983, *B. edmundi* Boeters, 1984, *B. elliptica* (Paladilhe, 1874), and *B. rolandi* Boeters, 1986. *B. elliptica* occurs in south-western France and at least reaches the Spanish border. During recent investigations carried out by Rolan in north-western Spain in the area flanked by the regions inhabited by *B. rolandi* and *B. cantabrica*, five new forms have

Figs. 1-16. Spanish *Neohoratia* and *Belgrandiella*. 1-5, *Neohoratia azarum* n. sp., Spain, Oviedo, Grado, Borondes, fountain La Fontana; 1-2, shells (Rolan colln.); 3, shell with partially visible intestine (Boe 1379); 4, shell plus male copulatory organ (Boe 1379); 5, shell plus part of female genitalia (i = intestine, ov = oviductus, rs = receptaculum seminis; Boe 1379). 6, *Belgrandiella cantabrica* Boeters, 1983, Spain, Santander, on the road Treceno/La Revilla near San Vicente de la Barquera. Body whorl with intestine (Paratype Boe 582). 7-8, *Belgrandiella* cf. *cantabrica* (forma 3), Spain, Lugo, O Courel. Shells (Rolan colln.). 9-13, *Belgrandiella galaica* n. sp., Spain, Lugo, O Courel; 9-10, shells (Rolan colln.); 11, shell with partially visible intestine (Boe 1393); 12, shell plus male copulatory organ (Boe 1393); 13, shell plus part of female genitalia (bc = bursa copulatrix, i = intestine, ov = oviductus, rs = receptaculum seminis; Boe 1393). 14-16, *Belgrandiella asturica* n. sp., Spain, Oviedo, Grado, Borondes, fountain La Fontana; 14, shell (Rolan colln.); 15, shell plus male copulatory organ (Boe 1379); 16, shell plus part of female genitalia (bc = bursa copulatrix, ov = oviductus; Boe 1379). All scale bars 0.5 mm.



been discovered which cannot be attributed to what we have interpreted as *B. rolani* and *B. cantabrica* in their strict sense. Two are doubtlessly unknown species; these are described below.

***Belgrandiella galaica* n. sp.**

(Figs. 9-13)

Description. — The shell is small and elongatedly ovate, nearly bluntly cylindrical and comprises $4\frac{1}{2}$ whorls; the last two whorls form at least $\frac{4}{5}$ of the height. The shell wall is colourless and more or less translucent, so that the digestive tract is visible. In front view the aperture is obliquely ovate; neither does it ascend nor descend on the last whorl. The aperture is slightly thickened but its edge is sharp; the umbilicus is closed by a drop-like thickening of the columella. Height 1.6-1.9 mm, width 0.85-1.0 mm. Operculum yellowish.

With the exception of the dark eyes, the animal is greyish, especially from the stomach to the apex. In addition to the usual Z-like loop of the intestine when leaving the stomach, the intestinal tract shows a second U-like loop, the two legs of which touch each other. The male copulatory organ is a mandrel-like penis with a small dentiform appendix approximately at half its length. Apart from the bursa copulatrix, the female genitalia comprise two receptaculi (rs 1 + rs 2).

Differentiating features. — *B. galaica* cannot be confused with either *B. rolani* or *B. cantabrica*. As regards the former, the second loop of the intestine is flatly V-like and the male copulatory organ is equipped with two massive appendices. *B. cantabrica*, however, is larger on the average, the shell being rather elongatedly ovate and less cylindrical than in *B. galaica*. Finally, in females of *B. cantabrica* (fig. 6) the second intestinal loop is formed approximately in the lower half of the body whorl (so that the pallial part of the oviduct becomes partially visible above this loop), whereas in *B. galaica* the second intestinal loop is situated practically immediately below the suture.

Habitat. — *B. galaica* was discovered in a spring; at its locus typicus it occurs sympatrically with *B. cf. cantabrica* (forma 3).

Locality. — PJ 40 Lugo, O Courel (Caurel).

Types. — Holotype MCNM (No. 11-23-1030); paratypes MCNM/2, CZL/2, Rolan collection/ca. 50 and Boe 1393/7.

