

Notable and Anniversary Dates in Biochemistry for 2000

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- 400th anniversary of the introduction of the term “ferment” (J. B. van Helmont, the beginning of XVII century).
- 300th anniversary of the founding of the Academy of Sciences (Berlin, 1700).
- 150th anniversary of the supposition of the existence of intermediate metabolism (C. Bernard, 1850).
- 100th anniversary of the founding of the Nobel Prize (June 29, 1900).
- 100th anniversary of the discovery of the regulatory peptide carnosine (V. Gulevich, 1900).
- 100th anniversary of the discovery of the human blood groups (K. Landsteiner, 1900).
- 100th anniversary of the All-Russia Pharmaceutical Congress (Moscow, 1900).
- 75th anniversary of the synthesis of berberine (1925).
- 75th anniversary of the preparation of the antireticular cytotoxic serum (ACS) for stimulation of connective tissue system functions in diseases with lowered reactivity of the organism (A. A. Bogomolets, 1925).
- 75th anniversary of the preparation of the insulin in crystalline form (J. J. Abel et al., 1925).
- 75th anniversary of the discovery of parathyroid hormone (J. B. Collip, 1925).
- 75th anniversary of the isolation of heparin in the pure state (W. H. Howell, 1925).
- 75th anniversary of the founding of the Institute of Biochemistry (Kharkov, Ukraine, 1925).
- 50th anniversary of the development of the drop-wise method of the determination of prothrombin in blood on a microscope slide (D. P. Borovskaya, 1950).
- 50th anniversary of the synthesis of the antibiotic synthomycin (V. S. Mikhalev, N. A. Skol'dinov, et al., 1950).
- 50th anniversary of the discovery of objective connection between the concentration of substances in living cells and in their surroundings (A. S. Troshin, 1950).
- 50th anniversary of the synthesis of the tranquilizer aminazin (P. Charpentier, 1950).
- 50th anniversary of the discovery of the thyroid gland hormone triiodothyronine (J. Gross, C. P. Leblond, 1950).
- 50th anniversary of the synthesis of carotene (P. Karrer, 1950).

January 16 – 125th anniversary of the birth of the German biochemist Leonore Michaelis (1875-1949). He first described azurophilous granularity (together with A. Wolff-Eisner). He suggested the use of nitrophenols for colorimetric determination of pH (0.1-0.5 unit). He described quantitative regularities of enzymatic processes. He established (together with M. Menten, 1913) the theory of formation and disintegration of the enzyme-substrate complexes. He introduced one of the major parameters of the kinetics of enzymatic reactions—the Michaelis constant. He elaborated the theory of oxidation-reduction processes, the theory of amphoteric electrolyte dissociation, methods of the protein isoelectric point determination, and the method of *in vivo* staining of mitochondria by Janus green. Bibliography and literature: see Great Medical Encyclopedia, Second and Third Edition.

February 10 – 70th anniversary of the birth of Russian biochemist-endocrinologist Yurii Alexandrovich Pankov (born in 1930 in Leningrad), Academician of the Russian Academy of Medical Sciences. His basic works are devoted to the study of corticosteroid biosynthesis, chemical structure and function of protein-peptide hormones, and to the primary structure of two lipotropic hormones of the hypophysis, corticotropin and lactogenic hormone. Bibliography: Great Medical Encyclopedia, Third Edition; *The protein hormones of the hypophysis, their structure and function* (1976) *Vestnik AMN SSSR*, No. 9, 60; *Hypoinsulinemia, hyperglycemia, and circulating antibodies to islet cells during the development of streptozotocin diabetes in rats* (1990) *Probl. Endokrinol.*, No. 2, 70-73 (with coauthors). Literature: Yu. A. Pankov (1990) *Probl. Endokrinol.*, No. 3, 93-94.

March 19 – 50th anniversary of the death of the English biochemist Walter Haworth (1883-1950). He

investigated carbohydrates and determined the structure of glucose. He studied (together with colleagues) hexuronic acid which he has renamed as ascorbic acid or vitamin C. He was the first to synthesize vitamin C. In 1937 he was awarded with the Nobel Prize for chemistry "for studies of carbohydrates and vitamin C" (together with P. Karrer). Bibliography: *The Constitution of Sugars* (1929). Literature: *The Nobel Prize winners*, in *The Encyclopedia: M-Ya* [in Russian] (1992) Progress, Moscow; *Dictionary of Scientific Biography* (1972) Vol. 6.

