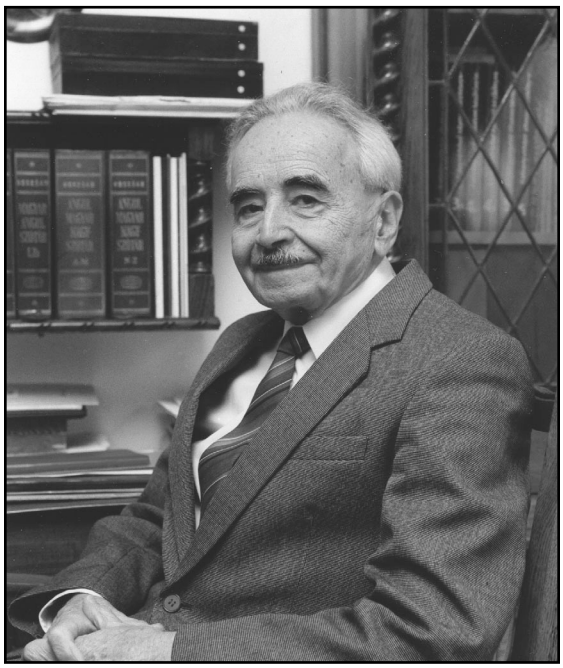
TIBOR JERMY



31 JANUARY 1917 · 23 SEPTEMBER 2014

Tibor Jermy, the Hungarian entomologist, was born in the then-Hungarian town of Lőcse (now Levoča, Slovakia). He moved to Hungary with his parents after the reshaping of the former Austro-Hungarian monarchy made life impossible for Hungarian intellectuals in the new nation-state of Czechoslovakia. Jermy had just completed his university studies in Budapest and decided to pursue a career in zoology with an admission to Sorbonne University in Paris, France, when history intervened again. World War II broke out, and Jermy was drafted into the Hungarian army. He survived the war but spent two years as a prisoner of war in Russia (where he learned Russian).

After returning home, he continued as a chemist in the Centre for Grape and Wine Production, and in 1949 was offered a job at the Keszthely Laboratory of the Plant Protection Institute. Politics played a part again, as the focal species this laboratory was supposed to work with was a newly invading pest, the Colorado potato beetle (*Leptinotarsa decemlineata*). The powers of the time believed—and the laboratory was supposed to provide evidence—that this species was intentionally introduced as an act of sabotage by the "imperialist powers." The target species refused to collaborate and continued to spread eastward instead, so not much was heard about this theory afterward. (I was only told of this by my senior colleague and great raconteur, László Szalay-Marzsó, when I joined the same institute as a young scientist.) An ironic twist of fate is that the beetle, being a North American species, provided an excuse for keeping scientific contacts with overseas researchers in a time when such contacts were nearly impossible. The Colorado potato beetle was to occupy Jermy's attention for many years, on and off.

The Institute, of which he became Director in 1969, was Jermy's only place of work. In 1978, having reached retirement age, he promptly resigned from his position, returned to the work bench, and continued his productive research career for nearly another 30 years, before his failing health forced him to retire from active research. Jermy's work extended to the coenological, ecological, and behavioral study of arthropods living on cultivated land, but his special area of interest was the biology and ecology of herbivorous insects. While studying the Colorado potato beetle and the gypsy moth (*Hyphantria cunea*), he produced detailed evidence that host plant choice was regulated not only by attractants but also by inhibitors. Later—during a rarely permitted research stay in the United States (in Pennsylvania)—he, in collaboration with Vincent Dethier and Frank Hanson, discovered the phenomenon of induced preference, proving that insects possess learning ability, and such learning and life experience will

influence their host plant choice (Jermy 1987). In all these endeavors, he went against the overwhelming consensus of the day. At that time, it was widely accepted that insects were regulated by instinct only, and that host plant choice was governed by attractant chemicals. Jermy also had little patience for ideas like the "balance of nature" and had serious doubts about the role of biotic interactions, like competition, or predation as a force in the evolution of host plant specialization (Jermy 1988). This led to his other big theory, that of sequential evolution.

The idea of coevolution had been a much-promoted idea since the 1960s. Coevolution had often been invoked as a plausible process to explain the adaptation of herbivores to their hosts (and many other ecological phenomena as well). There was even talk about a coevolutionary "arms race," when an herbivore's adaptation to a host plant constitutes a new selection pressure so that the plant will gain in fitness if it can develop a new defense against the herbivore; in time, the herbivore will overcome even this one, which triggers the plant to develop a new defense, and so on (Ehrlich and Raven 1964). Jermy had always been skeptical about this idea, based on his extensive experience with herbivorous insects. He developed an alternative theory, which he called sequential evolution (Jermy 1984). He claimed, and collected a lot of supporting evidence, that the path of plant evolution is not directed, and only exceptionally influenced by herbivores. Plant evolution responds to other selective pressures that are more important than herbivory; herbivores have to follow this and adapt to their new environment. This idea prompted a reevaluation of coevolution, and led to a better understanding of this often incorrectly used concept.

