

Mind the gap! First records of the harvestman *Leiobunum religiosum* Simon, 1879 from Belgium (Opiliones: Sclerosomatidae)

Pallieter DE SMEDT^{1,2}, Axel GOSSERIES³, Koen LOCK⁴, Garben LOGGHE^{2,5}, Hay WIJNHOFEN⁶

¹ Forest & Nature Lab, Department of Environment, Ghent University, Geraardsbergsesteenweg 267, 9090 Gontrode, Belgium. (e-mail: pallieter.desmedt@ugent.be)

² ARABEL, c/o Royal Belgian Institute for Natural Sciences, Vautierstraat 29, 1000 Brussels, Belgium

³ Rue du Loutrier, 55, 1170 Brussels, Belgium

⁴ Merelstraat 27, 9000 Gent, Belgium

⁵ Natuurpunt Studie, Coxiestraat 11, 2800 Mechelen, Belgium

⁶ Groesbeeksedwarsweg 300, 6521 DW, Nijmegen, the Netherlands

Abstract

The harvestman *Leiobunum religiosum* Simon, 1879 is reported for the first time in Belgium. This large and long-legged species is easy to identify by its contrasting dorsal colour pattern and conspicuous black bands on the leg coxae. Originally an endemic species of the southwestern Alps, it has also been recorded in recent decades from Germany, the Grand Duchy of Luxembourg and the Netherlands. The first confirmed Belgian records date from 2025 in Tellin (Wallonia, province of Luxembourg). It later turned out that a subadult female had already been photographed at the same location in 2017, but only identified later. The species was found on vertical rock surfaces in an old quarry. Based on this finding, an extra search was performed on citizen science platforms, adding eight additional localities for the species in the southeast of the country. As a rock-dwelling species, man-made habitats like artificial caves, dams, walls of buildings and quarries are suitable habitat, but the species also colonizes natural rock formations near rivers. The species has probably been introduced into the Grand Duchy of Luxembourg years ago. A warming climate may then have promoted its northern expansion from there onwards.

Samenvatting

De hooiwagen *Leiobunum religiosum* Simon, 1879 wordt voor het eerst gemeld uit België. Deze grote en langbenige soort is eenvoudig te determineren door het contrasterend kleurpatroon op de rug en de opvallende zwarte banden op de coxae van de poten. De soort is endemisch in de zuidwestelijke Alpen, maar werd in de laatste decennia ook waargenomen in Duitsland, het Groothertogdom Luxemburg en Nederland. De eerste geverifieerde Belgische waarnemingen zijn van het Waalse dorp Tellin in de provincie Luxemburg uit 2025. Later bleek dat al een sub-adult vrouwtje werd gefotografeerd in 2017 op dezelfde locatie. De soort werd gevonden op verticale rotsen en rotswanden in een verlaten steengroeve. Gebaseerd op deze eerste waarneming werd een extra zoektocht naar foto's op citizen science platformen ondernomen, wat resulteerde in acht extra locaties voor de soort in het zuidoosten van het land. Als rotsbewonende soort zijn antropogene habitats zoals artificiële grotten, dammen, muren van gebouwen en steengroeven geschikt, maar de soort blijkt ook voor te komen op natuurlijke rotsformaties nabij rivieren. Hoogstwaarschijnlijk werd de soort geïntroduceerd in het Groothertogdom Luxemburg jaren geleden en mogelijks dankzij een opwarmend klimaat kon de soort verder naar het noorden uitbreiden. We stellen Heilige hooiwagen voor als Nederlandstalige naam.

Résumé

Nous présentons les premières observations de *Leiobunum religiosum* Simon, 1879 pour la Belgique. Cette espèce de grande taille et aux longues pattes se reconnaît aisément à sa combinaison de couleurs dorsales contrastées et aux bandes noires marquées sur les coxae des pattes. Espèce endémique du Sud-Ouest des Alpes à l'origine, elle a été observée au cours des dernières années en Allemagne, au Grand-Duché du Luxembourg et aux Pays-Bas. Les premières observations confirmées en Belgique ont eu lieu à Tellin (Province de Luxembourg, Wallonie) en 2025. Il s'est avéré par la suite qu'une femelle subadulte avait déjà été photographiée en 2017 au même endroit. L'espèce y a été trouvée sur des surfaces rocheuses verticales, dans une ancienne carrière. Forts de cette découverte, les plateformes citoyennes ont été re-parcourues, permettant de découvrir huit localités supplémentaires dans le Sud-Est du pays. S'agissant d'une espèce rupestre, des habitats façonnés par l'homme tels que des cavités artificielles, des murs d'immeubles ou des carrières constituent des habitats favorables, même si l'espèce colonise aussi des formations rocheuses proches de rivières. L'espèce a probablement été introduite par l'homme au Grand-duché de Luxembourg. Il est possible que le réchauffement climatique ait ensuite encouragé son expansion vers le nord.

