

BELITSER, V.A.; KOTEL'NIKOVA, A.V.; LYUBIMOVA, M.H.; SEVERIN, S.Ye.;
STEPANENKO, B.N.; ENGEL'GARDT, V.A.

Second International Conference on Lipids and the Third Inter-
national Biochemical Congress. Vop.med.khim. 2 no.1:73-79 Ja-F '56.
(GHENT--LIPIDS--CONGRESSSES) (MLRA 9:9)
(BRUSSELS--BIOCHEMISTRY--CONGRESSSES)

ENGEL'GARDT, Vladimir A.

"Enzymes as Structural Elements of Physiological Mechanisms,"
"Enzymology and Mechanochemistry of Tissues and Cells,"

paper presented at the Intl. Symposium on Enzyme Chemistry, 15-23 Oct 57,
Tokyo and Kyoto, Japan.

Inst. Biochem, Acad. Sci. USSR

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B,3,095,529

ENGEL'GARDT, V.A.
BAYEV, A.A. [translator]; BARKHASH, A.P. [translator]; BEKINA, R.M.
[translator]; VEIKSTERN, T.V. [translator]; LISOVSKAYA, N.P.
[translator]; ODINTSOVA, M.S. [translator]; PIRUS, Ye.A.,
[translator]; TATARSKAYA, R.I. [translator]; ~~ENGEL'GARDT, V.A.~~,
akademik, red.; PARNES, Ye., red.; SOKOLOVA, T., tekhn.red.

[Present-day problems in biochemistry; a collection of articles.
Translations] Sovremennye problemy biokhimi; sbornik statei.
S predisl. V.A.Engel'gardta. Moskva, Izd-vo inostr. lit-ry, 1957.
480 p. (MIRA 11:5)

(BIOCHEMISTRY)

USSR / General Biology. Physical and Chemical Biology. B

Abs Jour : Ref Zhur - Biologiya, No 4, 1959, No. 14253

Author : Engel'gardt, V. A.

Inst : Academy of Sciences USSR

Title : The Chemical Principles of Efferent Functions
of Cells and Tissues

Orig Pub : Vestn. AN SSSR, 1957, No 11, 58-68

Abstract : The progress of the chemical mechanism of contraction, especially the problem of enzymatic factors of efferent function, are examined. After the author and I. N. Lyubimova discovered the adenosintriphosphatase activity of myosin (M), it was shown that ATP [adenosine triphosphate] acts upon M affecting a change in the elastic properties of its tissues and a decrease in the viscosity of M solutions.

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This fact initiated the standpoint which regards contraction to be a reaction of a highly molecular structural base of a muscle with low molecular metabolism products forming an enzyme substrate complex. In the course of studying this interaction, a second protein of the retractile substance, actin, was discovered which forms a complex with M, each component of which is incapable of contracting separately. At present it has been proven that ATP-ase activity is expressly inherent in M and does not depend upon the admixture of a special enzyme. A leading part in the process of contraction is played by the interaction of M and ATP but not by M and

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actin. Actine may even be substituted by nucleic acid whereby "nucleomyosin" is contracted by the action of ATP. It was established that the presence of Ca ions is requisite for the interaction of M and ATP. The study of various non-muscular cells capable of contraction and shrinkage permits to assume that in these cells, as in muscle, an interaction of the myosin-like protein, possessing a ATP-ase activity, and of ATP takes place. This process is apparently as universal as the processes of respiration and fermentation. Thus, a protein, related to M, with a ATP-ase activity which contracts through the action of ATP (models covered with glycerine) was detected in the cauda of

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sperms. Also, the models of dividing cells
which have the ability to contract are
distinguished by a high ATP-ase activity. --
P. P. Rumyantsev

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2

ENGEL'GARDT, V.A.; KANOPKAYE, S.I.

Coenzymatic activity of various forms of thiamine pyrophosphate in systems of simple and oxidative decarboxylation [with summary in English]. Biokhimiia 22 no.1/2:21-28 Ja-F '57. (MIRA 10:7)

1. Institut biokhimiia im. A.N.Bekha Akademii nauk SSSR, Moskva.
(COENZYMES,
thiamine pyrophosphate in systems of simple & oxidative
decarboxylation (Rus))

Engelgardt, V.A.
ENGELGARDT, V.A.; BURNASHEVA, S.A.

