

Academician Pranciškus Šivickis, a fosterer of comparative anatomy and embryology in Lithuania

Renata Rizgeliënė*, Violeta Palgeviëienë, Janina Pukienë

*Department of Anatomy, Histology and Anthropology, Medical Faculty, Vilnius University,
M. K. Èiurlionio 21, 03101 Vilnius, Lithuania*

E-mail: renata.rizgeliene@mf.vu.lt

In this article, the extensive scientific and pedagogical activities of Pranciškus Baltrus Šivickis are reviewed. P. Šivickis (1882–1968) was an outstanding scientist, Dr. of biology, professor of Vilnius, Kaunas and Philippines Universities, member of the Academy of Sciences, winner of the Republican Prize. His contribution to Lithuanian education is emphasized, especially in the sphere of comparative anatomy and embryology, where he was an initiator and fosterer.

After prolonged studies at American universities and work at the Philippines University, Professor P. Šivickis returned to Lithuania in 1928 as a mature scientist and pedagogue. In Kaunas University he founded the Cabinet of Comparative Anatomy, which became a progressive experimental and educational basis of that time. He lectured medicine and biology students on the course of comparative anatomy and embryology as well as on general morphology and zoology. In 1941, Professor organized the Department of Histology & Embryology at the Faculty of Medicine of Vilnius University, which was headed by him until 1948. He taught students microscopic anatomy and ontogenesis referring to the materials of comparative anatomy.

The scientific activities of Professor P. Šivickis included the spheres of morphogenesis, hydrobiology, parasitology, malacology, genetics and others. His special attention was paid to experimental research of regeneration. He also analyzed the questions of scientific terminology.

During the years of his active work, Professor P. Šivickis published more than 200 scientific articles, 29 writings on Lithuanian folklore. He guided the theses of 43 scientific works, 26 of which were successfully defended. Professor translated 4 and edited 5 works from Russian and English into Lithuanian. He wrote reviews to 59 theses or scientific

publications, participated at 24 congresses, conventions, conferences or sessions, 28 expeditions.

We would like to review all the life of Professor, halting at the most important dates, making a wider review of his pedagogical activity and his contribution to the propaganda and fostering of comparative anatomy and embryology.

P. Šivickis was born in 1882 in the parish of Đilutë, the village of Đalakiðkiai, to the family of Kazimieras and Ona Šivickis. The childhood of little Pranciðkus was rather difficult as his mother died very early. He served as a shepherd, worked on peasants' farms. With the money he earned he supported his father and brother and purchased books.

In two years Pranciðkus finished a three-year people's school in Đilutë. He himself also taught country children to write.

To avoid prosecutions and repressions of tsarist authorities for participation in revolutionary events, in 1906 P. Šivickis emigrated to the USA, hoping to return to his homeland some day. "America wasn't mother to me, either. After all, I wasn't expecting anything from it", Professor wrote about that period later (1). Having found accommodation at his uncle's, he toiled for bread on the railway, at a butcher's, worked in the editorial board of "The Friend", was a teacher of Lithuanian, was spoiling his health working at a chemical factory. He wrote: "Since the beginning of my stay in America my main goal has been to learn" (1).

Having saved up some money, he began studying. He often had to interrupt his studies because of the shortage of funds. He studied languages, biology, chemistry and medicine even at seven universities of the USA (Illinois, Missouri, Chicago, etc.).

While studying at Iowa University P. Šivickis carried out his first experimental-scientific work, the results of which were published in a scientific magazine (2).

* Corresponding author.

Being very persistent and industrious, 14 years he finished his studies and acquired the education of a wide-scope biologist.

In 1922 P. Šivickis successfully defended a thesis and was awarded the Doctor of Philosophy degree. It was an experimental thesis (3). The main experimental living organisms of the thesis were *planaria* (flat worms) which have a simple structure and regenerate well. It was the regeneration process that P. Šivickis used for investigating the laws of nature in morphogenesis.

P. Šivickis spent 16 years in emigration. He always wanted to return to Lithuania, so he made an inquiry about the possibility to be employed at the recently founded Kaunas University.

In 1922, the Mathematics & Biology Faculty Council of Kaunas University invited P. Šivickis to take the post of a professor at the Department of Zoology and Comparative Anatomy. But they were too late – he had already made a contract with the State University of the Philippines in Manila and had to go to work there.