Introduction

Climate change, resulting in milder winters and longer, warmer and drier spring and summer periods, has major consequences for biodiversity in Western Europe, leading to increasing numbers of Mediterranean species moving northward and subsequently settling. In the case of harvestmen, these recent expansions are particularly numerous and well documented (e.g. *Nemastoma dentigerum* Canestrini, 1873, *Astrobunus laevipes* (Canestrini, 1872), *Opilio canestrinii* (Thorell, 1876), *Dicranopalpus ramosus* (Simon, 1909), *Nelima doriae* (Canestrini, 1871); references in MARTENS 2021), with *Dicranopalpus larvatus* (Canestrini, 1874) as the latest new arrival of Mediterranean origin in Western Europe (DE SMEDT et al. 2025).

In Belgium, the genus *Leiobunum* was so far represented only by *L. rotundum* (Latreille, 1798) and *L. blackwalli* Meade, 1861. Furthermore, *Leiobunum* sp. A (*L. sp. A*; sensu WIJNHOFEN et al. 2007), originating from the Iberian Peninsula, has recently colonised European regions with an Atlantic climate regime. Here we report on another *Leiobunum* from southern Europe recently discovered in Belgium: *Leiobunum religiosum* Simon, 1879. It belongs to the '*Leiobunum rupestre* species group' that also includes *L. gracile* Thorell, 1876, *L. rupestre* Herbst, 1799, *L. subalpinum* Komposch, 1998 and *L. apenninicum* (Martens, 1969) (MARTENS & SCHÖNHOFER 2016). It originates from the western Alps in France and Italy. Its occurrence in Belgium was expected, as it had previously been found in the neighbouring countries Germany, the Grand Duchy of Luxembourg and the Netherlands (SCHÖNHOFER 2008, MUSTER & MEYER 2014, NOORDIJK & BINK 2014). Original illustrations and information on distribution, habitat and phenology are provided here. With this latest addition, the Belgian list now totals 34 species of harvestmen with verified records and established outdoor populations.

Material and methods

On October 5, 2025, the second author recorded on the citizen science platform iNaturalist.org an observation of *Leiobunum* that was identified by Ludivine Lamare as belonging to the species *L. religiosum*. An exchange started in the following days with the fourth and first author. This led to a second site visit to the site by the second author on October 18, 2025, and to a second observation. These two first specimens were photographed but not collected. Subsequently, on October 20, 2025, an excursion was undertaken by the first and fourth author to collect specimens at the same location to verify the species identity based on male characteristics. The collected specimens were sent to the last author to produce illustrations of the pedipalp, chelicera and penis to aid future identification. The following material was used to make drawings of *Leiobunum religiosum*: 3M, 2F, Carrière la Lesse, Resteigne, Tellin, province Luxembourg, Wallonia, Belgium, 50.08972N, 05.17887E, 21 October 2025,

leg. & col. P. De Smedt (PDS); 3M, 4F, Antarcticaweg, Maasvlakte Rotterdam, the Netherlands, 51.98106N, 04.01534E, 16 September 2014, leg. & col. H. Wijnhoven (CHW412).

Following this initial set of observations, all pictures of unidentified harvestmen on the Belgian citizen science platform Waarnemingen.be were re-checked for *L. religiosum* by the third and first author. In addition, we searched for additional records on iNaturalist and Observation.org for the Grand Duchy of Luxembourg. The purpose was to discover how well the Belgian locations were connected with the ones in the Grand Duchy of Luxembourg. For all records, we identified life stage (adult or juvenile) and sex, whenever the quality of the pictures allowed.

Results

After the first Belgian observations of *L. religiosum* in Tellin province of Luxembourg (Fig. 1A-C), the search for additional records via the citizen science website Waarnemingen.be resulted in eight additional locations. In the quarry in Tellin, where the first confirmed records were done, a picture of a subadult female was found dating back to July 16, 2017 (Fig. 1D). This turned out being the species' earliest record in Belgium. We discuss below the identification, distribution, habitat and phenology of *Leiobunum religiosum* in Belgium, with some notes on the distribution in neighbouring countries.

We propose the Dutch species name “Heilige hooiwagen” (literally “Holy harvestman”), derived from its scientific name. The epithet “religiosum” might be referring to the species' type locality. Although SIMON (1879) did not explain his choice of species name, it could allude to the Monastery of La Grande Chartreuse (Isère, France), close to where the type material was collected (SIMON 1879, MARTENS 1978).

