

BRNO SCHOOL OF PHYSIOLOGY

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In an academic community, the term “school” is used in the Aristotelian sense, denoting an association of scientists who are gathered around a dedicated founder, share common goals, manners and spirit and, last but not least, identify themselves with this school for more than one generation. The origin and existence of a school depend not only on a lucky encounter of persons with similar interests but also on a favourable social and political climate that would let the school mature and give a yield.

The term Prague School of Physiology is well established. It covers human physiologists, working at different departments and institutes in Prague, whose common trait is the evolutionary approach. For decades, they have been concerned with the evolution of nerve functions, ontogeny of cardiovascular adaptations and periodicity of the development of the internal environment. All of them have considered *Edward Babák* (1873–1926), a brilliant Czech evolutionary physiologist, to be their father founder.

From the very beginning of his career at Charles University, E. Babák showed an exceptional talent for attracting gifted students and young scientists. Indeed, the Babák School was a respected term well before World War I. In 1919, Babák was offered high academic posts at two newly founded universities in Brno: Rector of the School of Veterinary Medicine and Vice-Dean of the Faculty of Medicine at Masaryk University. This also involved the chairs of Departments of Physiology at the respective faculties. Most of the members of his Prague staff joined him. Although, during the years that followed, Babák was greatly overburdened by organisational, administrative and teaching responsibilities, a new school of physiology began to emerge again around his magnetic personality. Unfortunately, after only six years in office, Babák unexpectedly passed away. At that time, however, his former student *Tomáš Vacek* (1899–1942) became known as an outstanding comparative physiologist at the School of Veterinary Medicine. During his short chairmanship at the Department of Physiology, he was able to introduce there Babák’s legacy that has been perceptible till now. *Josef Petřík* (1894–1936), another of Babák’s scholars, was ready to take chair of the Department of Physiology at the Faculty of Medicine but was not given time enough to develop a school. His

successor was *Ludvík Drastich* (1887–1961), the last (but not the youngest) of Babák's former students. His career was also sad because, during the war time, Masaryk University was closed down and its premises were plundered. After two and a half years of post-war enthusiastic reconstruction, the Communist coup brought to an end any reminiscence of Babák's school and Drastich himself was dismissed.

Vilém Laufberger (1890–1986) was another Babák's prominent former student who, as Head of the Department of Pathological Physiology, was involved in the development of the School of Physiology at the Faculty of Medicine after the foundation of Masaryk University in 1919. He discovered ferritin, isolated insulin and carried out first original experiments with it; he also began to formulate his theory of excitability in anticipation of later cybernetic concepts. In 1935, he was invited to take a vacant position of the chairman of the Department of Physiology in Prague. Laufberger was an investigator of extraordinary invention and creativity but he was a solitary person. He therefore never established a school of his own, yet he was able to inspire his colleagues by Babák's ideas and to convey much of his thinking to them. In this way, *O. Poupa* and *J. Křeček*, the chief representatives of the Prague School, received their impetus.

Soon after V. Laufberger came to Prague, he had an opportunity to promote *Vladislav Kruta* (1908–1979), a young promising physiologist with first class training in France. Kruta's life was all ups and downs, with happier and tragic periods. He spent World War II in the army in England. After the liberation he worked for the Czechoslovak Ministry of Health, founded the Institute of Sport Physiology at Charles University, led the Department of Physiology in Hradec Králové, all without a chance to settle down. Only when Drastich retired in 1951, Kruta was offered his post in Brno.

Although Kruta took up Babák's legacy only indirectly, he did so in two ways: first, through Laufberger's patronage and, second, quite intentionally due to his lasting interest in comparative physiology, thus gradually bringing a true school into existence. In the 1960s Kruta, together with his young coworkers *P. Bravený*, *J. Šumbera* and later *J. Šimurda* and *M. Šimurdová*, contributed significantly to an understanding of the cardiac excitation-contraction coupling process. His work on the history of physiology remains unparalleled. Kruta chaired the Department of Physiology at the Faculty of Medicine in Brno for 19 years, experiencing a lot of animosity from the totalitarian regime. Because he signed the Two Thousand Words manifesto in 1968, he was dismissed from the University, his school was crushed and his name deemed to fall into oblivion.

In the run of years, the Brno School of Physiology, represented by the names of Babák, Laufberger, Vacek, Petřík, Drastich and Kruta, experienced harsh times. Nevertheless, it has survived and has later found purposeful propagators, namely *Jan Peňáz* and his younger colleagues *B. Fišer* and *N. Honzíková*, who made

a considerable contribution to the development of clinical physiology by their studies of cardiovascular regulation.

When recapitulating the history of a scientific school we cannot avoid the question of whether it is still feasible to set up schools approaching in size, number and importance the former ones. Scientists capable of playing pivotal roles do exist but the present-day science evolves along different lines. The dominant issues are grants, impact factors and peer-reviews. Progress in science is achieved through computers and a lot of international meetings of all kinds rather than by long thoughtful discourses over a new book. Departments and their schools, as intellectual units of science, have been replaced by specialised laboratories and volatile teams of graduate students, postdocs and grant-hunters. Nevertheless, the traditions of the former schools are maintained at least by a certain continuity with and conscious knowledge of the past. This is demonstrated by the fact that, in this and the next issue, some papers are written by young scientists, representatives of the current generation of physiologists at the Brno Medical Faculty. Included in the next issue will also be two papers by Slovak physiologists, which provides evidence of the lasting cooperation between the Czech and the Slovak physiological schools. It is worth mentioning that this cooperation was established by V. Kruta and J. Antal, the leading personalities of the respective schools, just fifty years ago.

