
CHRONICLES

Notable and Anniversary Dates in Biochemistry for 2007

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150th anniversary of the discovery of glycogen in liver tissue, study on pathways of its production and cleavage mechanisms (C. Bernard, 1857).

150th anniversary of the discovery of trypsin (G. Corvisart, 1857).

150th anniversary of synthesis of glycerol (A. Wurtz, 1857).

100th anniversary of the creation and introduction in practice of salvarsan, *the 606 preparation* (P. Ehrlich, S. Hata, 1907-1910).

100th anniversary of the discovery of phosphatase (phosphatase activity) (Suzuki, Yoshimura, Takaishi, 1907).

50th anniversary of the first preparation of prostaglandins (C. Bergstrom, 1957).

50th anniversary of the discovery of interferon (A. Isaaks, J. Lindenmann, 1957).

50th anniversary of *in vitro* DNA synthesis, with natural DNA as a primer (A. Kornberg, 1957).

January 9 – 85th anniversary of the birth of H. Khorana (1922), American biochemist of Indian origin, member of the National Academy of Sciences of the USA. His main studies concern synthesis of nucleotides, coenzymes, and nucleic acids. In 1949, he synthesized acetyl-CoA from yeast (jointly with J. Moffat). He determined the nucleotide sequence in triplets encoding each of 20 amino acids (jointly with colleagues), synthesized DNA and RNA chains consisting of 64 possible triplets, and determined those which acted as a signal for starting and termination of synthesis of the specific protein. In 1967-1970, he synthesized the gene encoding alanine transfer RNA (jointly with coworkers). In 1968, he won the Nobel Prize in Physiology and Medicine for “interpretation of the genetic code and its role in the synthesis of proteins” (jointly with R. Holley and M. Nirenberg). Bibliography: *Studies on Polynucleotides* (1967) J.

Mol. Biol., **25**, 275 (with others); *Total Synthesis of the Gene for an Alanine Transfer Ribonucleic Acid from Yeast* (1970) *Nature (Lond.)*, **227**, 27. Literature: see Great Medical Encyclopedia, Third Edition; *Science* (1968) October 26; *Biologists: Reference Book on Biographies* (1984) Naukova Dumka, Kiev, p. 321; *The Nobel Prize Winners*, in the *Encyclopedia: A-L* (1992) Progress, Moscow.

January 21 – 95th anniversary of the birth of K. E. Bloch (1912), American biochemist, Harvard University Professor, member of the National Academy of Sciences of the USA. He proved experimentally that cholesterol is a precursor of steroid hormones and bile acids. Nobel Prize winner for studies on reactions during biosynthesis of cholesterol and bile acids (1964, jointly with F. Lynen). Bibliography and literature: see Great Medical Encyclopedia, Third Edition, **10**, 1508-1509; Great Soviet Encyclopedia, Third Edition.

January 25 – 100th anniversary of the birth of Norair Martirosovich Sisakyan (1907-1966, born in the town of Ashtarak, Armenia), Russian biochemist, Academician of the USSR Academy of Sciences and of the Armenian SSR Academy of Sciences, Professor of Moscow State University and Bach Institute of Biochemistry, Academy of Sciences of the USSR (1935-1966); State Prize winner (1952). His main studies concern the enzymatic activity of cytoplasmic structures, elucidation of the protein and nucleic composition of chloroplasts and their ability to synthesize peptide bonds. He significantly contributed to the development of space biology. Bibliography and literature: see Great Medical Encyclopedia and Great Soviet Encyclopedia, Third Editions; *N. M. Sisakyan (1907-1966)* (1966) *Biokhimiya*, **31**, No. 2, 225-226; Davtyan, G. S. *For*

the 70th Anniversary of N. M. Sisakyan (1977) Biol. Zh. Armenii, **30**, No. 1, 107-113.

