

TIBOR SZÉKI
A TRIBUTE ON THE OCCASION OF THE 100th
ANNIVERSARY OF HIS BIRTH

Tibor Széki was born on 18 April 1879 in Kolozsvár, where he also completed his university studies. He first obtained his diploma as a pharmacist, and in 1902 was awarded doctorates not only in pharmacy, but also in chemistry. Although his father, Miklós Széki, had a well-known pharmacy in Kolozsvár, after receiving his diplomas, Tibor did not opt for a pharmacy career. Instead, as he was strongly attracted towards university teaching and organic chemistry research, he was very pleased to accept the offer of a post as an assistant lecturer by Professor Rudolf Fabinyi, his mentor and ideal. This soon led to the possibility for him to develop his organic chemical knowledge further, particularly in the field of laboratory methods, in the Department of Organic Chemistry, at the Charlottenburg Technical University, in Berlin, under the guidance of Professor Karl Liebermann.

As was the custom at that time, following his appointment as a professor in Kolozsvár University, Rudolf Fabinyi had travelled abroad, and worked in the institutes of two famous organic chemists, Wislicenus and Adolf Baeyer. On returning to Kolozsvár, from 1876 on he had dealt mainly with research work in organic chemistry, as evidenced by a number of publications. Fabinyi may be regarded as the pioneer of Hungarian organic chemistry research. However, his wide interests soon diverted his attention to other areas of chemistry, and the organic chemistry research work in his institute only commenced a revival when he selected Tibor Széki as one of his assistants. Their first joint paper appeared in 1905, in *Berichte der Deutschen Chemischen Gesellschaft*, and was followed at short intervals by further publications. The successful activity of Tibor Széki, who had in the meantime been promoted to the position of lecturer, is indicated by the fact that in 1907 he was further upgraded for his work on "The chemistry of benzene-ring compounds", and in 1917 was appointed assistant professor. This rapid advance in his scientific career underwent a sudden break after the First World War, however: Kolozsvár was occupied by Roumanian troops, and then, as a consequence of the Peace Treaty of Trianon, the Roumanian government discontinued the activities of the Franz Joseph University in Kolozsvár, which had been founded in 1872. For this reason, the professors of the University were forced to leave Kolozsvár, and for the time being awaited their subsequent fate in Budapest. In 1921, the then Hungarian government denoted Szeged as the new site for the Franz Joseph University, but Professor Fabinyi did not live to know this, as he died in Budapest in 1920. Accordingly, Tibor

Széki was invited to take the only chair in chemistry at the Faculty of Mathematics and Natural Sciences of the University. He accepted this offer, even though the work in his father's pharmacy would have provided him with a safe and comfortable living. It is again a tribute to his attraction towards university teaching and organic chemistry research that he was able to overcome the strong sentimental attachment which he felt for the beloved town of his birth. The conditions under which he began work as an assistant professor in Szeged in 1922 were extremely primitive: the Department was housed in the basement and in 5 second-floor rooms of what had previously been a secondary school; there was practically no laboratory equipment, and the entire stock of the library consisted of 20 or so annual volumes of *Berichte* and *Chemisches Zentralblatt*, the personal property of Széki, brought with him from Kolozsvár.

Széki was faced with the task of somehow acquiring the equipment that was indispensable for the reasonably acceptable operation of the Department. In addition, he attached importance to the introduction of modern laboratory methods. In this connection, for example, in 1928 he arranged a scholarship for the writer of the present article to travel to Graz to become acquainted with all of the then known procedures of quantitative determination in organic microanalysis, in the institute of the Nobel Prize winner, Professor Fritz Pregl. This made it possible that as early as 1929 an organic microanalysis laboratory could commence operation in the Szeged department, as the first in Hungary. Here, all of the then known determination procedures were used to perform analyses not only for the Szeged group, but also for the Budapest departments and other institutes. (In his later period in Budapest, Széki immediately set up a similar laboratory.) The tasks of organization accompanying the development of the Department were solved in an exemplary way by Széki. All this demanded very much work, but in addition it was necessary to provide all of the special courses in chemistry for the chemistry and pharmacy students, involving 12–14 hours of lectures weekly. Some of this great load was taken off his shoulders only in 1924, when a second chemistry department was organized in the Faculty of Mathematics and Natural Sciences. However, even then there still remained for him the teaching work in organic chemistry and pharmaceutical chemistry, together with a special course of 2 hours a week on important topics in organic chemistry, such as the chemistry of carbohydrates, terpenes and alkaloids.

He was aided in his research and teaching work by only a small staff (1 lecturer, 3 assistant lecturers and 2 unpaid probationers), with no other technical help at all (laboratory technicians, office workers), even though the total number of students in the various categories soon rose to 180.