Localization of the protein spermosine in sperm cells [with summary in English]. Biokhimiia 22 no.3:554-560 My-Je '57. (MIRA 10:11)

1. Institut biokhimiia im. A.N.Bakha Akademii nauk SSSR, Moskva.
(PROTEINS, determination
spermosin in sperm cells (Rus))
(SPERMATOZOA,
determ. of protein spermosin in sperm cells (Rus))

ENGEL'GARDT, V.A.

VENKSTERN, T.V.; ENGEL'GARDT, V.A.

Occurrence of ectoadenosinepolyphosphatase and some of its properties
[with summary in German]. Biokhimiia 22 no.5:911-916 S-O '57.
(MIRA 11:1)

1. Institut biokhimii im. A.N.Bakha Akademii nauk SSSR, Moskva.
(PHOSPHATASES,
ecto-adenosinpolyphosphatase distribution & properties
(Rus))

ENGELGARDT, V. A.

UNCLASSIFIED

PROCEEDINGS OF THE INTERNATIONAL SYMPOSIUM ON ENZYME CHEMISTRY, Tokyo & Kyoto, 1967
AUTHOR: Organising Committee, International Symposium on Enzyme Chemistry, Tokyo, Maruzen, 1968.

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Enzymes as Structural Elements of Physiological Mechanisms

W. A. ENGELGARDT
Institute of Biochemistry, Academy of Sciences of the U.S.S.R., Moscow, U.S.S.R.

There are hardly any physiological functions in which enzymatic processes are not involved. Numerous and diverse as these functions are, they can be divided into two major groups.

One of these groups comprises those functions which are directly or indirectly related to the synthesis and the production of substances or available material from the surrounding medium for the building up of new cellular material, synthesis of protein, fat and other cellular constituents, assimilation of respiratory products, which proceed in the cell with an "energetic currency" in the form of energy-rich phosphate compounds; production of hormones or of metabolic end products which are to be eliminated from the organism. These are primary functions of cellular organisms. They are carried out in all cells of every living cell, from the lowest unicellular organisms, or fungi, or plants, and up to the most highly differentiated tissues of an animal, for example the brain tissue of man.

This is the group of vegetative or nutritive functions. They are the functions of the organism that they are not dependent upon the kind of transformation of energy (directly or indirectly) involved in the physiological manifestation of the function. Therefore, in principle, they do not require the presence of any special physical arrangements. But, in many of the biochemical processes belonging to this group, the members of such a system are combined within definite subcellular organelles—mitochondria, plastids, microtubules, grana, and other particles.

The functions of the group could also be called "preparatory" or "preparative" since they are necessary for the maintenance of the cell, and they are not, for a most, only directly involved in the physiological manifestation of the organ or tissue, of which the given cell is a part. The second group of physiological functions will be the functions of the organism which are directly dependent upon the transformed functions of organs and tissues of a higher organism. Movement and performance of mechanical work, generation and propagation of nerve impulses, with the accompanying electrical phenomena, and contraction based on "action potentials", control concentration gradients, homeostasis, and other processes are functions which have come in common they involve transformations of energy, and other metabolic work (mechanical, electrical, chemical, etc.) which are necessary for the performance of these functions. That is why the term "preparative" is not applicable to these functions. The term "preparative" is also not applicable to all these complicated vital manifestations.

The changes of energy from one form to another during these functions are widely different in character. Chemical energy is transformed in a mechanical work of electrical energy, generation of electric potentials, and in the conversion of chemical energy into heat. In the case of the synthesis of proteins, the energy of metabolic substrates is transformed into energy of the chemical bonds of the proteins. In the case of the synthesis of nucleic acids, the energy of metabolic substrates is transformed into energy of the chemical bonds of the nucleic acids. In the case of the synthesis of carbohydrates, the energy of metabolic substrates is transformed into energy of the chemical bonds of the carbohydrates. In the case of the synthesis of lipids, the energy of metabolic substrates is transformed into energy of the chemical bonds of the lipids. In the case of the synthesis of hormones, the energy of metabolic substrates is transformed into energy of the chemical bonds of the hormones. In the case of the synthesis of other cellular constituents, the energy of metabolic substrates is transformed into energy of the chemical bonds of these constituents.