In Manila, P. Šivickis was the head of Zoology Department in the duty of a professor. He organized a biology station where he lectured on sea zoology. He also delivered courses on general zoology, comparative anatomy and embryology (4). There he investigated the anatomy of invertebrates, continued the research of regeneration that he had begun in Chicago (5).

Professor did not forget Kaunas University and supported it. In 1924 he donated 1385 francs to buy books on zoology for the university library. He also presented a collection of tropical stuffed animals to the Department of Zoology.

In 1928 P. Šivickis returned to Lithuania as an experienced scientist, pedagogue and experimenter.

On January 1, 1928 P. Šivickis was appointed professor of Department of Zoology & Comparative Anatomy at Kaunas University. Working in Kaunas he organized the Cabinet of Comparative Anatomy. He took care to provide it with the newest equipment, though used the funds very sparingly.

Professor P. Šivickis lectured students on comparative anatomy, embryology and zoology. According to the syllabus of comparative anatomy, at that time there were 3 hours of theory and 2 hours of practice per week for two semesters. The course of comparative embryology for one semester had accordingly 3 h and 2 h. During practice the students made use of methodical materials prepared by Professor, made preparations of fishes, reptiles and mammals, investigated the embryogenesis of a chicken.

In her reminiscences S. Gecevičiūtė, a student of Professor, wrote: “The credit test in osteology of comparative anatomy was a great worry to us. Professor liked to carry various little bones of verteb-

rate animals in the pockets of his operating coat. You approach Professor, he puts his hand into his pocket, takes out a bone and asks: “Would you kindly tell us whose bone it is?” (1).

In 1931, Professor P. Šivickis published one of the most important training appliances “The Summary of the Course of Elementary Zoology”, where he gave an extensive review of the course with an emphasis on the problems of evolution, genetics and morphogenesis (6).

Alongside the teaching of comparative anatomy and embryology, guidance of theoretical seminars, he organized the Experimental Laboratory, on its own expense engaged a laboratory assistant, himself carried out scientific investigations of vertebrates and tests on the regeneration of tissues. Together with his students and colleagues Professor P. Šivickis did a lot of experiments, the results of which were published in press (7, 8). His studies were important as the first works of experimental biology in Lithuania.

In summers, Professor together with the painter A. Pmuidzinavičius used to go on rides across Lithuania in his car. In those trips he not only observed and studied the fauna, but was also keen on ethnography, Lithuanian history, monuments of culture and nature. He also organized students' scientific expeditions where they investigated the water fauna of Lithuania. The data obtained were published in a lot of articles and the monograph “Animate Nature and We” (9).

In 1930–1941 he systematically reviewed Lithuanian scientists' articles in the journal “Biological Abstracts”.

When the Mathematics & Biology Faculty was transferred to Vilnius, on September 1, 1940 Professor P. Šivickis started working at Vilnius University where he was Head of Biology Department. He delivered lectures to the students of medicine on the course of general biology.

On February 6, 1941 P. Šivickis was appointed Head of Histology & Embryology Department, which he himself had organized at the Faculty of Medicine. “There was no lecturer of histology there. On Dean Starkus' suggestion I agreed to teach it and was doing it till 1948. The students didn't like histology as it was a theoretical course, and medical people are practical”, Professor wrote (1).

During the years of German occupation when the university was closed, Professor continued the training of medical students, illegally delivered lectures at the St. Jacob and Tyzenhausen hospitals, he saved the property of the department (hid or brought home the microscopes, books, equipment).

After restoration of Vilnius University, since July 16, 1944 he was Head of Histology & Embryology Department at the Faculty of Medicine.

Professor P. Šivickis lectured medical people on the course of general biology, histology and embryology.

While lecturing both in Kaunas and Vilnius, Professor was paying a lot of attention to the theory of a cell, required a detailed knowledge of its structure in connection it with its function.

Analyzing the problems of genetics, he thoroughly explained the works of G. Mendel to his students. He used to bring coloured peas to the auditorium and demonstrated their crossing and the succession of heritability, arranged seminars concerning this problem, guided students' research work (10).

At the beginning of embryology studies he gave his students a detailed explanation of Henkel's law of biogenesis, the history of its origin, its contents and estimation (11).

Professor lectured on the theory of evolution as well. He considered Ch. Darwin a great scientist, but he thought that the evolution problems of organisms can be solved only by the achievements of experimental sciences (12). That was sufficient to become known as an opponent of the theory, with subsequent personal enemies.