Derivatio nominis. — The name refers to the Galicia region.

Discovery. — *B. galaica* was discovered by E. Rolan in September 1987.

Remarks. — At its locus typicus *B. galaica* lives sympatrically with one of the other above-mentioned five new *Belgrandiella* forms (forma 3) (figs. 7-8). This other form resembles very much what at present is considered *B. cantabrica*. There are no remarkable differences with respect to the shell, the intestine, the male and the female genitalia, with the only exception that the end of the bursa exceeds the inversion point of the first intestinal loop and is not situated in front of said point. Thus, at the moment we prefer to identify this form as *B. cf. cantabrica*.

***Belgrandiella asturica* n. sp.**

(Figs. 14-16)

Description. — The shell is minute. It is colourless, transparent, ovate, with about 3.5 whorls. The last whorl forms $\frac{4}{5}$ of the height. The aperture is very slightly

broadened at its base; neither does the aperture ascend nor descend on the last whorl. The edge of the aperture, however, is sharp. The umbilicus is slit-like. Height 0.95-1.15 mm, width 0.67-0.70 mm. Operculum corneous with a pale yellow nucleus.

Animal colourless except for the eyes and spotted areas on the mantle and between stomach and apex. The usual Z-like loop of the intestine behind the stomach is followed by a second U-like loop, the two legs of which touch each other. The male copulatory organ is a slender mandrel-like penis with an acute dentiform appendix about $\frac{1}{3}$ behind the base of the penis. The female genitalia show a bursa with a curved pedunculus; this feature, however, and the question of existing receptaculi must be confirmed by further examination.

Differentiating features. — Because of its minute size, *B. asturica* cannot be confused with any other species, except for *B. edmundi*. This species, however, known from two places on Mallorca only, is geographically widely separated.

Habitat and localities. — *B. asturica* lives in springs; at two of its localities it occurs sympatrically with *Neohoratia azarum*. QJ 30 Oviedo, Grado, Borondes, near to the Bascones river in a fountain called La Fontana; Oviedo, Grado, Baselgas, in a small river (Rio Varas), near a bridge. QJ 41 Oviedo, Illas, La Peral, in a small fountain.

Types. — Holotype MCNM (No. 11-23-1031); paratypes Rolan collection/20 and Boe 1379/6 (Borondes).

Derivatio nominis. — The name refers to the Asturia region.

Discovery. — This new species was discovered by E. Rolan on August 1, 1987, together with *N. azarum*.

III

As mentioned before, Rolan discovered five new forms of *Belgrandiella*, two of which have been described as new species, viz. *B. galaica* and *B. asturica* (see above). In the following, the remaining three forms will be briefly characterized.

Forma 3

This form (figs. 7-8) lives sympatrically with *B. galaica*. Thus, its locality is: PJ 40 Lugo, O Courel (Caurel). The differences between this form and *B. galaica* and the relationship with respect to *B. cantabrica* have been discussed in connection with the description of *B. galaica* above. Reasons also were given why this form is regarded as *B. cf. cantabrica*.

Forma 4

This form was found in PH 49 Lugo, Villarmide about 50 km far from Lugo on the road Lugo-Vegadeo (Boe 1364). This form was already mentioned by Altimira from Lugo, Village (1969: 108 = Boe 235; Judán? PH 49?). The shells of both known samples are smaller than those of *B. cantabrica* from its type locality and the suture is rather flat. In addition, the penis is more slender than that of *B. cantabrica* from its type locality. However, the penis of this new form is likewise darkly pigmented as described for *B. cantabrica* from its type locality. Finally, there are no differences with respect to the female genitalia and the intestine. Thus, as long as we do not know more about the variation of *B. cantabrica*, this new form is regarded as *B. cf. cantabrica*.

Forma 5

This form was found in QJ 20 Oviedo, Salas (Boe 1392). The shell differs from that of syntypes of *B. cantabrica* by its deep suture. The blackishly pigmented male copulatory organ and the female genitalia do not differ from those of *B. cantabrica*, with the only exception that the first receptaculum (rs 1) could not be found. Only one female, however, was dissected. As long as we do not know more about this remarkable form, we shall regard it as *B. cf. cantabrica*.