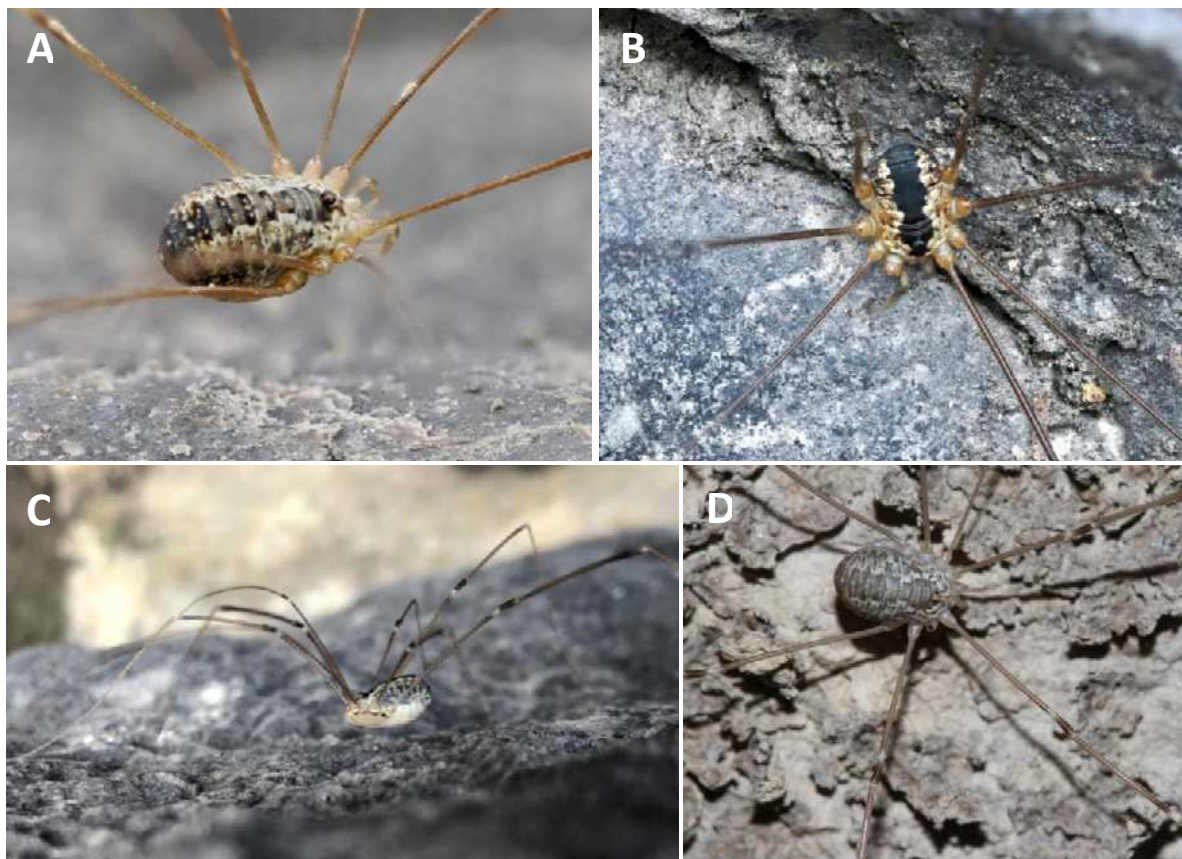


Figure 1. First observations of *Leiobunum religiosum* in Belgium at an abandoned quarry in Tellin, Luxembourg, Belgium. **A.** Adult female recorded via iNaturalist on October 5, 2025 (<https://www.inaturalist.org/observations/318968573>) © Axel Gosseries. **B.** Adult male recorded via iNaturalist on October 18, 2025 (<https://www.inaturalist.org/observations/321628961>) © Axel Gosseries. **C.** Adult female recorded during a targeted field excursion on October 20, 2025 © Pallieter De Smedt. **D.** Earliest observation of the species: a subadult female recorded via waarnemingen.be on July 16, 2017 (<https://waarnemingen.be/observation/141694445/>) © Ward Vercruysse.

Identification

Leiobunum religiosum is an attractive, long-legged and gracile harvestman, quite easy to distinguish from other European congeners. The male has a contrasting pattern with a broad black dorsal midline ('saddle'), pale yellowish sides (Fig. 1B) and a black band running distally across the coxae. The female's characteristics are less distinctive (Fig. 1C), the dorsal band consisting of black patches (Fig. 1A) and the black band on the coxae being narrower than in the male. The legs are brown, the patella, the distal area of femur and tibia are darkened, and the leg joints have light annulations. In both sexes, only the retrolateral side of coxa IV has a row of granules.

The male chelicera is slender, the first segment having a ventral hook, tipped with a large seta (Fig. 2C). The pedipalp femur and patella have black-tipped denticles (Fig. 2A). A rare feature, otherwise only present in the closely related *L. rupestre*, is a dense field of minute denticles ventrally on the male pedipalpal tibia (Fig. 2 A, B).

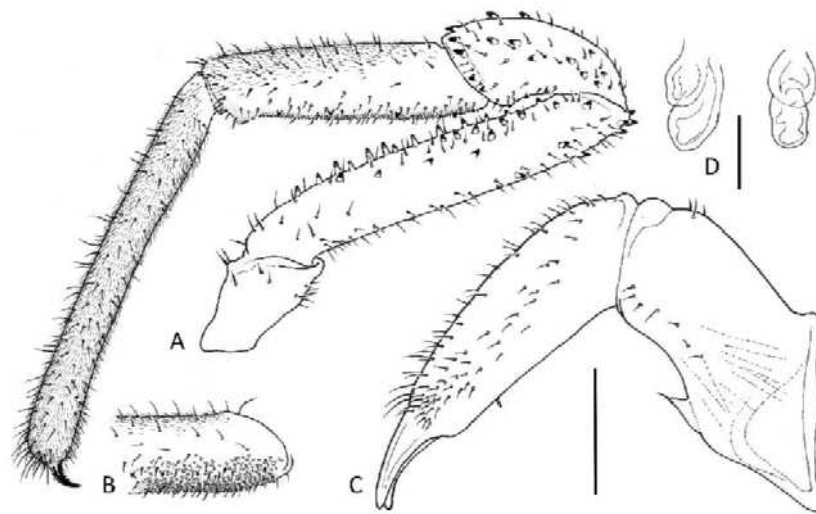


Figure 2. *Leiobunum religiosum* A-C male (PDS), D female (CHW412). **A.** Right pedipalp, prolateral view. **B.** Pedipalp tibia, ventral view, showing field of minute denticles. **C.** Right chelicera, prolateral view. **D.** Seminal receptacles. Scale bar A-C 0.5 mm, D 50 µm.