The impressions of travels, work experience abroad made it possible for him to use various illustration materials. At the lectures he used to tell his students about the adventures he had experienced in the Philippines and the USA, the animals he had seen and investigated. His lectures, based on wide erudition and great life experience, were popular and well-attended not only because attendance was compulsory, but also because they were interesting.

Professor considered attendance necessary, and while working at Kaunas University he criticized free attendance. According to him such order was useful to well-off students who were not eager to study well. It made a lecturer's work as well as a student's systematic studies more difficult. That's what he wrote about the problem: "I didn't like the system of training at Kaunas University. In the USA and the Philippines students had to attend lectures and other activities. In Kaunas nobody paid any attention to compulsory attendance" (1).

To check attendance to the lectures, Professor had his own system: before the lecture the students were given by his assistants sealed cards they had to sign. The collected cards were later checked in the department to the students' roll.

He made thorough plans for his lectures. During them he analyzed the problems of histology deeply and in complex, stressing the phylogenesis and ontogenesis of structures referring to the materials of comparative anatomy, showing the functional meaning of the structures.

Although students' workshops were led by his assistants, Professor himself always participated in the seminars. He used to sit down beside students, explained to them the preparations, tried to develop their logical thinking. While teaching his students the technique of working with a microscope, he demanded to analyze the preparation through the monocular with both eyes open. "A strange man exacting to scrupulosity...A student looking through the microscope must look with both eyes open by all means. Professor won't leave you in peace until you open the other eye". These are the words from the reminiscences of his former student D. Mažonyte (1).

Professor P. Šivickis was fond of putting under the lens not typical preparations dyed in different colours. The students feared them to death. They were also afraid of Professor himself a little. They were scared by his physical appearance: he was stocky, broad-shouldered, with irregular features, slow.

Asked by a student or a colleague to explain something, Professor never refused to help. As he himself had to undergo a lot of hardships to achieve something in life, he often asked his students if they had a roof over their head, any money, and even sometimes financed his postgraduates' research with his own savings.

In 1945 Professor P. Šivickis wrote the first post-war textbook for medical students "The Basics of Histology", with a lot of illustrations. It is a pity it wasn't published. So the students printed it on a rotary press and used it as their main training appliance until in 1949 the translation of "The Course of Histology" by A. Zavarzin and V. Rumiancev appeared. Professor had also prepared his other lectured subjects in separate volumes. Eventually, he hoped to have them published some day. Among them these ones can be mentioned: "The Histology and Embryology of the Face, the Mouth and Teeth", "A Workbook in Comparative Anatomy", "The Summary of the Course of Comparative Anatomy".

Professor was exacting and strict not only to his students but also to the staff of his department and especially to postgraduates. "From the very beginning he made his student think himself. Professor never corrected a thesis, nor did he write any remarks..., he just put question marks at some lines", his former research student M. Rauckis writes. "Professor originally selected questions to candidate minimum examinations. There were questions not only from the theme of the thesis writer but also from his friend's theme" (1).

Postgraduates were not allowed to go on holidays. "A young person must be hard-working and persistent", Professor used to say (1). He himself used to spend his holidays doing his work.

One of the first thesis writers guided by Professor was the future head of Department of Anatomy, Histology and Anthropology Prof. S. Pavilonis.

While delivering the courses of comparative anatomy, embryology and histology, P. Šivickis was confronted by the problem of terminology. He wrote: "Every term of science has its history. Some terms are closely connected with great scientists' names; the others are created by the scientists themselves" (1). He did not create new Lithuanian terms, he made international and Latin terms of different structures and organs satisfy the requirements of the Lithuanian language. Professor wasn't against the usage of Lithuanian terms, but he warned that they had to be built carefully and well-thought. At that time not all scientists agreed with the reforms of terminology initiated by P. Šivickis. Under the pressure of linguists the author himself had to give up some proposals. But his efforts were not in vain – the problem of terms and their unification appeared on the agenda, discussions into which the linguists were involved started.

In spite of the great amount of pedagogical work and post-war hardships, Professor kept on going with his scientific work: he investigated the water fauna of the surroundings of Vilnius.

In 1948 P. Šivickis interrupted his pedagogical activities and plunged into scientific-organizing work. He started to work at the Lithuanian Academy of Sciences.

