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Oxychilus (*Ortizius*) *edmundi* spec. nov. – a new narrow range endemic from Corsica (Gastropoda, Pulmonata, Oxychilidae)

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Dedicated to EDMUND GITTENBERGER,
the outstanding malacologist and true friend, on the occasion of his 65th birthday.

A new endemic glass-snail, *Oxychilus edmundi* spec. nov., is described from the Porto valley on the western coast of the French island Corsica. The single sparse population belongs to the presumed endemic radiation of the *O. tropidophorus*-group. The new species can be discriminated from its most similar relative, *O. tropidophorus* (J. Mabille, 1869), of which a topotype could be compared, by its more elevated spire and an extreme bottleneck in the penis, among other characters.

Key words: *Oxychilus edmundi*, new species, *Ortizius*, *Oxychilus tropidophorus*-group, Corsica, Porto, Commune d'Ota, endemic species.

For a long time the degree of endemism in the continental Mollusc fauna of the French Mediterranean Island of Corsica has been considerably underestimated compared to the large Italian Islands of Sardinia and Sicily. From the Italian Checklist (Bodon et al., 1995; Manganelli et al., 1995) a degree of endemism can be deduced of 20% for Sardinia and of 29% for Sicily. The publications of Réal & Réal (1988, 2000), on the other hand, reveal an endemism of only 4.5% for Corsica, the third largest West Mediterranean island after Sicily and Sardinia. To give an example which is of special interest for the present contribution: not even the largest *Oxychilus*-species of their list, *O. tropidophorus* (J. Mabille, 1869) was acknowledged as endemic by these authors. A re-assessment of the Corsican Fauna in the frame of the work on the French Checklist (Falkner et al., 2002) led to an elevated endemism rate of 33% for Corsica. This was possible as a result of a critical study of "old" literature and five field missions of the Muséum National d'Histoire Naturelle, Paris (acronym: MNHN), carried out by Th. E. J. Ripken and G. and M. Falkner in 1994, 1996, 1999, and 2000. The "price" for the more realistic estimation of endemism was the inclusion of undescribed species in an open nomenclature. This means that for the time being, instead of presenting a nomenclatorally stable species list, the Corsican malacofauna has become a "building site" with projections for the future. This may be an unsatisfactory situation for practical purposes but at the same time it is a strong stimulus for continued research efforts. It is rather easy to identify a new species or an unnatural conglomerate which is erroneously taken for a biological species, but it is a much longer process to arrive at sound publications of valid new names.

One of the most interesting hot-spots for future research will surely become the hinterland of the famous Corsican UNESCO World Heritage Site of the Cape and Gulf of Porto (in Corsican language Capu di Portu and Golfu di Portu) on the western coast of the island, which apparently harbours an excellent set of hitherto unrecognised and undescribed molluscan endemics. Two of them have already been mentioned in the French

Checklist (Falkner et al., 2002) as *Oxychilus* (*Ortizius*) "sp. 2" and *Deroceras* "sp. 1". Of the last mentioned *Deroceras*-species an animal from Porto has already been figured in a field guide to Corsica (Falkner & Bouchet, 2002: 239, as *Deroceras* sp.). The supposed treasure of species can after supplementary studies be augmented by two new species of *Limax* (one belonging to the group of *L. corsicus* Moquin-Tandon, 1855, the other to that of *L. wolterstorffi* Simroth, 1900). In addition, for this area a new species of *Tacheocampylaea* has recently been recognised in old museum material (Falkner & Niederhöfer, in prep.). The new *Oxychilus*, which is the largest and most spectacular one of its group in Corsica bears already since several years in my documentations and drafts the working-name "*edmundi*". Due to a special occasion it now seems suitable no longer to postpone the formal description of this species although the general revision of the whole group will still take some time.

***Oxychilus* (*Ortizius*) *edmundi* spec. nov.** (figs 1, 3)

Type material. – Collected by G. and M. Falkner, 11. and 12.X.1999. Holotype and paratype (shells and preparations) are in the Muséum National d'Histoire Naturelle at Paris (MNHN), Département Systématique et Évolution, Taxonomie-Collections [Malacologie].

