

REDISCOVERY OF *IGLICA GRATULABUNDA* (A. J. WAGNER, 1910) (CAENOGASTROPODA: TRUNCATELLOIDEA)

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ABSTRACT: *Iglica gratulabunda* (A. J. Wagner, 1910) is redescribed based on conchological and anatomical characters; the interstitial of the river Mürz (Styria, Austria) is described as its habitat.

KEY WORDS: Truncatelloidea, *Iglica gratulabunda*, anatomy, Styria (Steiermark), Austria

INTRODUCTION

In 1910 ANTONI JÓZEF WAGNER described *Vitrella gratulabunda* from deposits of the river Mürz at Kapfenberg in Styria (Steiermark, Austria). The description was based on shell characters only. Three years later STURANY & A. J. WAGNER (1914: 117) treated *V. gratulabunda* as a species of *Paulia* Bourguignat, 1882, i.e. *Avenionia* Nicolas, 1882. After the next 14 years A. J. WAGNER (1928: 295) described the new genus *Iglica* and designated *V. gratulabunda* as its type species.

No live specimens of the species were found during more than a century (RADOMAN 1983: 110), possibly because of an inadequate understanding of the snail's habitat. Most malacologists seemed to have expected the species to inhabit karstic subterranean water courses, similarly to *Bythiospeum*. However, Kapfenberg on Mürz lies far downstream of the alpine calcareous zones.

Meanwhile many taxa were assigned to the genus, quite often doubtfully, for example by BOLE (1961: 59) and BOETERS (1971). On the other hand *Iglica matjasici* Bole, 1961 was included in *Anagasta* (RADOMAN 1973: 423), later corrected to *Anagastina* (RADOMAN 1978: 27). Based on anatomical and genetic investigations of *Iglica* cf. *forumjuliana* (Pollonera, 1887), *Iglica* cf. *gracilis* (Clessin, 1882), *Iglica* cf. *hauffeni* (Brusina, 1886) and *Iglica hellenica* Falniowski et Sarbu, 2015, allegedly belonging to *Iglica*, the genus was included in the Moitessieriidae (HOFMAN et al. 2018: 326, fig. 60, FALNIOWSKI et al. 2019: 66, fig. 12).

We made an attempt at solving the systematic position of *Iglica*. Our idea that *Iglica gratulabunda* might inhabit the interstitial of the river Mürz downstream of alpine calcareous zones led us finally to the discovery of live animals.

METHODS

Shells and animals, embedded in mud and gravel, were collected in a water level pipe by means of a dragnet (lumen diameter ca. 5 cm), or a mechanical pump equipped with an un-perforated plastic tube

(length 12 m) fitted into the basal opening (diameter 3 cm) of the pump.

Shells and animals were separated from the deposits by fractionating sieving through two sieves (mesh

size 2.60 and 0.56 mm). The animals were preserved in 75% ethanol for dissection and sequencing.

Whorls were counted according to GITTENBERGER et al. (1970). Dissection of soft parts followed BOETERS (1999). Drawings of shells, animals, their

penis and renal oviduct were done with LEICA M80 Drawing Device. Length and diameter of shells were measured from the drawings (60× magnification). Photographs of shells were taken with a Leica R8 digital system.

SYSTEMATIC PART

Iglica gratulabunda (A. J. Wagner, 1910)

Vitrella gratulabunda A. J. WAGNER (1910: 188, pl. 16, figs 21–22).

Type locality: "... im Geniste der Mürz bei Kapfenberg ...".

Paulia gratulabunda – STURANY & A. J. WAGNER (1914: 117).

