

OBITUARY

Jiri C I F K A (14th April 1933 - 21st May 1987)



This talented scientist was granted by Fate a short life span of only fifty-four years. He was born, and spent all his life, in Prague, the picturesque and fascinating town in the heart of Europe on the Czech national river Vltava (Moldau). Here within the walls of the oldest University of Central Europe, founded in the 14th century by the "Father of the Nation", Charles IV, Czech King and Roman Emperor, acquired Jiri Cifka his fundamental chemical education. He graduated at Charles University in 1956 having dedicated himself to scientific research since the second year of his university studies, acting as auxiliary assistant of the Chair of Analytical Chemistry. In the focus of his interests in this early stage of his career were physico-chemical properties of complexometric indicators.

Immediately after his graduation he joined the newly formed Czechoslovak Nuclear Research Institute (NRI). He started in the provisional premises at the Strahov sportive stadium, then he became the pioneer of organising the laboratories in the new "nuclear campus" at the small village Rez on the bank of the Vltava river about 20 km north of Prague. He was witness of the rushing development, as well as various reorganisations. He served truly over 30 years the institute, almost till his last breath, being brought on that dismal day the 21st May directly from his laboratory desk to the hospital, where he passed away only a few hours later on an acute heart failure.

Most of the smaller countries which installed their own nuclear reactor started its utilisation by producing artificial radioisotopes. This situation holds also for Czechoslovakia where the 2 MW reactor of the VVR-S type that was supplied by USSR started its operation in 1957. Dr. Cifka was in his early years in Rez in charge of

introducing local radioisotope production. At that time radionuclides were usually in their simple inorganic form, such as [^{24}Na]sodium chloride, [^{32}P]phosphate, [^{35}S]-sulphate, etc. Dr. Cifka, in accordance with the "fashion of those years" also performed some hot atom chemistry studies. He studied in those early years the fate of ^{76}As in the liquid system arsenic trichloride-benzene. Dr. Cifka submerged himself with an incredible enthusiasm and ingenuity into these new areas of chemistry for which no previous experience existed anywhere in the country. A short-term training study-visit to the Radiochemical Laboratory of the Moscow University headed by Professor Andrei N. Nesmeyanov gave him a very basic insight into the field that for a traditional chemist represented an unusual way not only of thinking but even of in-laboratory manipulation.

In the middle of the sixties the original enthusiasm for local production of radionuclides dropped due to the fact that they had become easily available on the world market and that the price of simple inorganic forms settled on a low level. At that time NRI was operated by the Czechoslovak Academy of Sciences with concentration on fundamental research. For a few years the production of radionuclides in Rez on a commercial basis stopped and the attention of the team of the Department of Radionuclides, where Dr. Cifka had gained a dominant position, concentrated completely on studies of chemical effects of nuclear reactions. In this later period of his hot atom chemistry studies he has chosen solid systems, especially potassium chloride, as subject of his research. The consequence of bombarding chlorine with neutrons gave by the "broad spectrum" of nuclear reactions, i.e. (n, gamma), (n,p), (n,alpha) the plentiful variety of products ^{38}Cl , ^{35}S , ^{32}P with expected various behaviour. Original interpretations of this system during irradiation and thermal annealing was the basis of his Ph.D. thesis (candidate of chemical sciences) in 1964.

In the late sixties/early seventies, in the application of radioisotopes, nuclear medicine emerged as the most important field. Fast development of this progressive medical branch to highly sophisticated and selective combined scintigraphic and dynamic studies caused a shift from simple radioisotopes of trace-biogenic elements such as ^{24}Na , ^{32}P , ^{131}I in inorganic form to radioisotopes of "foreign" non-biogenic elements such as $^{99\text{m}}\text{Tc}$, $^{113\text{m}}\text{In}$, ^{67}Ga , ^{201}Tl and to organic labelled compounds with highly specific concentration in the target organ of the human body. Radioisotopes

for medical application acquired the status of drugs and the strict regulations requested by pharmacopoeas were to be applied to them. This period can be regarded as the official birth of radiopharmacy. A bridge of common understanding between radiochemists and pharmacists had to be built. Dr. Cifka was one of the enthusiastic and successful builders of that bridge. This last period of nearly two decades of his life might be regarded as the most fruitful one.

In the meantime, since 1972, NRI has become operated by the Czechoslovak Commission for Atomic Energy and the radiopharmaceutical production has been stated as the main aim of the Department of Radionuclides. Dr. Cifka's substantial contribution to the development of production technologies (and especially their analytical control methods for the Czechoslovak radiopharmaceutical production that started in NRI in 1974) represents only a part of his great efforts in the field. We mention only a few of the products : ortho-iodo-hippurate labelled with ^{131}I and ^{125}I , rose-bengal ^{131}I , bromsulphophthalein ^{131}I , generator-produced sodiumpertechnetate $^{99\text{m}}\text{Tc}$, $^{113\text{m}}\text{In}$ -generator, gallium citrate ^{67}Ga , ^{201}Tl -thallium, various kits for labelling with $^{99\text{m}}\text{Tc}$. His range of work was reaching far beyond the frame of NRI. He took over a part-time job at the State Institute for Control of Drugs in Prague and together with Dr. Vesely he has built up the Radiopharmaceutical department. Their common work on the valence state of $^{99\text{m}}\text{Tc}$ technetium in the generators and in controlling methods have gained world recognition. Dr. Cifka contributed fundamentally to radiopharmaceutical technological and scientific legislation not only in CSSR but on a world-wide scale. He participated in a very active way in many commissions working out general recommendations on radioactivity and special articles on individual radiopharmaceuticals in various pharmacopoeas (the 3rd and 4th editions of the Czechoslovak Pharmacopoea, and the WHO World International Pharmacopoea). He took part in many international comparative experiments on control methods of radiopharmaceuticals.

By his deep knowledge in the field he acquired a high respect among specialists all over the world. Accordingly he was a highly appreciated participant and often invited official guest at many important scientific gatherings, e.g. IAEA Consultant meetings (Copenhagen 1971 and 1978, Vienna 1976, Prague 1981), staff member of international training courses (lectures and manuals for IAEA radiopharmaceutical courses,

e.g. Prague 1971, Hradec Kralove 1981, Athens 1983; IAEA expert on radioisotope production : Lima, Peru 1976). At the request of the IAEA, he participated in a Panel Meeting on the Analytical Control of Radiopharmaceuticals (Vienna, 1969) whose Proceedings were edited by one of us (A.T.B.) and published in 1970.

As a recognition of his contributions, Dr. Cifka was elected as a member of the Editorial Advisory Board of the Journal of Labelled Compounds and Radiopharmaceuticals.

Dr. Cifka's list of publications has more than 110 titles.

Dr. Cifka was not only an excellent scientist but also an admirable human being. He managed all his life to overcome with natural elegance or even neglect his handicap given him by the unjust fate at his birth (he had to move on crutches). He was incredibly diligent, skillful, accurate and strictly logic in his thoughts and deeds. He had a deep insight to everyone's soul and he did not hesitate to tell anybody his meaning. This might have caused, especially when underlined by his often sarcastic manner of expressing himself, misunderstanding or even mistrust towards him. Those who managed to overcome this outer "shell of itching needles" found that inside this extraordinary and maybe slightly "strange" personality was beating a good-minded heart and that it was controlled by an extra-fine computer : his highly gifted brain inherently tuned by justice and honesty.

The laboratory desk at Rez and the chair in many commissions remains empty. Dr. Cifka's heart does not beat any more, but his ideas will continue to live not only in his written works, but also in the deeds of his colleagues who were deeply influenced by his numerous original ideas !

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