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Some records of two rare chironomid species in the Netherlands

(Diptera, Chironomidae)

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Abstract

Recent finds of two rare chironomid species in the Netherlands are described. *Dicrotendipes pallidicornis* Goetgh. has been found in two small brackish waters in the southwest of the Netherlands. *Parachironomus mauricii* Kruseman was collected from a freshwater ditch in the north of the Netherlands. Both finds are compared with reports from elsewhere in and outside Europe.

Introduction

In this article the Dutch records of the rare Chironomid species *Dicrotendipes pallidicornis* Goetghebuer and *Parachironomus mauricii* Kruseman are considered. *D. pallidicornis* is a new find for the Netherlands. This species was found at two places in the Delta-region in the south-west of the Netherlands.

Since the description of *P. mauricii* by KRUSEMAN in 1933, this species was not found in the Netherlands until 1979 when it was rediscovered by dr. W. van Vierssen in Friesland in the northern part of the Netherlands (VAN VIERSSSEN, 1982). Both species will be dealt with here.

Dicrotendipes pallidicornis Goetgh.

D. pallidicornis was first described by GOETGHEBUER (1934) on the basis of material collected on 13 to 15 April 1926 at Basra, Iraq, close to the Persian Gulf. Since then the species has been reported from several European countries. In the collection of the Zoologische Staatssammlung in Munich, FRG, I found some specimens from several parts of Europe, as indicated below (a to c):

a) One came from Lake Kurnas on Crete, Greece, collected by Dr. H. Malicky (Biological Station Lunz, Austria) on 16-5-1971. Dr. Malicky kindly supplied some chemical information about Lake Kurnas: it is an oligotrophic brackish water lake with a chlorinity that varied between 4.8 and 8.0 ‰ Cl⁻ during the period 1972–1980. The find of an adult doesn't necessarily indicate that it came from this lake.

b) The second specimen was one collected by Setta (Mendl) on 30–9–1975 at Lake Pineto, near Bastia, Corsica. About this find no further details are known.

c) On 7–8–1978 R. Kühbandner caught one male on the surface of a freshwater pond near Novalja on the island Pag, Yugoslavia. As above, this doesn't indicate that the midge grew up in this lake as a larva.

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The following references were found in the literature. PRAT (1980) reports the species from the Cala reservoir near Sevilla in the south of Spain. It is a male, caught on 16-3-1974 and was by that the first known Spanish record of this species. BIRKETT (1984) described some finds of England. On 19 August and 1 September 1975 he visited the sandhills at Sandscale Hawes Warren in Cumbria and caught males and females. The species is established in this part of north-west England, shown by frequent subsequent captures. Since then the species has been found by Langton in Swan Pool, near Falmouth, Cornwall, south-west England in a partly brackish pool. Birkett's conclusion is that these records suggest a discontinuous distribution at present, and he is expecting that further collecting in and around coastal dune slacks may reveal the species to be more widespread.

The finds for the Netherlands are listed below:

a) The first sampling-station was the Doolman, a "weel" on Zuid-Beveland in the Delta-region. A "weel" or "wiel" is a round pool which is a result of a dikeburst. The Doolman has a diameter of approx. 50 meters and its largest depth is 5 meters. It contains brackish water; the chlorinity in 1978 fluctuated between 1.70 and 1.90 ‰ Cl⁻. In 1975 fluctuations were somewhat larger: 2.60–5.90 ‰ Cl⁻. In the deeper parts of the pool a vertical salt gradient existed. Locally, the shallower parts were grown with reeds and the substrate consisted of soft mud. *D. pallidicornis* was found while sampling this shallow littoral zone on 6-4-1978 and 11-7-1978. On these sampling days the chlorinity was 1.90 and 1.70 ‰ Cl⁻, respectively. Collected larvae were reared in the laboratory. Identifications of the midges were confirmed by dr. R. Lichtenberg (Naturhistorisches Museum, Vienna). *D. pallidicornis* from 6-4-1978 was found in combination with larvae of *Procladius choreus* (Meigen) and *Glyptotendipes barbipes* (Staeger). For the 11-7-1978 sample *Chironomus salinarius* Kieffer, *Chironomus annularius* Meigen, *Chironomus halophilus* Kieffer and *Cricotopus ornatus* (Meigen) were additional to the combination mentioned before.