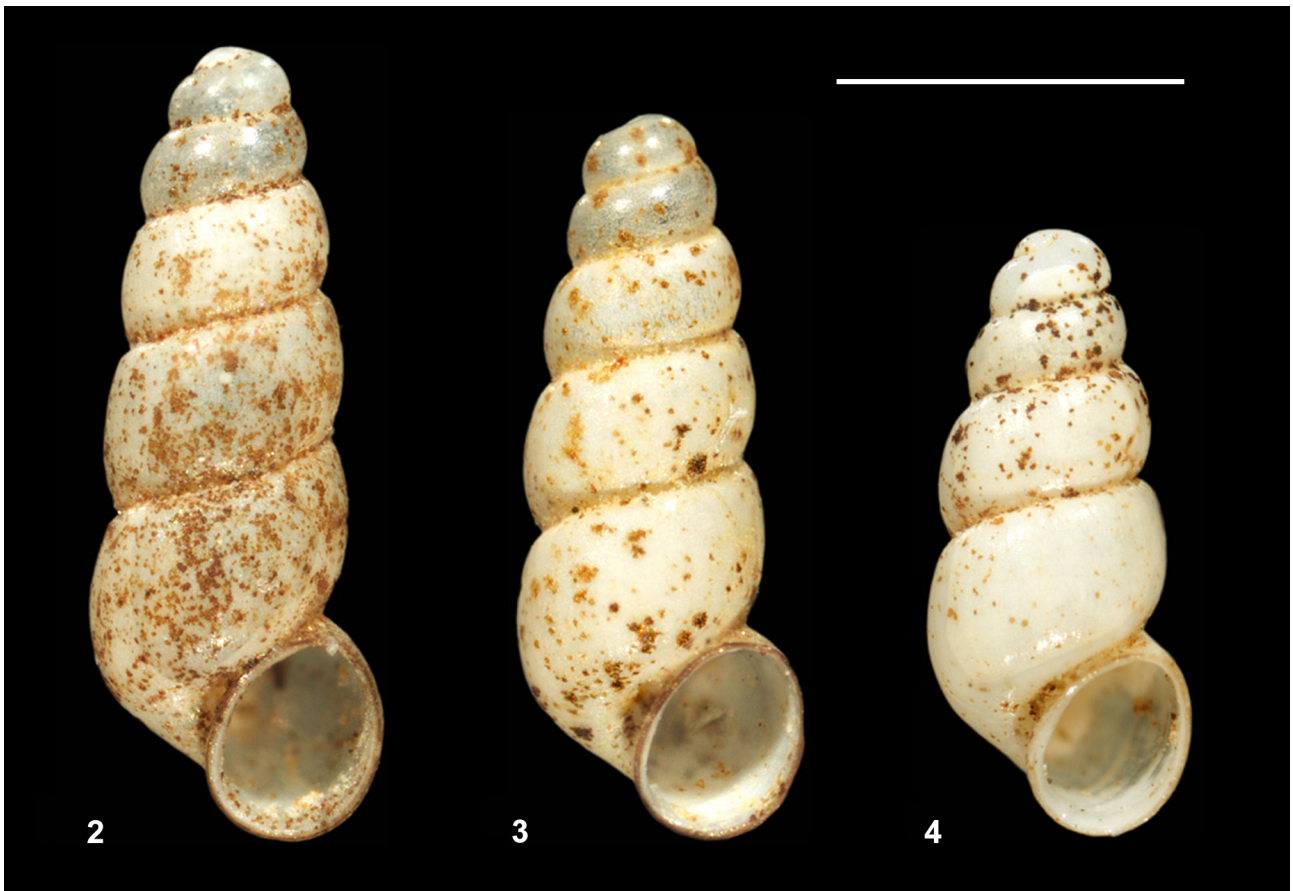
Iglica gratulabunda – A. J. WAGNER (1928: 295).

Iglica gratulabunda – BOETERS (1971: 173, figs 14a–b, syntype).

Material. Austria, Styria (Steiermark), Kapfenberg. (i) Deposits of river Mürz; Naturhistorisches Museum Wien (NMW)/Syntypes; (ii) vis-à-vis Mürzbogen (Fig. 1), water level pipe, 47°26'07.4"N, 15°17'07.5"E; BOETERS, A. REISCHÜTZ, UNRUH leg. 25.06.2019; BOE 3507/animals and 3509/shells.



Fig. 1. Austria, Styria (Steiermark), Kapfenberg, water level pipe vis-à-vis Mürzbogen



Figs 2–4. *Iglica gratulabunda*, Austria, Styria (Steiermark), Kapfenberg, Mürz, interstitial waters (BOE 3509). Photos: PETER GLÖER. Scale bar 1 mm

Shell (Figs 2–4). 4.5–5.0 whorls (N = 3). For measurements see Table 1. Operculum colourless.