The transformations of energy of the kind observed in the case of the synthesis of proteins, nucleic acids, carbohydrates, lipids, and hormones are possible and can proceed with any reasonable degree of efficiency only if the processes involved take place in some kind of physical organization, in a sort of biological machinery. The separate elements of which this biological machinery is composed are interconnected in a definite system, of a certain order, and are arranged in a definite manner.

The latter, responsible for the chemical phases of the complex, must also be an integral part of the complex, structurally interconnected and organized in a definite manner. The parts which are not directly involved in the biochemical transformations are interconnected in a definite manner by which chemical and physical phenomena are interconnected and brought together into an intricate unity.

If this view is accepted, and if the working of the biological machinery is understood, it will be possible to understand the mechanism of the highly specialized, complex and important enzymatic functions. I have no pretensions to originality in advancing these ideas. A detailed exposition of them is to be found in the book "Enzymes as Units of Biological Structure and Function". The proceedings of the Symposium represent a volume of considerable size. But the approach is of such great importance that it deserves attention wherever possible and more representatives should be invited.

Maybe the most unambiguous example of an enzyme forming an integral part of a physiological functional unit is the enzyme aspartate aminotransferase. In the case of the principal component, the enzyme aspartate aminotransferase, the conversion of aspartate to oxaloacetate is carried out in the enzyme. A proof of great importance in the fact, that the enzyme, aspartate aminotransferase, not only catalyzes a definite enzymatic reaction, but is also an integral part of the functional changes which we have to regard as the basis

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PROCEEDINGS OF THE INTERNATIONAL SYMPOSIUM ON ENZYME CHEMISTRY, TOKYO & KYOTO, 1971
AUTHOR: Organizing Committee, International Symposium on Enzyme Chemistry, Tokyo, Maruzen, 1972.

W. A. Engelhardt

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Enzymology and Mechanochemistry of Tissues and Cells

W. A. Engelhardt

Enzymology and Mechanochemistry of Tissues and Cells

The subject which is intended to discuss here may be regarded as a particular case of a broader, more general one, namely that of the role of enzymes in integral components of elementary physiological mechanisms. Only some aspects of this program will be dealt with in this article, but the entire field of biological chemistry, and particularly of the molecular aspects of enzymology, could be evaluated subsequently in almost all forms of biological processes.

It is an obvious reason that we begin with ATP, because this molecule is the primary source of energy for the performance of the majority of cellular processes. The energy of ATP is derived from the hydrolysis of the phosphate bonds. Reversibility of enzymatic reactions that are of considerable length of time no attempt has been made to investigate the nature of the interaction of ATP, or better

of potential chemical energy, with the mechanical energy of muscle, or structural proteins. The study of the mechanical energy of ATP is a new and previously unexplored area. One way of approaching this problem, which readily provides the energy for mechanical work, is the study of the interaction of ATP and the contractile proteins. The hydrolysis of ATP and the resulting free energy of the reaction are discussed in detail by Engelhardt and Schaefer in this volume. The knowledge of the detailed mechanism of the interaction of ATP and the contractile proteins will be essential for the study of the function of ATP in the contractile proteins. Detailed research was the study of muscle contraction, which is the subject of this volume.

ENGELHARDT, W. A.

ENGEL GARDT, VA.

PHASE I BOOK EXPLOITATION SOV/5494

Vasil'yev, Mikhail Vasil'yevich, and Sergey Zakharovich Gushchikov
Raportazh iz XXI veka; my sapisali rasskazy dvadtsati dvyatyi
sovetkikh uchenykh o snizke i tekhnike budushchego (Reports
From the Twenty-First Century; Stories of Twenty-First Century
Scientists on Science and Engineering of the Future) Printed.
Izd-vo Sovetskaya Rossiya, 1958. 283 p. 50,000 copies printed.

Ed.: V. A. Golubkova; Tech. Ed.: G. I. Kleyeva.

PURPOSE: This book is intended for the general reader.

