

# First record of the Hedge Snail *Hygromia limbata* (Draparnaud, 1805) (Gastropoda: Hygromiidae) in Belgium

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**ABSTRACT.** A fresh shell of the Hedge Snail *Hygromia limbata limbata* (Draparnaud, 1805) was discovered in November 2018 in a hedge in Rixensart (Walloon Brabant, Belgium). This is the first record of this species in Belgium. This Atlantic range of this species is progressing northeast, now reaching Belgium. The persistence of a living population in the territory is not yet proven, but this species could potentially become more frequent in the future, as is the case with the recent colonization of *Hygromia cinctella* (Draparnaud, 1801).

**RÉSUMÉ.** Une coquille fraîche de l'Hélice des ruisseaux *Hygromia limbata limbata* (Draparnaud, 1805) a été découverte en novembre 2018 dans une haie à Rixensart (Brabant wallon, Belgique). Cette mention constitue la première observation de cette espèce en Belgique. Cette espèce à tendance atlantique progresse vers le nord-est de son aire, atteignant donc maintenant la Belgique. Le maintien d'une population sur le territoire n'est pas encore prouvé, mais cette espèce pourrait potentiellement devenir plus fréquente dans le futur, à l'instar de la colonisation récente d'*Hygromia cinctella* (Draparnaud, 1801).

## INTRODUCTION

During a stop at a gas-station on November 9<sup>th</sup>, 2018, the first author found a fresh empty shell in a hedge. Originally thinking that it was an interesting specimen of *Monachoides incarnatus* (O.F. Müller, 1774) with a significant keel, a characteristic also evocating *Hygromia cinctella* (Draparnaud, 1801), the specimen was collected. After examination, a series of morphological traits do not correspond to *M. incarnatus*: the umbilicus is largely covered; the shell does not have the microstructure typical of *M. incarnatus*; the coloration is not typical of this species. Based on these characteristics, it appears that the specimen corresponds to *Hygromia (Riedelia) limbata limbata* (Draparnaud, 1805) (Hygromiidae), a species that has never before been reported in Belgium.

## DESCRIPTION OF OBSERVATION

**Collecting site.** The shell was collected at the coordinates 50°42'25"N, 4°31'16"E at the city of Rixensart (Walloon Brabant, Belgium), at the Jean XXIII Avenue, near the gas station of the Kennedy Avenue (Fig. 2B-D). The specimen was on the ground under a small hedge of small coniferous trees (thujas). The neighborhood is a sub-urban zone with numerous houses with gardens, and many hedges and trees; there is also a cultivated field nearby. No new prospections were carried out to search for other specimens, but a living population could potentially be present. Its status as a reproductive species in Belgium remains unknown at this stage.

**Shell description.** Dimensions: 9.9 mm (height) x 14.1 mm (width) (Fig.1 A-D). These dimensions are



within the normal range of the species (height 8-14 mm - width 12-17 mm) (Kerney & Cameron, 1999; Welter-Schultes, 2012; Cadevall & Orozco, 2016). The shell is very light brown, slightly translucent, with a slight, white-colored keel on the periphery of the shell. The second-to-last whorl has a more accentuated keel. The shell has more than 5 whorls. The individual was mature, with a complete aperture. The whorl descends slightly near the aperture, which shows a white inside lip, with a reflected margin. The umbilicus is very narrow, and partly covered by the reflected columellar margin. The shell has numerous oblique longitudinal growth striations, but remains slightly shiny. The specimen belongs to the subspecies *H.l. limbata*; *H.l. sublimbata* being located in the Vienne department of France, with conchological differences not observed in our specimen.

## DISCUSSION

No confusion is possible with the closed species *Hygromia cinctella* as the shell has more convex whorls, with a shallower suture, and with a complete aperture.

