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THE DISTRIBUTION OF HELOPHORUS SPECIES IN THE NETHERLANDS (COLEOPTERA: HYDROPHILIDAE)

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#### Introduction

The genus *Helophorus* can easily be recognized as such within the beetle family Hydrophilidae, but most species of this genus are hard to identify. For that reason a lot of unidentified material is present in most collections.

The aim of the present study was to identify all specimens present in Dutch collections and to produce distribution maps of and a key for the Dutch species. The results of this study were brought on record in a preliminary report (de Groot, unpublished). In this paper the maps are presented; I hope to be able to publish the key elsewhere in the near future.

#### Material and methods

In total c. 4200 specimens were identified and recorded on maps. This material comprises the collections of the Rijksmuseum van Natuurlijke Historie (Leiden), the Zoologisch Museum (Amsterdam), the Biologisch Station (Wijster) and a few private collections. Identifications were made with the keys of Arnold (1935), Kevan (1965) (*Helophorus* s.s.) and Angus (1971) (*Meghelophorus*).

#### Distribution and abundance

The distribution of all (\*) Dutch species is presented in Fig. 1-20. In the text some notes are made regarding the habitat and the abundance of the species in the Netherlands. It is noted here that the abundance of a number of species is declining, e.g. *H. arvernicus*, living along brooks in mountainous areas, and the species of the subgenus *Empleurus*, inhabiting arable land and before 1940 recorded from time to time as a pest for agriculture (cultivation of turnip).

##### 1. *Helophorus tuberculatus* Gyllenhal (Fig. 1)

Habitat: A non-aquatic, tyrphobiontic species, frequenting *Sphagnum* moss and places with burned peat moor.

Distribution: Recorded from fenn and peat moor areas in the Netherlands, most recently near Dallerveen (Dr.) in 1962. Up to 1960 37 specimens.

##### 2. *Helophorus porculus* Bedel (Fig. 2)

Habitat: Also a terrestrial species; the larvae live on turnip, being sometimes a pest for agriculture of these plants.

Distribution: Only recorded before 1950, mainly

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(\*) A species new to the fauna of the Netherlands has been collected by Burmeister (in press)

in the eastern and southern provinces. In total 40 records.

3. *Helophorus rufipes* (Bosc) (Fig. 3)

Habitat: Comparable with that of *H. porculus* (nr. 2); the larvae live on Cruciferae.

Distribution: Recorded from the whole country (83 specimens), although not very common. Last record: Noord Sloe (1960).

4. *Helophorus nubilus* F. (Fig. 4)

Habitat: Terrestrial, living under decaying leaves or detritus.

Distribution: Before 1950 common in the whole country (263 specimens in collections), but rather scarce since that year (only 17 specimens).

5. *Helophorus aquaticus* (L.) (Fig. 5)

Habitat: Aquatic species, mainly living in stagnant waters with luxurious vegetation; uncommon in running waters.

Distribution: Common in the Netherlands.

6. *Helophorus grandis* (Fig. 6)

Habitat: Aquatic species, frequenting silt ponds with little vegetation. Also in temporary pools (cf. *H. brevipalpis*).

Distribution: The subspecies *H. g. grandis* is common in the Netherlands, but more local than *H. aquaticus*. The subspecies *H. g. maritimus* has been recorded once from Maastricht, but it remains uncertain whether these specimens are indeed collected on this locality. The latter is considered a Mediterranean subspecies.

7. *Helophorus brevipalpis* Bedel (Fig. 7)

Habitat: Aquatic, to be found in most stagnant waters and sometimes very abundant in temporary pools. A ready migrator, although being a fairly poor flyer.

Distribution: The most common species of this genus in the Netherlands.

8. *Helophorus arvernensis* Mulsant (Fig. 8)

Habitat: Found in and along brooks with clear water in mountainous areas.

Distribution: Only in the eastern and southern

part of the Netherlands; before 1950 much more common (57 specimens) than since that year (only three records).

9. *Helophorus asperatus* Rey (Fig. 9)

Habitat: Unknown.

Distribution: Only three records (four specimens) from Zeeburg (near Amsterdam), Hoek van Holland and Brunssum.

10. *Helophorus nanus* Sturm (Fig. 10)

Habitat: Unknown.

Distribution: Although a widespread species in the western Palaearctic, it is rare in the Netherlands with only 26 specimens in collections.

11. *Helophorus strigifrons* C.G. Thomson

Habitat: Aquatic, probably frequenting moor areas.

Distribution: A rare species in the Netherlands (13 specimens), last recorded in 1937.

12. *Helophorus pumilio* Erichson (Fig. 12)

Habitat: Usually found in moor areas, in Fennoscandia in pools present after melting of snow. Also along running waters.