January 28 – 85th anniversary of the birth of R. Holley (1922), American biochemist, member of the National Academy of Sciences of the USA. He isolated for the first time the full chemical structure of biologically active nucleic acid, studied the nucleotide sequence during the synthesis of transfer RNA (with colleagues). He found (with colleagues) that transfer RNA has a biologically active secondary structure, in addition to the primary one, interpreted (1965) the structure of alanine transfer RNA of yeast (with coworkers). In 1968, he shared with H. Khorana and M. Nirenberg the Nobel Prize in Physiology and Medicine for “interpretation of the genetic code and its role in the synthesis of proteins”. Bibliography and literature: see Great Medical Encyclopedia and Great Soviet Encyclopedia, Third Editions; (1968) *Science*, **26**; *Biologists: Reference Book on Biographies* (1984) Naukova Dumka, Kiev, pp. 673-674; *The Nobel Prize Winners*, in the *Encyclopedia: A-L* (1992) Progress, Moscow.

February 2 – 100th anniversary of the death of Dmitry Ivanovich Mendeleev (1834-1907, born in the town of Tobolsk), great Russian chemist, Corresponding Member of the St. Petersburg Academy of Sciences, Professor of St. Petersburg University. From 1893, he headed the Board of Weights and Measures created on his initiative (later Mendeleev Research Institute of Metrology). The most significant contribution of D. I. Mendeleev to science was the periodical law of chemical elements (discovered 1869) and the periodical system of elements based on this law. For the first time in the history of chemistry, D. I. Mendeleev predicted the existence of unknown chemical elements and described in detail their expected properties. He created a hydrate theory of aqueous solutions, in 1861 discovered the existence of absolute boiling temperature (critical temperature), above which a substance can be only in the gaseous state. He performed fundamental studies in metrology. He wrote a classical handbook *Fundamentals of Chemistry* translated into the English, German, and French. Mendeleev was interested in problems of public health, found it necessary to struggle against the high morbidity and lethality of the population, to improve work hygiene; insisted on using domestic raw materials for drug production. He developed measures against pollution of the air, reservoirs, and soil with industrial wastes. During 23 years, he worked as a Member of the Medical Board, which was the highest scientific and methodical center of Russia. Bibliography and literature: see Great Medical Encyclopedia and Great Soviet Encyclopedia, Third Editions.

February 4 – 70th anniversary of the death of M. Schlesinger (1904-1937), Hungarian biochemist. His main works were in the field of chemical composition and physicochemical properties of viruses of bacteria, bacteriophages. He was the first to obtain (1933) a pure preparation of the bacteriophage WLL of colibacillus and determined the size of this bacteriophage. He studied the mechanism of the bacteriophage adsorption on the host cell and determined the adsorptive capacity of bacterial cells. He established (1934) the nucleoprotein nature of bacteriophages and showed them to consist of approximately equal quantities of protein and nucleic acid; found that nucleic acid gives a positive Feulgen reaction to thymonucleic (deoxyribonucleic) acid and bacteriophage is deoxyribonucleoprotein (1936). One of founders of molecular biology of viruses. Literature: *Biologists: Reference Book on Biographies* (1984) Naukova Dumka, Kiev, p. 708.

February 17 – 95th anniversary of the birth of A. Lehninger (1917), American biochemist, Professor. In 1945-1952 Professor of the Biochemistry Chair, Chicago University; from 1952 Chief of the Chair of Physiological Chemistry, John Hopkins University, Baltimore. His main works concern biochemistry of energy generation in the cell. He studied the structure and functions of mitochondria, oxidative phosphorylation reactions in the organism, electron transfer in the respiratory chain. He showed (1949) that oxidative phosphorylation occurs in mitochondria and the electron transfer is associated with structural changes in mitochondria. He studied the mechanism of ion penetration across cellular membranes. He is the author of the textbook *Biochemistry* (Russian translation, 1974). He was an editor of *Journal of Biological Chemistry*. Bibliography and literature: see Great Soviet Encyclopedia, Third Edition; *Biologists: Reference Book on Biographies* (1984) Naukova Dumka, Kiev, pp. 365-366.

