

9) MIGRATIONS OF MACROZOOBENTHOS WITHIN THE BEDSEDIMENTS OF THE "OBERER SEEBACH", A SECOND ORDER ALPINE BROOK (RITRODAT-LUNZ STUDY AREA, AUSTRIA)

Panek, K.

Migrations of the macrozoobenthos demonstrate the dynamics of the fauna in a stream. According to the wellknown three-dimensional distribution, this study deals with the migration activity within the gravel bed down to a depth of 70 cm. Because nothing is known about a possible preference of depth and / or direction, the so-called cage-pipe sampler was designed. This device allows depth- and migration-defined sampling. The function of this sampler and the possibility of measuring important accompanying factors are described. These factors are: fine sediment that is transported through the gravel bed and waterflow through the cages. Temperature is also registered at different points in the sediment. Twelve permanently installed cage-pipes are used in three topographically different areas of the brook: right bank, midstream and a gravel bank. About 6800 samples have been taken in one year. No preference of any direction has been found. Especially upstream migrations are not significantly different from other directions, although they are often discussed in connection with drift compensation. The field data support a critical view of upstream movements of the macrozoobenthos. Drift compensation without upstream migrations are considered for brooks with deep gravel beds.

10) FOOD PREFERENCES IN LARVAE OF PROTONEMURA NITIDA (PLEC.) (RITRODAT-LUNZ STUDY AREA, AUSTRIA)

Steiner, K.

Surfaces of organic and inorganic substrates in streams are well colonized by microorganisms (bacteria, fungi and algae - the so-called biofilm). This organic layer is of high nutritional value for invertebrates. Laboratory feeding experiments are conducted to examine the food preferences of larvae of *Protonemura nitida* (Plecoptera) with special reference to colonized surfaces. Four categories of available food sources are sampled at the study site and offered to the larvae. The animals are allowed to select between well-colonized stones, leaves (*Acer* sp.), mosses (*Fontinalis antipyretica*), fine particulate organic matter (FPOM) and uncolonized (oven-dried) stones, leaves and mosses. A comparison is made with the help of a scanning electron microscope (SEM) between offered food items, the feeding traces on them, and fecal pellets. Colonized stones as well as colonized mosses are the most preferable food items in relation to uncolonized items. No difference is found between colonized and uncolonized leaves. FPOM is completely refused. In fecal pellets large amounts of undigested moss fragments and unbroken diatoms are found but no bacteria (except associated bacteria on the peritrophic membrane).

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