Distribution: Rare, last recorded in 1945. In total only 15 specimens in Dutch collections.

13. *Helophorus dorsalis* (Marsham) (Fig. 13)

Habitat: Unknown.

Distribution: Only three records; the last dated one is from 1904. This species is rare everywhere in Western Europe.

14. *Helophorus fulgidicollis* Motschulsky (Fig. 14)

Habitat: A halobiontic species, inhabiting small pools on salt marshes.

Distribution: Rather scarce (28 specimens) along the Dutch coast before 1950. Also found along the former Zuiderzee, now IJsselmeer containing freshwater. Last record: Texel, 1949.

15. *Helophorus longitarsis* Wollaston (Fig. 15)

Habitat: Unknown, seems to be restricted to sandy areas in England.

Distribution: A rare species (five specimens), only recorded from the eastern part of the Netherlands. Last record from 1937.

16. *Helophorus minutus* F. (Fig. 16)

Habitat: Grassy and weedy pools.

Distribution: Common in the whole country, but probably absent in the oligohaline areas.

17. *Helophorus granularis* (L.) (Fig. 17)

Habitat: Usually inhabiting weedy pools, avoiding temporary pools (cf. *H. brevipalpis*).

Distribution: Recorded from the whole country, but rather scarce in the last decades.

--. *Helophorus flavipes*-complex (females only)  
(Fig. 18)

It appeared impossible to separate the females of *H. obscurus* and *H. flavipes* with certainty. The males can be determined on morphological characters of the genitalia. Fig. 18 includes all records of females of both species.

18. *Helophorus obscurus* Mulsant (males only)  
(Fig. 19)

Habitat: This species seems to be confined to neutral or basic permanent waters. It is a poor flyer.

Distribution: Found in most provinces, although uncommon in the northern ones. Still present everywhere.

19. *Helophorus flavipes* F. (males only)  
(Fig. 20)

Habitat: Frequenting acid waters (cf. *H. obscurus*), e.g. pools with *Sphagnum*.

Distribution: Rather common in the eastern provinces (Pleistocene), indeed covering the area with acid waters in the Netherlands.

