

HISTORY OF THE ZOOLOGICAL DEPARTMENT IN THE UNIVERSITY OF SZEGED

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The Department was founded in 1872 at Kolozsvár, in the Faculty of Natural Sciences of the Francis Joseph University. Its first heads were GÉZA ENTZ, Sr., JENŐ DADAI and ISTVÁN APÁTHY. Under the peace treaty of Trianon Transylvania, including Kolozsvár with the seat of the University, were annexed to Romania in 1920. This involved the consequence that the Francis Joseph University and the University Zoological Department of Kolozsvár were liquidated. A part of the departmental equipment was taken to Budapest by BÉLA FARKAS, then junior lecturer in the Department, and accommodated temporarily in a primary school-building. In 1921 the professors of the University repatriated to Budapest moved with the equipment brought from Kolozsvár to Szeged where the University, using its old name, resumed work with four faculties. As one department of the Faculty of Natural Sciences, the Zoological Department was accommodated in the Gábor Baross Grammar School. (in Baross Gábor str. 2). Also ISTVÁN APÁTHY arrived to Szeged in 1922 and started his lectures in the poorly equipped Department. ISTVÁN APÁTHY was born in Budapest on January 4, 1863. After completing his secondary studies, he immatriculated at the Medical Faculty of Budapest University. After his basic studies, he worked in the Institute of Pathological Anatomy where he was engaged in comparative zoohistological studies. He graduated as a Doctor of Medicine in 1885, and following his inclination for zoology, was appointed to assistant to TIVADAR MARGÓ, then professor of general zoology and comparative anatomy. After one year's work as the professor's assistant he was transferred to the zoological station of Naples in 1886 where he worked at the Hungarian desk with shorter and longer interruptions for three years. In 1890, at the age of 27 years, he was appointed to professor at the Zoological Department of the University of Kolozsvár. The Department, accommodated at that time in the villa of a count MIKÓ, was extremely small and the equipment was rather scanty. Despite this circumstance, people came there in masses from all corners of the globe to acquire APÁTHY's microtechnique ascended to world fame by then. Based on the conceptions and instructions of ISTVÁN APÁTHY, the immense Zoological Institute of the Kolozsvár University was completed in 1909 being virtually unparalleled all over Europe at that time. The high quality of instructional, educational and scientific work in the new institute under the leadership of ISTVÁN APÁTHY won world wide renown both to the leader of the institute and the institute

itself. But all this could not be continued in the new institute in Szeged. ISTVÁN APÁTHY was seriously ill at that time. His progressive cardiopathy disabled him more and more and he died after long suffering on September 27, 1922. With him a much-suffered man, a great genius and a far-lighting torch vanished from the scene of Hungarian scientific life — but his spirit has survived among us, and all over the world where there are love and enthusiasm for science, where people can work and, if needed fight for science.

If we wish to appraise in merit the work of ISTVÁN APÁTHY done during his career outlined in the foregoing, we must survey three fields in which he was really great having produced lasting values and achievements for science. The first one is zoology, the second neurohistology, and the third one micro-technique.

ISTVÁN APÁTHY's zoological studies started in Budapest and were continued in Naples at the Stazione Zoologica. These studies concerned the taxonomy and anatomy of leeches. For these studies APÁTHY collected the material in the gulf of Naples and in waters of Hungary. He conserved a part of that material in usual ways, but the most part of them were fixed embedded and processed histologically.