March 23 – 70th anniversary of the birth of Russian biochemist Boris Fedorovich Poglazov (1930, born in Verkholensk, Irkutsk Region). His main scientific works are devoted to the biochemistry of moving systems, of mechanisms of assembly of elementary biological structures, of the fundamental contractile proteins (actin and myosin) in nonmuscle animal tissues, in higher plants, and in algae. The presence of actins and myosins has been shown in all eukaryotic cells. He deciphered the molecular structure of some structural components of bacteriophage particles. Bibliography: *Structure and Functions of Contractile Proteins* (1966) Academic Press, N. Y.; *Morphogenesis of T-Even Bacteriophages* (1973) Karger Press, N. Y.; *The Laws of Elementary Biological Structures* [in Russian] (1977) Nauka, Moscow; *Myosin and Biological Mobility* [in Russian] (1982) Nauka, Moscow (together with D. I. Levitskii).

March 26 – 70th anniversary of the birth of the Russian biochemist Igor Stepanovich Kulaev (born in 1930 in Moscow), a Corresponding Member of the Russian Academy of Sciences. His major works are devoted to regulatory systems in microorganisms, the synthesis and structure of polysaccharides and glycoproteins of cell walls, metabolism, localization and physiological role of polyphosphates, and the evolution of bioenergetic systems of microorganisms. Bibliography: *Biochemistry of High-Polymer Polyphosphates* [in Russian] (1975) Moscow University Press, Moscow; *Biochemistry of Inorganic Polyphosphates* (1979) Wiley and Sons, Chichester, N. Y.

March 31 – 100th anniversary of the birth of John Gaddum (1900-1965), English pharmacologist and neuropathologist. He made a major contribution to contemporary pharmacology. Bibliography: see Great Medical Encyclopedia, Third Edition, Vol. 12, p. 527; Vol. 23, p. 259; Vol. 26, p. 204.

April 8 – 100th anniversary of the birth of Huan Huanovich Planelies (1900-1972, born in Spain), microbiologist, pathologist, and pharmacologist, Corresponding Member of the Academy of Medicine of Spain (1926), Academician of the Academy of Medical Sciences of the USSR. He is the author of scientific works on the biological standardization of pharmaceutical and biological drugs, on the analysis of sulfanilamides, antibiotic therapy, and problems of infectious pathology. Under his management a series of new

antibiotics were developed. Bibliography: see Great Medical Encyclopedia, Third Edition; *Serotonin and Its Significance in Infectious Pathology* [in Russian] (1965) Meditsina, Moscow (together with Z. L. Popenenkova); *Antibiotics and Their Application* [in Russian] (1967) Znanie, Moscow. Literature: see Great Medical Encyclopedia, Third Edition; A. F. Moroz (1990) *H. H. Planelies*, *Antibiotiki i Khimioterapiya*, No. 5, 55-56.

April 18 – 60th anniversary of the birth of Joseph Goldstein (1940), American physician, member of the National Academy of Sciences of the USA. His studies (together with M. S. Brown) have made a basic contribution to the study of the role of cell receptors in the regulation of cholesterol transport in man and animals. He discovered the receptors capable of binding low density lipoproteins (1973), this having great practical value for the treatment of the patients suffering from the homozygous and heterozygous forms of familial hypercholesterolemia and also for the treatment of atherosclerosis. He is a Nobel Laureate for Physiology and Medicine (1985, together with M. Brown). Literature: *The Nobel Prize winners*, in *The Encyclopedia: A-L* (1992) Progress, Moscow; *The Nobel Prizes of 1985* (1986) *Priroda*, No. 1, 98-100; *Science* (1986) January 10.

May 9 – 150th anniversary of the death of Joseph Gay-Lussac (1778-1850), French chemist and physicist, member of the Parisian Academy of Sciences (1806), foreign honorary member of the Petersburg Academy of Sciences (1826). He discovered the law of gas expansion with heating (1802) and the law of combining volumes of gases (1808). He studied iodine, chlorine, sulfur, and a number of compounds. He improved the technology of the preparation of sulfuric acid using a special column which was later named the Gay-Lussac column (1827). His works on the isolation of the cyanogens and the study of the properties of their compounds provided the basis for the theory of radicals. Bibliography: *Recherches physico-chimiques faites sur la pile* (1811) Vol. 1; (1828) Vol. 2, Paris. Literature: see Great Medical Encyclopedia and Great Soviet Encyclopedia, Third Edition; E. Blanc, L. Delhoum (1950) *La vie emouvante et noble de Gay-Lussac*, Limoges.

