

Invertebrate Water Animals of the Dunajec River

The literature dealing with the invertebrate water fauna of the Dunajec is very sparse. The tributaries of the river in the Tatra Mountains are relatively the best studied, together with the Rożnów dam reservoir.

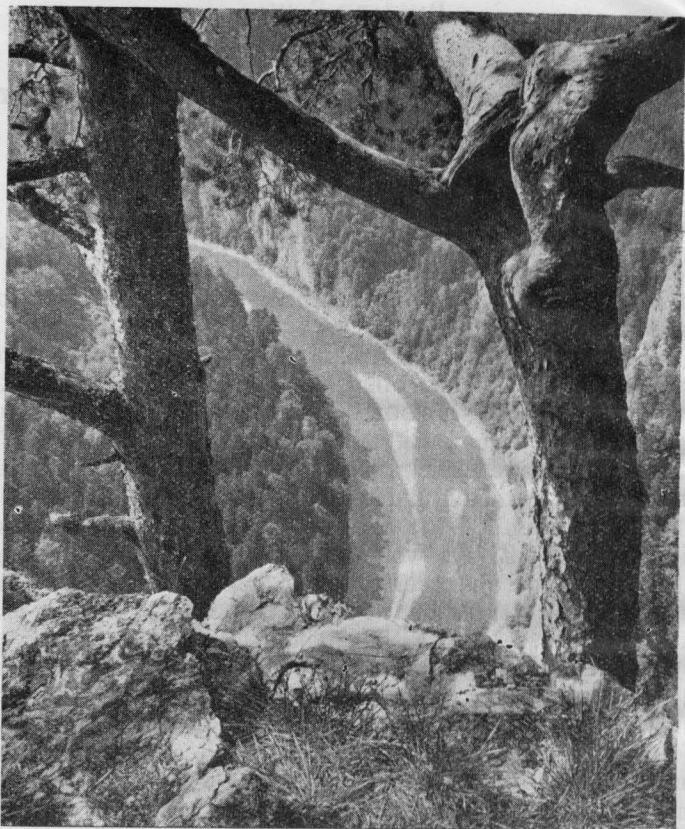
There are some earlier works dealing mainly with aquatic insects from the river basin, among others those of SCHILLE, MIKULSKI and FUDAKOWSKI. Recently FIEDOR, KRZANOWSKI and KUFLIKOWSKI investigated the bottom fauna of the mouth sections of the White Dunajec, Rogoźnik and Lepietnica streams. There is an almost complete lack of data from the middle and lower reaches of the Dunajec, including also the fine section of the Pieniny Gap between Czorsztyn and Krościenko. The dam reservoir at Czchów is also uninvestigated.

A hydrobiological characterization of the Dunajec and its principal tributaries is being worked out at present, as a result of team research work of the Chair of Hydrobiology of the Jagiellonian University and of the Laboratory of Water Biology of the Polish Academy of Sciences in Cracov. Some of the data obtained are utilized in this paper.

The Black and the White Dunajec, as well as the Białka Tatrzańska, which drain the northern slopes of the Tatra, are typical mountain streams with a swift run, clear and cold water, and a rocky bed composed of round stones and boulders of various sizes, mostly granitic. Judging from the investigations made so far the bottom fauna of these streams has a similar character. In the current on the stony substratum live the water mites *Sperchon squamosus* KRAM. and *Torrenticola elliptica* MAGLIO, as well as rheobiontic species of mayflies, among others *Baetis sinicus* BOG. known from Rumania and the northern slope of the Carpathians, and also *B. carpaticus* MORT. and *Epeorus assimilis* ETN. The numerous stoneflies appearing here represent spring snow species, such as *Taeniopteryx auberti* KIS and SOWA and *Brachyptera monilicornis* (Pict.), as well as *Protonemura montana* KIMM. Of the tendipedids, the stony bottom in the current is inhabited, among others, by *Diamesa thienemanni* KIEFF.) and *Eukiefferiella longicalcar* (KIEFF.). Among the caddisflies there appear frequently in this habitat *Rhyacophila nubila* (ZETT.), *Rh. oblitterata* McLACHL. and *Glossosoma boltoni* (CURT.).