He carried out his neurohistological investigations with the gilding method — named after him — in the intestinal tube of the sea leech *Pontobdella muricata*. In the course of this work he was the first in world literature to stain the intestinal nervous system of this leech with almost miraculous clearness. In these preparations, of which the most beautiful ones are in my possession, the nervous system of the intestine and the pattern of its connection with the intestinal wall appear with extraordinarily fine definition and clearness. In my opinion this fact in itself sufficed to keep the name of ISTVÁN APÁTHY for posterity, to gain positive international appreciation for his work and to distinguish him with objective esteem. But this is not all, or not the only thing, that ISTVÁN APÁTHY found out and laid down in a lasting form in connection with these studies. It was he, who succeeded in proving, and making acceptable at his time, that fine fibrils (neurofibrils) are running in the protoplasm parallel or arranged in a network-like manner, in the nerve cells, the sensory cells, and in their processes. APÁTHY regarded these fibrils as the leading elements of the nervous system; he went even much farther in the morphological and physiological evaluation of the neurofibrils professing that they pass through the cells, the centres, even the muscle fibres, forming thereby a coherent system which pervades the entire organism and integrates the nervous system with all its elements into a continuous unity. With the „continuity” theorem APÁTHY declared war on the neuron theorem, on synaptology, in short, on the theorem of stimulus transmission of „contiguity”, and became the initiator of heated controversies which for a long time went on with extreme vehemence mainly between him and so distinguished representatives of the neuron theorem RAMÓN Y CAJAL, MIHÁLY LENHOSSÉK, and others. This brief appraisal does not permit us to embark on a discussion in merit and analysis of this question being even we ourselves neuronists; so much must anyway be said that, in our opinion, APÁTHY went beyond the limits and possibilities permitted by his preparations. In our view — and this is also proved by the preparations in our possession which were made from the intestinal tube of the *Pontobdella muricata* by APÁTHY in Naples in

1882 — he failed to take into account certain facts and features when he reported on cells in the intestinal wall through which the neurofibrils passed without interruption and extended continuously in the organism. The reason was that he had gilt the intestine in its totality and that gave rise to the pictures described in his work „Das leitende Element des Nervensystems und seine topographischen Beziehungen zu den Zellen.” Otherwise the battle which broke out with the publication of this work has been decided by now, and to the advantage of the neuron theorem. The pictures of nervous system obtained with recent methods and with the electron microscope and the changes appearing as a result of experimental interventions, speak for being is no continuity, and the neuron theorem has full validity both from the anatomical and physiological point of view. As one who has studied for more than 40 years the histological structure of the nervous system of practically all classes of the animal kingdom, I have always held that there is neither plasmic, nor dendritic, nor neurofibrillar continuity in the nervous system. Any picture of nerves which so far has seen the printer's ink in this respect is based on a mistake or it is a result of inadequate technique. As concerns the neurofibrils I am of the opinion that these do exist, but are not apparent in every case, and never leave the area of nerve cells. They are simply components of the neuron like the tigroid, the cytocentrum, the GOLGI complex and all the others. Yet despite all this, as one who works in a similar field and is the second successor of ISTVÁN APÁTHY in the Department, I profess and declare that he as a neurohistologist carried out a pioneering and outstanding work.

The third field in which APÁTHY was really great is the microtechnique. Many people were active in this field before him, making available to researchers many a useful method and procedure, but we must say with due impartiality that there was no one among the histologists and cytologists who would have surpassed ISTVÁN APÁTHY in meticulous care, accuracy, inventiveness, ingenuity and skill. Experience and results originating from APÁTHY's work are generally known and many of them are still widely used. I refer here to the double embedding, triple staining, gilding and other procedures. All this shows quite clearly that ISTVÁN APÁTHY was a brilliant thinker, a personality of great stature experimenting speculatively and investigating ponderingly, making efforts to organize and create instruments and methods with whose aid he could find answers to his questions from the world of living nature. But as a microtechnician he became really great, known and appreciated all over the world, when he put in chronological order the empirical results and experimental facts established by others and by him, summing them up, analyzing them critically and thus elevated microtechnique to the rank of a discipline. The result of this activity were his 2 volumes on microtechnique, „Die Mikrotechnik der tierischen Morphologie” (Abt. I, 1896; Abt. II, 1901).

ISTVÁN APÁTHY was not only an outstanding researcher and good organizer, but proved to be also an exemplary master in the education of a new generation. From among his pupils JÓZSEF GELEI, BÉLA FARKAS, JENŐ MÁTYÁS and GÁBOR KOLOSVÁRY worked in the University of Szeged, MIHÁLY ROTARIDESZ, the outstanding expert of the Molluscs, was active in the zoological gallery of the Hungarian National Museum, and LAJOS BOGA, professor of zoology in Bolyai University, remained in Kolozsvár.