## References

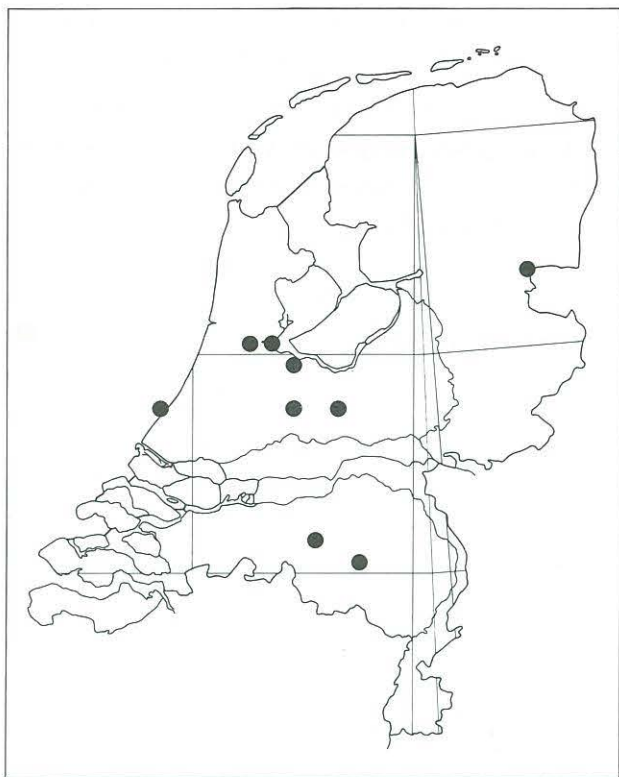
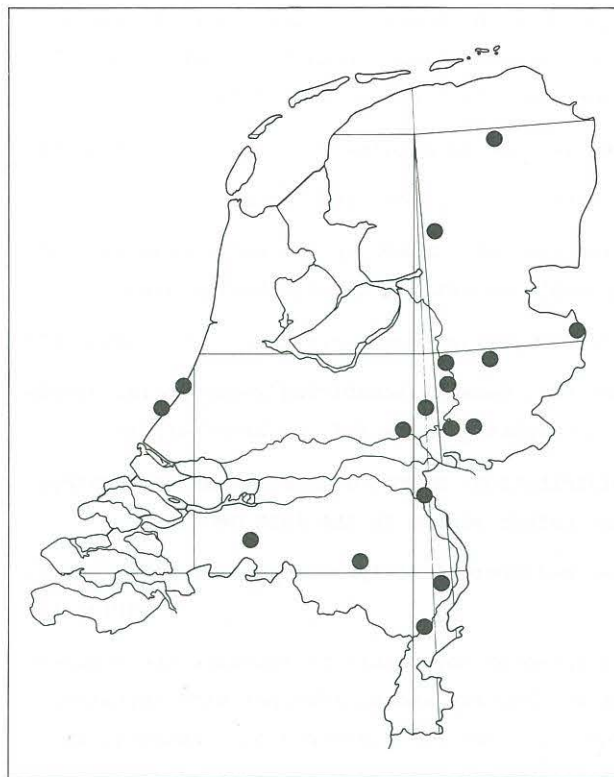
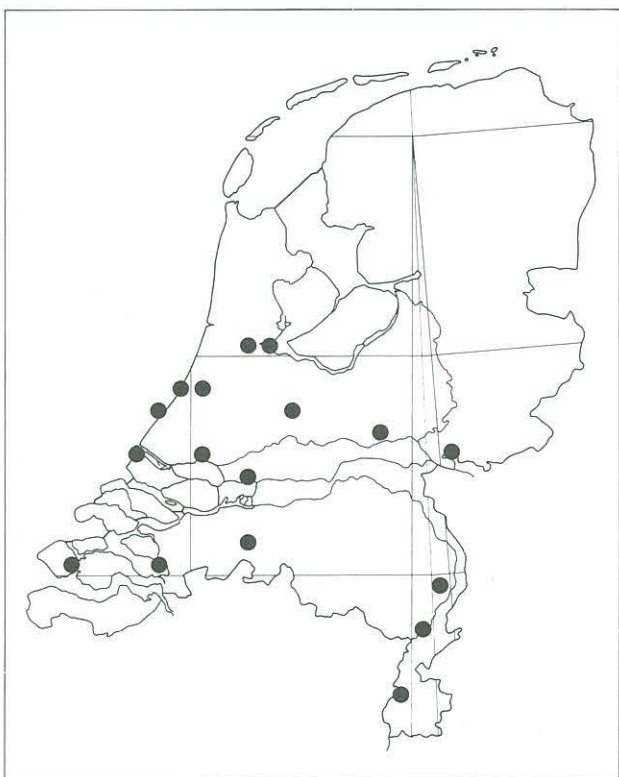
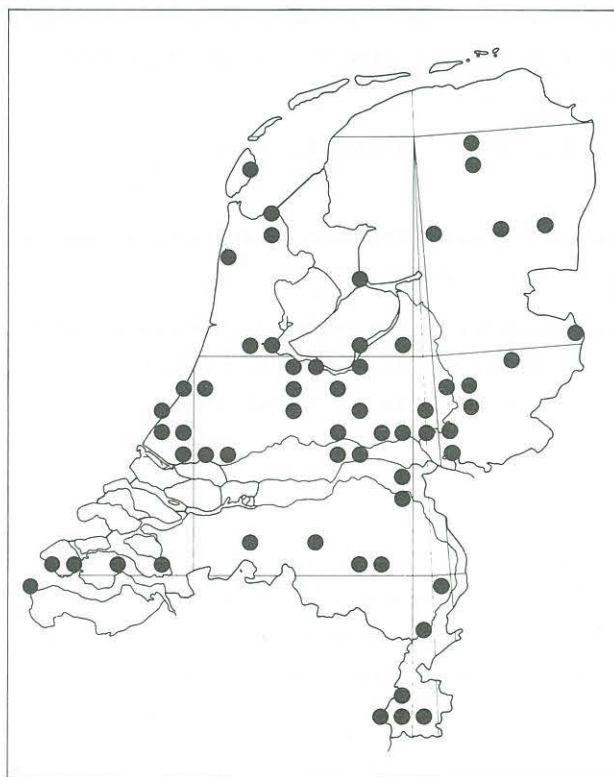
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europäischen Arten der Gattung *Helophorus* F. -- *Entomologische Blätter*, 31: 1-19.

Kevan, D.K., 1965 (1966). The British species of the genus *Helophorus* s.str. (Col., Hydrophilidae). -- *Entomologist's monthly Magazine*, 101: 254-268.

Fig. 1-20 on p. 62-66. ■



Fig. 1. *Helophorus tuberculatus*Fig. 2. *Helophorus porculus*Fig. 3. *Helophorus rufipes*Fig. 4. *Helophorus nubilus*

