

## Recent invasions of terrestrial slugs in Belgium (Mollusca Gastropoda)

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### Introduction

A review of the Belgian non-marine molluscs was presented by W. ADAM (1947, 1960) and more recently by J. VAN GOETHEM (1992). In this last review 12 additional non-marine mollusc species were mentioned to occur in Belgium. At present this figure has raised to 20, representing 7 freshwater and 13 terrestrial species. Three of these latter species expanded their range spectacularly in a short time: *Arion lusitanicus* MABILLE, 1868, *Boettgerilla pallens* SIMROTH, 1912 and *Deroceras caruanae* (POLLONERA, 1891). The dispersal of two of them is very well documented (figs 1, 6 & 7).

### *Arion lusitanicus* MABILLE, 1868

*Arion lusitanicus* (fig. 2) is supposed to have invaded northwestern and central Europe from the Iberian Peninsula and southern France.

The first well-documented record in Belgium dates from 1973. Since then the species gradually spread



Fig. 2 — *Arion lusitanicus* MABILLE, 1868 (average length when crawling: 8.5 cm).

further to the north (fig. 3 shows the known distribution in 1989, RISCH & BACKELJAU 1989) and currently it is found in suitable habitats nearly all over the country. It often occurs in high densities and may cause considerable damage to gardens and agriculture.

Moreover, it seems as if *A. lusitanicus* is replacing the autochthonous *A. rufus*, a species with which it may be closely related. On the other hand, the systematics and nomenclature of *A. lusitanicus* are currently hotly debated, since it is unclear whether MABILLE's *A. lusitanicus* from Portugal and the northwestern European *A. lusitanicus* are indeed the same species.

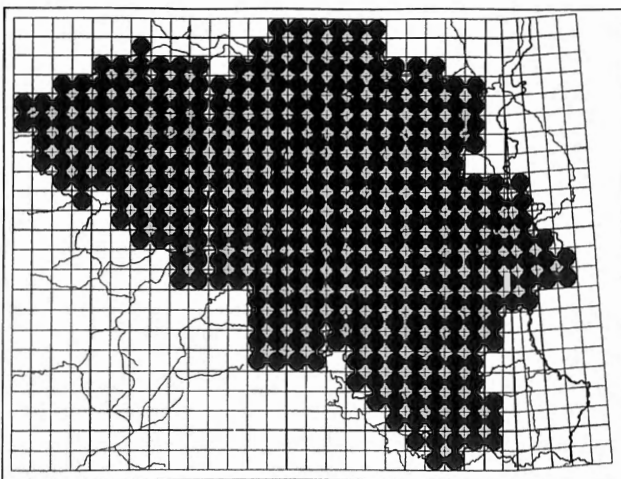


Fig. 1 — All sampled UTM squares for landsnails and slugs in Belgium, December 1984.

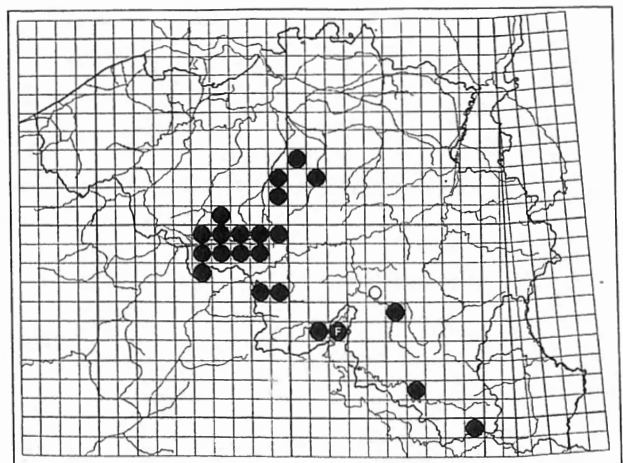


Fig. 3 — All records of *Arion lusitanicus* in Belgium, December 1989. ● = records based on collections or observations; ○ = records based on data from the literature; F = record on French territory.

