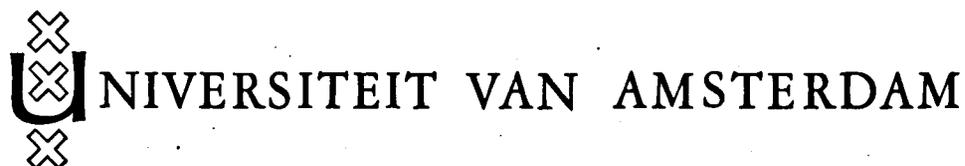


# BULLETIN ZOOLOGISCH MUSEUM



Vol. 1 Nr. 7 2 - IX - 1968

## RANGE EXTENSION IN 1967 OF THE ALIEN AMPHIPOD, *GAMMARUS TIGRINUS* SEXTON, 1939, IN THE NETHERLANDS

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### ABSTRACT

The range extension of *Gammarus tigrinus* in The Netherlands slowed down in 1967 to a gain of no more than 2 or 3 kilometers in the north-eastern and south-eastern parts of the distribution area, and to some 18 kilometers in the south-western part. The invader reached in 1967 the provinces of South Holland and Utrecht.

In two previous papers (Nijssen & Stock, 1966; Pinkster & Stock, 1967) we have recorded the introduction and spread of the alien amphipod, *Gammarus tigrinus* Sexton, 1939, in the northern part of the Netherlands. In 1967 also, we have followed the range extension of this amphipod.

It appears that the explosive development of the years 1965 and 1966 slowed down considerably in 1967. In 1965, the area occupied by *Gammarus tigrinus* amounted to some 70 x 90 km. In 1966 a progress of some 40 km was made in north-eastern direction and of some 30 km in south-western direction. The areas occupied at the end of 1965 and 1966, respectively, are shown by coarse and fine shading in fig. 1. In 1967, a progress of 2 to 3 km has been made in north-eastern, as well as south-eastern direction, whereas in south-western direction some 18 km were gained (fig. 1, table I). The 1967 gain was sufficient enough to cross the boundary of two provinces where *Gammarus tigrinus* was not yet present in 1966: the provinces of South Holland and Utrecht.

In suitable places just outside the area invaded by *Gammarus tigrinus*, 145 more samples have been collected, in which *tigrinus* was absent but local gammarids (*G. duebeni*, *G. zad-dachi*, *G. pulex*) occurred.

This rather dense sampling grid makes the distribution picture of *G. tigrinus*, as recorded in fig. 1, pretty reliable.

### ACKNOWLEDGEMENTS

For material provided we are indebted to the following persons: Professor Dr. C van der Meer (Amsterdam), Drs. P. Leentvaar (Zeist), Drs. S. Pinkster (Amsterdam), Drs. S. Parma (Nieuwer-sluis), and Mr. M. Mantje (Texel).

Financial aid for the field-work from the Beyerinck-Popping Foundation (Amsterdam) and from the RIVON (Zeist) is gratefully acknowledged.

Table I  
Records of *Gammarus tigrinus* in 1967 extending its range in the Netherlands

Locality	municipality	date (1967)	chlorinity (mg/l)
<b>Province of North Holland</b>			
Zuiderdorp, ditch along Zuiderdorper Gouw	Amsterdam	Aug. 20	-
Het Nieuwe Diep	Amsterdam	Aug. 22	180
Hakkelaarsbrug, Naardertrekvaart	Muiden	Aug. 22	165
Uitwatering van het Naardermeer near De Goog	Muiden	Aug. 22	186
<b>Province of South Holland</b>			
Rijnsburg, Oegstgeester Kanaal	Oegstgeest	Sept. 28	204
Leiden, Zijl near Puinhoek	Oegstgeest	Sept. 28	252
Kaag Dorp, Ringvaart Haarlemmermeer	Alkemade	Aug. 7	210
Rijpwetering, Koppoel	Alkemade	Aug. 7	187
Westeinder Plassen, E. of Leimuiden	Leimuiden	Aug. 7	159
<b>Province of Utrecht</b>			
Vinkeveense Plassen, Zuwe	Vinkeveen & Waverveen	Nov. 19	193
Vinkeveense Plassen, Grote Plas	Vinkeveen & Waverveen	Nov. 19	287
<b>Province of Gelderland</b>			
Klarenbeek, about 200 m upstream of mouth	Doornspijk	Apr. 11	-
Zilverbeekje, estate " Hulshorst "	Ermelo	Mar. 9	-
<b>Province of Friesland</b>			
Riedstroom, between Dongjum and Boer	Franekeradeel	Aug. 30	11
Van Harinxma Kanaal, near Zweins	Franekeradeel	Sept. 2	600
Eernewoude, Prinsenhof	Tietjerksteradeel	Sept. 1	109
Bergumer Meer, western shore	Tietjerksteradeel	Sept. 1	164
Kolonelsdiep, near Bergumer Meer	Tietjerksteradeel	Sept. 1	185
Prinses Margriet Kanaal, near bridge in highroad N 90	Utingeradeel	Aug. 31	177