Diagnosis. – A large species of *Oxychilus* Fitzinger, 1833, belonging to the subgenus *Ortizius* Forcart, 1957, in the traditional sense, and especially to the Corsican group of *O. obscuratus* (Porro, 1841) and *O. tropidophorus* (J. Mabille, 1869). It is conchologically discriminated from the other species of this group by its dilated last whorl and large aperture, combined with a slightly elevated spire. Anatomically it is characterised by its strong, conical distal penis and the extremely narrow bottleneck between the two penial sections.

Shell. – Large flat shell with 5.5 whorls, slightly elevated, depressed tectiform spire and rounded base; the last whorl is rapidly enlarged and ends in a wide basally rounded simple aperture without any thickening; on the upper side the whorls are rather rounded and separated by a rather impressed suture which is narrowly covered by a thickened callus. The shell wall is translucent and extremely thin, in the living animal a little bit elastic, in the dry shell very fragile; the colour is light brown with a slight reddish touch, around the umbilicus somewhat greenish; surface smooth and glossy. The umbilicus is cylindrical funnel-shaped, slowly narrowing towards the apex and showing the inner whorls.

Genitalia. – There is no perceptible atrium. The penis is in its distal portion conspicuously stout and muscular, in its general appearence conical and regularly tapering in the proximal direction towards the bottleneck, the involucrum (this term, corresponding to the German "Hüllmembran", is used to avoid the false translation "penial sheath") covers about one third of the distal penis. Strong longitudinal folds in the proximal penis could be made visible by compression with simultaneous transillumination; there were no traces of papillae (in order to preserve the intact genital preparations no further fine-sections have been made). The bottleneck between the two parts of the penis is extremely narrow. At the insertion of the epiphallus the proximal penis is swollen and makes the impression to be glandular; the flagellum is rather short. In the female terminal ducts the free oviduct is very short and the perivaginal gland rather long and not very voluminous; the bursa copulatrix is globular-oviform to oviform.

	Holotype	Paratype
number of whorls	5.5 mm	5.5 mm
shell height	8.1 mm	7.7 mm
largest diameter	19.0 mm	18.0 mm
smallest diameter	15.0 mm	14.0 mm
height of aperture	6.72 mm	6.16 mm
width of aperture	9.28 mm	8.56 mm
width of umbilicus	3.04 mm	2.8 mm

Table **1**. Shell measurements of *Oxychilus edmundi* spec. nov.