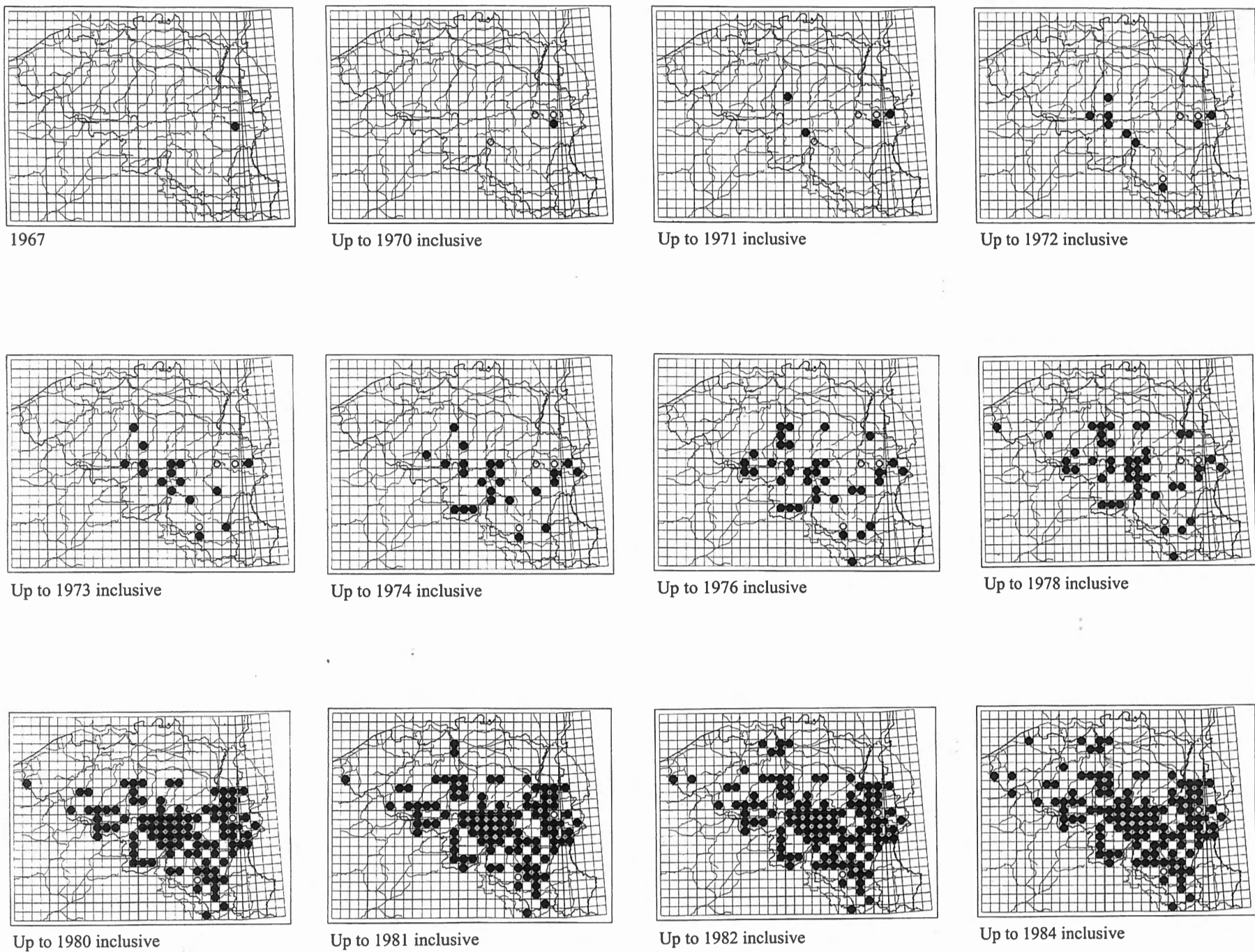


Fig. 6 — Dispersal of *Boettgerilla pallens* in Belgium, 1967-1984. ● = records based on collections or observations; ○ = records based on data from the literature.