The penis truncus is cylindrical and robust. In dorsoventral view, it has a broad base, narrowing to the alate (winged) section (Fig. 3). There is an intrinsic penial muscle in the proximal half of the truncus. The alate section consists of a dorsal and a ventral pair of lateral membranes that are fused in the basal portion, forming two pockets (Fig. 3). Distally, the dorsal membranes are attached to the truncus more proximally than the ventral membranes, which are attached near the truncus-to-glans margin (arrows in Fig. 3B, C). These ventral membranes, in particular, are thin-walled and highly variable in shape, due to wrinkles and/or damages (Fig. 3). Alate structures, including the pockets, act as reservoirs for nuptial fluids, delivered by the male to the female during copulatory activities (MACÍAS-ORDÓÑEZ et al. 2010, WIJNHOFEN 2011). As a result of repeated nuptial feeding activities, the alae can get damaged. Regularly, in collected *Leiobunum* specimens the pockets contain residues of nuptial fluids consisting of a transparent, yellowish, solidified mass (SCHÖNHOFER & HILLEN 2008). Penis length is somewhat variable (compare Fig. 3B and D). However, the stylus tip has a characteristic shape, with two pairs of sensory setae (Fig. 3E-G). In the female, the ovipositor has a pair of seminal receptacles consisting of two rounded pockets (Fig. 2D).

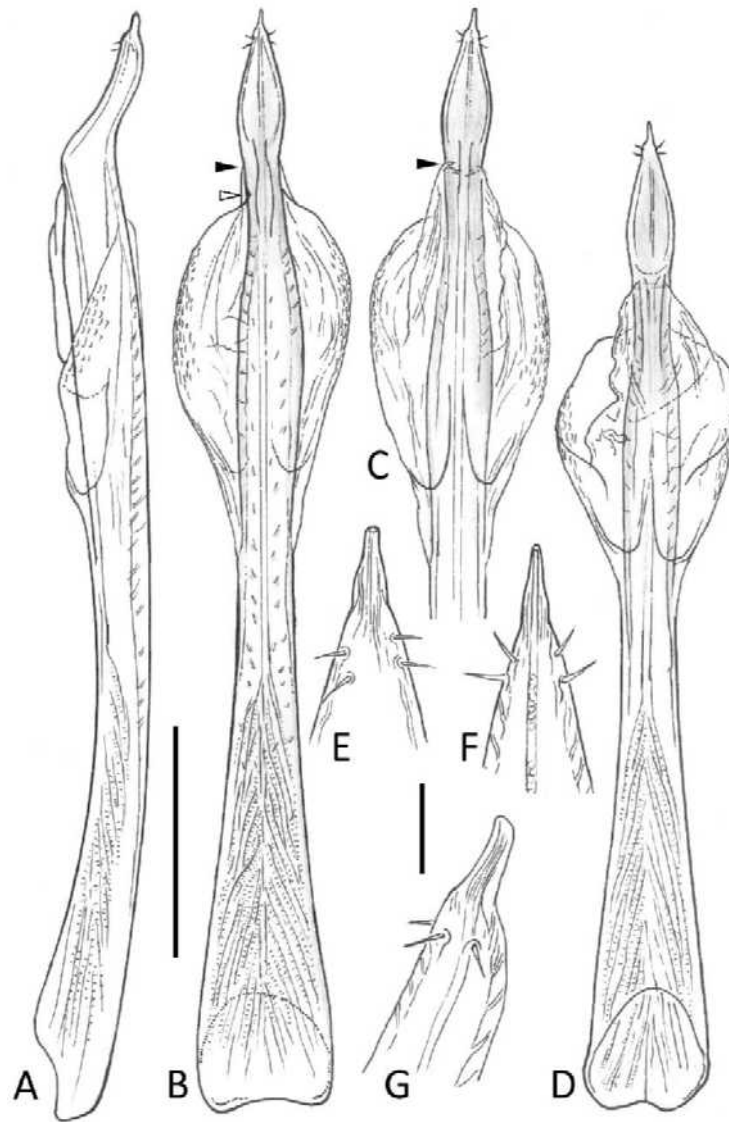


Figure 3. *Leobunum religiosum*, penis. A-C, E, G Rotterdam Maasvlakte, Netherlands (CHW412), D, F Tellin, Belgium (PDS). **A.** Lateral view. **B.** Dorsal view. **C, D.** Ventral view. **E, F.** Stylus dorsal view. **G.** Stylus, lateral view. Black arrow indicates attachment site of the ventral membranes, white arrow indicates attachment site of dorsal membranes. Scale bar A-D 0.5 mm, E-G 50 µm.