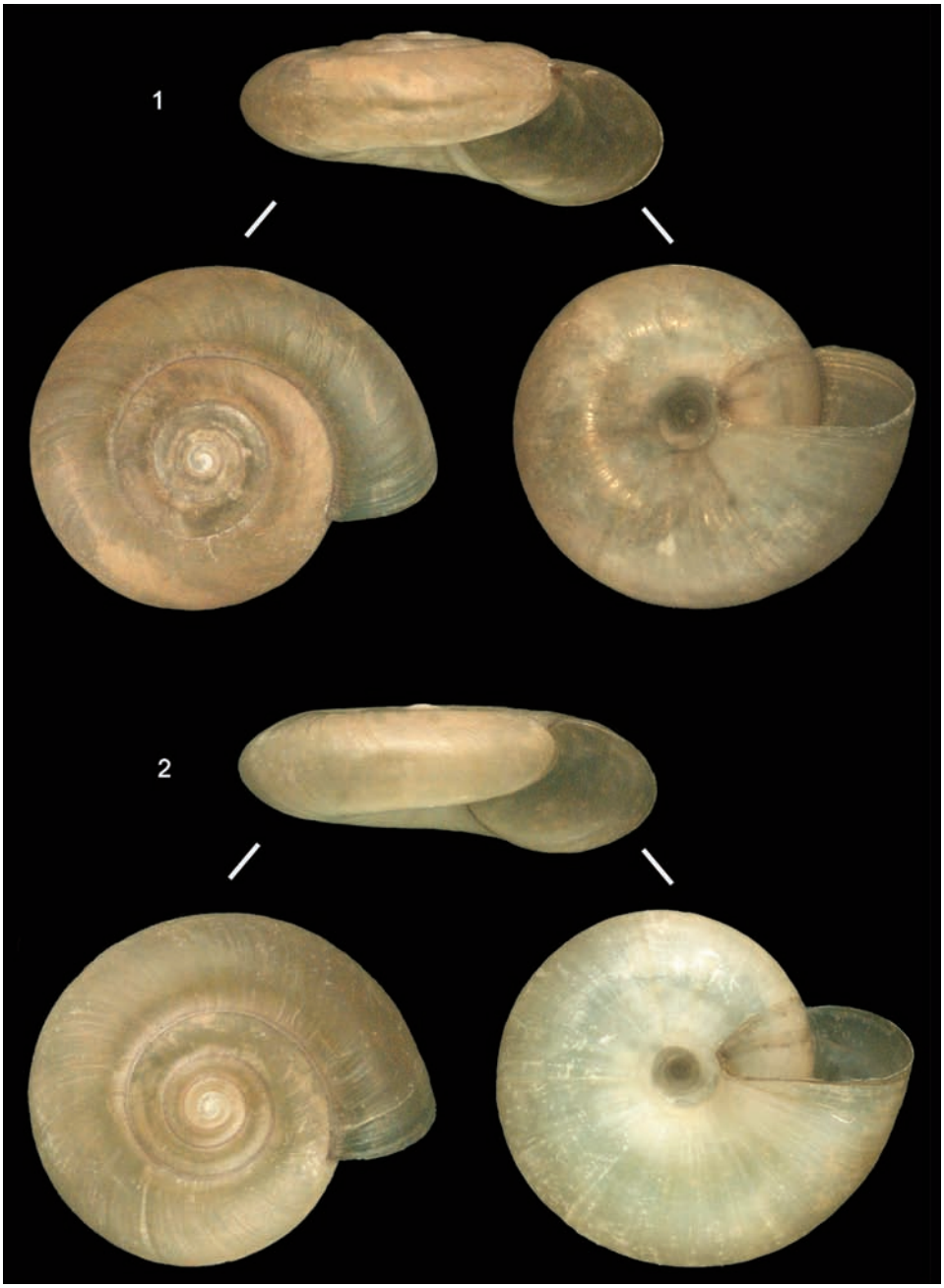
	Holotype	Paratype
length of penis (prox. + dist. + flag.)	11.0 mm	9.5 mm
length of proximal penis	3.5 mm	2.7 mm
length of distal penis	6.1 mm	5.6 mm
width of distal penis	1.5 mm	1.45 mm
length of flagellum	1.4 mm	1.2 mm
length of penial involucrum	2.0 mm	2.1 mm
length of free vagina	2.5 mm	2.6 mm
length of pedunculus	2.2 mm	3.2 mm
width of pedunculus	0.5 mm	0.55 mm
length × width of bursa copulatrix	2.6 × 2.0 mm	1.7 × 1.0 mm

Table **2**. Measurements of the genitalia of *Oxychilus edmundi* spec. nov.

Type locality and Distribution. – *Oxychilus edmundi* spec. nov. is only known from its type locality: France, Corsica, Département Corse-du-Sud, Commune d'Ota; on the right bank of the Porto river, opposite of the hameau Porto (Portu in Corsican language) (UTM MM7759). Holotype and paratype have been collected at a distance of about 100m.

Ecology. – The species lives in an apparently sparse population at the lower edge of north-exposed bushy slopes between large granitic boulders in a zone that is just above the reach of the inundations of the Porto river. The vegetation consists mainly of oak-shrub with blackberries and spiny lianas, the ground between the boulders being covered with tall herbs and partly with *Selaginella*. Remarkable associated gastropod species are *Deroceras* n. sp., *Limax* n. sp. (group of *Limax wolterstorffi*), and *Ganula lanuginosa* (Boissy, 1835). The larger of the two animals shortly after the collection date produced a dispersed clutch of 18 large eggs, from which no F1 could be obtained.

