Study of the Trichoptera Kirby, 1813 (Insecta) larvae community in Jacuí River middle section and some tributaries, RS: Brazil

Marcia Regina Spies

Abstract

The present study was carried out with the purpose of determining the taxonomic composition, the diversity, and the spatial and temporal distributions of the Trichoptera larvae community, in four lotic sites at the central region of Rio Grande do Sul State. Sampling was done monthly from Juny 2001 to May 2002 in four sites located at the middle section of Jacuí River (Station 4) and in three of its tributaries (Lajeado do Gringo – Station 3; Lajeado da Gringa – Station 2 and Carijinho River – Station 1), with a Surber sampler. Some environmental data were measured (pH, dissolved oxygen, air and water temperature, flow and precipitation). The total number collected was 29,143 specimens, belonging to 25 genera distributed in nine families, 20 of these genera are new records for the State. The highest abundance was found in Station 2 (12,547 specimens). The highest standardized richness, for a 1,151 specimens sample chosen by chance, was recorded in Station 1, followed by Station 4 (17.7 and 15.9 genera, respectively), on the other hand, highest number genera occurred in Stations 1 and 2 (20 genera in each Station), what was due to the influence of sample size on richness. The highest diversity was found in Station 1, and the lowest in Station 3 (H' = 1.3 and H' = 0.8, respectively). Station 1 had the lowest anthropic influence and the most conserved riparian vegetation; while Station 3 presented the highest anthropic impact, and very reduced riparian vegetation. The diversity of Trichoptera observed in the study site is low, compared to the estimated maximum theoretical diversity. Low diversity values are related to the low equity, since the richness was relatively high. The majority of the environmental factors have not showed significant correlation with genera abundance ($p > 0,05$), only temperature shown relation with temporal fluctuations of abundance in the majority of Stations. The spatial-temporal distribution, analyzed by the Detrended Correspondence Analysis (DCA), evidenced great overlapping among samples, with a tendency of segregation of some Station 4 samples. The four Stations spatial-temporal distribution are similar. Only Station 4's faunistic composition and abundance differ partially. Probably, this distribution is related to the hydrologic classification of the sites. The indicator *taxa* analysis showed the genera *Chimarra, Helicopsyche, Itauara* e *Polyplectropus* as environmental indicators of the characteristics represented by Sites 1, 2 and 3 and the genus *Blepharopus* as a environmental indicator of Station 4. The Trichoptera larvae community seem to be adjusted to the food availability and physical conditions (riparian vegetation and anthropic influence) of the study sites. The great similarity among the four Stations was probably due to environmental simplification, caused by its degradation.

Key-words*:* Trichoptera, larvae community, Insecta, Rio Jacuí (RS), faunistic composition, biological diversity, spatial-temporal distribution.

FICHA CATALOGRÁFICA

Spies, Marcia Regina

Estudo da comunidade de larvas de Trichoptera KIRBY, 1813 (Insecta) no curso médio do Rio Jacuí e alguns tributários, RS: Brasil / Marcia Regina Spies – Ribeirão Preto: 2005. vii + 76p.

Orientador: Claudio Gilberto Froehlich

Dissertação (mestrado) – Universidade de São Paulo. Faculdade de Filosofia Ciências e Letras de Ribeirão Preto.

1. Trichoptera. 2. Comunidade de larvas. 3. Insecta. 4. Rio Jacuí (RS). 5. Composição faunística. 6. Diversidade biológica. 7. Distribuição espaço-temporal.