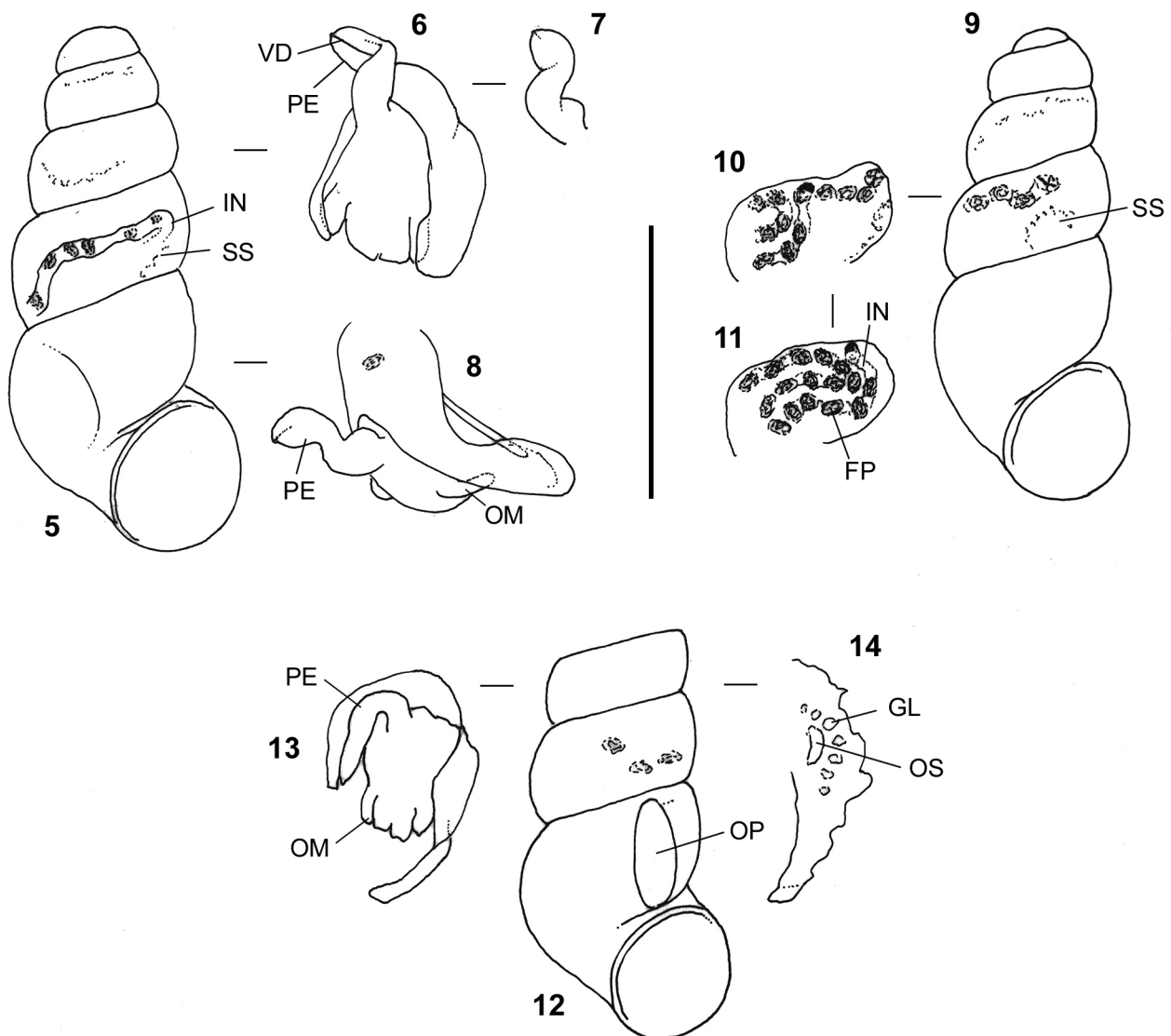
Body. A line of black pigment spots runs down from the body whorl down to the stomach and covers or surrounds the style sac. Eye spots are missing. After

Table 1. Shell measurements [mm]

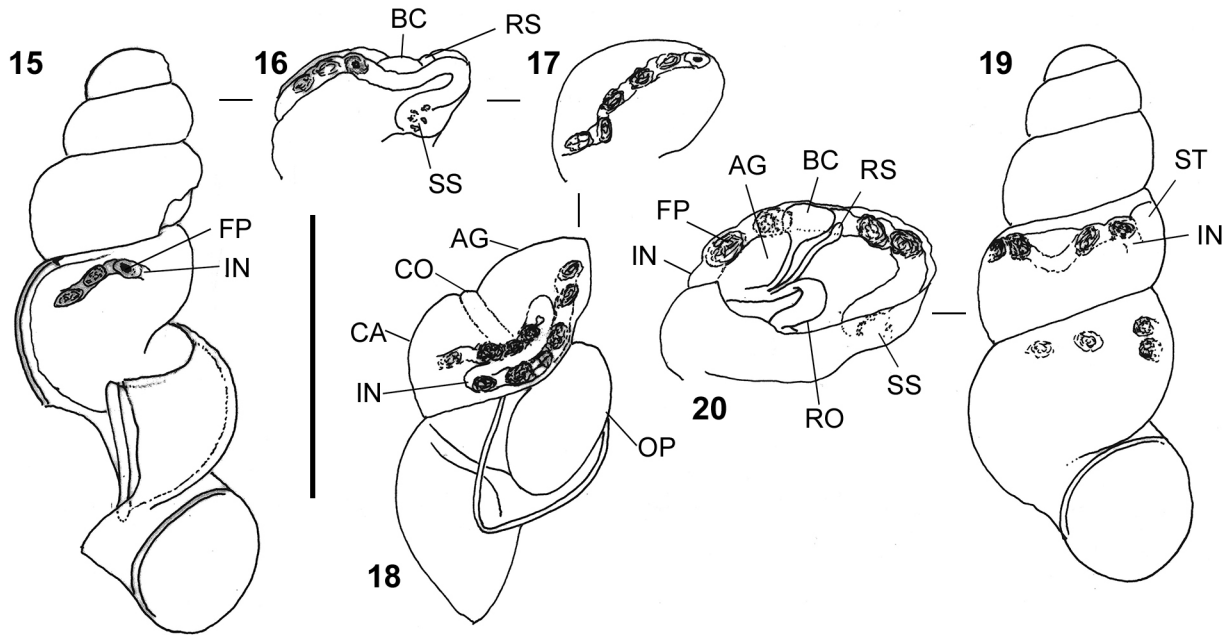
Height	Diameter	Sex
1.73	0.73	male
?	0.75	male
1.88	0.80	male
1.93	0.83	male
1.92	0.83	female