Notes. – That I dare to base a new species on only two specimens is justified by the facts that both correspond very well with each other and that it is in general very difficult



Figs **1-2**. Shells of *Oxychilus* spec. from Corsica. **1**, Holotype of *Oxychilus edmundi* spec. nov. (Ota, hameau de Porto, MNHN). **2**, Topotype of *Oxychilus tropidophorus* (J. Mabille, 1869) (Pietrabugno, haute vallée de Toga, MNHN). Magnification x3.

Figs **3-4**. Genitalia of *Oxychilus* spec. from Corsica. **1**, Holotype of *Oxychilus edmundi* spec. nov. (Ota, hameau de Porto, MNHN). **2**, Topotype of *Oxychilus tropidophorus* (J. Mabille, 1869) (Pietrabugno, haute vallée de Toga). Magnification x5.

to get more material. The rarity of the native *Oxychilus*-species in Corsica has already been noted by the famous biogeographer R. F. Scharff (1894: 158), who wrote: "Besonders sollte man in den von Feuchtigkeit triefenden Thälern erwarten, Massen von Hyalinen zu finden, doch entdeckte ich davon selten ein Exemplar." This is an experience which I can easily confirm. The subgeneric assignment needs an explanation. Although it is an artificial group, Riedel (1998: 37) pleaded for a provisional maintainance of the subgenus *Ortizius* Forcart, 1957, for species with longitudinal folds in the interior of the penis. It is in this heuristic sense that the subgenus name is used in the present description. Especially in Corsica the subgeneric allocation to *Ortizius* allows it to unite a group of medium-sized to large Oxychili which are centred from a phenetic point of view around the species *O. obscuratus* (Porro, 1841), and *O. tropidophorus* (J. Mabille, 1869). This unambiguous anatomical character makes it possible to discriminate these forms from other, in a large sense conchologically similar, native species, which can be united with *Oxychilus* s. str. sensu Riedel (see Falkner, 2001). Although it is likely that the "*tropidophorus*-group" (see Falkner et al., 2002: 126-128) forms a natural entity and an endemic Corsican (or corso-sardinian) radiation, there are up to now – except depressed shell, penis-folds, size, and geographical distribution – no convincing synapomorphies. It will depend on the future application of molecular methods to unravel their evolutionary history. Conchologically, the new species can be discriminated from most of the so-called "*Ortizius*"-species (see Riedel, 1980: 88-90; Riedel 1998: 38-40; Manganelli & Giusti, 2001: 202 table 4) by its remarkable size. Anatomically it has the narrowest bottleneck in the penis. Those of the Corsican allies which come conchologically near are *O. tropidophorus* (J. Mabille, 1869), *O. lathyri* (J. Mabille, 1869), and *O. shuttleworthianus* (Pini, 1883). Of these *O. lathyri* and *O. shuttleworthianus* have a less enlarged last whorl and a narrower aperture. Both have also a bottleneck in their penis but this is significantly wider than in *O. edmundi* spec. nov. In both species the epiphallus is much shorter and the penial involucrum longer. As *O. tropidophorus* is the most similar species in size and coiling and is at the same time the most cited *Oxychilus*-species for Corsica, a topotype of this species is chosen for a closer comparison (see figs 2 and 4). In *O. tropidophorus* the shell is much more flattened with a less vaulted base, and the umbilicus is widely funnel-like and markedly narrowed towards the apex. The most conspicious anatomical difference is the complete missing of a bottleneck in the penis: there is only a very slight narrowing which separates the two sections of the penis without any structural change. For the anatomical comparison in general it should be noted, that both figured individuals are of the same developmental and physiological state, both are full-grown and have been dissected shortly after laying eggs. So it seems possible to take the clear morphological and proportional differences, especially in the length of the free oviduct, the size of the perivaginal gland, and the different parts of the penis, as specific characters and not as functional states.

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