

The genus *Euchlanis* (*Rotatoria*) in brackish waters of the Vistula Lagoon (southern Baltic)

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Euchlanis
Rotifers
Brackish water

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Abstract

The results presented in this paper represent a part of long-term studies. They deal with the occurrence of *Euchlanis dilatata* Ehrenberg, and *Euchlanis dilatata f. lucksiana* (Hauer), the latter being found for the first time in shallow, brackish, eutrophic waters of the Vistula Lagoon (southern Baltic).

1. Introduction

Studies on the rotifers in the Vistula Lagoon (southern Baltic) have been initiated by the end of the last century (Seligo, 1895). Extensive description of the zooplankton in this lagoon was presented by Vanhöffen (1917). It included all rotifer species found so far. First data on the genus *Euchlanis* also date back to this period. However, the species *Euchlanis dilatata* Ehrenberg was mentioned only by Różańska (1963) in the paper dealing with the zooplankton of brackish waters of the Vistula Lagoon.

The results presented in this paper constitute a part of long-term studies and refer to the research carried out in 1975–1978 (Adamkiewicz-Chojnacka, 1978, 1983, 1983a). They deal with the occurrence of *Euchlanis dilatata* Ehrenberg and especially of the form *Euchlanis dilatata f. lucksiana* (Hauer) which has been found for the first time in shallow, brackish, eutrophic, coastal waters of the Baltic Sea.

2. Material and methods

Materials were collected since April till November in 1975, 1977, and 1978 at monthly intervals from the same stations, selected so as to take into

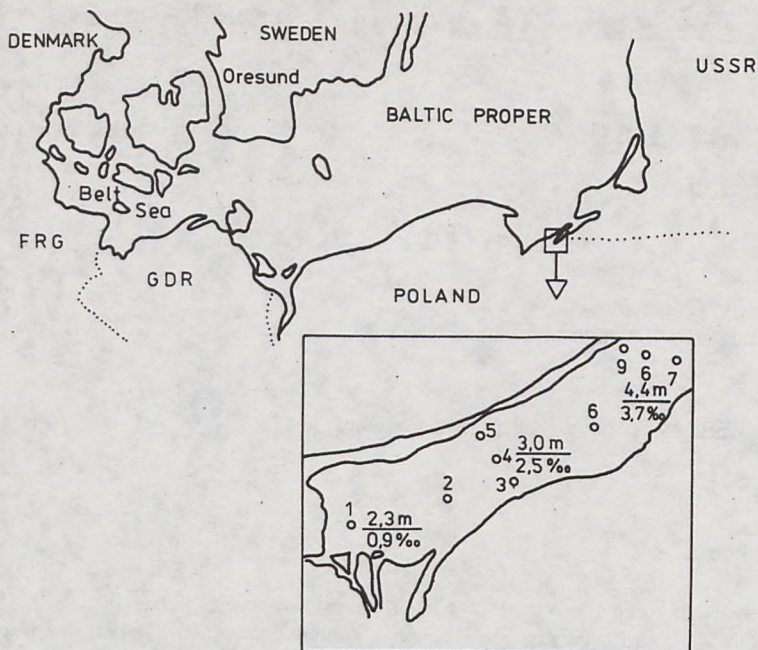


Fig. 1. Distribution of the sampling stations, average salinity, and depth of the Vistula Lagoon waters during the studies