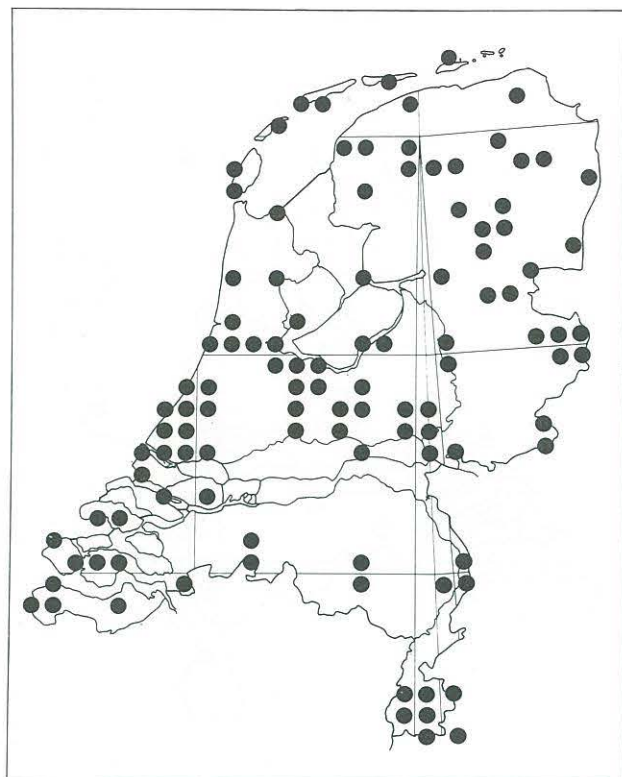


Fig. 5. *Helophorus aquaticus*

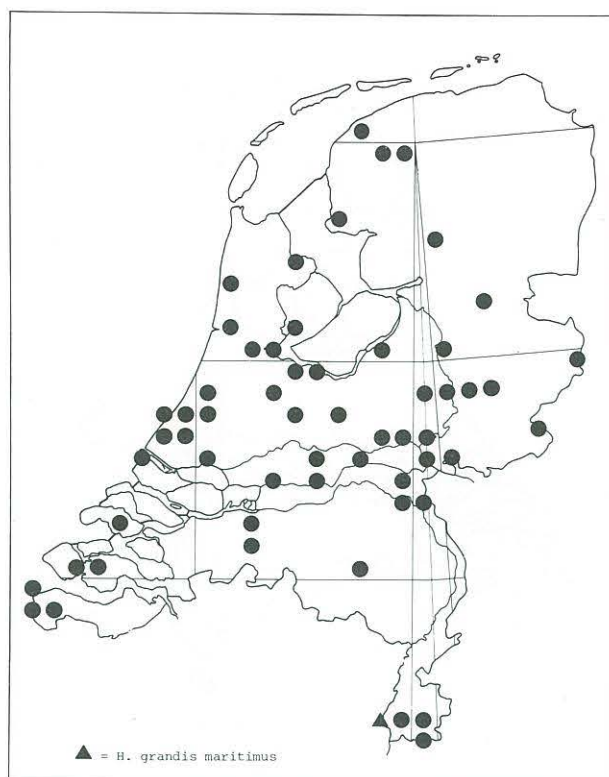


Fig. 6. *Helophorus grandis*