COVERAGE: The book contains 27 articles (told reporters by
Soviet scientists) dealing with probable future progress in
physics, chemistry, electricity, metallurgy, engineering,
mining, medicine, biology, agriculture, isolation, transportation,
exploration of space, and photography. Attention is given to
automation, automatic underground extraction of coal, use of
new metals, modernization of oil fields, atomic electric stations,
production of metal parts by the process of explosion, explosions
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Reports From the Twenty-First (Cont.)

in dam construction; cancer, internal longevity reserves,
machine diagnosis of illnesses, surgery treatment by ultra-
sonic vibrations, mechanical heart substitutes, human body banks,
"medical engineering," enriched fodder, "artificial suns," arti-
ficial snowfalls, agriculture vs. artificial work, "by auto-
power beam vs. wire, machines doing artificial suns (electromag-
netic rays focused above a day, which cause heated molecules
to shine), future ocean ships, railways, driverless auto-
mobiles, electric amars, the industrialization of Siberia,
use of underground heat, silent control, living on the moon,
antimatter, and photon jet. Names of the interviewed scientists
are given. There are no references.

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ENGELGARDT V. A.

ENGELHARDT, V. A., BAYEV, A. and VENKSTERN, T. Moscow UdSSR

"Nucleotidstoffwechsel in Vogelerythrozyten,"

report submitted IV Intl. Cong. of Biochemistry, Vienna, 1-6 Sep 1958.

ORBELI, L.A., akademik, PAVLOVSKIY, Ye.N., akademik, ~~ENGEL'GARDE, Y.A.~~,
akademik, BARANOV, P.A., CHERNIGOVSKIY, V.N., GENITSINSKIY, A.G.
FRANK, G.M.

Dmitrii Nikolaevich, Nasonov; obituary. Biofizika 3 no.3:257-258
'58 (MIRA 11:6)

1. Chlen-korrespondent AN SSSR (for Baranov, Chernigovskiy)
2. Chlen-korrespondent AMN SSSR (for Genitsinskiy, Frank).
(NASONOV, DMITRII NIKOLAEVICH, 1895-1957)

ENGEL'GARDT, V. A.

AUTHOR: None Given 30-58-5-14/36

TITLE: In the Department of Biological Sciences (V otdelenii biologicheskikh nauk)

PERIODICAL: Vestnik Akademii Nauk SSSR, 1958, Nr 5, pp 60-62 (USSR)

ABSTRACT: The secretary V. A. Engel'gardt, Member, Academy of Sciences, USSR reported on the work of the department and its institutions in the year 1957. He emphasized a number of serious deficiencies of the biological institutions of the AS. Above all there are not enough rooms for new as well as for already existing institutes and laboratories. The Botanical, Zoological and Soil Institute urgently need experimental field bases. Working cycles on the electron-microscopic investigation of the functional structure of muscles were terminated as well as on the radiographic investigation of collagen and on the determination of the mechanisms of the biological influence of ultrasonics. The gradual theory of the propagating excitation by the deceased D. N. Nasonov was further developed. Treatises on the part played by inner-secretory glands in the development of organisms and on the resistance to cold of insects were published. Further different researches are also mentioned which are performed at

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present. In 1957 the 24-th volume "Flora of the USSE", the 4-th volume "Flora of Spore Plants" and a chart of the vegetation of Central Asia and Southern Kazakhstan on a large scale were edited. The 13-th volume of the treatise "Trematodes of Animals and Man" was published. In the past year new biological institutions were established: the Institute for Cytology on the basis of the Laboratory of the same name, the northern branch of the Forestry Institute in Arkhangel'sk, the Kuybyshev Station of the Institute for Biology of Water Reservoirs and some new laboratories. In Moscow an international symposium on the formation of life was called. In a special information V. A. Engel'gardt outlined the plan of the development of biological sciences for the years 1959-1965. V. N. Sukachev, Member, Academy of Sciences, USSR reported on the work of biologists in 1957, where he pointed out the lack of specialists in the fields of cytology, biophysics, paleontology, botanics, zoology and some others. The following persons participated in the discussions:

- 1) G. Ya. Bey-Biyenko, Corresponding Member, Academy of Sciences, USSR spoke on tasks in connection with the establishment of the Siberian Branch.
- 2) B. N. Stepanenko, Doctor of Biological Sciences, emphasized

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In the Department of Biological Sciences

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the importance of an increase in contact of biology with chemistry.

