

## Isopods on the gravelbanks of the Meuse (Isopoda)

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### Abstract

From May till September 1998, more than 80 pitfalls were placed on 17 different gravelbanks in the summerbed of the river Meuse to get an idea of the isopods occurring in this extreme habitat. Four species were found : *Trachelipus rathkii*, *Armadillidium vulgare*, *Porcellio scaber* and *Hyloniscus riparius*. The latter species was found for the first time in Belgium and its appearance, distribution and habitat are discussed into more detail.

**Keywords :** Isopoda, Meuse, *Hyloniscus riparius*, Belgium.

### Samenvatting

Van mei tot september 1998 werden op 17 grindbanken in de zomerbedding van de Grensmaas meer dan 80 bodemvallen geplaatst om een idee te krijgen van de pissebedden die voorkomen in dit toch wel extreme habitat. Er werden vier soorten aangetroffen : *Trachelipus rathkii*, *Armadillidium vulgare*, *Porcellio scaber* en *Hyloniscus riparius*. Deze laatste soort werd voor het eerst aangetroffen in België. Het uiterlijk, de verspreiding en het habitat van deze soort worden meer in detail besproken.

### Résumé

De mai à septembre 1998, plus de 80 pièges à fosse ont été placés sur 17 gravières dans le lit d'été de la Meuse pour avoir une idée des isopodes qui occupent cet habitat extrême. Quatre espèces ont été trouvées : *Trachelipus rathkii*, *Armadillidium vulgare*, *Porcellio scaber* et *Hyloniscus riparius*. La dernière espèce est nouvelle pour la Belgique, nous discutons en détail son apparence, sa distribution et son habitat.

### Introduction

The middle part of the river Meuse, which is not dammed up, offers habitats which don't occur in the rest of Flanders. Along the part of the Meuse bordering the Belgian and Dutch provinces of Limburg, about 20 gravelbanks, which remain dry during most of the summer, occur on the Belgian side. Depending on the location on the bank, the grainsize varies from moderate to coarse sand to gravel and even big stones. The lowest parts, which still can be submersed during summer, contains a small layer of silt which quickly dries up.

The gravelbanks along the Meuse are a unique habitat, subjected to extreme conditions. In this contribution, only the isopods found on these gravelbanks are treated. Data about the carabids, spiders, grasshoppers and centipeds will be published elsewhere.

This study was conducted in the framework of the project 'Levende Grensmaas' (VAN LOOY & DE BLUST, 1995). By carrying out this project, a nature reserve of more than 2000 ha will be created where natural riverprocesses like erosion and sedimentation can take place again.

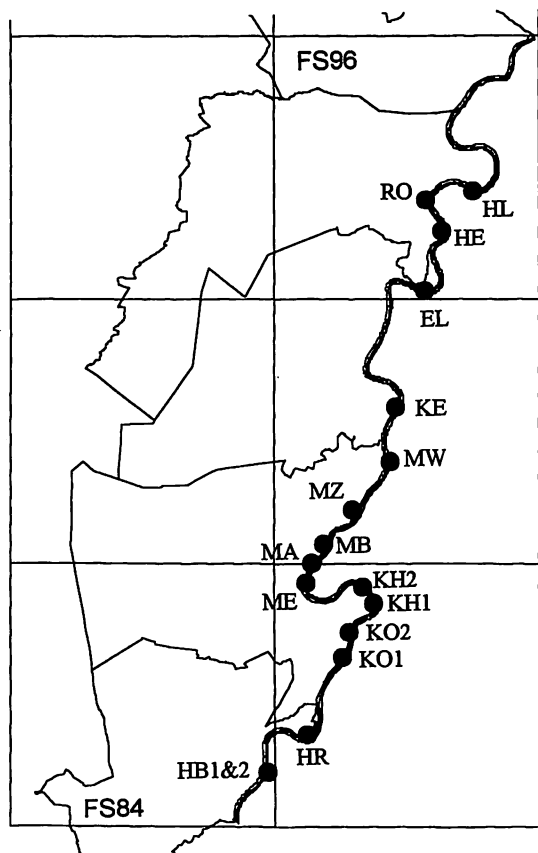


Fig. 1. Location of the sampled gravelbanks (codes are explained in table 1).