The scope of problems that interested him remained wide. It was morphogenesis, hydrobiology, parasitology, genetics, malobiology, pedobiology, etc. But in this period of his life and work he paid the greatest attention to parasitology.

Under his guidance systematic research in parasitology was begun in Lithuania. It was his initiative that the Laboratory of Parasitology was founded. Later it united with other laboratories and the Institute of Zoology & Parasitology grew up.

Almost every summer Professor organized parasitological expeditions into which not only postgraduates but also local specialists and teachers were involved.

Professor P. Šivickis was one of the constitutors and a member of the editorial board of the scientific journal "Acta Parasitologica Lithuanica". Together with coauthors he published some scientific articles in it (13).

On July 14, 1956 Professor was elected Member of the Academy of Sciences of Lithuania.

In the same year he published the capital scientific work "The Description of Parasites" for which he was awarded the Republican Prize (14). During the years of his work in the Academy of Sciences, Professor P. Šivickis published about 30 scientific articles and a lot of popular articles of high practical significance.

The problem of terminology was not forgotten. "I have a scientific dream – to prepare a dictionary of zoological terms", Professor wrote (1). Due to the worsening of his health he didn't manage to finish the work he had begun. Professor P. Šivickis died on October 10, 1968. He was buried in Vilnius, in the Antakalnis cemetery.

In a short paper it is difficult to describe all the work he did, to mention all the books he wrote, to enumerate all his pupils or colleagues. We would like to finish with the sentence Professor P. Šivickis once said: "The largest wealth of every person is his fruitful diligence". It characterizes him best of all. It makes us keep his memories, carry on his ideas, traditions and methods of teaching of anatomy, histology and embryology.

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R. Rizgeliënė, V. Palgeviëienė, J. Pukienė

**AKADEMIKAS PRANCIŪKUS ŠIVICKIS –
LYGINAMOSIOS ANATOMIJOS IR
EMBRIOLOGIJOS PUOSELĖTOJAS LIETUVOJE**

Santrauka

Straipsnyje apžvelgiame ávairiapusę ir plaëià áþymaus mokslininko, biologijos mokslø daktaro, Filipinø, Kauno ir Vilniaus universitetø profesoriaus, respublikinës premijos laureato akademiko Pranciškaus Baltraus Ŗivickio (1882–1968) mokslinę ir pedagoginę veiklą. Plaëiau nuðvieëiame jo, kaip lyginamosios anatomijos ir embriologijos pradininko ir puoselëtojo, indëlá á Lietuvos mokslá ir Ŗvietimá.

Po ilgø studijø Amerikos universitetuose ir darbo Filipinø universitete profesorius P. Ŗivickis 1928 m. grápo á Lietuvá kaip brandus mokslininkas ir pedagogas. Kauno universitete jis ákūrë Lyginamosios anatomijos kabinetá, kuris tapo paþangia to meto eksperimentine ir mokymo baze. Medicinos ir biologijos studentams, be lyginamosios anatomo-

mijos ir embriologijos kurso, dëstë bendràjà morfologijá bei zoologijá. 1941 m. Vilniaus universiteto Medicinos fakultete ákūrë Histologijos ir embriologijos katedrà, kuriai vadovavo iki 1948 m. Remdamasis lyginamosios anatomijos medþiaga, dëstë studentams mikroskopinę anatomijá ir embriologijá akcentuodamas struktūrø filogenezę ir ontogenezę.

Mokslinë prof. P. Ŗivickio veikla apëmë morfogenezę, hidrobiologijos, parazitologijos, malakologijos, genetikos ir kt. sritis. Ypatingá dëmesá jis skyrë eksperimentiniams regeneracijos tyrimams, nagrinëjo mokslinës terminologijos klausimus.

Per visá savo aktyviá veiklá prof. Ŗivickis paskelbë daugiau kaip 200 moksliniø straipsniø, 29 lietuviø tautosakos uþraðymus, vadovavo 43 disertantø moksliniams darbams, ið kuriø 26 buvo sëkmingai apginti, iðvertë ið rusø ar anglø kalbos 4, redagavo 5 veikalus, paraðë 59 disertacijø ar mokslo leidiniø recenzijas, dalyvavo 24 kongresuose, suvaþiavimuose, konferencijose ar sesijose, 28 mokslinëse ekspedicijose.