

## Notable and Anniversary Dates in Biochemistry for 2010\*

DOI: 10.1134/S0006297910050196

- 350th anniversary of the establishment of the fixed centigrade scale of the thermometer from the freezing point to the boiling point of water (Ch. Huygens, R. Hooke, about 1660).
- 250th anniversary of the final formulation of the law of conservation of matter (M. V. Lomonosov, 1760).
- 250th anniversary of *The Consideration of Solidity and Fluidity of Bodies* [in Russian] (M. V. Lomonosov, 1760).
- 150th anniversary of urotropine synthesis (A. M. Butlerov, 1860).
- 125th anniversary of the creation of electrolytic dissociation theory (S. A. Arrhenius, 1885-1887).
- 125th anniversary of *Lois de l'équilibre chimique...* (*Laws of Chemical Equilibrium*, J. H. van't Hoff, 1885).
- 75th anniversary of isolation of the lipid-soluble vitamin K (H. Dam, 1935, for this work he was awarded the Nobel Prize for 1943).
- 75th anniversary of discovery of the amino acid threonine (W. C. Rose, 1935).
- 75th anniversary of first use of isotopes as labels in studies of intermediate metabolism (R. Schoenheimer, D. Rittenberg, 1935).
- 75th anniversary of discovery that some di- and tricarboxylic acids accelerate tissue oxidation of glucose and other substances (A. Szent Gyorgyi von Nagrapolt, 1935).
- 75th anniversary of discovery of hydrogen-transporting enzyme and its nicotinamide-containing coenzyme moiety (O. Warburg, 1935-1937).
- 75th anniversary of creation of A. N. Bach Institute of Biological Chemistry (Moscow, 1935).

January 10 — 70th anniversary of birth of Aleksandr Ivanovich Archakov (1940, born in the town of Kashin, Tverskaya Oblast), Russian biochemist, Academician of the Russian Academy of Medical Sciences, winner of state awards. From 1979 he was Chief of the Chair of Biochemistry, Biomedical Faculty, II Moscow Medical Institute (now Russian

State Medical University). From 1989 he was Director of the Institute of Biological and Medical Chemistry (now Orekhovich Institute of Biomedical Chemistry). Main fields of his works: proteomics and bioinformatics; membrane structure and molecular mechanisms of their damage and reconstruction; molecular recognition in enzyme systems; design and synthesis of new drugs. Winner of state awards: 1983 for works in the field of free radical lipid peroxidation; 1989 for the studies on biochemistry of atherosclerosis; 1998 for the work *Microsomal Oxidation and Drug Metabolism: Mechanisms of Cytochrome P450-Catalyzed Reactions and Their Modeling*. Editor-in-Chief of the journal *Biomedical Chemistry* (from 2001). Awarded the Russian Federation Government Prize (2002). Bibliography: *Lipid Peroxidation in Biological Membranes* (1972) Nauka, Moscow (with colleagues); *Microsomal Oxidation* (1975) Nauka, Moscow; *Oxygenases of Biological Membranes* (1983) Nauka, Moscow; *Cholesterolosis* (1983) Meditsina, Moscow (with colleagues); *Prediction of Medical Science Development for 2000-2005* (2000) Moscow (with colleagues). Literature: *60 Years of the Russian Academy of Medical Sciences* (2004) Moscow, 347 p.

February 9 — 100th anniversary of the birth of J. L. Monod (1910-1976), French biochemist and microbiologist, Director of the Pasteur Institute (1971). He is a coauthor of the operon concept, which is a part of the theory of genetic organization and regulation (1961) that has been very fruitful for development of molecular genetics. For contribution to development of genetics and establishment of the development mechanism of some viral diseases he was awarded the Nobel Prize (1965, jointly with A. Lwoff and F. Jacob). Bibliography and literature: *Great Soviet Encyclopedia*, 3rd edition.

February 21 — 75th anniversary of the birth of Vladimir Petrovich Skulachev, Academician of the Russian Academy of Sciences, member of the European Academy and many other academies and scientific

\* Compiler, N. P. Voskresenskaya, Department of History of Medicine and Public Health (Head, Prof. M. B. Mirsky), National Institute of Social Health, Russian Academy of Medical Sciences.

