

The first records of *Piscicola siddalli* (Hirudinea: Piscicolidae) for Belgium and the Netherlands

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With 5 figures

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Piscicola siddalli Bielecki, Cios, Cichocka & Pakulnicka, 2012 is reported from the river Lesse, Belgium and the river Gulp, the Netherlands. So far this species was only reported from its type locality in Great Britain. This species seems to be confined to fast flowing rivers with a good water quality and gravel as a dominant bottom substrate.

1 Introduction

In 2005 specimens of an unknown piscicolid species were collected from the river Lesse in Belgium. Superficially they resembled *Italiobdella ciosi* Bielecki, 1993 but differed in e.g. the structure of the reproductive system. In 2007 specimens of the same species were collected in the Netherlands from a small river in the province of Limburg. Only after the publication of Bielecki et al. (2012) both findings could be assigned to the species *Piscicola siddalli* Bielecki, Cios, Cichocka & Pakulnicka 2012. So far this species was only known from its type locality near Wensley, North Yorkshire in Great Britain.

2 Material

- Belgium, Wallonia, Province of Namur, Belvaux, river Lesse south of the bridge of the Rue des Pairées, 50°06'24.66"N - 5°11'47.88"E, 30-10-2005, 17 specimens, leg. & det. D.M. Soes
- The Netherlands, Province of Limburg, Euverem, river Gulp near the bridge of the Kampsweg, 50°48'04.69"N - 5°52'11.39"E, 27-03-2007, 2 specimens, leg. H.P.J.J. Cuppen, det. D.M. Soes
- The Netherlands, Province of Limburg, Euverem, river Gulp near the bridge of the Pesakerweg, 50°47'49.65"N - 5°51'51.05"E, 27-08-2013, 21 specimens, leg. D.M. Soes, det. A. Bielecki & D.M. Soes
- The Netherlands, Province of Limburg, Euverem, river Gulp near the bridge of the Kampsweg, 50°48'04.69"N - 5°52'11.39"E, 26-04-2014, 36 specimens, leg. & det. D.M. Soes.

3 Identification

For a more elaborate description Bielecki et al (2012) should be consulted. Below are given the most important characters which allow a reliable identification based on external characters only.

Body shape and size

The in Belgium and the Netherlands collected specimens ranged from 9.5–24.1 mm in length and 0.9–3.1 mm in width. The Dutch specimens are considerably larger than the collected material from the type locality.

The body shape is clearly depended on the level of feeding. Specimens with empty stomachs are dorsoventrally flattened, but specimens that have recently fed and have stomachs filled with blood are completely cylindrical. So body shape is in practice a risky character in this species.

Reproductive system

The male and female pores are separated by four annuli. The male gonopore is large and easily detectable. The female pore is small and inconspicuous. The loop shaped copulatory area comprises the first four annuli of the urosom (Fig. 4).

Color pattern

Although Piscicolidae are notoriously difficult to identify, *P. siddalli* can be readily identified based on its color pattern (Fig. 1-3). At the sides of the urosome the eleven pulsatile vesicles have large white spots making them very conspicuous against the brown background color. At the dorsale side of each of the three subannuli of each S2-annulus a row of small, white spots is present. The basic pattern is seven white spots per row. Often the spots are partially faded, most notable in the most frontal subannuli of the S2 annulus. Also do they merge, as especially is the case with the spots at the sides of the body. The basic color pattern of the trachelosome is comparable with that of the urosome, but the individual spots are larger and often merge to form white bands with the individual spots hardly recognizable. In larger specimens especially the spots in the clitellar region are bright and large. The color pattern at the ventral side of the body is comparable with that of the dorsal side, but much less visible due to the lighter brown background color.

This described color pattern is absent in all other Piscicolidae species known from Western Europe, so can be considered characteristic for this species. *Italobdella ciosi* has superficially a similar color pattern, but is e.g. lacking the basic pattern of the spots.



Fig. 1: *Piscicola siddalli* from the river Gulp, the Netherlands



Fig. 2: *Piscicola siddalli* from the river Lesse, Belgium

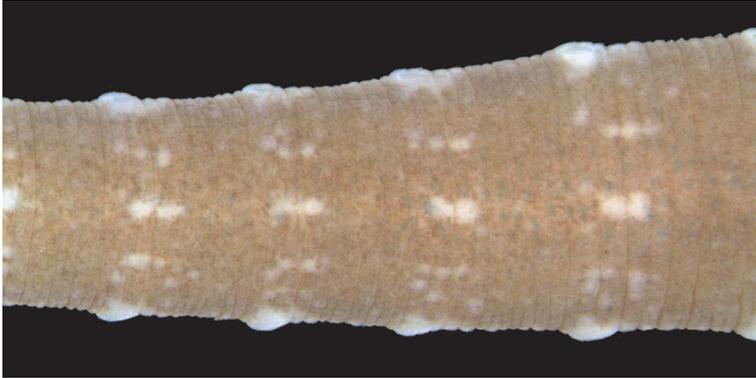


Fig. 3: A detail of the urosome of *Piscicola siddalli* from the river Gulp, the Netherlands