Fig. 7. *Helophorus brevipalpis*

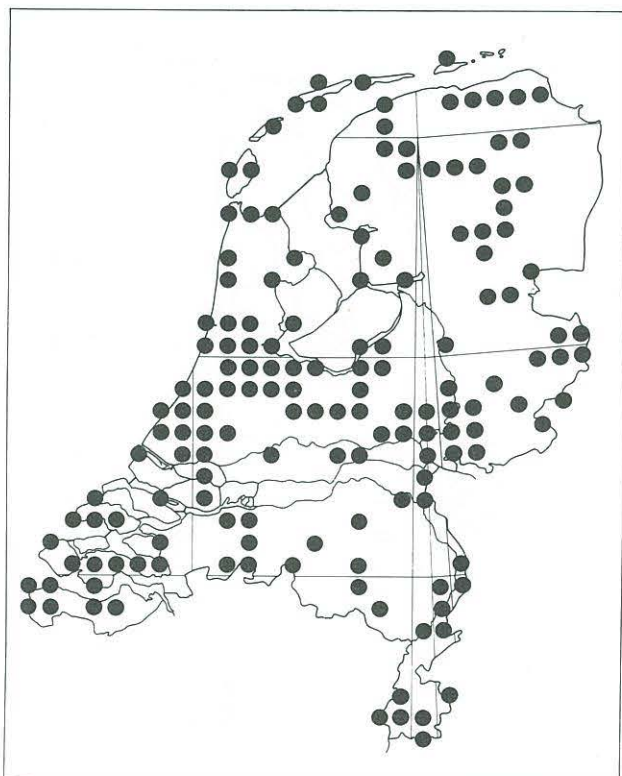
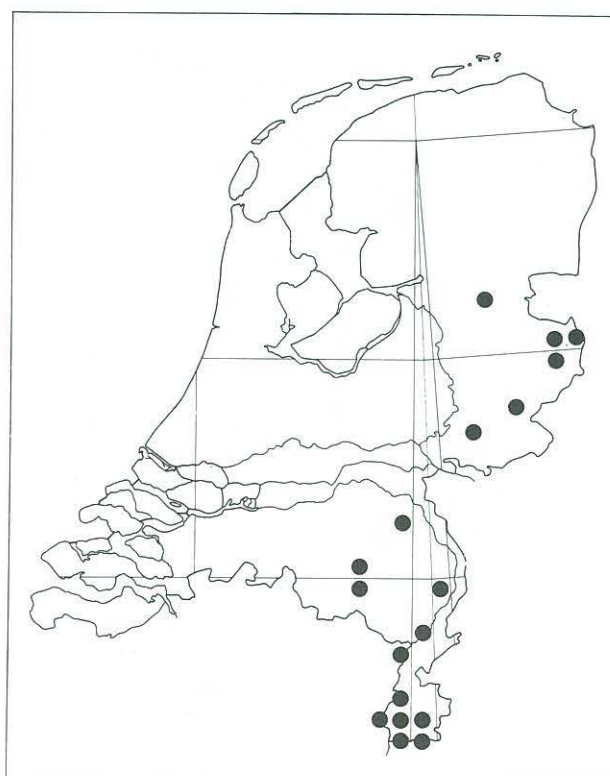
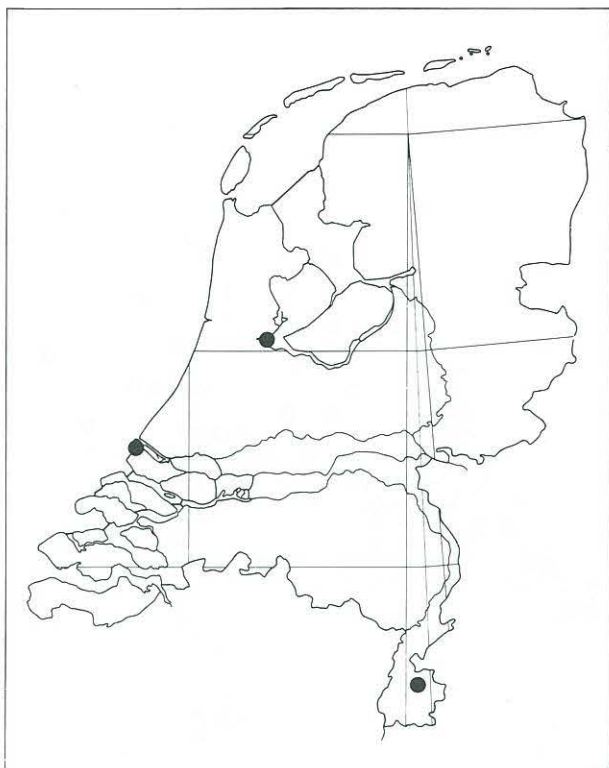