Distribution, habitat and phenology

Leobunum religiosum is an endemic species of the southwestern Alps in France and Italy. Its distribution ranges from Chamonix-Mont-Blanc (Haute-Savoie Department) and Isère (Auvergne-Rhône-Alpes Department), the Gard, the Hautes-Alpes and Alpes-Maritimes into the Ligurian Alps (MARCELLINO 1984, DELFOSSE 2004, DELFOSSE & IORIO 2015, BAL 2018). Distribution maps are provided by MARTENS (1978) and NOORDIJK & BINK (2014). The first northern finds came from Germany in 2007 (SCHÖNHOFER & HILLEN 2008), the Grand Duchy of Luxembourg in 2007 (WEBER 2011) with 12 recorded localities about ten years ago (MUSTER & MEYER 2014) and from the Netherlands in 2012 (NOORDIJK & BINK 2014). Altitudes range from sea-level in the most northern man-made habitat (the Maasvlakte, Netherlands; NOORDIJK & BINK 2014, NOORDIJK & WIJNHOFEN 2014, BINK 2017) up to 2250 m a.s.l. in its original habitat in the western Italian Alps (ISAIA et al. 2011).

In Belgium, the first observation dates back to 2017 (Fig. 1D). The species is recorded from two provinces in the southeast of the country, i.e. the Belgian Province of Liège (six locations) and the Belgian Province of Luxembourg (three locations) (Fig. 4, Table 1). Additionally, while MUSTER & MEYER (2014) had only reported the species from the south of the Grand Duchy of Luxembourg (Fig. 4), we found 15 recent records on citizen science platforms from the northern part of the Grand Duchy of

Luxembourg, with the oldest dating back to 2011 (Table 1). This fills the gap between the Belgian locations and the formerly published ones from the south of the Grand Duchy of Luxembourg.

Table 1. Recent confirmed records of *Leiobunum religiosum* in Belgium and the Grand Duchy of Luxembourg (shaded rows) from citizen science platforms and a targeted field excursion (bold). One observation concerned a dead individual (underlined). First observation at each Belgian locality is in italic. Date, Coordinates (N and E), Location (town and Belgian province between brackets: LUX: Luxembourg, LIE Liège), Habitat, Number (#), Life stage, Sex (M and F) and Source (citizen science platform, Obs.: Observation.org, iNat.: iNaturalist.org) are given.

Date	N	E	Location	Habitat	#	Stage	M	F	Source
23/08/2011	49.88674	6.05988	Diekirch	Stony river bed	2	Ad.	1		Obs.
01/08/2015	49.96306	6.16997	Stolzemburg-Putscheid	Bridge across river	1	Juv.		1	Obs.
16/07/2017	50.09089	5.17955	Tellin (LUX)	Quarry	1	Juv.		1	Obs.
15/07/2021	50.43895	6.11741	Waimes (LIE)	Town	1	Juv.	1		Obs.
28/07/2021	49.82912	6.34017	Berdorf	Rocks in forest	1	Juv.			Obs.
10/09/2021	49.63145	5.35286	Villers-Devant-Orval (LUX)	Roadside rocks	5	Ad.	2	1	Obs.
19/10/2021	49.91073	5.93462	Esch-sur-Sûre	Town	1	Ad.	1		iNat.
29/05/2022	50.46077	5.92281	La Gleize (LIE)	Rocky open forest	1	Juv.	1		Obs.
18/06/2022	50.46916	6.09288	Ovifat (LIE)	Rocks along river	1	Juv.		1	Obs.
23/06/2022	49.92313	6.00519	Esch-sur-Sûre	Forest near river	1	Juv.			Obs.
30/06/2022	50.14019	5.67145	Nadrin (LUX)	Bridge across river	2	Juv.	2		Obs.
01/07/2022	49.92504	6.00760	Goesdorf	Camping close to river	1	Juv.	1		Obs.
24/08/2022	49.83518	6.28702	Bouchwald	Rocks near river	7	Ad.	3	4	Obs.
25/08/2022	49.82464	5.75214	Martelange	Town	1	Ad.	1		iNat.
07/09/2022	49.82473	5.75388	Rambruch	Wall near river	1	Ad.	1		iNat.
04/05/2023	49.83365	6.28635	Beaufort	Old Castle	1	Ad.	1		Obs.
31/07/2023	49.81657	6.36928	Berdorf	Rocks near river	1	Juv.			Obs.
26/08/2024	49.74280	6.08759	Mersch	Wall near parking lot	1	Ad.	1		Obs.
14/11/2024	50.60477	5.58219	Angleur (LIE)	Building in forest	1	Ad.	1		Obs.
29/05/2025	49.83615	6.28542	Bouchwald	Rocks near river	1	Juv.			Obs.
21/08/2025	49.90581	6.07960	Shack	Old Castle	1	Ad.	1		Obs.
05/10/2025	50.08944	5.17961	Tellin (LUX)	Quarry	1	Ad.		1	iNat.
18/10/2025	50.08944	5.17961	Tellin (LUX)	Quarry	1	Ad.	1		iNat.
20/10/2025	50.08944	5.17961	Tellin (LUX)	Quarry	5	Ad.	3	2	Obs.
06/11/2025	49.80972	6.32957	Berdorf	Rocks in forest	1	Ad.	1		Obs.
09/11/2025	50.43567	6.20981	Bütgenbach (LIE)	Dam wall	2	Ad.	2		Obs.
10/11/2025	50.45315	6.11000	Robertville (LIE)	Dam wall	1	Ad.	1		Obs.