ISTVÁN APÁTHY's successor in the Zoological Department was his first assistant and privat-docent JÓZSEF GELEI, who, after an interval of one year, came to Szeged and at the institute of Baross street started with great diligence on building up the institute that was a rather difficult work and came up against many obstacles. One considerable achievement of his work, holding out far-reaching prospects, was that the Zoological Department of the University of Szeged was the first in Hungary to be divided into two sections to which two professors were appointed as leaders. One was named „Institute of General Zoology and Comparative Anatomy”, the other „Institute of Zoological Taxonomy”. Both institutes started working at the place of the old Zoological Institute, resp. as its continuation. JÓZSEF GELEI was appointed to professor of the first in 1924, and BÉLA FARKAS, ISTVÁN APÁTHY's other junior lecturer was appointed to professor of the second, also in 1924.

JÓZSEF GELEI was born at Árkos, on August 20, 1886. After completing secondary studies he immatriculated at the Faculty of Natural Sciences in the University of Kolozsvár where he acquired qualification as a teacher of biological subjects. After completing his university studies he was appointed ISTVÁN APÁTHY's assistant, later junior lecturer and then privat-docent. He started his scientific research work with the study of the microscopical anatomy of worms. From the beginning his favourite was the mil-white flatworm (*Dendrocoelum lacteum* OERSTED). He wrote an extensive monograph on its histology, entitled „Studies of the Histology of *Dendrocoelum lacteum* OERSTED”. Based on his extensive investigations, he described in that work the histological structure of this animal, accompanied by numerous most exquisite drawings occasionally making thorough excursions into cytology which remained GELEI's, favourite field of research also later on. It is deplorable that this work was only published in Hungarian and so failed to produce that international reaction which it would have deserved well both for its inherent values and the form of presentation. Otherwise also after the publication of that book, the *Dendrocoelum lacteum* continued to be GELEI's favourite material in which he studied mainly spermiogenesis, and in general, the development of germ-cells respectively. As a result of his studies in this subject he published his most valuable paper which still commands the respect of cytologists and whose title is „Longitudinal Pairing of Chromosomes”. In this work he describes the various phases of meiosis systematically, with great lucidity, and in a perfectly novel manner. In the beginning, the work aroused extreme indignation and was strongly criticized in international literature; after some time, however, justice was done to GELEI, and his conclusions have got into the special literature as lasting values. At the time of his professorship in Szeged he turned his attention towards the unicellular organisms, and for the rest of his life was dealt with the *Ciliata*, their taxonomy, morphology, phylogeny, and mainly with their nervous system. With various dry and wet argentation methods, developed experimentally partly by him, partly by his pupils, he showed in a most convincing way the stimulus conduction system of the *Ciliata*, mainly of the *Paramecium*, in which he distinguished — similarly to the nervous system of multicellular organisms — a central and a peripheral system of silvery lines. It is an interesting fact that while — as a pupil and follower of APÁTHY — he professed continuity in respect to the nervous system of multicellular organisms, he saw contiguity in the contact form

between the central and peripheral silvery line systems. Hungarian and international journals, study tours and activities abroad speak of GELEI's work and achievements.

GELEI was not only a good researcher and a good teacher, he was a good organizer at the same time. Shortly after he had been put in charge of the Institute of General Zoology and Comparative Anatomy, he tried to find ways and means for securing to his Institute a better and more spacious accommodation, and to complete properly the rather scanty pool of instruments. And he succeeded. Shortly after the division of the Department, the building of the Discount Bank, which at the time was owned by the State Railways, went over into University ownership. This offered ample opportunity for the Institute to get an accommodation as required by its future and development, and half of the ground-floor space, which looks on Batthyány street, was reserved for the Institute of General Zoology and Comparative Anatomy. GELEI equipped the new premises gradually but fairly quickly and in an attractive manner. He ordered practical, lasting and elegant pieces of furniture, and also equipped the tidy institute with plentiful research instruments in a short time. All this was made possible by a liberal assistance on the part of the State to fill all gaps; but both the making of equipment and the purchase of instruments was greatly promoted by a considerable financial grant given to the new institute by the American Rockefeller Foundation. Within a few years the institute was excellently equipped with all means and devices required for instruction and usual at that time, and was even able to offer comfortable working-places and excellent facilities to researchers coming from abroad. The pool of instruments was completed by a rich zoological collection, most of which came from the vertebrates and invertebrates living in the area of Szeged and the surroundings. There were in addition a considerable number of dry and wet preparations which made possible high standards of instruction in comparative anatomy.