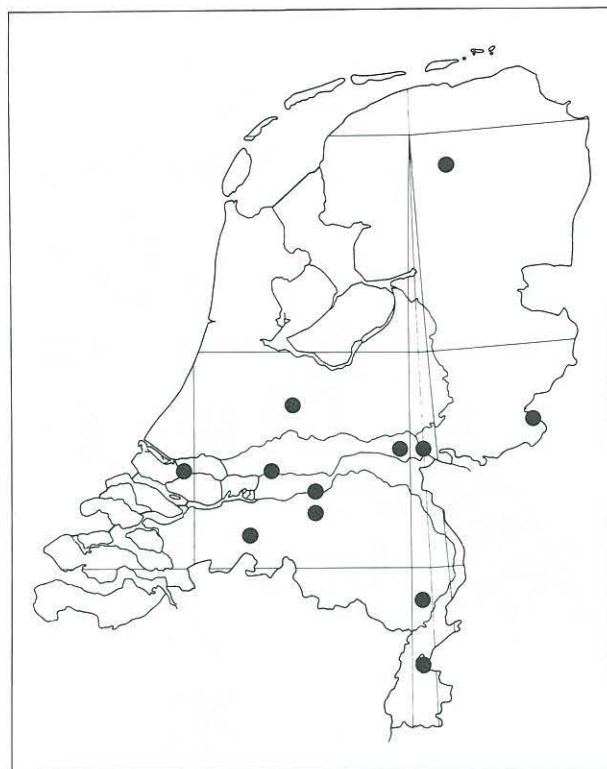
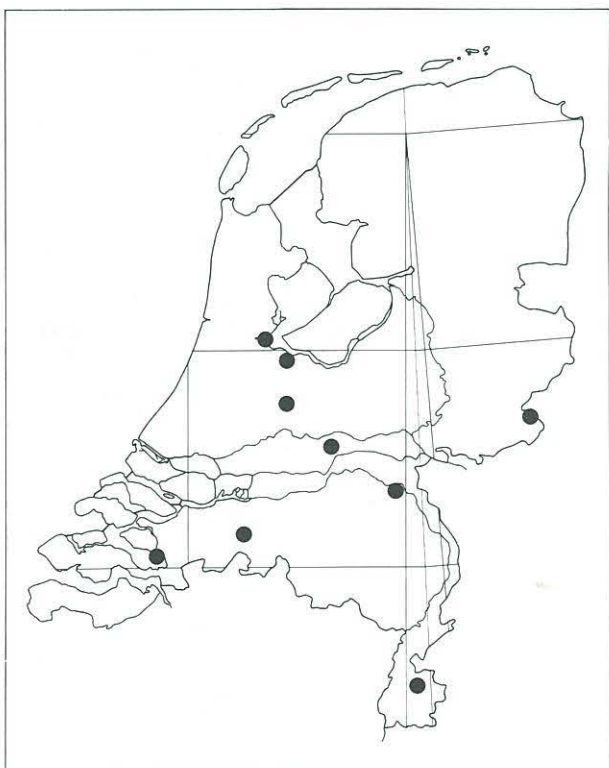
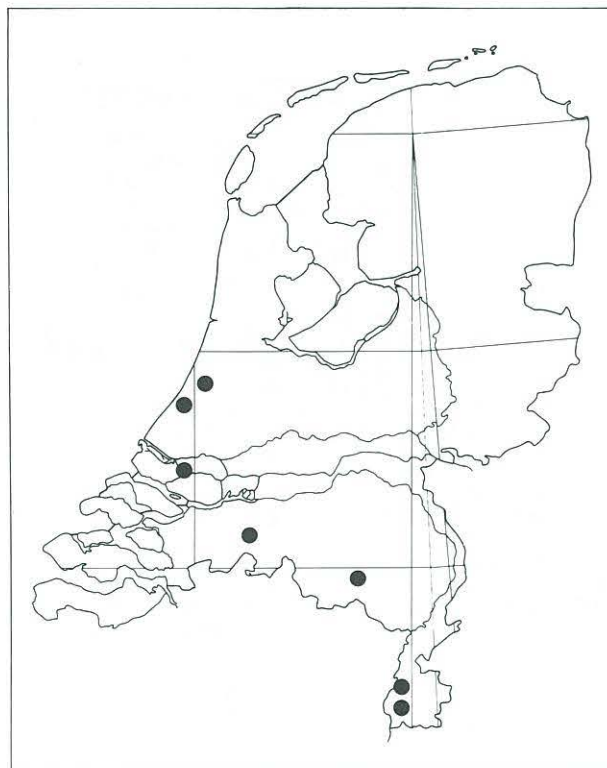