Jermy did not like administration—he was happiest when discussing, and above all, doing science, in the laboratory or the field. Nevertheless, his influence on the science of entomology and ecology in Hungary, throughout Europe, and then in wider circles, was not unimportant. In 1954, he designed a light trap that was simple to build and operate, and this "Jermy light trap" was used in the newly established country-wide network of monitoring agricultural and forestry pests in Hungary. This initiative originally served for forecasting mass gradations of agricultural pests, but it provided a lot of information about population dynamics, and built one of the most extensive and longest time series of insect population dynamics, at a time when the importance of long-term monitoring had not yet been recognized. In initiating this project, one of the trademarks of his research clearly emerges: all problems in science are equal, and solving a practical problem will often lead to advances in theory.

Roughly at the time of the start of my own work in science, Jermy instigated the start of agroecological and agrobiodiversity studies in

Hungary. It was a pioneer idea. I remember the fierce debates that we had to conduct with other colleagues who believed that "proper" ecology had to be pursued by studying natural systems (Lövei 2011). Today, the pendulum is almost on the other side: the ecological study of human-influenced ecosystems is nearly all that is left to us. This field has also matured since, and we now realize, more than ever, that "nature is one"—which does not equal, reader please note, that *all* things have equal importance, nor that "everything is connected to everything else." Similarly to his debating partner Pál Juhász-Nagy (affectionately known in Hungary as JNP), Jermy took care to distinguish the *ambience*, things generally around us, and the *ecological environment*, which is composed of the factors that really influence the species. The two are emphatically not equal—the second is a well-defined subset of the first. Unless you believe in the direct effect of heavenly bodies on all organisms, it is difficult to argue that the planet Mars influences, for example, the probability of host finding of an herbivorous caterpillar. The planet, although part of a loosely defined "environment" (as things outside it), will have little influence on the caterpillar, therefore it is not part of the *ecological* environment of the species. A species' environment has to be more carefully defined.

Jermy was more of an empiricist than a theorist. His repeated argument in discussions with theoreticians was: "Do you not see *too many* regularities into the world?" To which JNP's retort was: "Do you not see *too few* of them?" I am not sure that there is another world where we go after death. However, I am sure that if there is, JNP has already grabbed Jermy, and they continue their earnest and articulate debates that is one of the true joys of science.

His personality has to be mentioned, because this was an important reason why he was so well liked. Jermy was officially well recognized, was a member of the Hungarian Academy of Sciences, as well as of several other distinguished science bodies, and had several medals and various honorary titles. In spite of all that, in his last 30 years hardly anyone mentioned him by his surname or rank. He stopped to be "Tibor Jermy," even less "Professor Jermy," and would have deeply loathed to be called "Academician Jermy." Everyone was glad to call him "Uncle Tibor," and this was a mark of deep respect. Tibor is not a rare name in Hungary, yet everyone in biologist circles knew who *this* Uncle Tibor was. He was a gentle person, always respectful of others and of others' work, and always open to discuss scientific ideas, experiments, and results. He used his influence selflessly to help others, especially younger colleagues, to advance in their career, and took sincere pleasure in their success. A good paper, in his eyes, always trounced badges, titles, and honors.

I fondly remember my colleague, senior in years and superior in achievements, and I am sure there are many who feel the same. If you, dear reader, had not had the good fortune of meeting him, remember what his life in science says: there are no basic vs. applied sciences. There are only science and the applications of science, and they are one as the fruit and the tree which bears it. And this is a fitting conclusion that a life well spent can teach us.

Elected 1990

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REFERENCES

Ehrlich, P. R., and P. H. Raven. 1964. "Butterflies and Plants: A Study in Coevolution." *Evolution* 18: 586–608.

Jermy, T. 1984. "Evolution of Insect Host/Plant Relationships." *American Naturalist* 124: 609–30.

———. 1987. "The Role of Experience in the Host Selection of Phytophagous Insects." In *Perspectives in Chemoreception and Behaviour*, edited by R. F. Chapman, E. A. Bernays, and J. G. Stoffolano, 143–57. New York: Springer Verlag.

———. 1988. "Can Predation Lead to Narrow Food Specialization in Phytophagous Insects?" *Ecology* 69: 902–904.

Lövei, G. L. 2011. "Thoughts of a Travelling Ecologist, 2. Does the Ecological Study of Managed Habitats Constitute 'Real' Ecology?" *Journal of Biosafety* 20: 261–62.