

BRAUERIA (Lunz am See, Austria) 19:8 (1992)

EFFECTS OF POLLUTION ON AQUATIC FAUNA. THE EXAMPLE OF AQUATIC INSECTS IN RIVER AVE.

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(Summary of the article which was published in D.G.F. - Informação 2(6):14-19, 1991, in Portuguese)

This article is addressed mainly to non-specialists, principally foresters of the Ministry of Agriculture. In fact, freshwater fisheries are in large part under the supervision of this department. The first sections deal with general ecological principles especially with the relationships between water quality and aquatic invertebrates, in particular insects.

In the last section a particular topic concerning the capture of caddisflies with a light trap on the bank of the River Ave in Vila do Conde is analysed (for more details on the collecting method and site characteristics see Terra, 1977: "First results of Trichoptera collecting with light traps at Vila do Conde (Portugal)", Proc. of the 2nd Int. Symp. on Trichoptera, pp. 75-82.). The analysis is based on total annual captures of individuals and species and covers a period of seven consecutive years (1976-1982) with a supplementary year (1986) (see table).

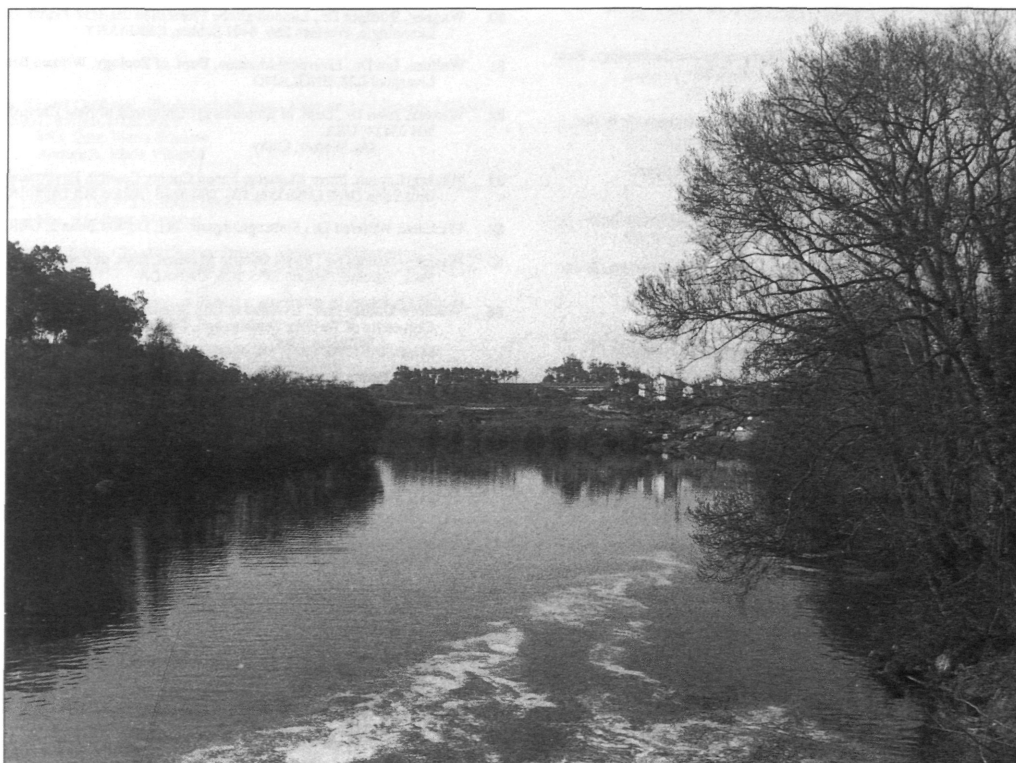
Captures of adult caddisflies with a light trap at Vila do Conde (River Ave):

Years	Total annual captures	
	Individuals	Species
1976	3727	21
1977	3049	19
1978	3323	23
1979	3314	25
1980	3921	19
1981	2370	21
1982	1324	15
1986	321	15

The fall in captures is obviously due to pollution and has accelerated since 1981. These numbers were low at the beginning because the river had been polluted for a long time by textile industries wastes, mostly untreated, but there was a fair degree of self-purification of the water, and the light trap was some kilometres downstream from the main pollution sources. Since the pollution has increased and a new source appeared close to the trap the effects have also increased.

In 1986 there were still 15 species present but only four were responsible for 93% of the total catches. They were Tinodes assimilis McL. (123♂, 80♀), Hydropsyche lobata McL. (23♂, 24♀), Ceraclea sobradieli Navás (10♂, 21♀), and Tinodes waeneri L. (13♂, 5♀). The single species, T. assimilis, accounted for 63% of the total catch.

Already before 1981 a few species had disappeared, e.g. Psychomyia ctenophora McL. which was relatively common between 1976 and 1979, with large numbers captured in 1978 (124♂, 62♀). This species was not found after 1979. Other species were rare and appeared only in the first years of collecting, such as the limnephilids, Grammotaulius submaculatus Ramb., Halesus radiatus Curtis, Micropterna fissa McL., and Mesophylax aspersus Ramb. On the other hand two other limnephilids, Limnephilus gadarramicus Schmid and Limnephilus marmoratus Curtis, were present in all collecting years even in 1986, though with smaller numbers as with the other species. Among the other common species in the period of collection can be included Rhyacophila munda McL., Polycentropus telifer McL., Ecnomus deceptor McL. and Mystacides azurea L. which were still present in the 1986 collection in small numbers.



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Zeitschrift/Journal: [Braueria](#)

Jahr/Year: 1992

Band/Volume: [19](#)

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Artikel/Article: [Effect of pollution on aquatic fauna. The Example of aquatic insects in river ave. 8](#)