May 12 – 90th anniversary of the birth of Dorothy Hodgkin (1910), English biochemist, member of the London Royal Society (1947), President of the British Association for Assistance to the Development of Science (1977-1978), foreign member of the Academy of Sciences of the USSR (1976). Together with J. Bernal she investigated the structure of sterols, peptides, and amino acids. She was awarded the Nobel Prize for Chemistry (1964) for the determination of structures of biologically active compounds, especially penicillin (1949) and vitamin B₁₂ (1957), using X-rays. Bibliography: *Birkbeck: Science and History* (1970). Literature: *The Nobel Prize winners*, in *The Encyclopedia: M-Ya* (1992) Progress, Moscow; Great

Soviet Encyclopedia, Third Edition; L. Haber (1979) *Women Pioneers of Science*.

June 14 – 80th anniversary of the birth of Anatolii Nikolaevich Klimov (1920, was born in the village Sheltozero of the Prionezhskii district in Karelia), Russian biochemist, Academician of the Russian Academy of Medical Sciences, participant of Great Patriotic War. His scientific works are devoted to problems of the biochemistry of antibiotics and lipid exchange. He participated in development of new domestic long-acting preparations of penicillin and their introduction into practical health care. He discovered a new isoenzyme hydroxymethylglutaryl-CoA-reductase that plays a key role in the regulation of the biosynthesis of cholesterol. Bibliography: see Great Medical Encyclopedia, Third Edition; *Cholesterol and the Cell: Official Speech* (1983) Nauka, Leningrad Section, Leningrad; *Lipoproteins, Dislipoproteidemia and Atherosclerosis* [in Russian] (1984) Meditsina, Leningrad Section, Leningrad; *Lipids, Lipoproteins and Atherosclerosis* [in Russian] (1995) Piter-Press, St. Petersburg (together with N. G. Nikul'cheva).

June 17 – 80th anniversary of the birth of Francois Jacob (1920), French biologist and geneticist, member of the Parisian Academy of Sciences (1977). His basic works are devoted to the genetics of bacteria and viruses. "For studies of the genetic control of enzyme and viral syntheses" he was awarded the Nobel Prize (1965, together with J. L. Monod and A. Lvov). Bibliography: *Viruses and Genes* (1961) (with E. Wolman). Literature: see Great Medical Encyclopedia and Great Soviet Encyclopedia, Third Edition; *The Nobel Prize winners*, in *The Encyclopedia: A-L* (1992) Progress, Moscow.

June 26 – 25th anniversary of the death of Boris Alexandrovich Lavrov (1884-1975, born in Arzamas of the Nizhnii Novgorod Region), Russian biochemist, one of the founders of Russian vitaminology, Academician of the Academy of Medical Sciences of the USSR. He made a significant contribution to the study of carbohydrate and nitrogen metabolism in insufficiency of vitamins C and B₁ in experimental animals. He was the first in Russia to isolate anti-scurvy drugs from fir needles. He established the norms of vitamin consumption. Bibliography and literature: see Great Medical Encyclopedia, Third Edition; *Organism reactivity and the vitamins* (1951) *Sovrem. Vopr. Med. Nauki*, Moscow; *Methodical Guidance on the Determination of Vitamins A, D, E, B₁, B₂, B₆, PP, C, P, and Carotene in Vitamin Drugs and Food Products* [in Russian] (1960) Medgiz, Moscow (ed.); *Essays on the History of the Soviet Vitaminology (1917-1967)* [in Russian] (1980) Meditsina, Moscow.

July 8 – 90th anniversary of the birth of Herman Lehmann (1910), English biochemist, hematologist, member of the Royal Society of London (1972). He made appreciable contributions to the study of the struc-

tures and functions of anomalous hemoglobins and their relation to the clinical manifestations of hemoglobinopathies. A series of his studies are devoted to the problems of population and biochemical genetics. He identified (with colleagues) some dozens of the anomalous hemoglobins at the level of their primary structure. Bibliography: *Human Haemoglobin Variants and Their Characteristics* (1976) Oxford (together with P. A. M. Kynoch). Literature: see Great Medical Encyclopedia, Third Edition.