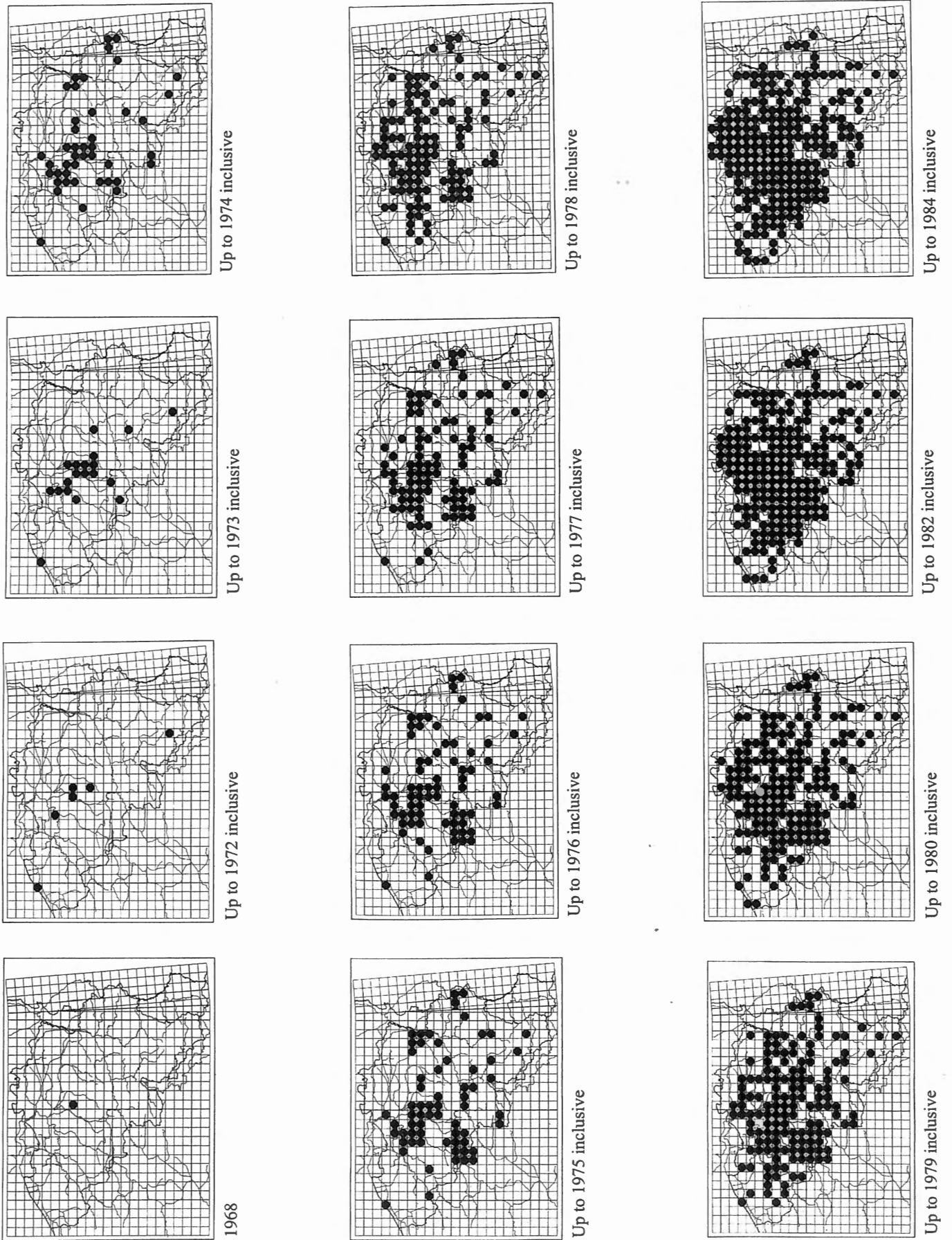


Fig. 7 — Dispersal of *Deroceras caruanae* in Belgium, 1968-1984. All records are based on collections or observations.



Fig. 4 — *Boettgerilla pallens* SIMROTH, 1912  
(average length when crawling: 3.5 cm).



Fig. 5 — *Deroceras caruanae* (POLLONERA, 1891)  
(average length when crawling: 3.0 cm).

### *Boettgerilla pallens* SIMROTH, 1912

*Boettgerilla pallens* (fig. 4), originally described from the Caucasus, was discovered in Poland in 1956 and later on in the sixties in various Central and Western European countries. The first record in Belgium dates from 1967. From the second half of the '70s onwards, this slug species becomes readily widespread in Belgium, especially in the southern part. Only from 1981 onwards, the species was also recorded in the northern part of Belgium.

Undoubtedly, *B. pallens* has been introduced in Belgium quite shortly before 1967. Fifteen years after the first record most observations were made in two regions: the eastern part of Belgium and the area in the triangle Charleroi, Huy and Dinant (fig. 6, for more details: DE WILDE *et al.* 1986a). It is not known whether this slug species competes with other snail species. On the other hand it has been mentioned that this species causes considerable damage to potato-tubers.

### *Deroceras caruanae* (POLLONERA, 1891)

*Deroceras caruanae* (fig. 5), originally described from Malta, was subsequently only found in the Mediterranean region.

The species was recorded for the first time in Belgium in 1968. It was not collected again during the period 1969-71. But from 1972 onwards the number of records show an explosive dispersal of this slug especially in the northern and western part of Belgium (fig. 7, for more details: VAN GOETHEM 1974, DE WILDE *et al.* 1986b).

Undoubtedly, *D. caruanae* has been introduced in Belgium shortly before 1968. Most probably there have been a number of subsequent introductions. The species can be found in the same habitats as *D. reticulatum*, our most common landslug. However it is not known if they share the same ecological niche nor if they compete.

### Conclusions

There is no doubt that man is responsible for most if not all recent introductions of terrestrial slug species in Belgium. *Arion lusitanicus*, *Boettgerilla pallens* and *Deroceras caruanae* are highly synanthropic and therefore human activities such as transport of garden plants, vegetables, wood, etc. facilitate their rapid dispersal. How-

ever there is no planned monitoring of introduced mollusc species and nearly nothing is known with respect to their impact on the autochthonous fauna (and flora).

With increasing international transport and trade, and tourism the appearance of new alien mollusc species in Belgium is to be expected.

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