Lauterbornia 52: 133-137, D-86424 Dinkelscherben, 2004-12-30

Glossiphonia nebulosa (Hirudinea: Glossiphoniidae) new for The Netherlands

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With 1 figure

Keywords: Glossiphonia, Hirudinea, Netherlands, morphology, habitat, find report, faunistics
Schlagwörter: Glossiphonia, Hirudinea, Niederlande, Morphologie, Habitat, Fundnachweis, Faunistik

During a revision of Dutch *Glossiphonia* material the expected occurrence of *Glossiphonia nebulosa* in The Netherlands could be confirmed. According to literature, the species is confined to running water. However, the species was also found in standing waters. This indicates that *G. nebulosa* uses a wider range of habitats than has been previously assumed.

1 Introduction

When starting the revision of Dutch *Glossiphonia* material, *G. nebulosa* Kalbe, 1964 was expected in the southernmost area of The Netherlands, southern Limburg, a hilly region with numerous hill streams and/or in the Pleistocene parts of The Netherlands with its lowland streams. The scarce descriptions of the species habitat mention small to medium sized fast running waters as the typical habitat of this species (e.g. Nesemann & Neubert 1999, Grosser & al. 2001). In The Netherlands, such streams especially occur in southern Limburg and the Pleistocene parts. The oldest Dutch material was collected by "Brother Arnoud" in 1952 from a small hill stream in southern Limburg. More material from this region was found in the collection of the Museum of Natural History Maastricht. Surprisingly however, recent Dutch material of *G. nebulosa* turned up from a unexpected region and entirely different habitats.

2 Material

25 specimens of *G. nebulosa* from 10 locations were available for analysis. Details on date and locality of occurrence are as follows:

1. Province of Limburg, Terziet,09-06-1952, 7 specimens, leg. Brother Arnoud, coll. RMNH(10136)
2. Province of Limburg, Geul near Cottessen,08-10-1980, 2 specimens, leg. P. Cuijpers & M. Damoiseaux, coll. MNHM (198075)
3. Province of Limburg, Geul near Wittem, 10-09-1980, 1 specimen, leg. P. Cuijpers & M. Damoiseaux, coll. MNHM (198087)

4. Province of Limburg, Geul near Stokhem, 07-10-1980, 1 specimen, leg. P. Cuijpers & M. Damoiseaux, coll. MNHM (198076)
5. Province of Limburg, Geul near Valkenburg, 10-09-1980, 2 specimens, leg. P. Cuijpers & M. Damoiseaux, coll. MNHM (198089)
6. Province of Limburg, Geul near Wijlre, 10-09-1980, 5 specimens, leg. P. Cuijpers & M. Damoiseaux, coll. MNHM (198088)
7 Province of Utrecht, Soestdijk, Nieuwegracht, 21-04-2002, 1 specimen, leg. & coll. Waterschap Vallei en Eem (29505)
8. Province of Utrecht, Pijnenburg, sloot Ewijksehoeve, 01-05-2002, leg. & coll. Waterschap Vallei en Eem (29503)
9. Province of Brabant, Herpen, 02-05-2002, 1 specimen, leg. Bureau Waardenbug, coll. Soes
10. Province of Zuid-Holland, Bergvliet, Schoonouwen, 02-06-2004, 1 specimen, leg & coll. Bureau Waardenburg
RMNH = National Museum of Natural History, Leiden; MNHM = Museum of Natural History Maastricht

Figure 1 gives an overview of the known 10 locations of *G. nebulosa* in The Netherlands.

Fig. 1: The distribution of *Glossiphonia nebulosa* in The Netherlands

3 Diagnosis

G. nebulosa is a small, oval leech. Dutch specimens reached up to 1.5 cm in length. The head is small and not bulbous, giving the front part of the body a tapered appearance. The colour pattern is sober. The basic colour is grayish white, with one or two dark continuous dorsal stripes. There are two or three pairs of eyes, of which the posterior two pairs are large and often fused. Prominent, large papillae are present on two of each three midbody segments.

The identification of the specimens is based on a description by Neseman & Neubert (1999). The original description by Kalbe (1964) is insufficient as it does not allow a clear separation of this species from other species of the genus *Glossiphonia*. The taxonomic status of *G. nebulosa* has been unclear until recently, but modern molecular techniques have firmly confirmed its species status (Trontelj 1997, Verovnik & al. 1999).

4 Habitat descriptions

The oldest specimens are from the Terzieterbeek, a small, shallow hill stream in southern Limburg. Also nowadays this stream has a good water quality and morphology. Flow velocity is about 0.3-0.7 m/s (Crombaghs & al. 2000). The other material from southern Limburg was collected at several localities in the river Geul, which is a medium sized hill stream with medium flow velocities near the village Meerssen being about 0.3-0.6 m/s. Since the nineteen-eighties water quality in the Geul deteriorated severely, resulting in a disappearance of sensitive species of benthic fauna (Tolkamp 1999).