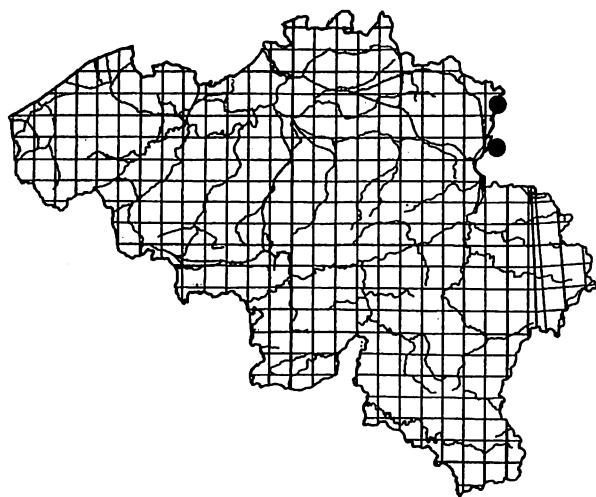


Fig. 2. Distribution of *Hyloniscus riparius* (KOCH, 1838) in Belgium.

### Material and methods

From May till September 1998, more than 80 pitfalls were placed on 17 gravelbanks of the Meuse (Fig. 1). During the rest of the year, these banks are submersed and therefore no data could be obtained outside this period. The gravelbank of Kerkeweerd is an exception to this rule be-

cause this bank dates from the extreme inundation in January 1995 and has not been submersed since.

The pitfalls were placed in groups of three and a 5% formaldehyde solution was used as a fixative. The pitfalls were emptied on average two times a month. The dataset was however somewhat reduced due to submersion, trampling down by horses and overflowing of the pitfalls by rainwater.

### Results

Four species of isopods were caught on the gravelbanks of the Meuse: *Trachelipus rathkii* (BRANDT, 1833), *Hyloniscus riparius* (KOCH, 1838), *Armadillidium vulgare* (LATREILLE, 1802) en *Porcellio scaber* (LATREILLE, 1802). *T. rathkii* was by far the most common species and it was caught on 15 of the 17 sampled banks (Tab. 1). *A. vulgare* was only found on the bank of Heerenlaak but in great numbers while *P. scaber* was only once found on the bank of Mazenhoven. *H. riparius* was found on the banks of Elerweert, Heerenlaak and Kotem-Hal but always in very low densities. The captures of the latter species consider the first records for Belgium and therefore this species will be discussed into more detail. As TAVERNIER & WOUTERS (1989) reported 30 species in their checklist of the terrestrial Isopoda of Belgium and there were no species added to the list since, the number of isopods in Belgium raises to 31 with the addition of *H. riparius*.

*H. riparius* resembles the common *Trichoniscus pusillus* (BRANDT, 1833) but the females can be bigger (up to 6.9 mm) than *T. pusillus* and usually also darker. The body surface is smooth and shining and sparsely covered with hairs. The eye consists of one big, black ocellus. The body has a retiform red-brown to violet-brown pigmentation. On both sides of the dark midline on the back, there is an irregular bright striping caused by the local lack of pigment. These colors remain unchanged in alcohol. Males and often also females have a typical hook on the merus of pereopod seven. The flagellum of full-grown animals consists of five to seven unclearly separated segments (four in *T. pusillus*).

Central and eastern Europe constitute the main distribution area of *H. riparius* (VANDEL, 1960). The species does not occur in the Mediterranean

Table 1. The number of isopods that were caught on the different gravelbanks of the Meuse.