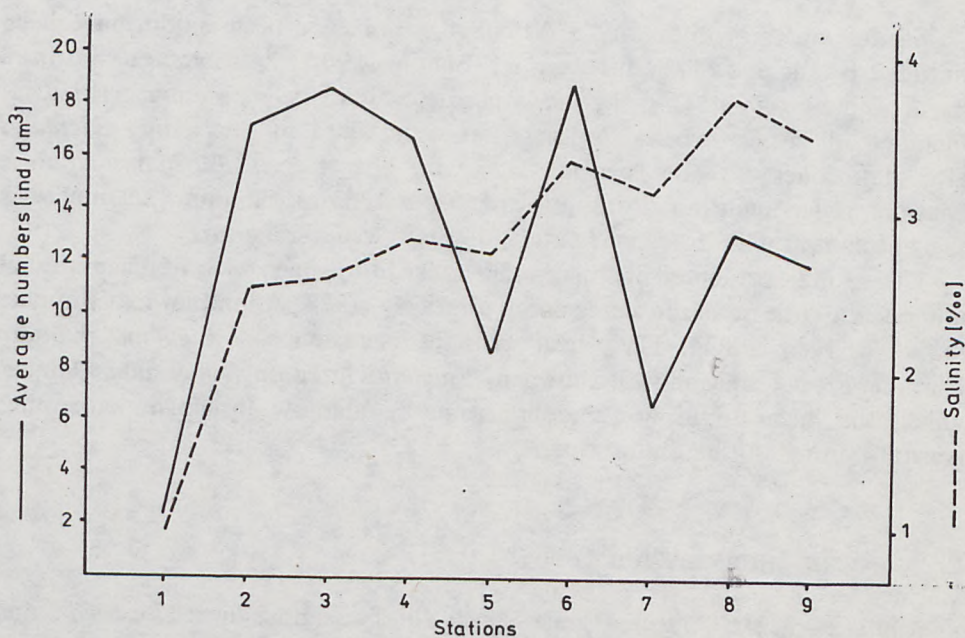


Fig. 2. Changes in the genus *Euchlanis* numbers at the sampling stations of the Vistula Lagoon against a background of water salinity

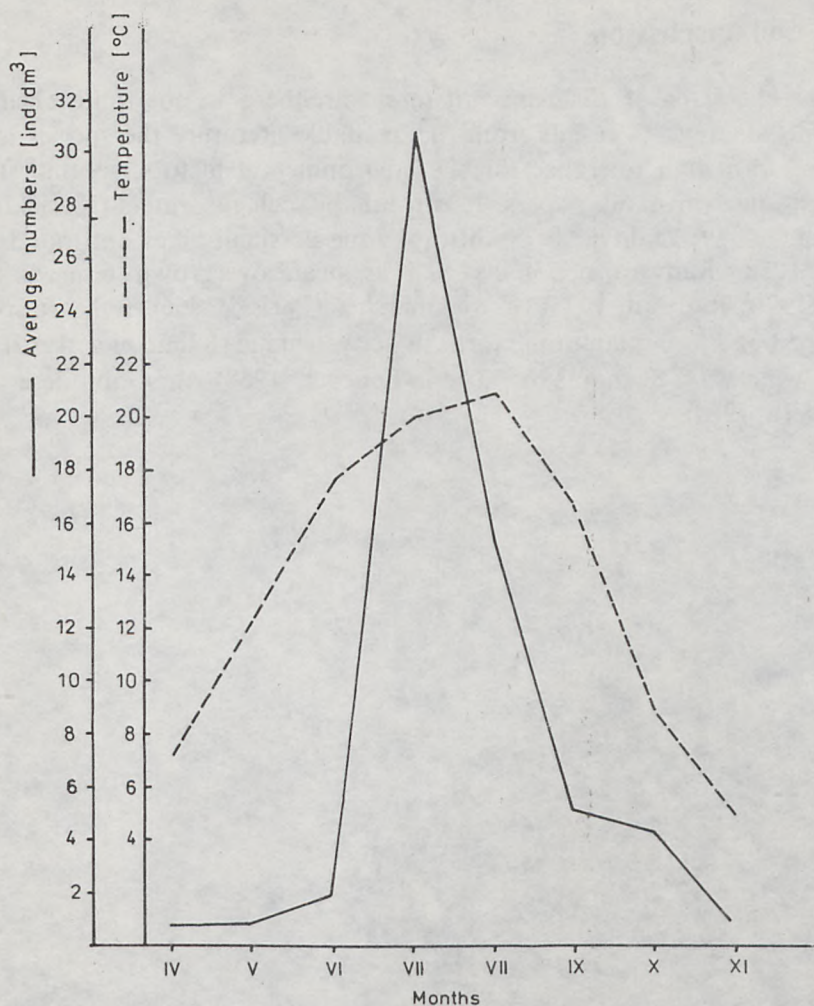


Fig. 3. Seasonal occurrence of the genus *Euchlanis* against a background of water temperature in the Vistula Lagoon