July 14 – 200th anniversary of the birth of the French biochemist Jean Dumas (1800-1884). He determined (1843) the existence of the first homologous series in organic chemistry—the formic acid series. He developed (1830) the method of volumetric quantitative determination of nitrogen in various organic compounds (the Dumas method). He studied the chemical nature of uremia (together with T. Prevest). Bibliography: *Traité de chimie appliquée aux arts* (1928-1946) Vols. 1-8, Paris. Literature: see Great Soviet Encyclopedia, Third Edition; M. Dzhud (1966) *History of Chemistry* [Russian translation], Moscow.

July 18 – 100th anniversary of the death of Johann Kjeldahl (1849-1900), Danish chemist. He elaborated (1883) the method of quantitative determination of nitrogen in organic compounds and various matter of animal and plant origin (the Kjeldahl method). This method was used in biochemistry and medicine for the determination of the quantity of protein and other nitrogen-containing compounds in tissues and fluids of organisms and also in food products. Bibliography: *Neue Methode zur Bestimmung des Stickstoffs in organischen Körper* (1883) *Z. Analyt. Chem.*, Bd. 22, S. 366. Literature: see Great Soviet Encyclopedia, Third Edition; Great Medical Encyclopedia, Third and Second Editions.

August 5 – 50th anniversary of the death of Emil Abderhalden (1877-1950), Swiss biochemist and physiologist, foreign member of the Academy of Sciences of the USSR (1925). His studies in the field of chemistry and the biological role of proteins, polypeptides, and especially the action of enzymes and hormones are most relevant. He determined that the tissue proteins differ in structure. He developed the classification of protein compounds into separate groups. He discovered (1909) so-called "defensive" enzymes produced by an organism in response to inflow of foreign proteins to blood. He developed a diagnostic reaction based on the determination of decay products of alien substrates injected into blood serum (reaction of Abderhalden). He carried out (1916, together with E. Fischer) the synthesis of a polypeptide from separate free amino acids. Bibliography: *Handbuch der biochemischen Arbeitsmethoden* (1909-1919) Bd. 1-9, Berlin-Wien (ed.). Literature: see Great Medical Encyclopedia and Great Soviet Encyclopedia, Third Edition; *Emil Abderhalden* (1951) *Z. Vitamin-Hormon-u. Fermentforsch.*, Bd. 4, S. 1.

August 11 – 150th anniversary of the birth of Albert Adamkiewicz (1850-1921), Austrian pathologist and physiologist. He revealed a color (qualitative) reaction to protein which is due to the presence in protein of the amino acid tryptophan, which forms colored complexes with glyoxylic acid. A red-violet ring appears at the interface of concentrated sulfuric acid and the solution of protein and glyoxylic acid (Adamkiewicz's reaction). Bibliography and literature: see Great Medical Encyclopedia, Third Edition.

August 25 – 100th anniversary of the birth of Hans Krebs (1900-1981), English biochemist, born in Germany. His scientific works are devoted mainly to studies in the field of tissue nitrogen and energy metabolism processes. He developed the theory of the urea forming cycle (Krebs' ornithine cycle). He elaborated the experimental method of testing cell respiration—oxygen consumption and carbon dioxide release during the metabolism of carbohydrates, lipids, and proteins. In 1937, studying the intermediate stages of carbohydrate exchange, he described the citric acid cycle or the tricarboxylic acid cycle (Krebs' cycle). For this he was awarded the Nobel Prize (1953) for Physiology or Medicine (together with F. Lippmann). In 1958 he discovered the glyoxylate cycle that provides for the functioning of the tricarboxylic acid cycle under conditions when its substrates are consumed by biosynthetic processes in an organism (together with H. Kornberg). Bibliography: *The Advent of Biochemistry* (1946). Literature: see Great Medical Encyclopedia, Third Edition; *The Nobel Prize winners*, in *The Encyclopedia: A-L* (1992) Progress, Moscow; *Biographical Memoirs of Fellows of the Royal Society* (1984) Vol. 30.