3) G. K. Khrushchov, Corresponding Member, Academy of Sciences, USSR and a number of other speakers also spoke on the necessity of strengthening the contacts between biologists and physiologists as well as chemists. He called it an essential disadvantage that the office of the department in its activity mainly restricted to scientific-organizational problems, which was supported by several other speakers.

4) A.A. Imshenetskiy, Corresponding Member, Academy of Sciences, USSR, advocated the opinion that the office of the department should take up everything new in science and that it should act as initiator in the posing of new principal scientific problems. He made the proposal to introduce prize competitions for the best works.

5) E. A. Asratyan, Corresponding Member, Academy of Sciences, USSR emphasized the one-sided development of physiology in the country and stated that neurophysiology is developed to a very limited extent.

6) N. M. Sisakyan, Corresponding Member, Academy of Sciences, USSR emphasized the necessity of creating connections between the scientific institutions of the department and the councils

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of national economics. In his closing speech V. A. Engel'gardt Member, Academy of Sciences, USSR agreed to the remarks made by the speakers of the discussion. The plenary assembly elected a new composition of the office. Beside the Secretary V.A. Engel'gardt, Member, Academy of Sciences, USSR whose powers have not yet expired the following persons were elected: The Members, Academy of Sciences, USSR, A. L. Kursanov, Ye. N. Pavlovskiy, V. N. Sukachev, and I. V. Tyurin, as well as the Corresponding Members, Academy of Sciences, USSR E. A. Asratyan, P. A. Baranov, V. A. Kovda, Yu. A. Orlov, A. N. Svetovidov, S.Ye. Severin, G. K. Khrushchev, V. N. Chernigovskiy. The following lectures were heard: M. N. Meysel' on new directions in the fluorescence-microscopic investigation of cells, tissues and organs. B. P. Ushakov on the problem of the adaptation of the cells of cold-blooded animals to raised temperatures. M.N. Livanov on the investigation of higher nervous activity by the new electro-physiological method. M. A. Peshkov on the use of the perfected an-
optical microscope in microbiology and protistology. I. S. Beritashvili, Member, Academy of Sciences, USSR showed a popular scientific film on the investigation of the part played by the cerebral cortex of the cerebrum and cerebellum in the spatial orientation of animals.

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YEL'TSINA, N.V., ENGEL'GARDT, V.A.

Pathways of carbohydrate introduction in plastic metabolism of cancer cells [with summary in English] Biokhimiia 23 no.3:468-492 My-Je '58 (MIRA 11:8)

1. Institut eksperimental'noy terapii raka AMN SSSR, Moskva.
(CARBON metabolism,
cancer cell (Rus))
(NEOPLASMS, metabolism,
carbon (Rus))

VASIL'YEV, M.; GUSHCHEV, S.; NESMEYANOV, A.N., akademik; SHCHURBAKOV, D.I., akademik;
ENGEL'GARDT, V.A., akademik; ZHEREBAK, A.R., prof.; LEBEDEV, S.A.,
akademik; ZENKEVICH, L.A.; GRADOV, A.S.; GOLODOVSKIY, M.G., prof.;
STANYUKOVICH, K.P., prof.

Ahead with the dream! Znan.sila 33 no.12:24-25 D '58.
(MIRA 11:12)

1. Chlen-korrespondent AN SSSR (for Zendevidh). 2. Direktor Nauchno-
issledovatel'skogo instituta proyektirovaniya obshchestvennykh zdaniy
i sooruzheniy (for Gradov).
(Science)

ENGEL'GARDT, Vladimir Aleksandrovich, akademik

[Some problems in modern biochemistry; report at the Eighth
Mendeleev Congress of General and Applied Chemistry] Nekotorye
problemy sovremennoi biokhimi; doklad na VIII Mendeleevskom
s"ezde po obshchii i prikladnoi khimii. Moskva, Izd-vo Akad.
nauk SSSR, 1959. 38 p. (MIRA 12:11)
(BIOCHEMISTRY)

Σ ΝΒΕΛΙΓΑΡΤΙ Α

50(6)
ATTENTION:
TITLE:
PHONICALLY:
ABSTRACT:

