

## IN MEMORY OF VIKTOR ALEKSEEVICH RALDUGIN

It is with deep regret that we announce that 62-year old talented scientist, Doctor of Chemical Sciences, Professor Viktor Alekseevich Raldugin passed away on July 15, 2008, after a serious illness.

Viktor Alekseevich was born on July 28, 1946, in the town of Mednogorsk. From 1964-1967 he worked as a furnace operator at the Mednogorsk copper sulfide plant and simultaneously took extramural courses at the All-Union Polytechnic Institute. Then, he transferred to Novosibirsk State University, which he completed in 1970. He arrived at the Wood Chemistry Laboratory of the Research Institute of Organic Chemistry, Siberian Branch, Russian Academy of Sciences (RIOC, SB, RAS), as a fourth-year student at NSU. His scientific career began as a staff scientist. He brilliantly defended his candidate dissertation in 1972. Until May, 1973, he served in the Soviet Army and since that same year until recently he worked continuously at the RIOC, SB, RAS, starting as a research scientist, then a senior research scientist and finally in 1998 as a chief research scientist.

Being the favorite scientist of Valentina Alekseevna Pentegova, he replaced her in 1988 as the head of the Wood Chemistry Laboratory. In 1989 he defended his doctoral dissertation. From youth Viktor Alekseevich was drawn to the chemistry of natural compounds. He was especially interested in the structure of cembrane diterpenoids. His candidate dissertation focused on the study of diterpenoids of Korean and Siberian pine.

Continuing the study of neutral diterpenoids of these species, V. A. Raldugin isolated and established the structures of three new cembrane hydrocarbons,  $\alpha$ -,  $\beta$ -, and  $\gamma$ -pinacenes, which differ in the configuration of the double bonds of the conjugated diene system. These hydrocarbons were prepared by isomerization of cembrene using iodine.

The stereochemistry of cembrane compounds was practically unstudied. The configuration of the tri-substituted double bonds was unknown. V. A. Raldugin found that cembrene, isocembrene, isocembrol, and neocembrene have an asymmetric center with the *1R*-configuration and the *trans*-configuration at all tri-substituted bonds. An isomer of isocembrol, epiisocembrol, was isolated from the aforementioned species.

The chemical properties of cembrane diterpenoids had not been studied until his systematic work. The study of oxidative transformations of cembranoids was started under the leadership of Viktor Alekseevich. Isocembrol was epoxidized. Cembrene was photo-oxidized to produce alcohols and aldehydes, exhaustive epoxidation of which by peracetic acid produced triepoxycembrene, the structure of which was proved by studying the reaction of cembrene and isocembrol with *N*-bromosuccinimide.

Transformations of cembranoids and highly oxidized derivatives were also pathways to biologically active compounds, for example, to analogs of a juvenile hormone. Oxidations of cembrene and isocembrol by chromic anhydride in aqueous acetone and in strongly acidic media were studied. The resulting methyl ester of (3*E*,7*E*,12*E*)-4,8-dimethyl-11-isopropylpentadecatrien-3,7,12-on-14-oic acid exhibited activity as a juvenile hormone. Later this compound was obtained from isocembrol and used to increase the production of silk worms.

A significant portion of the work on macrocyclic diterpenoids was concerned with their cyclization. The cyclization of cembrene, isocembrol, and epiisocembrol was studied in detail. Viktor Alekseevich was the epitome of dedication to science and the generation of ideas. The agricultural preparation Gibbersib was invented with his participation. V. A. Raldugin actively studied compounds extracted from pine needles. He isolated triterpene acids, on the basis of which the preparation Novosil, a plant immunomodulator, was invented.

Viktor Alekseevich paid much attention to the education of scientific staff. He directed the defenses of 10 candidate dissertations. He was the author of over 300 scientific articles and 22 patents.

Viktor Alekseevich actively participated in the publishing of scientific journals. He was on the Board of Editors of the Chemistry of Natural Compounds (Tashkent) and Chemistry in the Interest of Sustainable Development (Novosibirsk).

The memory of Viktor Alekseevich Raldugin will always remain in the hearts of his friends, scientists, and colleagues.

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of Natural Compounds*

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