b) The second sampling-station was a in 1975 newly created pool in the recreational area "Het Poelbos", also on Zuid-Beveland. This pool, which was sampled on 15-3-1978, is rather shallow with reeds *Phragmites australis* (Cav.) Trin. ex Steud, salt-marsh club-rush *Scirpus maritimus* L. and bulrush *S. lacustris* L. growing on its shore. The submerged vegetation consisted largely of *Ranunculus* sp., *Potamogeton pectinatus* L. and *Myriophyllum spicatum* L. Chlorinity at that time was 0.92 ‰. Again, collected larvae were reared in the laboratory. Besides *D. pallidicornis*, we identified *G. barbipes*, *C. halophilus*, *C. annularius*, *C. salinarius*, *C. plumosus* (L.), *Microchironomus deribae* (Freeman), *C. ornatus* and *P. choreus*, a species composition that shows close resemblance to the combination found in the Doolman.

Table 1

Species	Brackish water-species	Freshwater species with moderate tolerance for brackish water	Freshwater species with slight tolerance for brackish water	Reference
<i>Chironomus halophilus</i>	×			PARMA & KREBS, 1977
<i>Chironomus annularius</i>		×		PARMA & KREBS, 1977
<i>Chironomus salinarius</i>	×			PARMA & KREBS, 1977
<i>Chironomus plumosus</i>			×	PARMA & KREBS, 1977
<i>Glyptotendipes barbipes</i>		×		PARMA & KREBS, 1977
<i>Microchironomus deribae</i>	×			KREBS, 1979
<i>Cricotopus ornatus</i>		×		KREBS, 1982
<i>Procladius choreus</i>		×		KREBS, 1982

Both the additional species from the Doolman, as well as those from the Poelbos are rather common in the southwestern part of the Netherlands and typical for oligohaline-mesohaline waters (Table 1). For the species composition of the accompanying macrofauna see Table 3.

From the above, the tentative conclusion can be that *D. pallidicornis* shows a preference for slightly brackish water. The question, whether it is a true brackish water species or a freshwater species with a tolerance for brackish water has to remain unanswered due to a lack of sufficient data. The Dutch and English data do suggest the former.

FITTKAU & REISS (1978) classified *D. pallidicornis* as being a species of stagnant lakes. On basis of the Dutch records, we could add to this the smaller (brackish) waters. *D. pallidicornis* is likely to have at least two generations a year, because larvae of the species were found both on spring (March) and on summer (July).

Parachironomus mauricii Kruseman

W. van Vierssen (Landbouwhogeschool, Wageningen, The Netherlands) sent me some chironomids reared from larvae collected in several pools and ditches in Friesland in the norther part of the Netherlands. One of these samples was especially interesting since it contained *P. mauricii*.

This species has originally been described by GOETGHEBUER (1931) as *Cryptochironomus littorellus*. The description being based on a specimen collected on 8-9-1931 at “de Panne”, a dune area in the southwest of Belgium. The species name “littorellus” gave rise to some confusion since Meigen used it also for another species. Therefore KRUSEMAN (1933) renamed the species *Parachironomus mauricii*, “mauricii” referring to Goetghebuer’s Christian name.

For the Netherlands, Kruseman reports 2 finds. One concerns a specimen from his own collection and collected in the dunes near Vogelenzang in May 1931; the other one being a specimen from the “de Meijere-collection” and caught near Diemen, Noord-Holland, in September 1920.

LEHMANN (1970) reports the species in his revision of the European *Parachironomus* species. Besides the finds from Belgium and the Netherlands, Lehmann reports the species for Germany as well (though with a questionmark) and concludes that nothing is known about its lifecycle.

In the collection of the Zoologische Staatssammlung Munich two male specimens were found. One of these came from the Netherlands and was identified by Kruseman as *Parachironomus varus limnaei* Guibé, but renamed by Reiss as *P. mauricii*. About the origin of this material no further details are known. The second specimen, collected by Prof. Feliksiak in 1954 came from the region of Lodz, Poland. About this find we have no additional information either.

P. mauricii is also known from England. Langton found this species in Flood’s Ferry, near March in Cambridgeshire (CRANSTON, 1974).

The first record for the Sovietunion comes from SHILOVA (1976) who reared 4 males from larvae collected in an artificial pond with a depth of 70 cm and a muddy, sandy bottom. The pupae hatched by the end of May and July.