Fig. 8. *Helophorus arvernensis*



Fig. 9. *Helophorus asperatus*Fig. 10. *Helophorus nanus*Fig. 11. *Helophorus strigifrons*Fig. 12. *Helophorus pumilio*



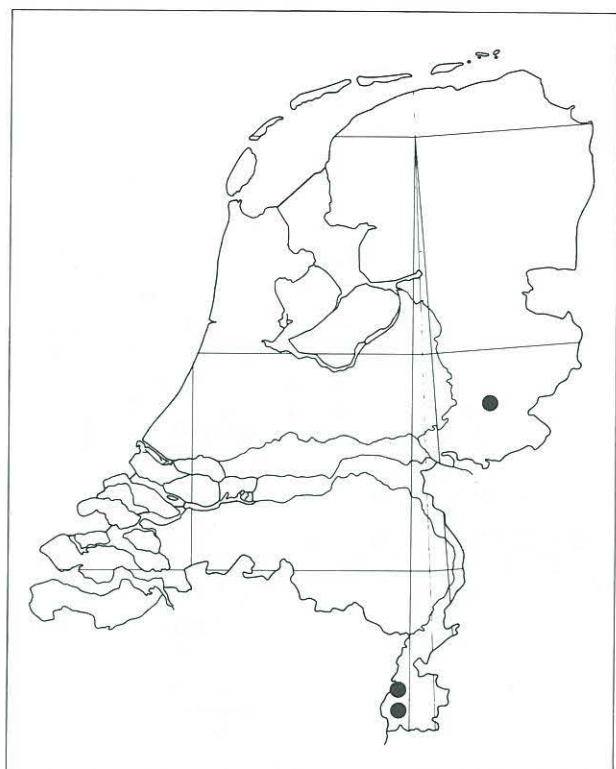


Fig. 13. *Helophorus dorsalis*

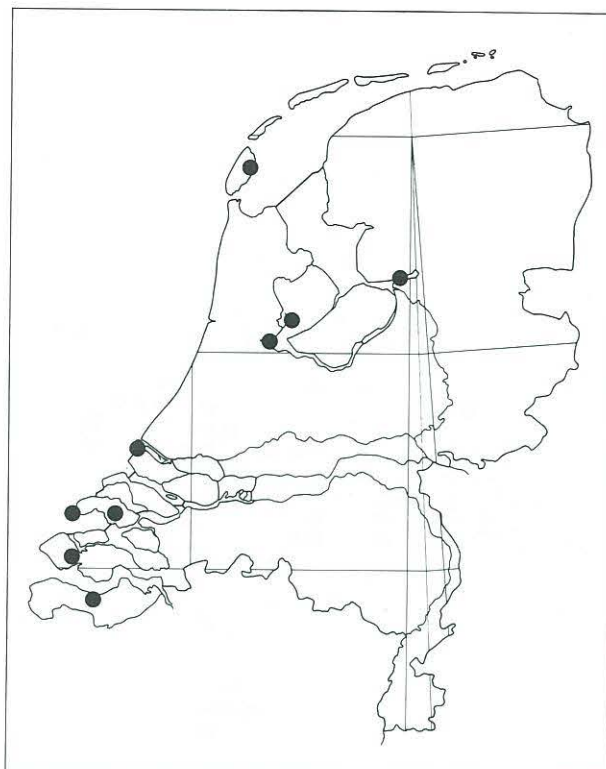


Fig. 14. *Helophorus fulgidicollis*

Fig. 15. *Helophorus longitarsis*

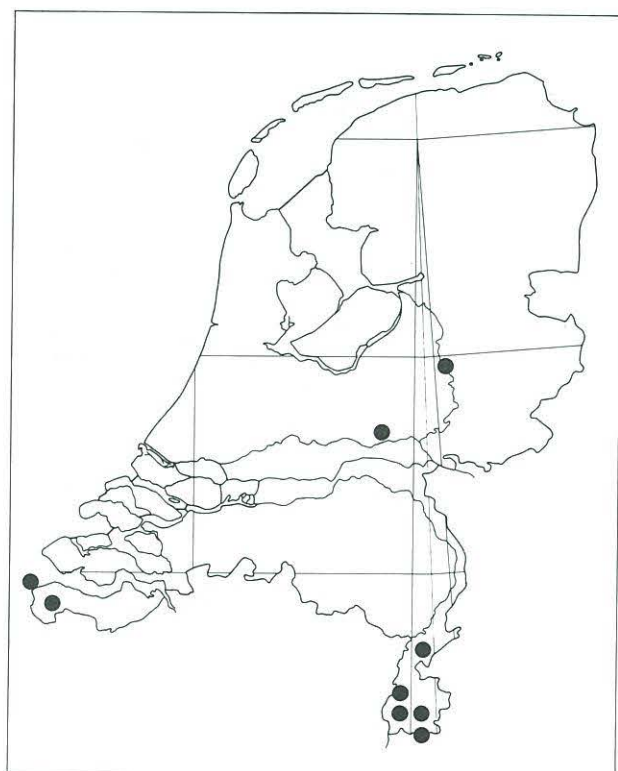
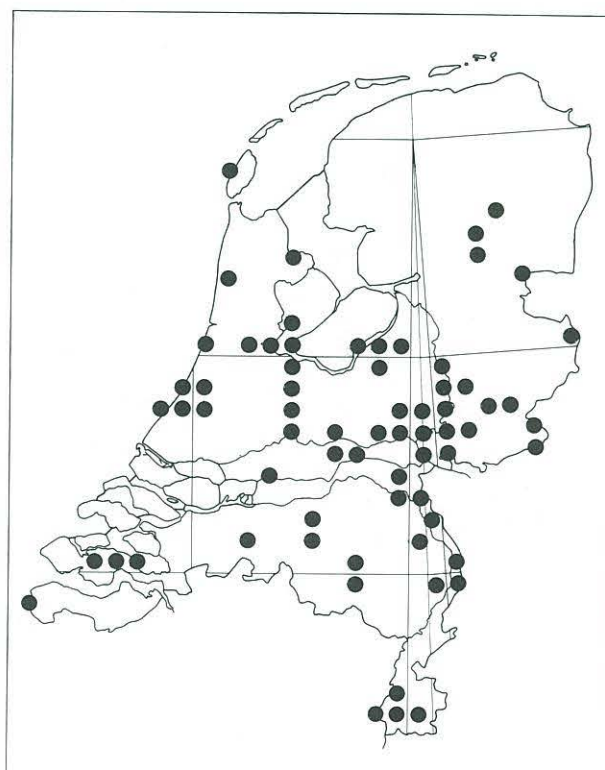