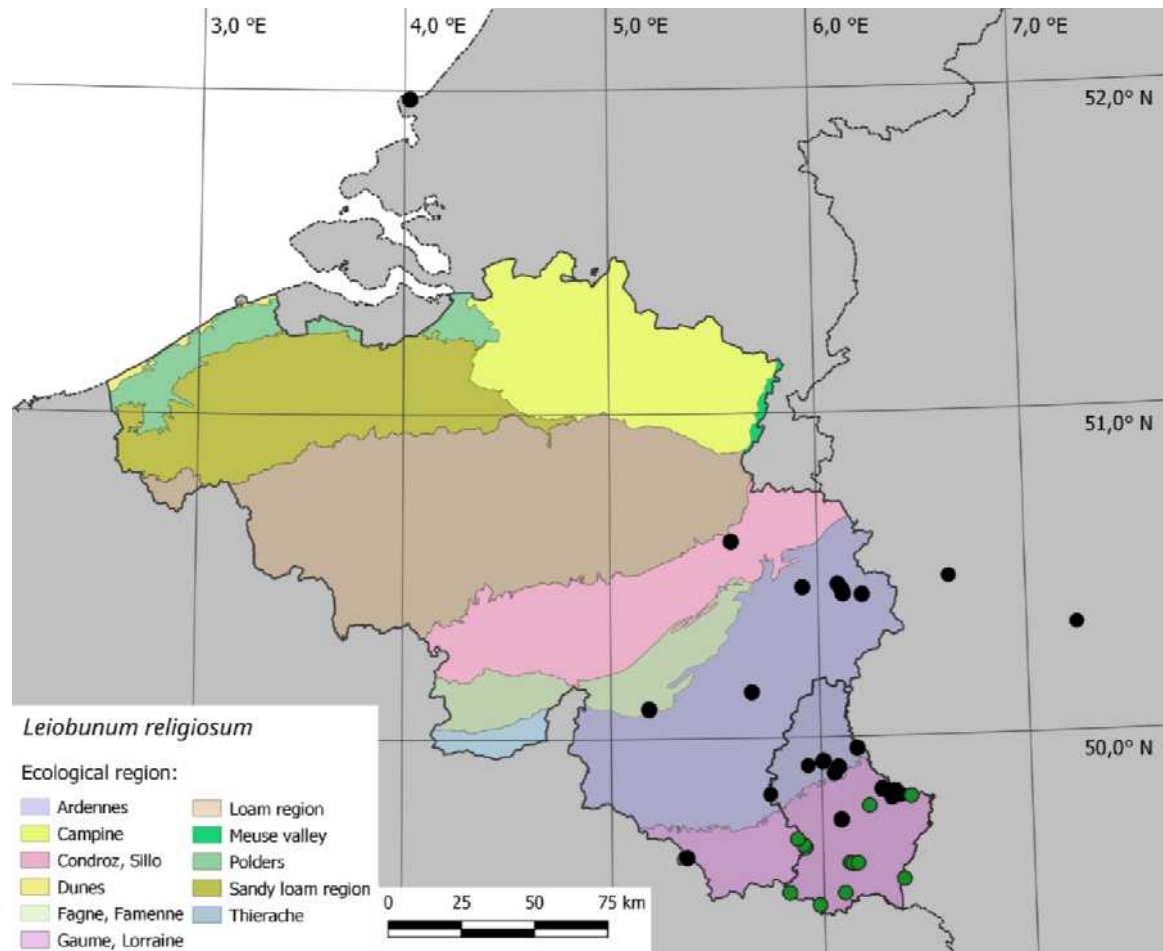


Figure 4. Distribution of *Leiodunum religiosum* in Belgium and neighbouring countries up to the end of 2025. Dots in green are published records from MUSTER & MEYER (2014). The northern point in the Netherlands is the record from NOORDIJK & BINK (2014). The most eastern point is the record from SCHÖNHOFER & HILLEN (2008). The other German point is an additional confirmed record from Germany (<https://www.inaturalist.org/observations/239167831>), that is the closest to the Belgian border. There are no confirmed records in Germany south of these two German points. All black dots in Belgium and the Grand Duchy of Luxembourg are presented in Table 1.