Code	Village	Place	UTM-code	<i>Trachelipus rathkii</i> (BRANDT, 1833)	<i>Hyloniscus riparius</i> (KOCH, 1838)	<i>Armadillidium vulgare</i> (LATREILLE, 1802)	<i>Porcellio scaber</i> (LATREILLE, 1802)
EL	Dilsen-Stokkem	Elerweert	FS9660	229	1		
HB1	Lanaken	Hocht ter Bampd (1)	FS8942	32			
HB2	Lanaken	Hocht ter Bampd (2)	FS8942				
HE	Maaseik	Heppeneert	FS9662	21			
HL	Maaseik	Heerenlaak	FS9764	52	2	83	
HR	Lanaken	Herbricht	FS9143	32			
KE	Dilsen-Stokkem	Kerkeweerd	FS9456	39			
KH1	Maasmechelen	Kotem-Hal (1)	FS9348	81	2		
KH2	Maasmechelen	Kotem-Hal (2)	FS9349	3			
KO1	Maasmechelen	Kotem (1)	FS9246	1			
KO2	Maasmechelen	Kotem (2)	FS9247	4			
MA	Maasmechelen	Maaswinkel	FS9149	4			
MB	Maasmechelen	Maasband	FS9250	37			
ME	Maasmechelen	Meers	FS9149				
MW	Maasmechelen	Meeswijk	FS9453	72			
MZ	Maasmechelen	Mazenhoven	FS9251	31			1
RO	Maaseik	Roosteren	FS9664	9			

area but in France, Denmark, Finland, northern Germany, the U.S. and Newfoundland the species was found synanthropically (MEINERTZ, 1950; VANDEL, 1960; GRÜNER, 1966). Also in the Netherlands the species was only found in greenhouses in Utrecht, where the species was collected in great numbers in 1942 and 1949 (HOLTHUIS, 1956). Since 1991 the species was however found in the Netherlands in the Ooijpolder near Nijmegen, in some places along the Rijn and the Waal, at the IJsselmeer, along the Maas and in trenches near Vaals (WIJNHOFEN, 1993; BERG & WIJNHOFEN, 1997). Based on the data gathered in this study, a distribution map of *H. riparius* in Belgium was constructed (Fig. 2).

*H. riparius* is a river accompanying species which, just as *T. rathkii*, can survive on places which are regularly flooded. Just like *T. pusillus* the species can also be found on the side of ditches, in trenches and verges. Sometimes the species occurs in compostheaps or in greenhouses. On the sides of ditches, the animals usually live in very humid areas under the vegetation of the banks, under dead wood and stones and sometimes deeper in the ground. Nevertheless the species seems to be more tolerant to desiccation than other Trichoniscidae (BERG & WIJNHOFEN, 1997).

## Discussion

*T. rathkii*, *H. riparius* and *A. vulgare* were also found in pitfall samples taken during 1995 from several locations along a river in the Danube-Drava National Park, Hungary (FARKAS, 1998). With exception of *P. scaber*, the species that were encountered along the Meuse therefore seem to constitute a typical riveraccompanying isopod community. *A. vulgare* however significantly decreases after inundations while *T. rathkii* resists those inundations without a significant decrease in abundance (HAFERKORN, 1996). This could explain why *A. vulgare* was only found in Heerenlaak, the most northern sampling site which is situated close to a stew. Due to this stew the gravelbank in Heerenlaak is never submersed during summer while this is often the case in most other banks. *H. riparius* was only found on three banks and moreover in very low densities. Probably this species occurs on more places but because the species lives deeper in the ground, it was rarely caught with the pitfall traps.

## Acknowledgments

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## Note sur la présence en Belgique du Microphyside *Loricula bipunctata* (PERRIS, 1857) et données récentes pour trois autres espèces (Heteroptera Microphysidae)

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### Abstract

The Microphysid *Loricula bipunctata* is recorded for the first time from Belgium, having been recently captured in two stations of the natural park Viroin-Hermeton (south-west of province of Namur). New data are detailed for three other Microphysids species : *L. pselaphiformis*, *L. elegantula* and *Myrmedobia coleoptrata*. Details on chorology and ecology of these bugs are given and provisional maps are produced.

**Keywords** : Heteroptera, Microphysidae, Belgium, Faunistic.

### Résumé

Le Microphyside *Loricula bipunctata* est signalé pour la première fois de Belgique où il a été capturé récemment en deux stations du parc naturel Viroin-Hermeton (sud-ouest de la prov. de Namur). De nouvelles données, en provenance du sud du pays, sont en outre détaillées pour trois autres espèces de cette famille méconnue : *L. pselaphiformis*, *L. elegantula* et *Myrmedobia coleoptrata*.

Les Microphysides constituent assurément l'une des familles de punaises les plus méconnues de la faune belge : en effet, leur mention

dans la littérature s'est toujours avérée très occasionnelle tout comme leur représentation dans les collections entomologiques, ce qui fait