In developing and equipping of the Institute of General Zoology and Comparative Anatomy, GELEI was greatly helped by JENŐ MÁTYÁS, his former junior lecturer, who also had come from Kolozsvár where he was APÁTHY's assistant as well. While in Kolozsvár, JENŐ MÁTYÁS began studies in comparative osteohistology and produced most interesting results in this field whereby he was not only able to differentiate from one another the various bones histologically, but could identify also racial differences in the system building up tubular bones. GELEI attached great importance to the investigations of MÁTYÁS and therefore assigned in shaping the workingprogram and the entire layout of the Institute a considerable role to MÁTYÁS's ideas and illustrations which almost completely covered the walls of the large corridors. JENŐ MÁTYÁS continued his osteological and histological studies with great diligence in the new institute as well and some of the students co-operated in this work actively. After his retirement, JENŐ MÁTYÁS went to Budapest to the Anatomical Institute and summed up the results of his comparative osteohistological studies. This work was published in German by the Hungarian Academy of Sciences.

JÓZSEF GELEI was in no way inferior to his master ISTVÁN APÁTHY as concerns the education of the new generation. Despite the fact that there were few students at that time, GELEI succeeded in training a team of researchers which greatly contributed to making known the *Ciliata* of Hungary both structu-

rally and systematically. With the exception of Miss JULIA VIDACS who studied comparative osteohistological problems under the guidance of MÁTYÁS, all the members of the Institute became enthusiastic and competent researchers of the *Ciliata*. PÉTER HORVÁTH, a member of GELEI's school, who later took up teaching in secondary schools, has studied the nervous system of the *Paramecium* and developed a simple argentation method for this purpose which was used successfully at that time. JÁNOS HORVÁTH also studied the nervous system of the *Ciliata*; later he was transferred to the Biological Research Institute of Tihany where he started studies of unicellular fungi. He continued research work in this field also later, as professor of microbiology in the Agricultural University of Gödöllő, till his death in 1969. Miss JOLÁN STILLER studied the *Peritricha* and continued this work also later when she was research worker of the Zoological Gallery of the National Museum. BÉLA PÁRDU CZ studied the stimulusconduction system of the *Ciliata* and was particularly interested in ciliary movement. He investigated motivation and causes of that with particular technical skill and competence. He continued these studies in the Zoological Gallery of the Hungarian National Museum till his early death. GÁBOR GELEI, the son of JÓZSEF GELEI, belonged to the protistological school of Szeged, and was a diligent and competent researcher of the subpellicular system of the *Paramecium*. He continued this work as professor of zoology in the Teachers' Training College of Eger till his early death.

JÓZSEF GELEI worked till summer 1940 as director of the Institute of General Zoology and Comparative Anatomy in Szeged. He then went back to Kolozsvár, taking with him a considerable proportion of the equipment of the institute and all the books which had formerly been brought from Kolozsvár to Szeged. After the departure of GELEI, AMBRUS ÁBRAHÁM was appointed to head of the Institute which then was named upon the recommendation of GELEI, without reason and necessity — „Department of General Zoology and Biology”.

AMBRUS ÁBRAHÁM was born at Tusnád on November 20, 1893. After completing secondary school studies he immatriculated at the Philosophical Faculty of the University of Budapest where he acquired a diploma as secondary school teacher of natural history and geography, and a Doctor's diploma of zoology, botany and geology. Still a student, he got into the University Institute of General Zoology and Comparative Anatomy and Histology where he was appointed to professor's assistant, later junior lecturer then privat-docent. In 1934 he was appointed to professor of zoology in the Teachers' Training College of Szeged, and became its director in 1939. He started his scientific research work with the study of the comparative histology of the nervous system, and was active in that line also later on. He was interested in the entire animal kingdom and in man as well, particularly in the nerve supply of the organs of sense, and the cardiovascular system, the sympathetic nervous system and the synapses. Hungarian and international journals, monographs published in German and English, and lectures given at international meetings bear witness to his results in comparative neurohistological work. He was member of 26 international congresses and symposiums, and delivered 42 lectures at these and at other scientific meetings abroad. After starting his educational and research work, he reorganized the institute which then consisted of more than 20 rooms, modernized it as required by the time and equipped it with materials and implements needed for