August 26 – 150th anniversary of the birth of Charles Richet (1850-1935), French physiologist and allergist. His scientific works are devoted to the physiology of the brain, digestion, thermoregulation, sensitivity, psychology and parapsychology, organic chemistry, serology and its use in the treatment of infectious diseases, laboratory work, and medical statistics. He formulated (1888) the concept of "passive immunity". He was the first (1878) to demonstrate the presence of hydrochloric acid in gastric juice of mammals, birds, and invertebrates (1878). He described (together with P. Portier) the reaction of an organism to an alien protein, calling it anaphylaxis. For his works on anaphylaxis he was awarded (1913) the Nobel Prize for Physiology or Medicine. He was a member of the French Academy of Sciences (1914) and from 1933 its President. Bibliography: *Physiologie. Travaux du laboratoire* (1893-1902) Vol. 1-5, Paris; *L'anaphylaxie* (1911, 1930) Paris. Literature: see Great Medical Encyclopedia and Great Soviet Encyclopedia, Third Edition; *The Nobel Prize winners*, in *The Encyclopedia: M-Ya* (1992) Progress, Moscow; *Dictionary of Scientific Biography* (1975) Vol. 11.

September 13 – 90th anniversary of the birth of Tadeush Baranowski (1910), Polish biochemist, member of the Polish Academy of Sciences. His main scientific works are devoted to the biochemistry of enzymes and hormones, biochemistry of muscles, and immunochemistry. Together with Ya. O. Parnas he investigated the mechanisms of the reactions of glycolysis (1955), improved the method of protein crystallization and prepared crystals of myoglobin, a protein of sarcoma, and blood serum albumin (1939-1941). Literature: *The Biologists: a Biographer's Reference Book* [in Russian] (1984) Naukova Dumka, Kiev, p. 42.

September 20 – 75th anniversary of the birth of Igor Petrovich Ashmarin (1925, born in Leningrad), Russian biochemist, Academician of the Russian Academy of Medical Sciences. His scientific works are devoted to the problems of the biochemistry of contractile muscle proteins, the comparative biochemistry of the chromatin of various tissues, the determination of the phylogenetic links between the composition of bacterial chromosomal DNA and bacterial ecology, and the analysis of antibacterial and antiviral activity of the chromatin and lysosome cationic proteins. He established a hypothesis about the evolutionary unity of various forms of biological memory. Literature: see Great Medical Encyclopedia, Third Edition; *Mysteries and Revelations of the Biochemistry of Memory* [in Russian] (1975) Leningrad University Press, Leningrad; *Inhibitors of Protein Synthesis* [in Russian] (1975) Meditsina, Leningrad Section, Leningrad; *Elements of Pathological Physiology and Biochemistry* [in Russian] (1992) Moscow University Press, Moscow.

September 20 – 100th anniversary of the birth of Nikolai Vladimirovich Timofeev-Resovskii (1900-1981, born in Moscow), Russian biologist, the follower of S. S. Chetverikov and N. K. Koltsov. His basic works are devoted to genetics, radiobiology, biogeocenology, and the theory of evolution. He is one of the founders of quantitative radiogenetics and radiation biogeocenology. He is the author of a series of studies on genetic effects of radiation which have allowed to formulate the basic conception of the modern radiobiology—"the principle of hit" and the theory of "target". He created (together with M. Delbruck) the first biophysical model of the gene structure and suggested possible ways of its variation. He formulated and developed the doctrine about the microevolution. Bibliography: see Great Soviet Encyclopedia, Third Edition; *Application of the Hit Principle in Radiobiology* [in Russian] (1968) Atomizdat, Moscow; *Brief Essay on Evolutionary Theory* [in Russian] (1977) Nauka, Moscow; *Introduction to Molecular Radiobiology: Physicochemical Basis* [in Russian] (1981) Meditsina, Moscow; *Genetics. Evolution. Biosphere: Selected Works* [in Russian] (1996) Meditsina, Moscow. Literature: see Great Soviet Encyclopedia, Third Edition; *N. V.*

Timofeev-Resovskii: Essays, Memoirs, Materials [in Russian] (1993) Moscow.

October 20 – 100th anniversary of the birth of Shiro Akabori (1900), Japanese biochemist and organic chemist, member of the Japanese Academy of Sciences, foreign member of the Academy of Sciences of the USSR (1966). Fundamental directions of his studies: synthesis of optically active compounds, isolation of amino acids and peptides, organic catalysis, chromatographic analysis of amino acids. Bibliography: *The preparation of optically active α -C-substituted glutamic acid* (1965) *Bull. Chem. Jap.*, **38**, 1338 (with others). Literature: see Great Medical Encyclopedia and Great Soviet Encyclopedia, Third Edition; Japan Biographical Encyclopedia (1961) Tokyo, p. 16.