Table 2

<i>Potamogeton pectinatus</i> L.	25 %
<i>Zannichellia pedunculata</i> Rchb.	20 %
<i>Lemna gibba</i> L.	20 %
<i>Lemna trisulca</i> L.	10 %
<i>Potamogeton pusillus</i> L.	10 %
Green algae	10 %

As stated above, the most recent Dutch find was done in Friesland by W. van Vierssen on the 22nd of August, 1979. Larvae of *P. mauricii* were collected from a small ditch, running through arable land. Its breadth was 2.5 m, and depth approx. 40 cm. The substrate consisted of clay. The water was very clear and its level did not fluctuate. The vegetation is given in Table 2 (after van Vierssen, 1982). For the species composition of the accompanying macrofauna see Table 4.

Unfortunately, the chlorinity is unknown, but regarding the species composition of the vegetation, the water will have been fresh or slightly brackish at the most. Rearing of larvae resulted in 2 males and 6 females. Other species either were not present or did not hatch. After identification the midges were compared with specimens from the collection in Munich.

Like *D. pallidicornis*, FITTKAU & REISS (1978) consider *P. mauricii* to be a stagnant lake species. On basis of the concise data given above it would be more likely to consider *P. mauricii* as a species typical

Table 3

Species composition of the accompanying macrofauna at the sampling locations of *Dicrotendipes pallidicornis*.

	Doolman 6-4-1978	Doolman 11-7-1978	Poelbos 15-3-1978
<i>Plea leachi</i> McGreg. & Kirk		×	
<i>Callicorixa concinna</i> (Fieber)	×	×	×
<i>Callicorixa praeusta</i> (Fieber)		×	
<i>Sigara stagnalis</i> (Leach)	×	×	×
<i>Sigara lateralis</i> (Leach)	×	×	×
<i>Sigara striata</i> (L.)	×	×	×
<i>Corixa punctata</i> (Illig.)			×
<i>Haliphus lineatocollis</i> Marsh.			×
<i>Anacaena globulus</i> (Payk.)		×	
<i>Procladius choreus</i> (Meigen)	×	×	×
<i>Chironomus salinaris</i> Kieff.		×	×
<i>Chironomus halophilus</i> Kieff.		×	×
<i>Chironomus annularius</i> Meig.		×	×
<i>Chironomus plumosus</i> (L.)			×
<i>Glyptotendipes barbipes</i> (Staeger)	×	×	×
<i>Microchironomus deribae</i> (Freeman)			×
<i>Cricotopus ornatus</i> (Meigen)		×	×
<i>Limnephilus affinis</i> Curtis			×
<i>Ischnura elegans</i> v. d. L.	×	×	
<i>Electra crustulenta</i> (Pallas)		×	
<i>Hydrobia</i> sp.		×	
<i>Lymnaea palustris</i> (Müller)		×	
<i>Neomysis integer</i> (Leach)	×	×	
<i>Corophium</i> sp.		×	
<i>Orchestia gammarellus</i> (Pallas)		×	
<i>Gammarus duebeni</i> Lilljeborg	×	×	
<i>Gammarus zaddachi</i> Sexton	×	×	×
<i>Palaemonetes varians</i> (Leach)	×	•×	

for small fresh waters (Kleingewässer). *P. mauricii* is mostly found in the northern-German lowlands and their offshoots. Regarding the finds of Kruseman in May and September, of van Vierssen in August and of Shilova by the end of May and July, the species can at least be considered bivoltine.

Table 4

Species composition of the accompanying macrofauna at the sampling location of *Parachironomus mauricii*

Coleoptera	Heteroptera	Mollusca
dominant	<i>Sigara striata</i> (Fieb.)	<i>Lymnaea peregra</i> (Müller)
<i>Hygrotus inaequalis</i> (Fabr.)	<i>Sigara stagnalis</i> (Leach)	<i>Lymnaea palustris</i> (Müller)
<i>Laccobius minutus</i> (L.)	<i>Sigara falleni</i> (Fieb.)	<i>Lymnaea stagnalis</i> (L.)
frequent	<i>Corixa punctata</i> (Ill.)	<i>Planorbis planorbis</i> (L.)
<i>Haliplus lineatocollis</i> Marsh.	<i>Corixa affinis</i> Leach	<i>Planorbis corneus</i> (L.)
<i>Haliplus immaculatus</i> Gerh.	<i>Corixa panzeri</i> (Fieb.)	<i>Bitynthia tentaculata</i> (L.)
scarce	<i>Hesperocorixa linnei</i> (Fieb.)	<i>Physa fontinalis</i> (L.)
<i>Laccophilus hyalinus</i> (Deg.)	<i>Gerris thoracicus</i> Schumm.	
	<i>Notonecta glauca</i> L.	

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