March 17 – 150th anniversary of the birth of Aleksei Nikolaevich Bach (1857-1946, born in the Zolotonosha town, Poltava guberniya), founder of the school of domestic biochemists, Academician of the USSR Academy of Sciences, State Prize winner (1941). In 1918, he created the Central Chemical Laboratory at the Supreme Soviet of People's Industry of RSFSR (later Karpov Physico-Chemical Institute, of which he was Director until the end of his life). In 1921, he founded the Biochemical Institute, Narkomzdrav RSFSR, in 1935 he created Biochemical Institute, USSR Academy of Sciences (now Bach Institute of Biochemistry, Russian Academy of Sciences). His peroxidation theory of slow oxidation is a significant contribution to bio-

chemistry. He developed a method for determination of catalase activity in blood (the Bach–Zubkov method), laid the foundations of technical biochemistry. Bibliography and literature: see Great Medical Encyclopedia and Great Soviet Encyclopedia, Third Editions.

March 23 – 100th anniversary of the birth of D. Bovet (1907–1992), Italian physiologist, chemist, and pharmacologist, Professor of Rome University. In 1936–1947, he worked in the Pasteur Institute in Paris. His main works are in pharmacology, normal and pathological physiology, allergology. Under his guidance in 1936 sulfanilamide was prepared and in 1937 antihistamine preparations were created. He was one of the first researchers who discovered mechanisms of antibacterial action of sulfanilamides. He studied the effect of curare on humans and animals and proposed the use of curare in surgery. The Nobel Prize winner (1957) for studies in the field of synthesis of antihistamine and curare-like preparations. Bibliography and literature: see Great Medical Encyclopedia and Great Soviet Encyclopedia, Third Editions. *Biologists: Reference Book on Biographies* (1984) Naukova Dumka, Kiev, pp. 77–78.

March 24 – 90th anniversary of the birth of J. Kendrew (1917–1997), British biochemist and biophysicist, member of the London Royal Society (1960). From 1975, he headed the Main European Laboratory of Molecular Biology in Heidelberg. His main works concerned the structure of protein molecules. By X-ray crystallography, he for the first time determined (1957) the space arrangement of polypeptide chains in a protein (myoglobin) molecule and proposed a three-dimensional model of its structure, discovered molecular structure of hemoglobin. In 1962, he shared with M. F. Perutz the Nobel Prize in Chemistry for studies on the structure of globular proteins. He was the founder and Editor-in-Chief of *The Journal of Molecular Biology*. Bibliography and literature: see Great Soviet Encyclopedia, Third Edition. *Biologists: Reference Book on Biographies* (1984) Naukova Dumka, Kiev, pp. 297–298.

March 24 – 85th anniversary of the birth of Roman Bentsionovich Khesin-Lurie (1922–1985, born in Moscow), Russian biochemist and geneticist, Corresponding Member of the USSR Academy of Sciences. He mainly studied mechanisms of translation and transcription of genetic information, revealed the possibility of protein synthesis without an immediate involvement of the cell nucleus, found that the protein synthesis was mainly regulated during transcription. He established the possibility of positive regulation of transcription on the base of

“recognition” by proteins of certain nucleotide sequences in DNA, proposed an idea about the autoregulation of synthesis of bacterial RNA polymerase and two levels of the RNA synthesis regulation in animals. Bibliography: *Biochemistry of Cytoplasm* (1960) Moscow; *Variability of the Genome* (1984) Nauka, Moscow. Literature: *Biologists: Reference Book on Biographies* (1984) Naukova Dumka, Kiev, p. 669; R. B. Khesin (1986) *Genetika*, No. 1, 175–176; *Molecular Biology* (1985), No. 5, 1438–1439; *Tsitologiya* (1987), No. 2, 244.

April 10 – 80th anniversary of the birth of M. W. Nirenberg (1927), American biochemist, geneticist, member of the National Academy of Sciences of the USA (1967). He established the nucleotide composition and sequence of nucleotides in triplets encoding the incorporation of all 20 amino acids into the polypeptide chain of protein molecules. Approaches proposed by him were used for interpretation of chemical nature of virtually all codons. The Nobel Prize winner for discovery and interpretation of the genetic code (1968, jointly with R. Holley and H. G. Khorana). Bibliography and literature: see Great Medical Encyclopedia and Great Soviet Encyclopedia, Third Editions. *Biologists: Reference Book on Biographies* (1984) Naukova Dumka, Kiev, p. 459.