The upper and still water reaches of these streams, with a mostly stone and gravel substratum, are inhabited by water mites mainly of

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Pieniny: Dunajec River seen from the Sokolica. Photo W. STROJNY

the species *Sperchon glandulosus* (KOEN.) and the mayflies: *Ecdyonurus torrentis* KIMM., *Ephemerella krieghoffi* (ULM.), and *E. ignita* (PODA). Among the stoneflies living here the following are common: *Amphinemura borealis* (MORT.), *Leuctra inermis* KEMP. and *Isoperla oxylepis* (DESP.) and among the caddisflies *Drusus biguttatus* (PICT.), *D. trifidus* (MCLACHL.), *Metanoea flavipennis* PICT. and others.

In its middle course, below the confluence of the Black and White Dunajec up to the neighbourhood of Nowy Sącz, the Dunajec is already a large mountain river with a stony bottom of various components, gradually decreasing in size along the river course. The river bed shows frequently swift current sections under a hundred metres in length and a steeper incline, alternating with lenitic parts usually with a greater

width of water. Near the river sides small areas of sandy and muddy bottom can sometimes be seen. This is more frequent in the side water reaches of the river.

In the current on a stony bottom there gather the water mite *Sperchon plumifer* THOR, *S. clupei* (PIERS.) and *Atractides spinipes* KOCH.; mayflies such as the common *Oligoneuriella rhenana* (IMH.), *Baetis venustulus* ETN. and the *Rhithrogena grisocolata* BOG. known only from the Carpathians, also live here in considerable numbers. Stoneflies are represented by the *Dinocras cephalotes* (CURT.) and *Pterobryonia bipunctata* PICT. and flies, among others, by *Simulium reptans* (L.), *Synorthocladus semivirens* (KIEFF.), and *Trichocladus* ex gr. *bicinctus* (MEIG.) commonly found along the whole course of the Dunajec. In places with a slower current this group is represented also by *Thienemanniella flaviforceps* KIEFF. and *Polypedilum* ex gr. *pedestre* (MEIG.). *Hydropsyche pellucidula* (CURT.), *H. lepida* PICT. and *Rhyacophila nubila* ZETT. are the most frequently found caddisflies.

In the lenitic parts of the stony bed and riverside there live water mites of the species *Hygrobatas fluviatilis* (STRÖM.), mayflies such as *Potamanthus luteus* (L.) and *Ephemera lineata* ETN. characteristic for greater rivers, but also the stoneflies *Leuctra mortoni* KEMP., *Isoperla grammica* (SCOP.) and *Chloroperla tripunctata* (SCOP.). Typical for muddy parts of the river are the mayflies *Siphonurus aestivalis* ETN., often with considerable density of population and *Cryptochironomus* ex gr. *defectus* (KIEFF.) as well as *Polypedilum brevipennatum* TSHERN. from the tendipedids.

Below the Czchów dam, the Dunajec gradually becomes an submontane river, partially regulated, with a stony and gravel bottom is sandy near the river mouth. On the stony substratum in the current there live commonly the tendipedids: *Tanytarsus* ex gr. *gregarius* KIEFF., *Polypedilum* sp. (*Tendipedidae* „genuinae Nr 3“) LIP. and buffalo gnats, among others *Simulium reptans* (L.). The mayflies are represented by the species *Baetis venustulus* ETN. and *Ecdyonurus fluminum* (PICT.) and the caddisflies by *Hydropsyche pellucidula* (CURT.) and *Psychomyia pusilla* FABR. In the lenitic parts of the river, among the mayflies *Baetis scambus* ETN., *Heptagenia sulphurea* (MÜLL.) and *Ephemerella notata* ETN. are more numerous. Along the riversides the amphipod *Gammarus balcanicus tatrensis* KARAM. appears in fair numbers.

In its lowest reaches the Dunajec is markedly polluted by industrial wastes and sewage from Tarnów. A fairly considerable growth of *Sphaerotilus natans* may be observed on its bottom, the river animals become quantitatively and also, in most groups qualitatively poorer. The mayflies living here in greater numbers are *Heptagenia flava* ROST., *Potamanthus luteus* (L.) and *Centroptilum luteolum* (L.). Caddisflies are represented by *Hydropsyche pellucidula* (CURT.) and the tendipedids

by *Microtendipes bicolor* (ZETT.), *Limnochironomus* ex gr. *nervosus* (STAEG.) and *Tanytarsus* ex gr. *exiguus* JOH. Along the riversides the leech *Erpobdella octoculata* (L.) is abundant.

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