*Hygromia limbata* is known as a typical Atlantic species, with a distribution ranging from north-eastern Spain (Prieto & Puente, 1992) to western France (Welter-Schultes, 2012; Audibert & Bertrand, 2015) (Fig.2.A.). In France, the species is common in the West, from the Pyrenees to Brittany (Fig. 4A-B). *H. limbata* is also present in Normandy and Picardie (Vilvens et al., 2012; Welter-Schultes, 2012; Audibert & Bertrand, 2015; Gargominy, 2018) (Fig. 3). It has also recently been reported in a couple of departments in the North of France, notably in Pas-de-Calais and in the Aisne (reported respectively in 2008 and in 2010 by X. Cucherat in CardObs, in Gargominy, 2018). In the 1910's, an introduced population was discovered in the Devon in England (Ellis, 1926; Kerney, 1999), and several decades later, the species is well-established in the south of England, and ranges all the way to the Worcestershire area (Whitehead, 2008).

It seems that *H. limbata* tends to extend its distribution in the North-East of its range. This species has colonized Britain in the twentieth century, and is considered to be a recent arrival in northern France (Limondin-Lozouet & Preece 2004). However, fossil sediments show that *Hygromia limbata* was present in Normandy during the Holocene 6500 yr BP (Limondin-Lozouet & Preece, 2004).

In its range, *H. limbata* is found in forests, shrubs, hedges, meadows, in lower vegetation (Welter-Schultes, 2012; Audibert & Bertrand, 2015; Cadevall

& Orozco, 2016). In England, *H. limbata* is found in moist, grassy habitats among herbage and ground litter in gardens and other disturbed places (Kerney, 1999). The Rixensart site has all the characteristics to welcome the species.

The cause of the introduction of this *H. limbata* remains unknown, but there is a high probability that man has involuntary introduced this land snail by anthropochory, given the distances that separates it from the nearest known populations. The most probable is an introduction by importation of plants from France or England. Vehicular anthropochory, with individuals attached to a car or train, is improbable, even if this has been observed with xerophilous species, which climb grass, poles and sometimes vehicles during hot temperatures (Hulme et al., 2008; Kurek & Najberek, 2009). This behaviour has not been observed in *H. limbata*. Introduction during the importation of materials (for instance, earth, stones, or building materials) is another interesting hypothesis.

Of course, one shell is not a proof of the existence of a settled population, but *H. limbata* could be more frequently observed in Belgium in the future. A related species, *H. cinctella*, observed for the first time in 1994, has colonized the entire country in two decades (Van den Neucker & Scheers, 2014; Delcourt & Vilvens 2017). *H. limbata* could be the next anthropophilous meridian species to settle in Belgium, after *H. cinctella*, *Tandonia budapestensis* (Hazay, 1860), *Arion vulgaris* Moquin-Tandon, 1855, *Ambigolimax valentianus* (Férussac, 1822), *Eobania vermiculata* (Müller, 1774), *Monacha cantiana* (Montagu, 1803) and *Ceruella virgata* (da Costa 1778) (i.e. Delcourt & Vilvens, 2015). Climate may have limited the arrival of these species of southern origin in the past, but recently, the warming climate, in particular the mild winters (especially in urban areas), may have created more welcoming conditions.