May 1 – 100th anniversary of the birth of Grachia Khachaturovich Bunyatyan (1907–1981, born in the town of Nor-Bayazet, Yerevan guberniya), Armenian biochemist, Honored Scientist of Armenia, Academician and Vice-President (1961–1967) of the Armenian SSR Academy of Sciences. Professor and Chief of the Chair of Biochemistry, Yerevan Medical Institute (1937–1961), organizer and Director of the Institute of Biochemistry, Academy of Sciences of Armenian SSR (from 1961). His main studies concern functional biochemistry of the brain. He studied mechanisms of ammonia generation from amino acids, discovered a new nicotinamide coenzyme (diaminonicotinamide dinucleotide), and studied its role in metabolism, showed the role of γ -aminobutyric acid in metabolism of carbohydrates and amino acids, found new copper-containing proteins in the brain. He studied the role of unsaturated phosphatides and choline in oxidative processes, oxidation and stabilization of vitamin C, and cortical regulation of metabolism. Was the first to show antioxidant properties of vitamin C, phosphatides, carotenoids, and vitamin A; revealed new regularities in brain metabolism in its different functional states. He was Chairman of the Armenian Society of Biochemists (from 1975), member of the German Leopoldina Academy of Naturalists (from 1972), the International Society on Neurochemistry, the

International Brain Research Organization, and the International Biochemical Union Council (from 1975). Bibliography: *Phosphatides as Pro- and Antioxidants in Autooxidation of Lipids and Vitamin A (Carotenoids)* (1937) Yerevan; *Urea Cycle in Brain in Handbook of Neurochemistry* (1971) New York-London, Vol. 5, pp. 235-247. Literature: *Reference Book on Biographies of Men in Natural Science and Technique* (1958) Moscow, Vol. 1; *Biol. Zh. Armenii* (1977) **30**, No. 5, 101-104; *Vopr. Med. Khim.* (1981) No. 6, 851-853; *Biologists: Reference Book on Biographies* (1984) Naukova Dumka, Kiev, p. 104; *Outstanding Biochemist and Organizer of Science* (1987) *Neirokhimiya*, No. 3, 456-458.

May 9 – 100th anniversary of the death of Aleksandr Dmitrievich Bulyginsky (1838-1907), Russian biochemist, Professor. In 1863, he founded the first Russian Chair of Medical Chemistry at the Medical Faculty of Moscow University (now Chair of Biochemistry, Moscow State University). From 1871 headed the Medical Chemical Laboratory organized by him in the University. His main works concern metabolism. He was one of the first who studied (1868) bile acids and chemical composition of urine. He introduced the teaching of medical chemistry at Moscow University, edited lectures on organic chemistry and also on physiological and pathological chemistry. Bibliography and literature: see Great Medical Encyclopedia, Third Edition; *Biologists: Reference Book on Biographies* (1984) Naukova Dumka, Kiev, p. 103.

May 11 – 80th anniversary of the birth of Mikhail Nikolaevich Kolosov (1927-1985, born in the town of Kursk), Russian organic chemist and biochemist, Academician of the USSR Academy of Sciences. From 1959, he worked in the Institute of Bioorganic Chemistry. His main studies were in chemistry of nucleic acids, antibiotics, and other natural compounds. He established the space structure of some antibiotics (tetracycline, aureomycin, etc.), synthesized tetracycline, detected structural elements responsible for the biological activity of these antibiotics and mechanisms of inhibition of protein synthesis. He was engaged in enzymatic synthesis of nucleic acids, developed methods for synthesis of polydeoxynucleotides. He isolated a new antitumor substance, reumycin, and established its structure. Bibliography and literature: see Great Soviet Encyclopedia, Third Edition; *Biologists: Reference Book on Biographies* (1984) Naukova Dumka, Kiev, pp. 314-315.

