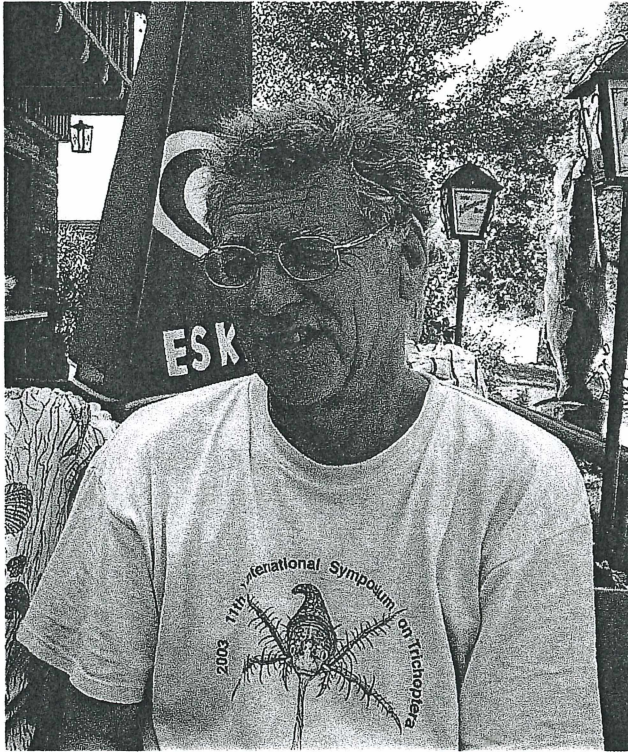


## Bernhard Statzner 1948–2020: A Respected Trichopterologist, Colleague, and Friend



Bernhard Statzner, a researcher of many aspects of trichopteran biology and an attendee at many of the international symposia on Trichoptera, died on July 12, 2020. He had one of the most fascinating and diverse careers in freshwater ecology and his research covered many different topics that involved caddisflies, either as the focus of a particular study or as part of a study of the benthic community. He presented his first paper at the First International Symposium on Trichoptera held in Lunz am See, Austria, describing the functional morphology of caddisfly genitalia. Demonstrating the research ingenuity that characterized his entire career, he constructed paper models to formulate his ideas illustrating the functions of various genital structures.

Bernhard was born in Kiel in Northern Germany on June 30, 1948. As a student, he was fascinated with biology, chemistry, and physics. After completing his undergraduate degree at the University of Kiel in 1973, he obtained a position through the Volkswagen Foundation to conduct stream studies in Zaire, now the Democratic Republic of Congo. There he made detailed collections of caddisflies that were the basis of many of his future systematic and ecological research papers.

Returning from Africa, he began his Ph. D. research on northern German streams but he interrupted his studies to work for the World Health Organization on the Onchocerciasis (River Blindness) Programme in West Africa from 1976 to 1978. His Trichoptera research based on these African experiences included studies of systematics and taxonomy, longitudinal zonation, and emergence patterns of caddisflies from African streams. He left Africa to complete his degree in 1979 at the University of Kiel.

His first academic position was as an Assistant Professor at the University of Karlsruhe in Germany. There he started a research program focusing on what he eventually called “Hydraulic Stream Ecology”. He developed innovative methods (use of Laser Doppler Anemometry and development of FST-hemispheres) for measuring the influence of flow and other hydrological forces on stream organisms. He applied these techniques to study benthic macroinvertebrate population dynamics, understand the effects of flow characteristics on these organisms, incorporate these approaches to stream restoration projects, and explain underlying factors affecting benthic macroinvertebrates diversity and distribution. His Research Habilitation included many aspects of these studies and it was awarded in 1987.

After a short period teaching in the School of Engineering at the University of Kassel, he went to the Emscher Water Authority in Central Germany to be in charge of the restoration activities of this major tributary to the Rhine River. There he put into place many of the programs that led to the shift of this river from being one of the most industrially affected rivers in Europe to a restoration success story.

In 1990, Bernhard made a major career shift, becoming a Research Director in the National Center for Scientific Research (CNRS) based at the University of Lyon in France. Bernhard’s research centered on integrating concepts in theoretical ecology, hydrology, and modeling to understand and solve basic and applied problems as related to flow and the distribution of organisms, river restoration, biomonitoring, and many other topics. Studies based on species traits of organisms in the Rhône River and eventually throughout Europe, involving scores of researchers, resulted in widespread use of this approach in theoretical ecology, biological monitoring of water quality, and many other topics.

His Trichoptera research continued while at Lyon and included innovative areas involving caddisfly cases and

sediment availability, and hydraulic influences on casemaking. He studied how silk-production by *Hydropsyche siltalai* fixed gravel pieces in riffles, reduced erosion, and the resulting effect of physical conditions on densities of this species. Several papers on mineral grains in caddisfly cases and streambed demonstrated effective resource use, limitations of substrate availability for case making, and the influence of substrate availability on case architecture and stability.

He continued his systematic and phylogenetic research in studies of phylogenetic and species-trait patterns across environmental gradients, variation of color patterns in larval *Hydropsyche* and their implications for species identifications, and phylogenetic relationships among regionally co-existing species of *Hydropsyche*.

His research led to over 150 research publications, many book chapters, and even articles on the sociology of scientific publishing; these were widely cited, some hundreds of times. In both Germany and France, he had a great influence on the careers of students and postdoctoral researchers, both in his own laboratory and those of others. He served on review committees and funding bodies of over a score of local, national, and international organizations, and established links between his laboratory and more than 30 others throughout the world.

Bernhard retired from the CNRS in 2013 and colleagues from all over the world arrived at his home in Parcieux, France, to join him in celebrating his career. His wife Monika, a dentist, joined him in retirement soon after and they travelled often to see friends and continued their wonderful hospitality to visitors that came to France.

Bernhard Statzner was in many respects a larger than life character—in his research, lectures, loyalty to his friends, and his love of good food and wine, and in spirited conversations. Their home was a gathering spot for trichopterologists, freshwater scientists, and ecologists from throughout the world. Bernhard was a unique scientist, colleague, and friend to all who knew him, and he will long be remembered for his generosity, hospitality, and most of all—his love of life.

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