The locality near Soesterberg, at which one specimen of *G. nebulosa* was collected, is a 3 m wide ditch with medium to low flow velocities. No vegetation was present. The oxygen level was good, but the ditch was polluted with organic material. The mollusk fauna was dominated by *Pisidium* species. Although nearby, the ditch near Pijnenburg differed greatly from the ditch near Soesterberg. This ditch, with a width of 3-4 m, had a dense vegetation and had low to zero flow velocities during at least part of the year. Oxygen levels were markedly lower than at Soesterberg, but organic pollution was also lower. The mollusk fauna consisted of Gastropoda and Bivalvia, without dominant taxa (Geerink 2003).

The locality at Herpen is a small, shallow lake of about 0.5 ha. The specimen of *G. nebulosa* was caught near the bank. Water quality was reasonable, although phosphor levels were high. The aquatic vegetation was dominated by *Nuphar lutea* with hardly no submerged vegetation. Mollusk fauna was rich with species such as *Marstoniopsis scholtzi, Anisus vorticulus* and *Sphaerium corneum*.

The last locality Bergvliet near Schoonouwen in the Krimpenerwaard is a large ditch of 8-10 m wide. At time of collecting no current was noticed. The aquatic vegetation was dominated by *Nuphar lutea*, submersed vegetations of *Ceratophyllum demersum* and *Elodea nuttallii* covered less then two percent. Mollusk fauna was rich with species such as *Anisus vorticulus*, *Radix auricularia* and *Sphaerium corneum*

5 Discussion

The material from before 2002 all originated from the southern part of The Netherlands. More recent material originated from areas in the centre of The Netherlands, which is a Pleistocene area and from one location in the west, a Holocene area. These results suggest that *G. nebulosa* has a widespread distribution in The Netherlands. This is confirmed by a recent, not checked but reliable record from the northeast of The Netherlands (T. van Haaren, pers. com.). However, the species is likely to be uncommen or occurs locally in the western, Holocene part of The Netherlands, as numerous samples (over 350) of leeches from this area which were seen by the author contained only one sample with specimens of *G. nebulosa.*

In addition, the results show that the species is not confined to streams, but can also occur in standing waters, such as ditches and small lakes. This wide range of habitats is remarkable, as the typical habitat mentioned for *G. nebulosa* in literature is running water. According to Nesemann & Csányi (1993) the species is even restricted to this habitat. Future research will show whether the use of standing waters is common in The Netherlands or whether running waters are the preferred habitat and use of standing waters is relatively rare.

Acknowledgements

The author wishes to thank Marion Geerink, Bert Hoeksema and Fokeline Dingemans for providing material. Clemens Grosser, Hasko Nesemann and Peter Trontelj are thanked for verifying the identifications of the author. Ton de Winter is thanked for being helpful with providing literature. Karin Krijgsveld and Jan van der Winden were very helpful by reviewing the paper. Peter van Horssen is thanked for making the map.

References

Crombaghs, B. H. J. M., R. W. Akkermans, R. E. M. B. Gubbels & G. Hoogerwerf (2000): Vissen in Limburgse beken. De verspreiding en ecologie van vissen in stromende wateren in Limburg. Stichting Natuurpublicaties Limburg, Maastricht (in Dutch)

Dresscher, T. G. N. & L. W. G. Higler (1982): De Nederlandse Bloedzuigers Hirudinea. Wetenschappelijke mededelingen K.N.N.V. 154, Utrecht (in Dutch)

Geerink, M. (2003): Inventarisatie macrofauna Praamgracht 2002. Interne notitie Waterschap Vallei en Eem, Leusden (in Dutch)

Grosser, C., D. Heidecke & G. Moritz (2001). Untursuchungen zur Eignung heimischer Hirudineen als Bioindikatoren für Fließgewässer. Hercynia N. F. 34: 101-127, Halle

Kalbe, L. (1964): Glossiphonia complanata nebulosa nov. Subspec., eine neue Hirudinee aus Fließgewässern des Havelsgebietes.- Mitteilungen aus dem Zoologischen Museum in Berlin 40: 141-144, Berlin

Nesemann, H. & B. Csányi (1993): On the leech fauna (Hirudinea) of the Tisza river basin in Hungary with notes on the faunal history.- Lauterbornia 14: 41-70, Dinkelscherben

Nesemann, H. & E. Neubert (1999): Annelida, Clitellata: Branchiobdellida, Acanthobdellea, Hirudinea.- In: Schwoerbel, J. & P. Zwick (eds): Süßwasserfauna von Mitteleuropa. Begründet von A. Brauer 6/2, 178 pp., (Spektrum) Heidelberg

Tolkamp, H. H., 1999. Waterkwaliteitsverbetering en natuurontwikkelingssuccessen. Natuurhistorisch Maandblad 88: 126-132, Limburg (in Dutch)

Trontelj, P. (1997): Molekular Systematik der Egel (Hirudinea): Phylogenetische Analyse nuklear und mitochondrialer ribosomaler DNA-Sequenzen.- Dissertation der Eberhard-Karls-Universität Tübingen, Tübingen

Verovnik, R., P. Trontelj & B. Sket (1999): Genetic differentiation and species status within the snail leech Glossiphonia complanata aggregate (Hirudinea: Glossiphoniidae) revealed by RAPD analysis.- Archiv für Hydrobiologie 144: 327-338, Stuttgart

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Received: 2004-10-14