May 17 – 70th anniversary of the birth of Vladimir Nikolaevich Smirnov (1937, born in Chelyabinsk),

Russian biochemist, Academician of the Russian Academy of Medical Sciences, Corresponding Member of the Russian Academy of Sciences. From 1973 he was Chief of the Laboratory of Myocardium Metabolism, Myasnikov Institute of Cardiology, from 1976 Deputy General Director of the Cardiology Research Center (now Russian Research Complex of Cardiology), and from 1982 also Director of the Research Institute of Experimental Cardiology, from 2002 Chief of the Laboratory of Stem Cells in this Institute. In 1989-1992, he was Chief of the Chair of Molecular Biology and Medical Bioengineering, Russian State Medical University. His main works concern molecular biology, biochemistry, and physiology of cardiovascular system, in particular, molecular and cellular pathogenic mechanisms of atherosclerosis. He is the State Prize winner (1978) for studies on biochemistry, chemistry, and physiology of the cardiac muscle. He guided the creation and introduction of highly effective diagnostic systems based on mono- and polyclonal antibodies, drugs and biologically active compounds produced by gene engineering for prevention and treatment of cardiovascular and other diseases (thrombolytics, streptokinase, urokinase, an anti-ulcerous drug dalargin, etc.). For these and other works, he was awarded the Lenin Prize (1982). Bibliography and literature: see Great Medical Encyclopedia, Third Edition; *Smirnov, V. N. (2004) The 60th Anniversary of the Russian Academy of Medical Sciences*, Moscow, p. 412.

July 5 – 80th anniversary of the death of A. Kossel (1853-1927), German biochemist, member of the Sweden Royal Academy of Sciences. His main works concern biochemistry of the cell nucleus, chemistry of proteins and nucleoproteins. In 1879, he isolated “nuclein” from starch. He determined (with colleagues) that nucleic acids consist of nitrogen-containing bases, which include thymine, cytosine, and uracil. He concluded that nuclein should play a certain role in tissue growth and not be a source of energy for muscle cells, isolated from goose erythrocyte nuclei a protein-like substance, histone. He developed a concept about the building elements of the cell, noted that amino acids, sterols, purines, and pyrimidines, which are present in all animal and plant cells, act as building blocks for various physiological processes. From 1885 to 1901, he discovered some amino acids (jointly with others), including histidine. In 1910, he won the Nobel Prize in Physiology and Medicine for “contribution to knowledge about the chemistry of the cell by studies on proteins, including nucleic substances”. Bibliography: *Die Gewebe des menschlichen Körpers und ihre mikroskopische Untersuchung* (1899)

Braunschweig (mit andere); *The Proteins and Histones* (1928). Literature: *The Nobel Prize Winners*, in the *Encyclopedia: A-L* (1992) Progress, Moscow; Forbes, E. (ed.) (1961) *Great Chemists*; Jones, M. E. *Albrecht Kossel - a Biographical Sketch* (1953) *Yale J. Med. Biol.*, **26**, 80. *Biologists: Reference Book on Biographies* (1984) Naukova Dumka, Kiev, pp. 325-326.

August 4 – 75th anniversary of the death of Sergei Sergeevich Salazkin (1862-1932, born in the village of Doshchatoe, now Gorky Region), Russian biochemist, Doctor of Medicine. He was one of the initiators of creation of the Women's Medical Institute in St. Petersburg and its Director (1905-1911). In 1924-1925, he was Rector of the Crimean Institute in Simferopol, in 1925-1931 Professor of Biochemistry, the Leningrad Medical Institute, in 1927-1931 Director of the Institute of Experimental Medicine. He was an author of important studies on nitrogen metabolism in animals, in particular, generation of its final products, urea and uric acid. His Doctoral dissertation (1897) was entitled "On the Role of Liver in Generation of Urea in Mammalian Animals"; he showed that urea was produced from ammonia of amino acids. Some of his works concerned properties of enzymes. Bibliography and literature: see Great Medical Encyclopedia and Great Soviet Encyclopedia, Third Editions. *Biologists: Reference Book on Biographies* (1984) Naukova Dumka, Kiev, p. 554.