research work of the nervous systems. During his directorship the field of hydrobiology and cytology was added to histological research, and cytological research produced considerable achievements in respect of unicellular organisms. His institute was abundantly supplied also with comparative anatomical and systematical collection. The collection comprising the avifauna of Fehértó and the insectifauna of Marostó were very interesting and beautiful and were highly useful in the instruction concerned with the fauna of Szeged and surroundings. Equally beautiful were the bone collection and the collection of alcoholic preparations, and the latter, comprising all systems of organism, were available in great numbers to lecturers and practice leaders alike. All this was completed by over 30 thousand neurohistological preparations extending over the entire animal kingdom and the totality of organism produced partly by ÁBRAHÁM himself, partly by his pupils; this collection is unique even by international standards.

Considering the fact that in the forties the number of students of biology was hardly five or six in a year at the Faculty of Natural Sciences in our University, the training for school presented a difficult task to AMBRUS ÁBRAHÁM. Difficulties were increased by the circumstance that while the institute hardly had two or three assistants, it was always his institute that was affected hardest by staff reductions. But even so, if only somewhat belatedly, ÁBRAHÁM succeeded in developing an institute which ranked among the first ones of the world in respect to scientific and research standards. He successfully educated a staff of young, enthusiastic neurohistologists, and in addition, a number of specialists active in other fields of zoology, who have become competent representatives of their respective branches. Owing to the adverse turn of circumstances anyway, they are at present not all in the position to work in the fields for which they have been educated. SÁNDOR BENDE, Miss ARANKA STAMMER, EMIL MINKER, IMRE HORVÁTH, LAJOS ERDÉLYI, JÓZSEF TÁNCZOS, Miss MAGDOLNA FERENCZ, FERENC VETŐ, Miss MÁRIA CSOKNYA, IMRE ROJIK and GÉZA TÚRY have been active in neurohistology; JÁNOS MEGYERI, FERENC BICZÓK and DÁNIEL GÁL have done hydrobiological research work MIHÁLY WEBER, and LÁSZLÓ VARJAS have worked in the entomological field; Miss JUDITH GERGELY and ENDRE VÁGÁS have studied evolutionary and biological problems.

SÁNDOR BENDE started his research work with the skull of fish and continued it with the brain of fish. Later on he started to study the neurohistology of the intestinal canal of fish, and is carrying on these studies at present in Eger where he is senior lecturer and head of the Zoological Department in the Ho Shi Minh Teachers' College. His main concern is to find out whether food, on nutrition, affects the formation of innervation, and, if so, whether this can be detected in the various structural formations.

Miss ARANKA STAMMER studies the innervation of the eyes, respiratory organs and endocrinous systems of vertebrates. She is mainly interested in fine nerve end-structures, her principal subjects being the ganglion ciliare, the pincal organ and the retina. As senior research worker she is now active in the Zoological Department of the University of Szeged.

EMIL MINKER studied the innervation of the intestinal tube of the leeches and of the hinges of shells. Following this he started synaptic research of the paravertebral ganglia. At present he is senior lecturer in the Pharmacological Institute of the University Medical School of Szeged.

IMRE HORVÁTH investigates the structures and evolution of the sympathetic nervous system; his principal field of research is the heart, intestinal canal and truncus sympathicus of the lower vertebrates. At present he is junior lecturer in the Zoological Department of the University of Szeged.

LAJOS ERDÉLYI first investigated the innervation of the cardiovascular nervous system of mammals; later on he started to study the heart of snails and ionic effects. At present he is junior lecturer in the Zoophysiological Department of the University of Szeged.