Fig. 16. *Helophorus minutus*



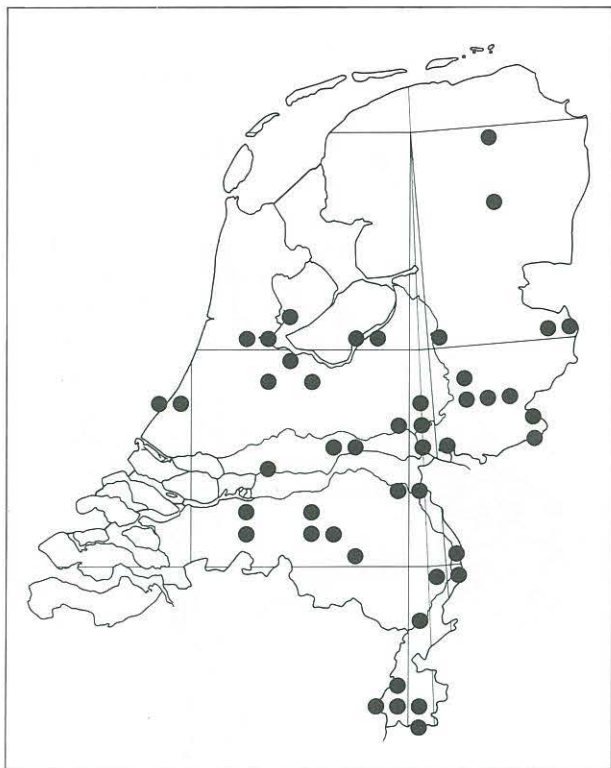


Fig. 17. *Helophorus granularis*

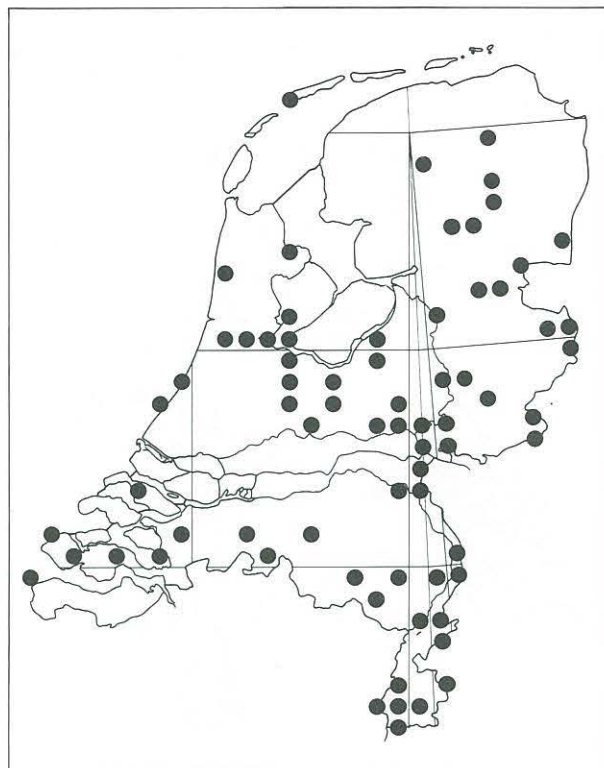


Fig. 18. *Helophorus flavipes*-complex ♀♀

Fig. 19. *Helophorus obscurus* (♂♂ only)

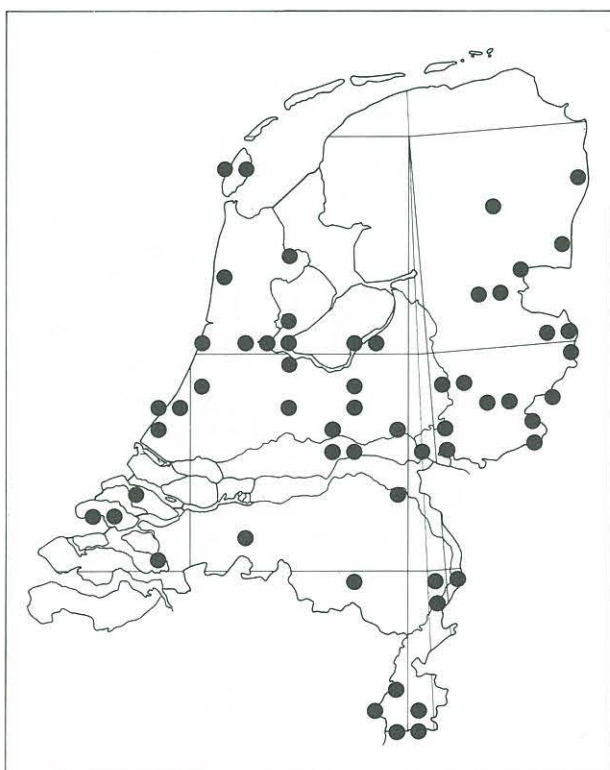


Fig. 20. *Helophorus flavipes* (♂♂ only)