October 30 – 100th anniversary of the birth of Ragnar Granit (1900), Swedish neurophysiologist, President of the Swedish Academy of Sciences (1963-1965). His fundamental studies are devoted to the physiology of organs of sense, in particular to bioelectric processes in the retina and visual analyzer. He found that in retinal cones there are three types of sensitive pigments which react to the light waves of various length. "For the discovery connected with the primary physiological and chemical visual processes in an eye" he was awarded with the Nobel Prize for Physiology or Medicine in 1967 (together with H. Hartline and G. Wald). Bibliography: *The Basis of Motor Control* (1970) N. Y.; *The Purposeful Brain* (1977). Literature: see Great Medical Encyclopedia, Third Edition; *The Nobel Prize winners*, in *The Encyclopedia: A-L* (1992) Progress, Moscow; *The 1967 Nobel Prizes for Physiology or Medicine* (1968).

November 3 – 100th anniversary of the birth of Kurt Mothes (1900-?), German biochemist, Academician, foreign member of the Academy of Sciences of the USSR (1971). He contributed by his studies to the analysis of the biochemistry of alkaloids, nitrogen metabolism, and plant growth regulators including cytokinins. Bibliography and literature: see Great Soviet Encyclopedia, Third Edition.

November 5 – 25th anniversary of the death of Eduard Tatum (1909-1975), American biochemist and geneticist. In 1941 together with G. Beadle he found that in the fungus *Neurospora* genetic mutation results in loss by a strain of the capacity to synthesize any amino acid necessary for growth, vitamin, or other growth factor (auxotrophic mutant), and in 1945 he found this property in bacteria. He discovered (1947) together with (J. Lederberg) the phenomenon of genetic recombination in bacteria. He was awarded with the Nobel Prize for Physiology or Medicine in 1958 "for the discovery of the mechanism of the regulation by genes of basic chemical processes". Bibliography: *X-Ray-Induced Growth Factor Requirements in Bacteria* (1944) (with others). Literature: *The Nobel Prize winners*, in *The*

Encyclopedia: M-Ya (1992) Progress, Moscow; Great Medical Encyclopedia and Great Soviet Encyclopedia, Third Edition; *Current Biography* (1959) March; *The Excitement and Fascination of Science* (1978) Vol. 2.

November 16 – 25th anniversary of the death of Alexander Pavlovich Vinogradov (1895-1975, born in St. Petersburg), Russian geochemist, Academician of the Academy of Sciences of the USSR. His studies enveloped the different scientific fields of biogeochemistry, analytical chemistry, space chemistry, and a number of fields of geochemistry. Bibliography: see Great Medical Encyclopedia and Great Soviet Encyclopedia, Third Edition; *The chemical elementary composition of organisms and the periodic system of D. I. Mendeleev* [in Russian] (1935) *Proc. Biogeochem. Lab. Acad. Sci. USSR*, Vol. 3, Leningrad-Moscow, p. 5; *The Geochemistry of the Rare and Scattered Chemical Elements in Soils* [in Russian] (1957) Publishing House of the Academy of Sciences of the USSR, Moscow; *The Oxygen Isotopes and Photosynthesis* [in Russian] (1962) Publishing House of the Academy of Sciences of the USSR, Moscow; *The Geochemistry of Isotopes and the Problems of Biogeochemistry: Selected Works* [in Russian] (1993) Nauka, Moscow.

December 1 – 100th anniversary of the death of Sergei Ivanovich Korzhinskii (1861-1900, born in Astrakhan), Russian botanist, Academician of the St. Petersburg Academy of Sciences. He was one of the founders of phytocenology. He developed the geographo-morphological method in systematics. Independently of H. De Vries he founded (1899) the mutational theory ("the theory of heterogenesis") and opposed it to Darwinism. Literature: see Great Soviet Encyclopedia, Third Edition.