JÓZSEF TÁNCZOS had dealt with the innervation of the intestinal tube of snails, then he started to study the nerval connections of the gallbladder of mammals. At present he is junior lecturer in the Zoological Department of the Teachers' Training College of Szeged and studies the sympathetic nervous system of *Gastropoda*.

MISS MAGDOLNA FERENC has studied the nerve supply of the intestinal tract of tadpoles. At present she is junior lecturer in the Zoological Department of the University of Szeged where she investigates the fauna of the benthos and the *Oligochaeta*.

FERENC VETŐ studied the neurosecretory nuclei of the hypothalamus of lower vertebrates; at present he is research worker of the Biophysical Institute of the University Medical School of Pécs.

MISS MÁRIA CSOKNYA studied the innervation of the intestinal canal of birds with special regard to conditions of nutrition. At present she is assistant in the Zoological Department of the University Szeged where she is concerned with the anatomy and ecological study of *Ephemerids*.

GÉZA TÚRY studied the anatomy and histology of the brain of the Anura; at present he is junior lecturer in the Zoophysiological Department of the University of Szeged. — IMRE ROJIK studied the innervation of the lactiferous glands, and was mainly interested in the receptors. At present he conducts plant-genetic studies in the special group for genetics of the Zoophysiological Department of the University of Szeged. — JÁNOS MEGYERI investigated the fauna of the natron lakes in the Great Hungarian Plain, and is mainly interested in lower crayfish. He carries out his investigations in the Zoological Department of the Teachers' Training College of Szeged as professor of zoology.

FERENC BICZÓK was first engaged in entomology, after which he started research work with the *Rhizosphaera*: at present he is senior lecturer of the Zoological Department of the University of Szeged and carries on cytological studies in unicellular organisms. — DÁNIEL GÁL studied the *Protozoan* fauna of the dead-waters in the surroundings of Szeged and of the river Tisza. His main concern were the *Rhizopoda*; at present he is research worker of the Zoological Department of the University of Szeged and studies the *Protozoan* fauna of the Tisza.

MIHÁLY WEBER studied the anatomy and taxonomy of the dragon-flies; at present he is professor of zoology in the Teachers' Training College of Pécs and studies the *Hypenoptera*. — LÁSZLÓ VARJAS studied the evolution and physiology of insects. At present he is research worker of the Plant-Protection Research Institute of Budapest where he studies insect hormones.

MISS JUDITH GERGELY started her research work with the study of estrogenic substances; at present she is senior lecturer of the Pharmacological Institute

of University Medical School of Debrecen where she engaged in virology. — ENDRE VÁGÁS studied the evolution of tissues and microtechnique; at present he is junior lecturer of the Zoological Department of the Ho Shi Minh Teachers' Training College of Eger.

After the retirement of AMBRUS ÁBRAHÁM in August 1967, the General Zoological and Biological Institute was merged with the Institute of Zoological Taxonomy and the institution thus created has been named „Institute of Animal Organology and Taxonomy". At the same time the Institute of Animal Physiology was established and OTTÓ FEHÉR was appointed to its director as senior lecturer. OTTÓ FEHÉR was born in Debrecen on February 4, 1927. He studied in the University Medical School of Debrecen; after some time he was appointed to assistant, then junior lecturer and later senior lecturer at the Physiological Institute of Debrecen. His research field is the physiology of the nervous system. Earlier he studied sympathetic ganglia and at present he is engaged in the elementary processes of the auditory cortex.

BÉLA FARKAS, director of the first Hungarian Institute of Zoological Taxonomy organized in Szeged, was born at Hajdúnánás on June 15, 1884. He studied natural history and geography at the University of Kolozsvár. After completing his university studies at the Faculty of Natural Sciences he was elected assistant and then junior lecturer of the Zoological Institute. In 1924 he was appointed to director of the newly established Department of Zoological Taxonomy. Actually he was a histologist, a pupil of ISTVÁN APÁTHY, one of the most skilled in APÁTHY's technique and one of the most talented ones. During his work at Kolozsvár as assistant and then junior lecturer, he studied mainly the intestinal tract of the river crayfish and published interesting conclusions about the histological structure of the digestive glands. Later on with the help of ISTVÁN APÁTHY he was sent to the zoological station in Naples where he published remarkable papers on the histology of sponges. In Szeged he turned his attention to the auditory organ of fish, and this was the line he followed and practised with great diligence and competence during practically all his research activities. He studied the membranous labyrinth and the sensulae of a great variety of freshwater bony fishes, and tried to clarify with his extremely refined microtechnical methods the correlations between sensory cells and the nervous system. Shortly after his appointment his institute could move to the building of the Discount Bank — to the ground-floor section looking on Partizán street — and there he established a large institute for zoological taxonomy. Substantially the equipment of the institute was similar to that of the Institute of General Zoology and Comparative Anatomy, with the difference that here the zoological collection was much larger and occupied practically half of the large premises.