Leiodunum religiosum inhabits caves and rock faces (MARCELLINO 1984), man-made habitats such as quarries (SCHÖNHOFER & HILLEN 2008), underground tunnels and casemates of Luxembourg city (ISAIA et al. 2011, WEBER 2011), shaded walls of buildings (BAL 2018) and dikes constructed of basalt stones (NOORDIJK & BINK 2014). Based on these habitat types, a ‘rocky’ and preferably vertical substrate has to be available, which is supported by the records from Belgium (Table 1). Also, while the species has been found once in a river bed on natural rock formations and once in a rocky open forest, most sightings are associated with manmade structures such as dams or bridges near rivers (three locations), a quarry (1), a building in a forest (1), a rocky roadside verge (1) and a town wall (1). Interestingly, about 2/3 of the Belgian observations are close (<150m) to a major stream or a river of which four of the nine records are immediately next to the water. The rocky nature of all the locations is in line with observations in the Grand Duchy of Luxembourg (see also Table 1), Germany and the Netherlands. At the abandoned quarry in Tellin, where we observed seven individuals on three observation days, we examined the habitat preference in more detail. We surveyed the complete quarry and the species was found at the side of stones near the bottom of the quarry, high on the quarry walls and inside crevices (Fig. 5). On 20 October, two of us searched the site for three hours and found only five individuals. Probably, most specimens were hidden deep within crevices. All observations were made during daylight, which makes detection hard. At night, more specimens are likely to be detected when they emerge to forage or search for mates.

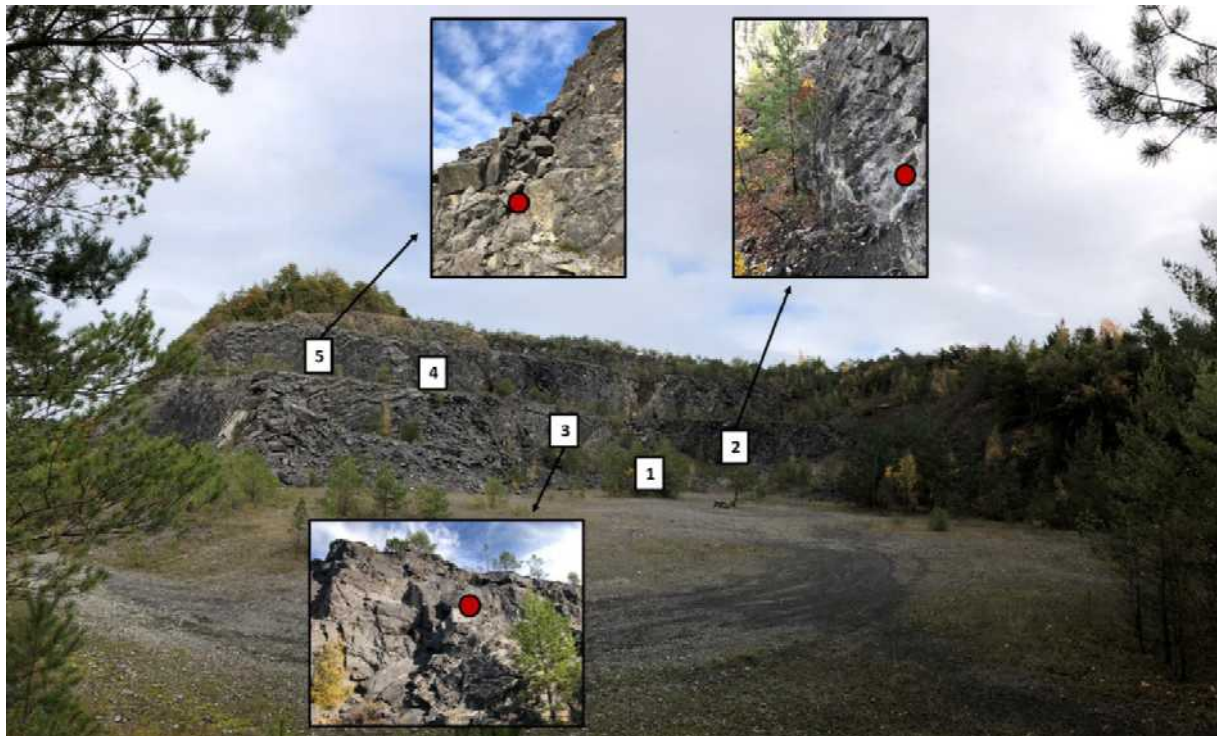


Figure 5. Abandoned Carrière la Lesse in Resteigne (Tellen, province of Luxembourg, Belgium). Numbers indicate the places where individuals of *Leobunum religiosum* were found in October, 2025. 1) On the side of a rock at the bottom of the quarry (one male), 2) Low on the rock wall (one female), 3) High on the rock wall (one female), 4) On the side of a rock on the first plateau of the quarry (one female), 5) Inside a large crevice on the lower side of the rock wall (three males). Red circles indicate the exact spot where the specimen was found. © Pallieter De Smedt.

As for other *Leobunum* species in the country, overwintering eggs of *L. religiosum* may hatch in spring, with adults appearing in late summer till late autumn. In the Grand Duchy of Luxembourg, adults were recorded from August into November (MUSTER & MEYER 2014). The population in the Netherlands was monitored by Johan Bink over a period of ten years (2012- 2022), with adults found from August 20 to November 5 (BINK 2017; Waarneming.nl). The earliest adult in Belgium was recorded on September 10 and the latest on November 14 (Table 1). In the Grand Duchy of Luxembourg, we found records of adult males as early as the end of August (Table 1). The phenology of the species is thus very comparable across different locations of the Western European populations with adults being found from August until November. From December onwards, it might get too cold for the species. For juveniles, we collected records from the end of May until the beginning of August (Table 1).