leaving the style sac, the intestine turns Z-like back to the stomach, then back towards the mantle cavity, and forms a second long Z-like loop in the roof of the cavity; in males this loop fills approximately the height of the body whorl, in females it flanks dorsally the stack of three glands, comprising the proximal albumen gland and the distal capsule gland. Ctenidium with seven lamellae (1 male).

Male (Figs 5–14). Penis in its resting state bent back below the second loop of the intestine; finger-like, without any outgrowth; vas deferens running centrally towards a minute papilla of the rounded apex of the penis.



Figs 5–14. Males of *Iglica gratulabunda*, Austria, Styria (Steiermark), Kapfenberg, Mürz, interstitial waters (BOE 3507): 5–8 – 1st male (5 – animal, intestine seen through shell wall, 6 – head with penis exposed through slit in mantle, 7 – penis, 8 – head-foot bulk with penis and operculum); 9–11 – 2nd male (9 – animal, style sac and intestine seen through shell wall, 10–11 – body whorl with intestine seen through body wall); 12–14 – 3rd male (12 – fragmented animal with operculum in fragmented shell, 13 – head with penis exposed through slit in mantle, 14 – mantle fragment with ctenidium and osphradium). Abbreviations: FP – faecal pellet, GL – ctenidium lamella, IN – intestine, OM – ommatophore, OP – operculum, OS – osphradium, PE – penis, SS – style sac, VD – vas deferens. Scale bar 1 mm



Figs 15–20. Females of *Iglia gratulabunda*, Austria, Styria (Steiermark), Kapfenberg, Mürz, interstitial waters (BOE 3507): 15–18 – 1st female (15 – animal with operculum in partially broken shell, 16–17 – body whorl with intestine seen through body whorl, 1st and 6th faecal pellet marked by cross and dot, respectively, 18 – body whorl with operculum and partially removed shell, loop of intestine seen through body wall); 19–20 – 2nd female (19 – animal seen through shell wall, 20 – body whorl with opened renal cavity, bursa and receptaculum in side view covered by intestine). Abbreviations: AG – albumen gland, BC – bursa copulatrix, CA – capsule gland, CO – covering gland, FP – faecal pellet, IN – intestine, OP – operculum, RO – renal oviduct, RS – receptaculum, SS – style sac, ST – stomach. Scale bar 1 mm for Figs 15–19 and 0.5 mm for Fig. 20

Female (Figs 15–20). Renal oviduct with a spherical bursa and a small receptaculum, leaning proximally on the bursa.

Habitat and distribution. Only known from Styria (Steiermark) in Austria, from interstitial waters of the

river Mürz at Kapfenberg (sympatric with *Bythinella* sp.) and from deposits of a brook at Thal, W of Graz (REISCHÜTZ & REISCHÜTZ 2009).

DISCUSSION

The anatomical characters correspond to those of *Bythiospeum* Bourguignat, 1882. However, *Iglia* differs in that the finger-like penis is not as slim as in *Bythiospeum*, that the ducts of the receptaculum and the bursa branch off the renal oviduct quite close to each other, and that the bursa is roundish sack-like and not cylindrical. A roundish sac-like bursa has already been shown by RADOMAN (1983: 11, fig. 57) for *I. luxurians* (Kuščer, 1932) and by HOFMAN et al. (2018: 323, fig. 5) for *I. cf. forumjuliana* (Pollonera, 1887). As regards *Bythiospeum* sp. from the interstitial of the river Neckar (type species *Bythinella pellucida* Wiedersheim, 1873 with the type locality “Neckarabwurf bei Cannstatt”) reference is made to BOETERS (1984: 7 figs 3 ♂ and 5–6 ♀♀) and RICHLING

et al. (2017: 11, figs 6J ♀ and 7D–E ♂♂). The discrimination between *Iglia* and *Bythiospeum* should be supplemented by genetic analyses of the type species of *Iglia*.

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