When I joined him as an assistant lecturer in 1926, I was amazed to observe what deep insight his lectures provided on the most important aspects of organic chemistry, including the chemistry of heterocyclic compounds, which was barely mentioned at the Technical University in Budapest at that time. His special organic chemistry courses gave a clear picture of the mental processes involved in structure research. He was a master in the art of lecturing, and as an ardent laboratory research worker he frequently presented interesting and instructive experiments, while he regularly shed light on questions of stereochemistry with the aid of models he had himself made. In spite of his great preoccupation with the teaching work, he continued the scientific researches he had been forced to abandon in Kolozsvár, as far as this was possible within the scope of the poor equipment and financial support of the

Department. Those striving for higher degrees were drawn into this work. A better possibility for the research opened only at the beginning of the nineteen-thirties when modern university buildings were constructed in Dóm Square; with the mediation of Albert Szent-Györgyi, the Rockefeller Foundation supported the up-to-date equipping of many of the departments of the Faculty of Medicine and the Faculty of Mathematics and Natural Sciences; at the same time, there was a considerable increase in the annual financial support of these departments on the basis of an agreement reached with the then Ministry of Education. Nevertheless, Tibor Széki enjoyed these improved conditions for only a short time, as in 1935 he was invited by the Péter Pázmány University to take the chair made vacant by the retirement of Professor Lajos Winkler. Here again he carried out much teaching and organizing work, primarily because he reorganized the existing department to be the Department of Organic and Pharmaceutical Chemistry. It was to his credit that Budapest University could finally begin to provide the necessary number of lessons weekly as regards the theoretical and laboratory teaching in organic chemistry, which was compulsory for the chemistry and pharmacy students. These students numbered around 250–300 each year, whereas merely 5 teaching staff were available (2 professors, 3 assistant lecturers, 1 unpaid probationer).

Evidence as to the scientific work of Tibor Széki is given by the 42 publications he prepared, and by the same number of doctoral theses in organic chemistry produced under his guidance. Most of his publications appeared in *Berichte der D. Ch. Gesellschaft*, *Liebigs Annalen* and *Archiv der Pharmazie*. In addition, he wrote a university text-book "Pharmaceutical Chemistry", published in 1941.

It is not possible to give a detailed account of his publications here, and I should like simply to refer to a few of his results. A fair number of his first papers, jointly written with Fabinyi, deal with the study of azarone (2,4,5-trimethoxypropenylbenzene). This naturally-occurring organic compound was isolated from the oil of *Asarum Europaeum*, which grows wild in the vicinity of Kolozsvár. The most interesting of their investigations in this respect relate to the unusual reactions of azarylaldehyde with various Grignard reagents. These reactions did not yield the expected secondary alcohols, but the ethers produced by bimolecular condensation of the latter. Széki and a small number of his staff dealt with azarone, and particularly with the azarone oil, in Szeged too; they isolated and identified some of the previously unknown components of the oil. A very interesting further feature of his examinations with Fabinyi was a condensation reaction that can be induced between pyrogallol and various ketones, and that leads to the formation of tetracyclic compounds. One of the especially interesting results of the research work in Szeged was the discovery of a correlation between pungent taste and molecular structure. With organic compounds synthesized for this purpose, Miklós Jancsó, the then Professor of Pharmacology, was able to attain just such an interesting anti-inflammatory effect in experimental animals as with, for example, capsaicine, the pungent-tasting component of paprika. Another interesting research field begun in Szeged was the study of the dimerization of phenolic ethers possessing a propenyl side-chain. These studies were later continued in Budapest by Sándor Müller, who discovered the mechanism of the dimerization and the steric structures of the stereoisomeric dimers.

In recognition of the results of his scientific research, Tibor Széki was elected a Corresponding Member of the Hungarian Academy of Sciences in 1934, and

a Full Member in 1945 (among others, his nomination was supported by László Zechmeister, Gyula Gróh and Frigyes Konek). In connection with his university activities, he was Dean of the Faculty of Mathematics and Natural Sciences in Szeged University in 1926/27, and Rector there in 1933/34. Of the organic chemists who worked under his professorial guidance, 3 in Szeged (Zoltán Földi, László Vargha and Győző Bruckner) and 1 in Budapest (Sándor Müller) acquired much higher qualifications and positions as a consequence of his initiatives, and all of them joined in the teaching of organic chemistry within special courses. The public activities of Tibor Széki are indicated by the facts that he was elected Vice-Chairman of the Hungarian Pharmaceutical Society from 1938 to 1943, and was subsequently its Chairman until 1947, while he was Chairman of the Hungarian Chemical Society in 1941.

Tibor Széki, one of the pioneers of Hungarian organic chemistry research, died suddenly in Budapest in 1950, after a life filled with much honourable work and not free from trial. After his death, his family presented his official portrait to the Várpalota Museum. However, it was in vain that I sought for it there among the portraits of the great Hungarian chemists. It might appear that Tibor Széki is not worthy of being remembered! However, I for one, who was his colleague for 8 years, will always treasure his memory with respect and affection, and I am convinced that numerous Hungarian organic chemists and pharmacists look back on him with similar feelings.

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