December 1 – 75th anniversary of the birth of Martin Rodbell (1925), American biochemist, member of the National Academy of Sciences of the USA. He described (with colleagues) the succession of the information signal passing inside the cell from the interplay of the initial mediator with the protein receptor on the cellular membrane to synthesis of the secondary mediator in the cell. He determined the succession of the events in information transmission and the role of the guanosine triphosphate-coupled protein receptor. In 1994 he was awarded with the Nobel Prize for Physiology or Medicine for the discovery of G-proteins binding GTP and their role in transmission of signals in cells (together with A. Gilman). Literature: *The Nobel Prizes of 1994* (1995) *Priroda*, No. 1, 109-112.

December 3 – 100th anniversary of the birth of Richard Kuhn (1900-1967), German chemist and biochemist. His scientific works are devoted mainly to problems of chemistry and biochemistry of vitamins and coenzymes. A series of his works are devoted to the analysis of the properties and structure of carotenoids. He determined (1933) the structure of carotene, having

divided it into two isomers (α - and β -carotene), and in 1937 has provided a method for its synthesis. He was the first (in 1933 with colleagues) to isolate in crystalline form riboflavin (vitamin B₂) from milk serum and egg white, in 1935 he determined its structure, and in 1936 he synthesized riboflavin. In 1938-1939 he isolated pyridoxine (vitamin B₆) from yeast in crystalline form and determined its structure formula. He was awarded the Nobel Prize for Chemistry (1938) for his works in the field of the vitamins and carotenoids. Bibliography: *Biochemistry* (1947-1948) (with others). Literature: see Great Medical Encyclopedia, Third Edition; *The Nobel Prize winners*, in *The Encyclopedia: A-L* (1992) Progress, Moscow; *Dictionary of Scientific Biography* (1973) Vol. 7.

December 9 – 100th anniversary of the birth of Joseph Needham (1900-1994), English biochemist, embryologist, and historian of science. His scientific research is devoted to various problems of biochemistry and embryology and also of philosophical questions of natural sciences. He established the regularities of metabolism of embryos at different developmental stages and ascertained the dependence of embryonic germ development conditions on the final products of nitrogen metabolism. Bibliography: *Biochemistry and Morphogenesis* (1942) Cambridge and others. Literature: see Great Medical Encyclopedia, Third Edition; *Dr. Joseph Needham, scientist, orientalist and philosopher* (1957) *New Scientist*, Vol. 1, p. 24.

December 16 – 150th anniversary of the birth of Hans Buchner (1850-1902), German bacteriologist, hygienist, and immunologist. He described how the virulence of *Bac. anthracis* changes (1878). He found in blood plasma special thermolabile protein substances (alexins) giving it bactericidal properties and suggested (1894) that alexins are formed in leukocytes. He discovered (together with E. Buchner, 1897) the yeast enzyme zymase. Bibliography: *Über die bakterientödtende Wirkung des zellenfreien Blutserums* (1889) *Zbl. Bact. I Abt. Orig.*, Bd. 5, S. 817, Bd. 6, S. 1. Literature: see Great Medical Encyclopedia, Third Edition; *Biographisches Lexicon der hervorragenden Ärzte* (1929) *Hrsg. V. A. Hirsch*, Bd. 1, S. 750, Berlin-Wien.

December 22 – 75th anniversary of the birth of Igor Valerianovich Domaradskii (1925, born in Moscow), Russian microbiologist and biochemist, Academician of the Russian Academy of Medical Sciences. His scientific works are devoted to the influence of environment on the vitality of microorganisms, features of the metabolism, cultivation, mutagenesis, and genetic mapping of the plague pathogen and cross-immunity in the plague. He revealed in the plague pathogen the presence of individual amino acid decarboxylases. He elaborated the special synthetic environments for cultivation of the plague microbe. He developed an effective method for immunization against plague using pseudotuberculosis

bacteria, a number of original techniques for diagnosis of cholera. He elaborated the scheme of differentiation of representatives of the family *Vibrionaceae*. Bibliography: see Great Medical Encyclopedia, Third Edition; *Genetics, Biochemistry, and Immunochemistry of Especially Dangerous Infections: Collection of Articles* [in Russian] (1967) Rostov University Press, Rostov-on-Don; *The Biochemistry and Genetics of the Plague Pathogen* [in Russian] (1974) Moscow; *The Plague* [in Russian] (1998) Meditsina, Moscow. Literature: I. V. Domaradskii (1985) *Mol. Genet. Mikrobiol. Virusol.*, No. 12, 46.

