

CHRONICLES

FIFTH INDO-SOVIET SYMPOSIUM ON THE CHEMISTRY OF NATURAL COMPOUNDS

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The fifth regular Indo-Soviet Symposium on the Chemistry of Natural Compounds was held in Erevan on May 11-16, 1978. It was organized by the combined Indo-Soviet Committee for Scientific Cooperation, the Academy of Sciences of the USSR, the Academy of Sciences of the Armenian SSR, and the Scientific Council on Problems of Bioorganic Chemistry.

Meetings of Soviet natural-compound chemists with their Indian colleagues have now become traditional. They began in 1968 when the first forum of Soviet and Indian scientists working in the field of bioorganic chemistry was held in Tashkent. Subsequently, the symposia have been held alternately in India and the Soviet Union.

The choice of the capital of the Armenian SSR is due to the fact that there is a large scientific center here — the A. L. Mndzhoyan Order of the Red Banner of Labor Institute of Fine Organic Chemistry of the Academy of Sciences of the Armenian SSR — which carries out investigations on the synthesis of new physiologically active compounds. The main directions of the investigations of the Institute are the search for effective drugs for the treatment of cardiovascular, nervous-psychic, and infectious diseases, and of drugs for use in surgical practice. As a result of the investigations performed by the Institute, more than 25 new drugs have been created of which 11 have been introduced into medical practice. Many of the drugs introduced are produced in large amounts directly in the Institute, which has a well-equipped pilot-scale production shop.

Leading scientists from Moscow, Leningrad, Kishinev, Kazan', Vladivostok, Tashkent, Tbilisi, and other cities took part in the symposium.

The delegation of Indian scientists was led by Professor Sukh Dev. The delegation included Professor B. S. Joshi, S. V. Kessar, C. R. Narayanan, and others. Among the Soviet participants in the symposium were Academician Yu. A. Ovchinnikov, Corresponding Members of the Academy of Sciences of the USSR I. V. Torgov and N. K. Kochetkov, Academician of the Academy of Sciences of the Armenian SSR S. A. Vartanyan, Professor O. S. Chizhov, D. A. Murav'eva, G. A. Kuznetsova, N. K. Abubakirov, and N. S. Vul'fson.

Academician Yu. A. Ovchinnikov, who opened the symposium, briefly characterized the main tasks of bioorganic chemistry and the prospects for its further development. He emphasized that strong scientific contacts between Soviet and Indian scientists and the regular exchange of scientific information promote the development of the chemistry of natural compounds and have great importance for strengthening cultural links.

The participants in the symposium were welcomed by Academician of the Academy of Sciences of the Armenian SSR A. B. Nalbandyan and the leader of the Indian delegation Sukh Dev.

The participants in the symposium heard six plenary lectures read by eminent scientists of our country and of India. Professor Sukh Dev gave a plenary lecture on the chemical and pharmacological investigation of the compounds present in *Asparagus racemosus* and *Commiphora mukul* — plants used in India folk medicine. The alkaloids of Indian plants of the family Piperaceae were discussed by B. S. Joshi. The lecturer dwelt in particular detail on new bases isolated from *Piper tricholstachyon* for which the structure has been established and the stereochemistry has been elucidated. The structures of the new compounds have been confirmed by synthesis. A detailed review of the biosynthesis of alkaloids was given by Dr. D. S. Bakuni. In particular, the author gave an account of the study of the biosynthesis of the bisbenzylisoquinoline and erythrine alkaloids isolated from *Cocculus laurifolius*. Thus, for example, it was shown that the biogenetic precursor of the unusual erythrine alkaloids cocculine and cocculidine, the structure of which has been established by S. Yu. Yunusov et al., is (+)-N-norprotosinomenine.

Soviet scientists gave three plenary lectures. Academician Yu. A. Ovchinnikov devoted his lecture to the structure and mechanism of the action of ionophores — compounds of a new

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class binding metal ions and capable of transporting them through biological membranes.

In his lecture, Academician of the Academy of Sciences of the Armenian SSR S. A. Vartanyan gave the results of investigations on the synthesis of biologically active compounds based on six-membered heterocycles.

Advances in the chemical investigation of the antigenic lipopolysaccharides of the bacterium *Shigella dysenteriae*, which is the causative agent of dysentery, were discussed by Corresponding Member of the Academy of Sciences of the USSR N. K. Kochetkov. In the course of a study of the specific polysaccharides of 10 types of the bacterium *Sh. dysenteriae* it was found that they are hexosaminoglycans and can have an acidic or a neutral character. The difference established in the structures of the antigenic lipopolysaccharides has permitted an explanation on the molecular level for the first time of a number of immunological properties of microorganisms of this group.

Although the subjects of the lecture were extremely diverse and related to different aspects of bioorganic chemistry, the main attention was devoted to questions of the chemistry of alkaloids, steroids, terpenoids, and carbohydrates.