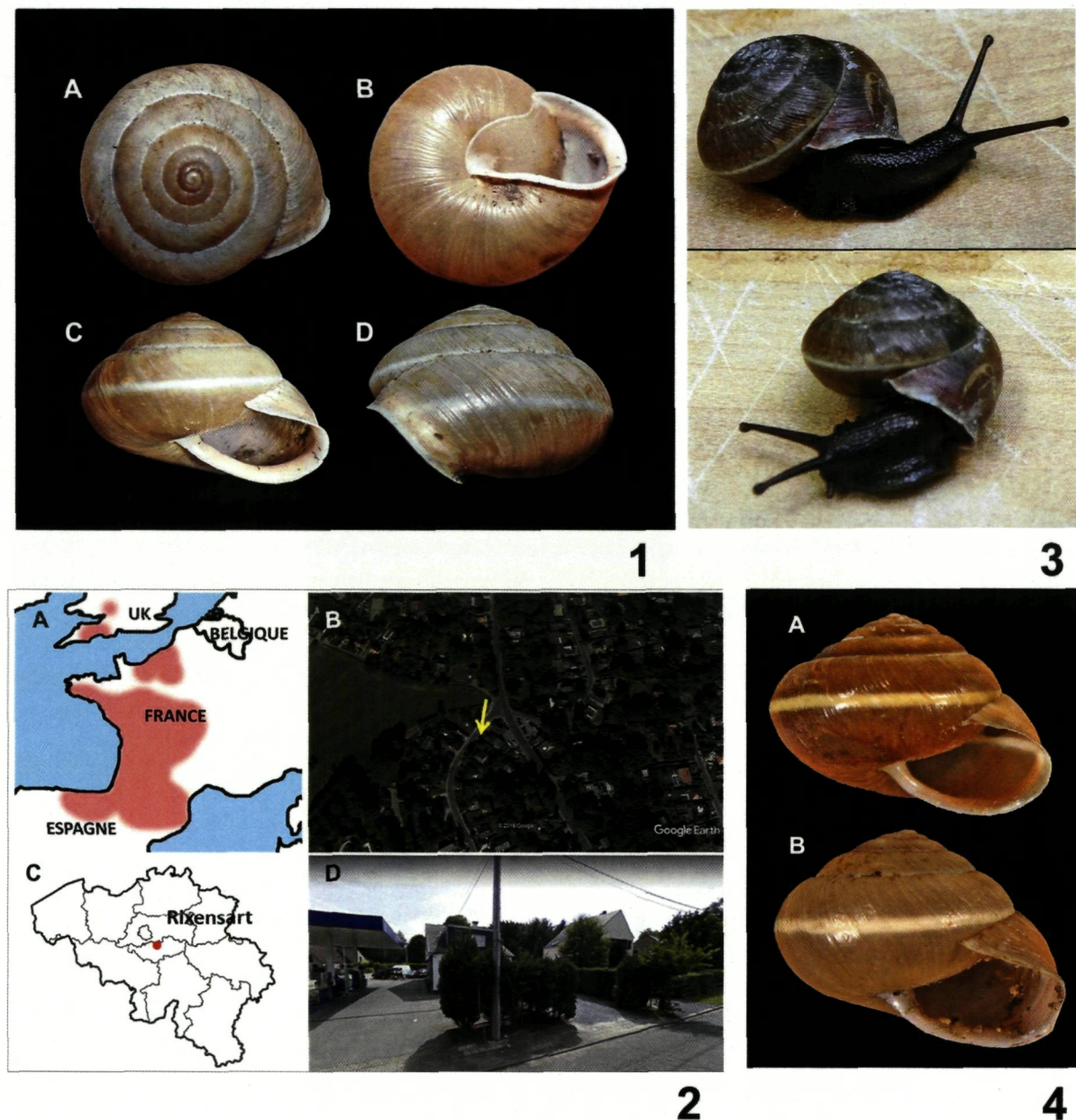
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**Figures 1-4**

1. Shell of *Hygromia limbata limbata* discovered in Rixensart (Belgium) in November 2018. A. Dorsal view; B. Ventral view; C. frontal view; D. lateral view.
2. A: Approximative range map of *Hygromia limbata* (from Welter-Shultes, 2012, redrawn); B: localization of the city of Rixensart (Belgium) where the shell was collected; C: detailed view (Google Earth ©) of the quarter with the localization of the discovery area (yellow arrow); D: picture of the hedge where the shell was found.
3. *Hygromia limbata limbata* observed in Brotone Forest, near Jumièges, Normandy, France, 2014.
4. *Hygromia limbata limbata* A. Haut Ossau Valley, western Pyrenees, France, 2009; B. Doué-la-Fontaine, Anjou, France, 2002.

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