150th anniversary of the birth of the German biologist Richard Hertwig (1850-1937). Already in the second half of the XIX century he (together with his brother O. Hertwig) connected the archiving and transmission of hereditary signs with nucleic acids. In 1881 the Hertwig brothers distinguished the two forms of mesoderm: epithelium-like (mesoblast) and diffuse (mesenchyma). At the end of XIXth and beginning of the XXth centuries the Hertwig brothers and number of other investigators established the basis of modern conceptions about the interaction of the nucleus and cytoplasm during ontogenesis, embryonic induction, processes of regeneration, etc. He supplemented (together with O. Hertwig) the enterocoel theory which was elaborated in 1874 by I. I. Mechnikov that the coelom develops from the hollow pocket-like extrusions of the primary intestine. Bibliography: *Über Korrelation von Zell- und Kerngrösse und ihre Bedeutung für die geschlechtliche Differenzierung und die Teilung der Zelle* (1903) *Biol. Zbl.*, Bd. 23, Nos. 2/3. Literature: see Great Medical Encyclopedia, Third Edition: Vol. 15, p. 125; Vol. 27, p. 159.

125th anniversary of the birth of David Davis (1875-1954), American pathologist, geneticist, and biochemist. In 1948 he described endomyocardial fibrosis which was widely distributed in some districts of South Africa. He carried out studies which determined the sequence of nucleotides in transport ribonucleic acids and elaborated methods of organic synthesis of polynucleotides. Bibliography and literature: see Great Medical Encyclopedia, Third Edition: Vol. 28, p. 168; Great Soviet Encyclopedia, Third Edition: Vol. 3, p. 372.

125th anniversary of the birth of the German biochemist Franz Knoop (1875-1946). He elaborated the theory of β -oxidation of fatty acids (1904). This is the basis of modern conceptions about the mechanism of fatty acid oxidation. He also studied the transformation of the amino acids in organisms: he tried to determine the role of arginine in the formation of creatine. He synthesized (together with A. Windaus) methylimidazole from ammoniacal solution of glucose and determined the structure of histidine. Bibliography: *Oxidation im Tierkörper* (1931) Stuttgart. Literature: see Great Medical Encyclopedia, Third Edition; K. Thomas

(1948) *Franz Knoop*, Hoppe-Seylers Z. Physiol. Chem., Bd. 283, S. 1.

100th anniversary of the death of Richard Altmann (1852-1900), German anatomist and histologist. He discovered and studied the cytoplasmic organelles now known as mitochondria. He invented methods of fixation and staining of cells and tissues which are used in histology, mainly for revealing of mitochondria. He suggested to distinguish between nucleic acid itself and its complexes with proteins—nucleoproteins (1889). He proposed the presence in cells of bioblasts (smaller elementary vital units). Bibliography and literature: see Great Medical Encyclopedia and Great Soviet Encyclopedia, Third Edition.

100th anniversary of the death of Willie Kühne (1837-1900), German physiologist. He began the study of mechanoactive myofibrillar proteins (1864). He isolated visual pigments and investigated them in detail, naming them visual purple and determining their protein nature. He also investigated some of their spectral properties and phototransformations and found the capacity of visual pigments to regenerate in darkness.

He discovered (1863) the afferent innervation of skeletal muscles (together with R. Kelliker). He described (1864) the phenomenon of cell protoplasm coagulation under the influence of ether and chloroform vapor. He proved the protein nature of amyloid (together with M. M. Rudnev). He suggested the name “trypsin” for one of the basic digestion enzymes. Bibliography and literature: see Great Medical Encyclopedia, Third Edition: Vol. 8, p. 486; Vol. 16, p. 41, 141; Vol. 22, p. 414; Vol. 25, p. 271.

80th anniversary of the birth of the American biochemist Edmonton Fischer (1920). He studied together with E. Krebs the regulation of glycogen catabolism. He elucidated the mechanism of activity of protein kinase A phosphorylating the phosphorylase kinase which in turn phosphorylates phosphorylase and also the dephosphorylation of the phosphorylase and of the phosphorylase kinase. In 1992 he was awarded the Nobel Prize for Physiology or Medicine for the discovery of reversible protein phosphorylation as a regulatory mechanism of the cellular metabolism (together with E. Krebs). Literature: *The Nobel Prizes of 1992* (1993) *Priroda*, No. 1, 103-105.