The recent observations from our field excursion and the recent observations from citizen science platforms retrieved data involving 15 males and only six females, giving an observed sex ratio in Belgium of 71% males (Table 1). Adding the new records of the Grand Duchy of Luxembourg resulted in an observed sex ratio of 70% (44 males vs. 11 females). This is comparable to the observed sex ratio determined by MUSTER & MEYER (2014): i.e. 100 individuals with 64% of males. In *Leobunum* sp. A a shifting was observed towards more males after September (WIJNHOFEN 2011). It may be that females start to die after egg deposition is completed, or they may behave more secretively when searching for oviposition sites, while males are more active in search of mates.

The earliest record in Belgium is from 2017 (Tellen) and we found more individuals at the same location in 2025, demonstrating that there has been an established population for at least nine years. Recent records from the 'Maasvlakte' site (November 5 2025; Waarneming.nl) demonstrate that the Dutch population has persisted for at least 13 years. Similarly, German (SCHÖNHOFER & HILLEN 2008) and Luxembourg populations (MUSTER & MEYER 2014) proved able to survive for many years.

Discussion

The occurrence of *Leiobunum religiosum* in Belgium was expected, given the species' known presence in the neighbouring Grand Duchy of Luxembourg. Nevertheless, the extent of its distribution in southeastern Belgium was surprising. We consider it unlikely that the species remained undetected for decades. *L. religiosum* is distinctive and easy to recognize. Yet, it is absent from the pre-2010 Opiliones database of VANHERCKE (2010). Likewise, no older Belgian records exist in the citizen-science platform Waarnemingen.be, despite the fact that other *Leiobunum* species were frequently reported there before 2021, when the first adult of *L. religiosum* was documented. As an illustration, between 2010 and 2021, 803 records of *L. rotundum* and 179 records of *L. blackwalli* were submitted, indicating high reporting activity for the genus, even if verification is still pending for some observations. Together, these patterns suggest that the presence of *L. religiosum* in Belgium is recent.

The current distribution of *L. religiosum* exhibits several notable characteristics. First, it is markedly discontinuous: the gap between the southern Alpine range and the northwestern populations is approximately 350 km, a gap that is difficult to attribute solely to under-detection. Second, the species' appearance in the northwest is recent across all countries, starting in 2007 in Germany and the Grand Duchy of Luxembourg, in 2012 in the Netherlands and in 2017 in Belgium. Given the species' conspicuous size and appearance, it seems unlikely that it would have gone unnoticed before these dates; for instance, it is entirely absent from MULLER's (1962) treatment of the opiloid fauna of the Grand Duchy of Luxembourg. Third, both the northwestern populations and the southern Alpine core show evidence of northward expansion. In Switzerland, at least five recent records (2019–2025) from the Alps on iNaturalist document its presence in a country where it had not previously been reported (MARTENS 1978; NOORDIJK & BINK 2014) (e.g. <https://www.inaturalist.org/observations/189610938> and <https://www.inaturalist.org/observations/313816773>). Fourth, the species occurs not only in natural rocky habitats but also in strongly anthropogenic environments, indicating ecological flexibility. These distributional patterns raise an important question. Are the northwestern populations relicts, do they reflect recent colonization or do they reflect unintentional introductions during historical times?

Several lines of evidence go against the relict hypothesis. MUSTER & MEYER (2014) note that the recent appearance of the species in the Grand Duchy of Luxembourg is incompatible with long-standing, undetected populations. The observed northward spread in both the Alpine and northwestern regions aligns with a potential influence of climate change on distributional shifts. However, climate change alone cannot readily explain the pronounced distributional discontinuity separating the two ranges. Instead, such a pattern strongly suggests human-mediated dispersal. SCHÖNHOFER & HILLEN (2008) even raised the possibility of an introduction dating back to Roman times given the species' occurrence in Roman-period man-made structures. While we cannot rule out a historical introduction, we consider a more recent (decades ago) introduction to be more likely since the species proves to spread quickly in recent times. Additional evidence supporting a recent human-mediated introduction comes from the Netherlands, where *L. religiosum* has recently established a population at a synanthropic site isolated from all other known occurrences (NOORDIJK & BINK 2014). Comparable biogeographical patterns exist in other arthropods; for example, the terrestrial isopod *Trichoniscus alemannicus* Verhoeff, 1917, native to the Alps, may harbour relict populations in Belgium (DE SMEDT et al. 2016; 2020). Such parallels demonstrate that both ancient survival and recent introduction can result in disjunct distributions, although the balance of evidence for *L. religiosum* points toward a set of recent dispersal events. Molecular studies could aid in explaining the current distribution.

From an ecological perspective, *L. religiosum* stands apart from other harvestmen that were recently introduced in Belgium (VANHERCKE & BAERT 2015; DE SMEDT et al. 2022; 2025), as it has successfully

established in natural habitats such as natural rock formations. It appears less of a generalist than *L. sp. A*, showing a preference for rocky substrates and moist, shaded microhabitats. This restricted ecological niche may shape its further expansion. Monitoring its spread will therefore be of particular interest, both for understanding the species' ecological requirements and for shedding light on the mechanisms underlying its colonization history.

Acknowledgments

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