account hydrological specifics of the Vistula Lagoon (Fig. 1). Samples were collected with a 5 l Ruttner's sampler, at depth intervals of 1 m, filtered through a No 25 net, and preserved in 4% formalin. In order to facilitate the calculations all samples were brought down to the same volume. Microscopic examinations were performed in a 1 cm³ chamber. Each time 3 cm³ of the sample were analysed. Totally 281 samples were collected and analysed. A number of the taxa was expressed as an arithmetical mean for the three years of studies.

Together with the biological studies determinations of physical and chemical factors were carried out, their results being published by Różańska and Więclawski (1978, 1981). Data on water salinity and pH presented in Figures 1, 2, and 3 were taken from these works.

3. Results and discussion

Ecological character of *Euchlanis dilatata* Ehrenberg is not quite clear and even contradicting. As results from the available literature the species is cosmopolitan, with high tolerance for the environmental factors, so that it has been mentioned in many papers. It can inhabit pelagic waters (Kosicki, 1960; Nikolaev, 1979; Zudova, 1978), littoral zone or small lakes and ponds (Pawłowski, 1958; Radwan, 1973), as well as peat, overgrown reservoirs (Klimowicz, 1970; Radwan, 1974) or wet marshes (Parise, 1966). It has also been mentioned as a non-planktonic form in active sludge (Klimowicz, 1983), in brackish waters of Scandinavia (Thane-Fenchel, 1968), in Gobi desert (Koste, Wulfert, 1964).



Photo 1. Shape of *Euchlanis dilatata* f. *lucksiana* (Hauer)



Photo 2. Characteristic shape of the upper part of the body in *Euchlanis dilatata f. lucksiana* (Hauer)

In Poland *Euchlanis dilatata f. lucksiana* (Hauer) was found by Radwan (1975) in the pelagic zone of Łęczyńsko-Włodawskie Lakes, by Świeżawska-Wiktorowa (1975) in the Szczecin Lagoon, and by Strzelecki and Póltorak (1971) in a brackish Gardno Lake.

Differences between the two forms—*ie* *E. dilatata* Ehrenberg and *E. dilatata f. lucksiana* (Hauer)—are almost negligible. Only the size of particular species (Adamkiewicz-Chojnacka and Leśniak, 1985) made it possible to distinguish two forms. As results from the three-year studies the species *Euchlanis dilatata* Ehrenberg was present in various numbers at all stations of the Vistula Lagoon. *Euchlanis dilatata f. lucksiana* (Hauer) was found in July and August samples in 1975 and 1978 at pelagic stations 6 and 8 where the form occurred together with *Euchlanis dilatata* Ehrenberg (Figs. 1 and 2).

Shape of this form, high upper ridge, and cell size were in accordance with the drawings presented by Koste (1978), Kutikova (1970) and Ruttner-Kolisko (1972)—Photos 1 and 2. In the Vistula Lagoon an average size of the individuals of the genus *Euchlanis* amounted to:

Genus	Length	Breadth
<i>Euchlanis dilatata</i> Ehrenberg	287 μm	170 μm
<i>Euchlanis dilatata f. lucksiana</i> (Hauer)	314 μm	179 μm

The present studies revealed that individuals of the genus *Euchlanis* were present in shallow, brackish coastal waters of the Baltic Sea since April till November. They exhibited high tolerance to temperature (5.2–21.0°C) and water salinity (0.93–3.7‰), at pH 7.7–9.0. They were more abundant in July. Materials collected so far indicate that *Euchlanis dilatata f. lucksiana* (Hauer) can be classified as pelagic, euryhaline form in the Vistula Lagoon.

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