Like JÓZSEF GELEI and AMBRUS ÁBRAHÁM, he displayed great diligence and devotion in the development and enrichment of the institute. In addition, he tried to demonstrate, mainly with the composition of the practical material and the selection of subjects, that parasitology, which was rather neglected in Hungary at that time played a highly important role among the biological subjects. How very much right BÉLA FARKAS was in this respect was decisively proved by subsequent trends in international biological research, and is still being proved at every turn. In summer 1946 BÉLA FARKAS resigned from the directorship of the Institute of Zoological Taxonomy, and that involved the liquidation,

or, more exactly, the merger of the Institute with the General Zoological and Biological Institute.

In his efficiently organized and well-equipped institute BÉLA FARKAS provided a possibility for the education of experts, as well who were somewhat detached from the zoological disciplines which he himself mastered. The entomologist GÉZA ZILAHÍ SEBESS, the malacologist ANDOR HORVÁTH, the protistologist JÓZSEF KORMOS and the parasitologist BÉLA EDELÉNYI were trained in his institute.

GÉZA ZILAHÍ SEBESS, the outstanding expert of insects and competent researcher of the *Diptera*, graduated from the University of Debrecen and was working there for some time. Later he was junior lecturer of the Institute of Zoological Taxonomy and the General Zoological and Biological Institute of the University, Szeged. He moved from Szeged to Debrecen again where he was senior lecturer and head of the Zoological Institute of the University till his early death.

ANDOR HORVÁTH, a competent researcher of the *Molluscs*, worked as professor's assistant in the Institute of Zoological Taxonomy. As a junior lecturer he later was transferred to the General Zoological and Biological Institute, and then again went back to the Institute of Zoological Taxonomy. At present he works as senior lecturer in the Zoological Department of the University where he studies the Hungarian recent and Pleistocene fauna of *Mollusca* with special regard to ecological features.

JÓZSEF KORMOS is an industrious researcher of the morphology and taxonomy of the *Suctorina*, interested mainly in problems connected with reproduction. He started his work in the Institute of Zoological Taxonomy of the University Szeged, was then active in the Genetical Institute in Budapest, and is at present senior research worker of the Zoological Department of Szeged. — BÉLA EDELÉNYI studied the worms of Hungarian frogs; he carried on this work in Eger where he was senior lecturer of the Zoological Department of the Ho Shi Minh Teachers' Training College. At present he is head of the Zoological Department of the Agricultural University Debrecen and studies the worms of fishes.

The Department of Zoological Taxonomy was reestablished in 1954, and GÁBOR KOLOSVÁRY, as a university professor, was put in charge of the institution.

GÁBOR KOLOSVÁRY was born at Kolozsvár on August 18, 1901. After his secondary studies he immatriculated at the Medical Faculty of University which was moved from Kolozsvár to Budapest and then to Szeged. After passing his first university examination he went over to the Faculty of Natural Sciences where he obtained a leaving certificate in the special subject group of natural history and geography. His scientific activities comprised practically all fields of zoology and biology. He studied zoological taxonomy, ecology, animal psychology, theoretical biology, maritime biology, zoogeography and paleontology. He was particularly interested in fish, spiders and crayfish. His work is evidenced in a variety of Hungarian and other journals.

In the second half of his life he was chiefly concerned with paleontological problems, many of which he presented in a new light and in connection of which he drew conclusions useful also in practice.