Fig. 4: A detail of *Piscicola siddalli* from the river Gulp, the Netherlands, showing from left to right the copulatory area, the female and male pores

4 Site descriptions

The type locality of *P. siddalli* is the River Ure near Wensley, North Yorkshire in Great Britain. At the type locality the River Ure is around 20 m wide and rather shallow. The sediments are dominated by stones and gravel. The specimens were picked from the underside of stones in shallow, still water. Noted fish species at the site were *Barbatula barbatula* (stone loach), *Salmo trutta* (Atlantic trout), *Thymallus thymallus* (grayling) and *Squalius cephalus* (chub). One specimen of *P. siddalli* was collected from *Thymallus thymallus* (Bielecki et al. 2012).

The river Gulp is a small, fast flowing river with a good water quality. At the collecting sites the River Gulp was in general shallow with less than 0,3 m of water and had a width around 7 m. The substrate was stones and gravel in the shallow parts and loamy silt in the deeper parts. The leeches were found underside of stones, with the higher densities in parts of the river with a lot of structure (Fig. 5). The species poor fish fauna is dominated by *Cottus rhenanus* (Rhine sculpin), *Barbatula barbatula* and *Gasterosteus aculeatus* (European threespine stickleback). Less common are species such as *Phoxinus phoxinus* (minnow), *Gobio gobio* (gudgeon) and *Salmo trutta* (Dorenbosch et al., 2012). All mentioned species, except *Gobio gobio*, were actually noted on 27-08-2013 at the southern collecting site (Pesakerweg). A specimen of *P. siddalli* was collected from the second dorsale fin of *Cottus rhenanus*.



Fig. 5: The collecting site of *Piscicola siddalli* in the river Gulp, the Netherlands

The river Lesse is in its dimensions comparable with the River Ure. The water quality of this fast flowing river is good (DGO3, 2013). At the collecting site water depth was less than 0,5 m. The substrate was stones and gravel. The leeches were found underside of larger stones, with the higher densities near the banks. The fish fauna of the River Lesse consists of species such as *Salmo trutta*, *Thymallus thymallus*, *Phoxinus phoxinus*, *Barbus barbus* (barbe) and *Chondrostoma nasus* (nase) (Philippart 2007). At the collecting site both *Cottus rhenanus* and *Barbatula barbatula* were noted underneath the stones, occasionally together with *P. siddalli*.

5 Discussion

Based on the known sites *P. siddalli* seems to be restricted to fast flowing rivers with a good water quality and gravel as a dominant bottom substrate. At these sites it feeds on typical stream fish species which it does probably attack mainly at night as all 74 specimens collected by the author were collected from the underside of stones. Actual feeding is recorded from a salmonid (*Thymallus thymallus*) and a percid (*Cottus rhenanus*) suggesting rather opportunistic feeding instead of showing host specialization for certain species or species group.

Both the river Lesse and the river Gulp are situated within the Meuse River Basin. With parts of this basin being situated in France and Germany this species is likely to be found in those countries as well. Nothing can be said about the likelihood of this species turning up in other basins, except for the fact that suitable habitat with a fish fauna comparable to the known sites of this species are common and widespread within Europe.

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References

- Bielecki, A., S. Cios, J. M. Cichocka & J. Pakulnicka (2012): *Piscicola siddalli* n. sp., a leech species from the United Kingdom (Clitellata: Hirudinida: Piscicolidae).- *Comparative Parasitology* 79(2): 219-230, Washington
- DGO3 (Operational Directorate-General for Agriculture, Natural Resources and the Environment), 2013. Key Environmental Indicators for Wallonia in 2012 (KEIW 2012). State of the Environment Directorate (DEE), Namur. 162pp.
- Dorenbosch, M., B. Crombaghs & R. Gubbels (2012): Ruimtelijke verspreiding en scheiding van vislevensgemeenschappen in de Geul en zijbeken.- *Natuurhistorisch Maandblad* 101(3): 43-48, Maastricht (in Dutch)
- Kottelat, M., & J. Greyhof (2007): *Handbook of European Freshwater Fishes*.- 646 pp., (Publications Kottelat) Cornol
- Philippart, J.-C. (2007): *L'érosion de la biodiversité: Les poissons*.- Dossier scientifique réalisé dans le cadre de l'élaboration du Rapport analytique 2006-2007 sur l'état de l'environnement wallon. Région Wallon, Brussel. 315 pp. (in French)

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