VLADIMIR F. BYSTROV
1935–1990

VLADIMIR F. BYSTROV
1935–1990

With the death of Professor Vladimir Bystrov on August 13, 1990, the field of biomolecular NMR has lost one of its founding members and most prominent representatives. Although his friends had known for some time about his severe illness, the news of his passing away was unexpected and filled us with deep sorrow.

Vladimir Bystrov was born in Leningrad on December 31, 1935. His studies in Physics at Lomonosov Moscow State University led to a Master of Science degree in 1959. After graduate studies at the Institute of Chemical Physics of the USSR Academy of Sciences, he received his Ph.D. degree in 1964 in the field of NMR spectroscopy of organic compounds. By this time he became interested in biological applications of NMR spectroscopy and joined the Institute for Chemistry of Natural Products of the USSR Academy of Sciences (now the Shemyakin Institute of Bioorganic Chemistry) as a Senior Scientist. Since that time he was a permanent staff member of the Institute, where he founded a most successful NMR group. During all these years Professor Bystrov's work at the Shemyakin Institute was interrupted only by two sabbatical leaves, in 1969 with Professor S. Brownstein at the National Research Council of Canada in Ottawa, and in 1990 as the Ludwig Schaeffer Visiting Professor at Columbia University in New York.

Bystrov's research spanned many areas of NMR spectroscopy. As a student, from 1957–59, he was among the enthusiasts who built the first high-resolution NMR spectrometer in Russia. During his graduate studies he worked on the chemical structure and reactivity of organic compounds, investigating effects of steric hindrance on the hydrogen bonds in phenols and studying the stereochemical significance of long-range proton-proton coupling constants. After joining the Shemyakin Institute in 1964, his major efforts were concentrated on structure elucidations of physiologically active compounds, in particular the conformational analysis by NMR spectroscopy of peptides and depsipeptides such as gramicidin S, valinomycin and enniatin B. An important result of the work with peptides was Bystrov's now classical review on the use of spin-spin coupling constants for conformational studies of polypeptides, which was published in 1976 and has ever since been an indispensable reference for all of us. More recently, his research was focused on the ambitious goal of characterizing membrane-spanning peptides and proteins. In the mid-eighties the structure determinations of the peptide gramicidin A in both organic and micellar media attracted worldwide attention, and a most recent highlight of the Bystrov laboratory was the pioneering structural study of bacteriorhodopsin, where selective introduction of ^{19}F labels permitted characterization of local structural features in both external loops and membrane-spanning regions. In addition to his career as a research scientist, Professor Vladimir Bystrov was an outstanding teacher. In the period from 1969 to 1990, over thirty young scientists received their Ph.D. under his guidance, some of whom now continue work along the avenues that he has outlined with the foundation of his NMR laboratory.

A direct measure of Bystrov's success as a scientist can be taken from a recent survey of Soviet science publications (Current Contents Life Sciences, Vol. 33, No. 24, pp. 5–18), where his position

0925-2738/$ 5.00

is high up among the 100 most-cited Soviet authors. His achievements were duly recognized by his contemporaries. Vladimir Bystrov became a Vice Director of the Shemyakin Institute and Head of the Instrumental Analysis Department in 1971, in 1978 he was elected a corresponding member of the USSR Academy of Sciences, he was the recipient of the J. Heyrovsky Medal of the Czechoslovak Academy of Sciences, a member of the UNESCO Expert Committee on Biophysics, and Secretary General of the 16th FEBS Meeting. However, our admiration for Vladimir Bystrov goes far beyond these distinctions. His contributions to science and to the worldwide community of scientists were enhanced by his lasting friendship with colleagues at home and abroad. His austere rigour as scholar and scientist was matched by a ready wit, and by warmth as both friend and colleague. His death is a great loss to the whole scientific community.

Kurt Wüthrich

I would like to thank Drs. A.S. Arseniev, V.T. Ivanov, B.W. Low and D.J. Patel for their help in the preparation of this text.