August 5 – 50th anniversary of the death of H. Wieland (1877-1957), German biochemist, member of the National Academy of Sciences of the USA, of the London Royal Society. He studied chemistry of organic nitrogenous compounds. His analysis of the hydrazine color reaction became a foundation for discovery of free nitrogen radicals. He created a theory of dehydration in the burning reactions based on the hydrogen activation; combined organic chemistry and biochemistry by demonstrating the dehydration process in living cells; discovered choleic acid. In 1927, he was awarded the Nobel Prize in Chemistry "for studies of bile acids and structure of many similar substances". Bibliography: *On the Mechanism of Oxidation* (1932); *Über den Verlauf of Oxydationsvorgänge* (1933), Stuttgart. Literature: see Great Medical Encyclopedia, Third Edition; *The Nobel Prize Winners*, in the *Encyclopedia: M-Ya* (1992) Progress, Moscow; Forbes, E. (ed.) (1961) *Great Chemists*; *Biologists: Reference Book on Biographies* (1984) Naukova Dumka, Kiev, p. 130.

August 13 – 90th anniversary of the death of E. Buchner (1860-1917), German organic chemist, biochemist,

and bacteriologist. His main studies in bacteriology concern fermentation and enzymes of microorganisms. His first publication (1886) was about the influence of oxygen on fermentation. By a hydraulic process, he prepared (1897) yeast juice lacking living cells but inducing active fermentation. By the same method, he obtained an extract of microorganisms, which induced lactic, acetic, butyric, and citric acid fermentation. He invalidated the contemporary belief about the enzyme subdivision into organized and unorganized. The Nobel Prize winner in Chemistry (1907). Bibliography and literature: see Great Medical Encyclopedia, Third Edition; *Biologists: Reference Book on Biographies* (1984) Naukova Dumka, Kiev, pp. 108-109.

August 18 – 75th anniversary of the birth of Yuri Andreevich Vladimirov (1932, born in Moscow), Russian biophysicist, Academician of the Russian Academy of Medical Sciences, Honored Scientist, winner of the 1983 State Prize. In 1962-1965 directed a laboratory in the Institute of Biological Physics, USSR Academy of Sciences, from 1967 Chief of the Chair of Biophysics, the 2nd Moscow Medical Institute (now Russian Medical University). He studied fluorescence and phosphorescence of proteins, primary photochemical reactions in proteins, reactions with involvement of free radicals in the humans and animals. He formulated a hypothesis on the leading role of disorders in the barrier function of cell membranes in cellular pathology; contributed to elaboration of luminescent methods used in biology and medicine for diagnosis of various inflammatory, immune, cardiovascular diseases. Bibliography: see Great Medical Encyclopedia, Third Edition; *Fluorescent Probes in Studies on Biological Membranes* (1980) Nauka, Moscow (jointly with others); *Physicochemical Foundations of Photobiological Processes* (1989) Moscow (jointly with others). Literature: Vladimirov, Yu. A. (2004) *The 60th Anniversary of the Russian Academy of Medical Sciences*, Moscow, p. 348.

October 2 – 90th anniversary of the birth of Ch. De Duve (1917), Belgian biochemist, member of the Belgian Academy of Sciences, of the Royal Academy of Medicine. He is the founder of the doctrine about lysosomes as constant universal cellular components with definite structure and functions, which are involved in physiological and pathological processes in the cell (1964-1968). Contributed to studies on biochemistry of insulin used in the treatment of diabetes mellitus and on biochemistry of glucagon. For works about the structure and functional activity of the cell shared the 1974 Nobel Prize with G. Palade and A. Claude. Bibliography and literature: see

Great Medical Encyclopedia and Great Soviet Encyclopedia, Third Editions; *Biologists: Reference Book on Biographies* (1984) Naukova Dumka, Kiev, pp. 216-217.