In recent years a considerable proportion of his scientific research activities were concentrated on the river Tisza. This river was his favourite research area also in his young days which is evidenced by his monograph written on the fishes the Tisza and on the ways of fishing in that river. Aided by the Hungarian Academy of Sciences, he recently has organized an efficiently working community for studying the Tisza and its flood area („Tisza Research Community”). JÁNOS GAUSZ, LÁSZLÓ GALLÉ, Jr., and GYÖRGY CSIZMAZIA co-operated in this work in addition to the members of his Institute. — JÁNOS GAUSZ, who was mainly concerned with ecology and physiology of the *Orthoptera*, is working at present in the Genetical Section of the Biological Research Center of the Hungarian Academy of Sciences Szeged.

LÁSZLÓ GALLÉ, Jr., who studies the ants of the flood area, worked first in a secondary school of Szeged and now in the Zoological Department of the University Szeged. He has recently started studying the ants of Hungary. — GYÖRGY CSIZMAZIA, who is teacher in secondary school of Szeged, is studying the small mammalian fauna of the flood area, particularly of the dikes and is interested mainly in ecological problems.

Up to August 1967, GÁBOR KOLOSVÁRY was head of the Department of Zoological Taxonomy; from that year he was director of the newly created Institute of Animal Organology and Taxonomy till his death in 1968.

After KOLOSVÁRY's death LÁSZLÓ MÓCZÁR, head of section in the Zoological Gallery of the Hungarian National Museum, was appointed as a university professor to the above mentioned Department. LÁSZLÓ MÓCZÁR was born at Kiskunfélegyháza on December 10, 1914. He studied at the Faculty of Natural Sciences of the University of Budapest, started his scientific work with studying the *Hymenoptera*, mainly the *Aculeata* and is active more or less in this field also today. He is an acknowledged expert and excellent researcher of this order of insects. He has been head of the Institute of Animal Organology and Taxonomy since October 1969. This name was however, abolished in 1970, and the institution was named Zoological Department.

If we look back at the 50 years of the Zoological Department of the University, we see that periods of evolution and involution have alternated in quick succession in the life of the Department. After a long chain of great conceptions and respectable initiatives, this Department, which was called the Zoological Institute at the time of its foundation, has deplorably grown down again to its original form. It goes without saying that in this form it is no longer able to provide an adequate basis for understanding and solving great biological problems. There is no substantial teaching and research work of comparative anatomy and histology in this Department, as this is not possible in the present form. Only the morphology can give strong basis for understanding and solving any biological problem. It has been the basis in the past, is it today, and will be in the future. Biological research of our age is directed by the conception of comparison and phylogeny. And these fields can be approached with any prospect of success only by those who are in possession of perfect and detailed knowledge in comparative anatomy and histology. In universities abroad there are special departments not only for comparative anatomy, comparative histology, but also for comparative neurology, or as it is called in America, for the neurological sciences (neuro-sciences).

In Hungary the only efficient department of comparative anatomy and histology has been dissolved quite irrationally and unreasonably, however the comparative anatomy and histology are basic disciplines and requirements of our time.

We are confident that the time will come — and fairly soon — when the department of comparative anatomy and histology is re-established, when a department of comparative neurology is founded, and the departments of animal physiology and zoological taxonomy are maintained in working condition correlated with the former ones. The idea on whose basis the department of animal physiology came into being was correct and was one of the exigencies of our time.

But it is all the more a requirement of our days that there should be in the future a department of comparative anatomy and histology in the University of Szeged, a department of comparative neurology, a department of comparative physiology based on these and able to develop on this basis, as well as a department of zoological taxonomy paying attention to ecological and zoogeographical features as well. If these four departments become reality, and will be headed by men who are well-versed in the methods of scientific research, have a sence for research work and are able to teach on a high level which is worthy of the name and reputation of our University, then the combined efforts of these four departments will be able to lay the foundations for a zoological and biological erudition on which anybody can rely wherever he be, in whatever circumstances he may get into contact with problems arising frequently and summarily in the field of biology in our days. We are confident that evolution which appeared in a most heartening form in the history of the Zoological Department of the University of Szeged, but turned abruptly into involution, will again start on the road to evolution before long.

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