

This Week's Citation Classic

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Hynes H B N. The invertebrate fauna of a Welsh mountain stream.
Arch. Hydrobiol. 57:344-88, 1961.

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Monthly samples revealed the changing patterns of the invertebrate fauna and the life cycles of most species. These and other published data were used to outline new concepts of the structure and function of the lotic community. [The SCⁱ® indicates that this paper has been cited over 140 times since 1961.]

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"This paper represents a turning point in my own career, and I suppose that it is often cited because it contains an early, though often incorrect, model of the stream community, a topic that has become fashionable in these environmentally conscious times. I just happened to be a little ahead of the pack and bold enough to commit crackpot ideas to paper. I dispatched the long manuscript with trepidation, but the editors described it as 'a valuable contribution' and required only some unscrambling of my German summary.

"I had been studying the ecology of various stream animals (stoneflies, sticklebacks, and amphipods), but during the 1950s the public discovered pollution and I became involved in consultancy. This was initially largely to make money; British academics were badly paid. However, I soon found that my simple autecology was inadequate, that pollution was really very interesting, and that we greatly

needed much more understanding of the whole lotic community. I was also urged by my department head, R.J. Pumphrey, to write a book on water pollution,¹ and that involved considerations on community structure.

"So this topic was on my mind when I came to know the Afon Hirnant, a perfect stream for study—remote, unspoiled, beautiful, and accessible. I had been surveying the streams around Llyn Tegid for my colleague J.W. Jones (the salmon), whose interest was in nursery grounds for lacustrine trout. Among them, only the Afon Hirnant could be easily worked to the source, so I concentrated on it. After a spell in the hospital, which provided much time for thought, I began a detailed community study at one high-level site, but my luck was out. In those sodden hills, where the wise never venture without rain gear, there was an unprecedented drought. My site dried out and all the fish died.² But this setback gave me several insights which led to the more intensive study that became the 1961 paper. Even then, I only just obtained the minimum of 12 monthly samples before the Suez crisis put most vehicles off British roads.

"I did later studies on the stream but the ideas generated in the 1961 paper contributed greatly to my second book.³ This was urged on me by D.J. Frey, and has probably done much more for my reputation as a lotic ecologist than my work in Wales. I also moved to North America, and, perhaps because of my wider interests and many later papers on stream ecology, was elected to the Royal Society of Canada. Thus did a simple zoologist become subverted, but it is satisfying that the field is now full of workers.⁴ J. Venn, who did all the really dull work in the Hirnant study, is now our most senior biological technician at Waterloo."

1. Hynes H B N. *The biology of polluted waters*. Liverpool, England: Liverpool University Press, 1960. 202 p.

2. The effect of drought on the fauna of a small mountain stream in Wales.

Verh. Int. Verein. Theor. Angew. Limnol. 13:326-33, 1958.

3. *The ecology of running waters*. Toronto, Canada: University of Toronto Press, 1970. 555 p.

4. Whittton B A, ed. *River ecology*. Berkeley, CA: University of California Press, 1975. 725 p.