October 2 – 100th anniversary of the birth of A. R. Todd (1907-1997), British biochemist, President of the London Royal Society (1975-1980). His main studies on chemistry of nucleotides and nucleic acids form the basis for the modern concepts about the structure and synthesis of these chemical compounds. He also studied vitamins and other biologically active natural substances. Awarded the Nobel Prize in Chemistry (1957) for his works concerning nucleotides and nucleotide coenzymes. Bibliography and literature: see Great Medical Encyclopedia, Third Edition; Cholakov, V. (1986) *Nobel Prizes*, Mir, Moscow; *The Nobel Prize Winners*, in the *Encyclopedia: M-Ya* (1992) Progress, Moscow, pp. 500-502.

October 8 – 80th anniversary of the birth of C. Milstein (1927, born in Argentina), British immunologist and biochemist. From 1961, he worked in the Laboratory of Molecular Biology, Cambridge; contributed to knowledge about the primary structure of immunoglobulins, preparation of hybrid cells by fusion of lymphocytes, cloning of hybrid cells and their long-term cultivation. For outstanding results in immunology, he was awarded the 1984 Nobel Prize (jointly with N. Jerne and G. Kohler). Literature: *The 1984 Nobel Prize Winners* (1985) *Priroda*, No. 1, 99-100; *The Nobel Prize Winners*, in the *Encyclopedia: M-Ya* (1992) Progress, Moscow, pp. 85-87.

October 8 – 90th anniversary of the birth of R. Porter (1917-1985), British biochemist and immunologist, member of the London Royal Society (1964). His main studies concern the structure of antibodies. He developed (jointly with A. J. P. Martin) a technique of chromatographic fractionation of proteins; supposed and proved (jointly with G. Edelman) the peptide structure of antibodies (1962). In experimental studies on antibodies, he used for the first time the genetic labeling of the immunoglobulins under investigation. He was awarded many international prizes. Won the Nobel Prize in Medicine and Physiology for basic studies on chemical structure of antibodies (1972, jointly with G. Edelman).

Bibliography and literature: see Great Medical Encyclopedia and Great Soviet Encyclopedia, Third Editions.

October 26 – 50th anniversary of the death G. T. Cori (1896-1957), American biochemist, member of the National Academy of Sciences of the USA. She studied glycogen structure in health and disease, mechanism of the enzymatic synthesis and cleavage of this polysaccharide, the influence of various hormones on these processes. Her works on glycogenoses, inherited diseases caused by disorders in the glycogen metabolism, are of great importance for theory and practice. She discovered the enzyme deficiency responsible for the III type glycogenosis (Cori disease) and proposed the classification of glycogenoses. She shared the 1947 Nobel Prize with K. Cori for the discovery of catalytic transformations of glycogen. Bibliography and literature: see Great Medical Encyclopedia, Third Edition; *Biologists: Reference Book on Biographies* (1984) Naukova Dumka, Kiev, p. 322.

November 17 – 85th anniversary of the birth of S. Cohen (1922), American biochemist, member of the National Academy of Sciences of the USA. He prepared (with colleagues) from a mouse tumor a concentrated growth-stimulating extract; found that snake venom and adult mouse salivary glands had a highly active growth factor of nervous tissue. In extracts of salivary glands of adult mice, he detected an epidermal growth factor (EGF) capable of stimulating the growth of internal and external epithelial cells. Developed a method for preparation of large quantities of mouse EGF, which became an important tool for investigation of biochemical signals regulating the cell division and differentiation. He obtained anti-EGF antibodies, succeeded in constructing functionally active molecules of hybrid DNA (with colleagues). Jointly with L. Unger and J. Feldman, he found (1956) Ii antigens in blood. In 1986 shared the Nobel Prize in Physiology and Medicine with R. Levi-Montalcini “for discoveries very important for interpretation of mechanisms regulating the growth of cells and organs”. Bibliography: *The Nobel Prize Winners*, in the *Encyclopedia: A-L* (1992) Progress, Moscow; *Science* (1986) October 31; Great Medical Encyclopedia, Third Edition, 5, p. 260.