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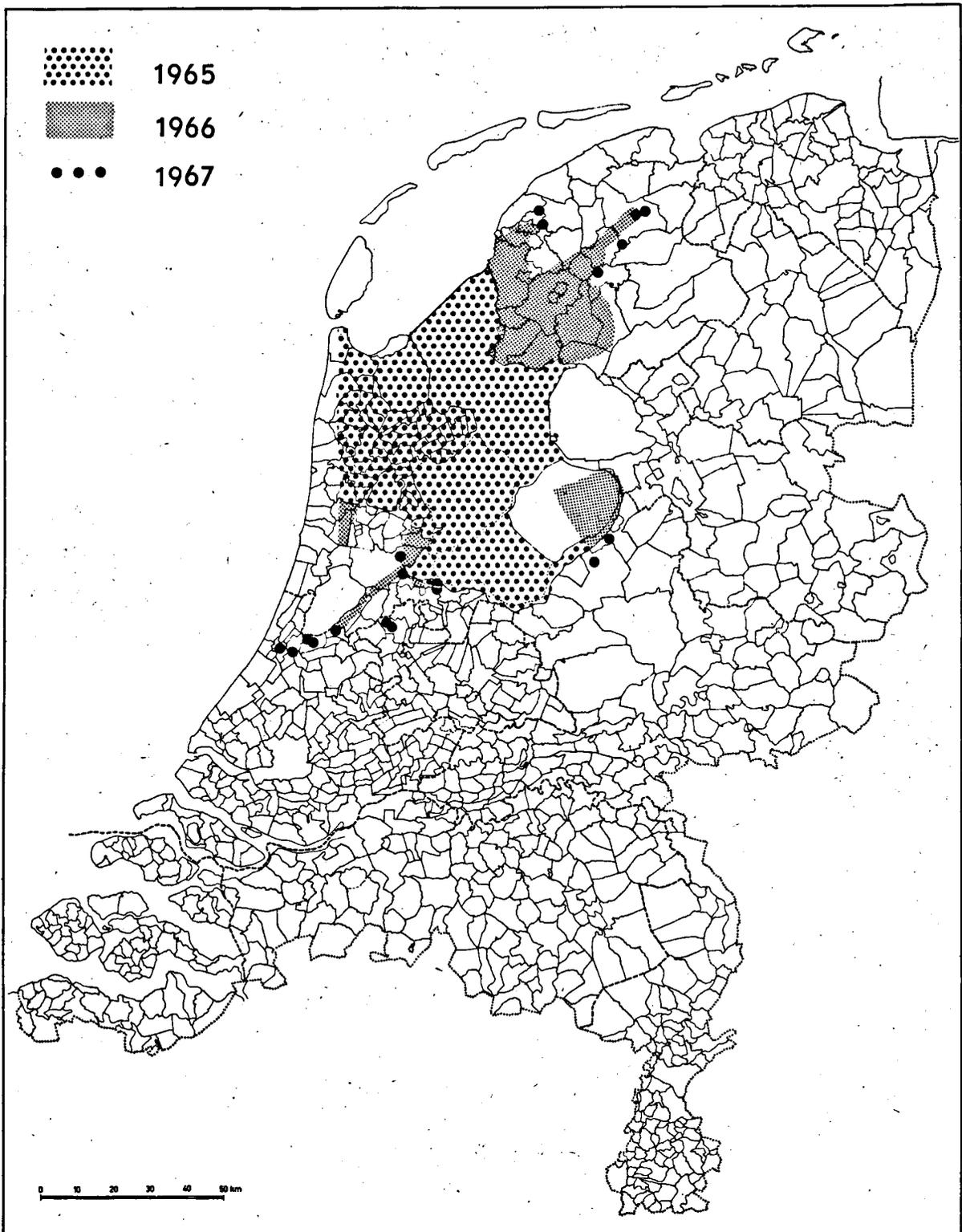


Fig. 1 Area occupied by *Gammarus tigrinus* Sexton, 1939, in the Netherlands in 1965 (coarse shading), 1966 (fine shading), and new records for 1967 (larger dots).