

**The Chironomidae (Diptera) of
the "Waelenhoek" nature reserve
(Niel, Belgium)**

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Summary

From 1990 to 1992 the benthos of a pond in Niel (Belgium) was sampled in order to study the spatial distribution of the fauna. Larvae of Chironomidae were always the dominant animals. At least 20 species were caught with a Ponar grab sampler.

Samenvatting

Tussen 1990 en 1992 werd het benthos van een vijver in Niel (België) bemonsterd in het kader van een studie van de ruimtelijke verspreiding van de fauna. Larven van Chironomidae waren steeds de dominante dieren. Tenminste 20 soorten werden gevangen met een Ponar bodemgrijper.

Introduction

The larvae of Chironomidae can be found in a wide range of terrestrial, aquatic and even some marine habitats. Several species have hemoglobine that enables them to live in almost anoxic conditions. In many rivers and ponds the majority of benthic invertebrates belong to this family. So far 305 species have been recorded from Belgium (GODDEERIS & BEHEN, 1991, INT PANIS *et al.*, 1992). This could be an underestimation since PINDER (1978) mentions 439 British species, a number that already rose to over 500 some five years later (LANGTON, 1984).

Methods

The pond that we have sampled has an area of about 1 ha and is 4 metres deep in its center. The water is eutrophic and during the summer stratification the water mass below 2.5 metres is completely anoxic from June till September.

A "Petite Ponar" grab sampler (Wildco, Cat. No. 1728) was used to take bottom samples. A total of 68 samples was taken in the littoral zone; 16 samples were taken at depths greater than 2.5 metres. The grab has an area of approximately 250 cm² and the mean sediment penetration is 3.0 cm (SD=1.4) in the littoral and 9.2 cm (SD=3.0) in the profundal zone of this particular pond. In addition, we have manually sampled stones from the northern shore where the bottom is far too hard to be sampled with a grab.

Samples were sieved (mesh size 300 µm) and sorted. All animals were preserved in 70% ethanol. The larvae of chironomids were identified with the keys of MOLLER PILLOT (1984). The larvae of *Chironomus cf. muratensis* were identified with the key provided by WEBB and SCHOLL (1985). Some specimens were heated in a KOH solution of 10% and dehydrated in ethanol. Then they were mounted on a microscope slide in euparal (MOLLER PILLOT, 1984). However, most animals could be identified without prior preparation. In 1990, twelve samples were taken at four different stations. These were used to rear adult midges from larvae. The males were identified with the key of PINDER (1978).

Results

Twenty taxa belonging to three subfamilies were identified. These taxa are listed in table 1. Only 4 species were identified from their larvae. For another 4 taxa the species name was found by identifying the adult midges (indicated by an asterisk in table 1). Two species were identified both from larvae and adults (indicated by a double asterisk in table 1). Twelve taxa could only be identified up to genus or species group level.

Discussion and conclusions

The samples that were taken in the central part of the pond were dominated by *Chaoborus flavicans* (MEIGEN, 1830) (Diptera: Chaoboridae) and *Chironomus plumosus* (LINNAEUS, 1758). Almost no other animals were found in this zone that has a very low oxygen concentration throughout the summer.

Most species are restricted to the shallow zone near the shores. The bottom along the northern shore is covered with stones. In this zone Orthoclaadiinae are the most abundant animals. The soft shallow sediments are inhabited by a large number of species.

Table 1

Chironominae

Chironomini

- Chironomus cf. muratensis* Ryser, Scholl & Wülker, 1983
- * *Chironomus plumosus* (Linnaeus, 1758)
- Chironomus* Meigen, 1803 (gr. *thummi*)
- Cladopelma* Kieffer, 1921 (gr. *laccophila*)
- Cryptochironomus* Kieffer, 1918
- ** *Dicrotendipes nervosus* (Staeger, 1839)
- * *Glyptotendipes pallens* (Meigen, 1804)
- Kiefferulus tendipediformis* (Goetghebuer, 1921)
- Microtendipes* Kieffer, 1915 (gr. *chloris*)
- Parachironomus* Lenz, 1921 (gr. *arcuatus*)
- * *Polypedilum nubeculosum* (Meigen, 1804)
- Polypedilum cf. uncinatum* (Goetghebuer, 1921)
- Stictochironomus* Kieffer, 1919

Tanytarsini

- Cladotanytarsus* Kieffer, 1921
- Tanytarsus* van der Wulp, 1874

Orthoclaadiinae

- Cricotopus* van der Wulp, 1874 (gr. *sylvestris*)
- Cricotopus* van der Wulp, 1874 (*trifasciatus* agg.)

Tanypodinae

- ** *Ablabesmyia longistyla* Fittkau, 1962
- Ablabesmyia monilis* (Linnaeus, 1758)
- * *Procladius choreus* (Meigen, 1804)

The presence of *Ablabesmyia longistyla* FITTKAU, 1962 in this pond was already reported by INT PANIS *et al.* (1992). The presence of two other taxa that are new to the Belgian fauna is discussed below.

Cladopelma gr. laccophila

This group of larvae is described by LENZ (1954-1962). Only adults can be identified up to species level. According to MOLLER PILLOT (1984), only two species belong to this group: *C. laccophila* KIEFFER, 1922 and *C. edwardsi* KRUSEMAN, 1933. Neither of these species has been recorded from Belgium (GODDEERIS & BEHEN, 1991). Only *C. edwardsi* (two adults) is known from the Netherlands (MOLLER PILLOT, 1984). However, the mentum of our larvae does not resemble the descriptions given by BECK & BECK (1969) and SUBLETTE (1964) for this species. In any case, the larvae of several *Cladopelma* species remain unknown.

Chironomus cf. muratensis

These larvae are typical of the littoral zone. They are easily identified as *Chironomus semireductus* group (LENZ, 1954-1962). Further identification with the key of WEBB & SCHOLL (1985) brings us to *Chironomus muratensis* RYSER, SCHOLL & WÜLKER, 1983. This species is the only one with shortened ventral tubuli on the eighth abdominal segment that was included in their key to 26 species. However, more than 60 species of *Chironomus* have been recorded from Europe. The original description of the species by RYSER *et al.* (1983) is mainly based on karyological characteristics and the morphology of the larvae. The identification cannot be confirmed by rearing the larvae and identifying the adults because RYSER *et al.* (1983) state that the adults of *C. plumosus*, *C. muratensis* and *C. nudiventris* cannot be distinguished from each other on the basis of morphological characters.

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