ic societies, Laureate of the Lenin and State Prizes. His studies have formed the basis of modern bioenergetics, the science about energy transformations in the living cell. Jointly with E. A. Liberman he developed approaches that confirmed the chemiosmotic coupling theory proposed by P. Mitchell (Nobel Prize, 1978). His studies significantly contributed to current ideas about artificial uncouplers of oxidative phosphorylation and natural proteins executing the same function. Natural uncouplers are shown to be involved in thermoregulation. Skulachev developed concepts about structure of the mitochondrial reticulum and energy transmission through mitochondria in the cell. He formulated the concept of "sodium bioenergetics" which is now generally adopted. At present, V. P. Skulachev is mainly interested in the mitochondrial theory of aging. He has developed mitochondria-targeted antioxidants that in extremely low doses decelerate aging and increase the life duration of various animals. Skulachev is Director of the Belozersky Institute of Physico-Chemical Biology, Moscow State University, and Dean of the Faculty of Bioinformatics and Bioengineering, Moscow State University. He is also Editor-in-Chief of the journal *Biochemistry (Moscow)*.

April 18 – 70th anniversary of the birth of J. Goldstein (1940), American physician, member of the National Academy of Sciences of USA. His studies (jointly with M. S. Brown) introduced a basic contribution to investigations of the role of cellular receptors in the regulation of cholesterol transport in humans and animals. Together with Brown he discovered receptors capable of binding low-density lipoproteins (1973) that was very important for biology and medicine, in particular, for treatment of patients with homozygous and heterozygous forms of family hypercholesterolemia, which is a severe inborn disease, and also for treatment of atherosclerosis. Winner of the Nobel Prize in Medicine for establishment of regulation of cholesterol metabolism and of increasing possibilities for prevention and treatment of atherosclerosis (1985, jointly with M. Brown). Literature: *The Nobel Prize Winners: Encyclopedia (A-L)* (1992) Progress, Moscow; *Nobel Prizes of 1985* (1986) *Priroda*, No. 1, 98-100; *Science* (1986) January 10.

May 12 – 100th anniversary of the birth of D. Hodgkin (1910-1994), English biochemist, member of the London Royal Society (1947), President of the British Association of Assistance to Science Development (1977-1978), foreign member of the USSR Academy of Sciences (1976). Jointly with J. Bernal, she investigated the structure of peptides

and amino acids. She was awarded the Nobel Prize in Chemistry (1964) for the X-ray determination of biologically active substances, first of all penicillin (1949) and vitamin B<sub>12</sub> (1957). Literature: *The Nobel Prize Winners: Encyclopedia (M-Ya)* (1992) Progress, Moscow; *Great Soviet Encyclopedia*, 3rd edition; Haber, L. (1979) *Women Pioneers of Science*.

May 20 – 150th anniversary of the birth of E. Buchner (1860-1917), German organic chemist, biochemist, and bacteriologist. His main studies in bacteriology concern fermentation processes and microbial enzymes. He was the first to publish work (1886) about the influence of oxygen on fermentation. Using a hydraulic approach, he prepared (1897) a yeast extract lacking living cells but inducing pronounced fermentation. By the same method he also prepared extracts of microorganisms inducing lactic, acetic, butyric, and citric acid fermentation. He disproved the current idea of existence of organized and unorganized enzymes. Nobel Prize winner in Chemistry (1907). Literature: *Great Medical Encyclopedia*, 3rd edition; *Biologists: Reference Book on Biographies* (1984) Naukova Dumka, Kiev, pp. 108-109; *The Nobel Prize Winners: Encyclopedia (A-L)* (1992) Progress, Moscow, pp. 211-214.

June 17 – 90th anniversary of birth of F. Jacob (1920), French biologist, geneticist, member of the Paris Academy of Sciences (1977). His main works concern genetics of viruses and bacteria. For studies on mechanisms of protein synthesis regulation in bacteria and finding mechanisms of arising of some viral diseases he was awarded the Nobel Prize (1965, jointly with J. L. Monod and A. Lwoff). Literature: *Great Medical Encyclopedia*, *Great Soviet Encyclopedia*, 3rd editions; *The Nobel Prize Winners: Encyclopedia (A-L)* (1992) Progress, Moscow.

July 27 – 125th anniversary of birth of Boris Il'ich Zbarsky (1885-1954, born in the town of Kamenets-Podolsk), Russian biochemist, Academician of the USSR Academy of Medical Sciences, State Prize Laureate (1944). Jointly with A. N. Bach participated in the organization of Karpov Chemical Institute (1918) and Biochemical Institute (1920, now Bach Institute of Biochemistry). From 1930 Director of Institute of Nutrition, Head of Laboratory of Cancer Biochemistry (1945-1952), Chief of Biochemistry Chair of First Moscow Medical Institute (1934-1954, now Sechenov Moscow Medical Academy). Director of the Laboratory at the V. I. Lenin Mausoleum (1924-

1954). Jointly with V. P. Vorob'ev embalmed Lenin's body. His main works concern problems of protein metabolism and tumor biochemistry, role of erythrocytes in amino acid metabolism. Bibliography and literature: *Great Medical Encyclopedia*, *Great Soviet Encyclopedia*, 3rd editions; B. I. Zbarsky (1985) *Vopr. Med. Khim.*, No. 4, 141-142; Shtenberg, A. I.: *B. I. Zbarsky and His Role in Development of Science about Nutrition* (1989) *Vopr. Pitaniya*, No. 1, 75-77.

August 1 — 125th anniversary of the birth of G. Hevesy (1885-1966), Hungarian chemist and physical chemist. His scientific works concern radioactivity and using radioactive isotopes as labels. In 1913 together with F. Paneth proposed an approach of isotopic indicators, or labeled atoms, and used it for investigation of metabolism of lead and bismuth in humans and animals. Studied the possibility of using artificial radioactive isotopes in biology and medicine. In 1922 jointly with D. Coster discovered and isolated the chemical element hafnium, which became widely used in experimental medicine and radioisotope diagnostics. In 1932 developed a method of X-ray immunofluorescent analysis and in 1936 jointly with Hungarian chemist D. Levi developed the method of neutron-activation analysis. Awarded the Nobel Prize in Chemistry (1943). Laureate of the International Prize "Atoms for Peace" (1959) and of the E. Fermi Prize. Literature: *Great Medical Encyclopedia*, 3rd edition.

September 10 — 125th anniversary of the birth of Aleksandr Vladimirovich Palladin (1885-1972, born in Moscow), Soviet biochemist, Academician of the USSR Academy of Sciences and of the USSR Academy of Medical Sciences, President of the Ukrainian SSR Academy of Sciences, Honored Scientist of the Ukrainian SSR, Lenin Prize Laureate (1929). In 1925-1969, Director of Ukrainian Biochemical Institute in Kharkov created on his initiative (now A. V. Palladin Institute, Ukrainian Academy of Sciences). In 1933-1954, Chief of the Chair of Biochemistry, Kiev University. One of the first investigators of vitamins. Pioneer in the field of functional biochemistry of the nervous system. His main works con-

cern biochemistry of vitamins, intracellular carbohydrates and phosphorus metabolism, comparative biochemistry of nervous tissue and brain under different functional conditions. Synthesized vikasol. Bibliography and literature: *Great Medical Encyclopedia*, *Great Soviet Encyclopedia*, 3rd editions; *Selected Works* (1975) Kiev; Belik, Ya. V.: *Academician A. V. Palladin* (1985) *Vestn. Akad. Nauk SSSR*, No. 2, 78-86; Polyakova, N. M., et al.: *A. V. Palladin: Documents, Photographs* (1985) Naukova Dumka, Kiev.

October 21 — 350th anniversary of the birth of G. Stahl (1660-1734), German physician and chemist. Author of the phlogiston theory, which was prevalent until the 1770s and was the first scientific chemical theory free of alchemy. Literature: *Biographies of Great Chemists* (translation from German), G. V. Bykov, ed. (1981) Mir, Moscow; Volkov, V. A., Vonsky, E. V., and Kuznetsova, G. I.: *Outstanding Chemists of the World* (1991) Moscow.

December 4 — 75th anniversary of the death of Ch. Richet (1850-1935), French physiologist and allergologist. Scientific works concern brain physiology, digestion, thermoregulation, psychology and parapsychology, organic chemistry; attempted to use blood serum for treatment of infectious diseases. He dealt also with laboratory practice and medical statistics, improved technique of colorimetry (1885). Formulated (1888) the concept of "passive immunity". Was the first to detect hydrochloric acid (1878) in gastric juice of mammals, birds, and invertebrates. Described (in co-authorship with P. Portier) the organism's reaction to a foreign protein and called it anaphylaxis. Differentiated "passive anaphylaxis" and "*in vitro* anaphylaxis". Awarded the Nobel Prize in Physiology and Medicine for works on anaphylaxis (1913). Member of the French Academy of Sciences (from 1914) and its President from 1933. In 1926 became a bearer of the Legion of Honor. During 17 years was an editor of the *Journal of Physiology and General Pathology*. Literature: *Great Medical Encyclopedia*, *Great Soviet Encyclopedia*, 3rd editions; *The Nobel Prize Winners: Encyclopedia (M-Ya)* (1992) Progress, Moscow; *Dictionary of Scientific Biographies* (1975), vol. 11.