OSV/00-59-1-47/57
Candidate of Philosophical Sciences
Problems Concerning Philosophy of Modern Natural Science (Philosophy of Modern Natural Science) (Philosophy of Modern Natural Science) (Philosophy of Modern Natural Science)
Festskilsk Akademii nauk SSSR, 1959, № 1, pp 131-136 (USSR)

At the end of October last year an All-Union conference took place which dealt with these problems. The conference had been organized by the Academy of Sciences (Academy of Sciences) and the Ministry of Higher and Secondary Education (Ministry of Higher and Secondary Education) of the USSR. The conference was held in the city of Moscow. The conference was attended by representatives of the Academy of Sciences, the Ministry of Higher and Secondary Education, and other organizations. The conference was held in the city of Moscow. The conference was attended by representatives of the Academy of Sciences, the Ministry of Higher and Secondary Education, and other organizations. The conference was held in the city of Moscow. The conference was attended by representatives of the Academy of Sciences, the Ministry of Higher and Secondary Education, and other organizations.

Card 1/4

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Card 2/4

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SOV/29-59-2-11/41

30(11)
AUTHOR:

Engel'gardt, V., Academician

TITLE:

Biology Will Enrich Exact Sciences and Technology (Biologiya obogatit tochnyye nauki i tekhniku)

PERIODICAL:

Tekhnika molodezhi, 1959, Nr 2, p 12 (USSR)

ABSTRACT:

To the question asked by the editors of the periodical "Tekhnika - molodezhi" how he imagined future, V. Engel'gardt replied among other things: The Socialist order, the development of which we are experiencing, will ask more and more for new forms of control and utilization of natural forces. Thus, a great importance is given to the investigation of the living matter. Biology which at present makes good use of the achievements of allied sciences - chemistry, physics etc - will in its turn enrich the exact sciences, even technology. To explain my idea I will give two examples. In nature we have got a device admirable for its perfection which serves the conversion of energy. In the muscles the energy of chemical reactions is turned directly into mechanical work with such efficiency that any heat engines or turbines designed by man are greatly surpassed. We know already the chemical

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Biology Will Enrich Exact Sciences and Technology

SOV/29-59-2-11/41

processes taking place in the working muscle. Still unknown is the physical change of protein. The protein transforms the chemical energy to mechanical one. As soon as we know the physical character of these phenomena there is no doubt, we shall be able to give technology new principles of "chemo-dynamic" engines. The other example is found in the world of plants. At present we can only dream of the utilization of guided thermonuclear reactions. Meanwhile, the whole life on earth is based on the utilization of solar energy. We are able to utilize only about 10% of solar radiation by means of the most perfect photoelements. A vegetable cell containing chlorophyll, however, utilizes 100% of the solar energy absorbed. One can easily imagine what gigantic, practically inexhaustible, sources could be used for power economy if the photosynthesis could be realized not only in the leaf of a plant but in a technological process. There is 1 figure.

Card 2/2

AUTHOR: Engel'gardt, V. A., Academician SOV/30-59-2-12/60

TITLE: In Memory of an Outstanding Scientist (Pamyati zamechatel'nogo uchenogo)

PERIODICAL: Vestnik Akademii nauk SSSR, 1959, Nr 2, pp 60-61 (USSR)

ABSTRACT: This paper presents the speech held by the author on the occasion of the obsequies in the great conference hall of the Academy of Sciences in Leningrad on December 13, 1958 (see reference). The author describes Leon Abgarovich Orbeli's life and work, who was an outstanding physiologist and biologist and pupil of the famous Pavlov. Orbeli founded the Institut evolyutsionnoy fiziologii (Institute of Evolutionary Physiology). For ten years he held the office of a scientific secretary of the Department of Biological Sciences. There is 1 figure.

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KANOPKAYTE, S.; ENGEL'GARDT, V.A.

Some data from a study of the enzyme function of thiamine-
pyrophosphate. Vitaminy no.4:5-9 '59. (MIRA 12:9)

1. Institut biokhimii Akademii nauk SSSR, Moskva.
(THIAMINE) (COCARBOXYLASE)

ENGELHARDT, W.A.

Enzymes as an integral component of physiological mechanisms.
Acta physiol.hung. 16:Supplem.:3-4 '59.

1. Biochemisches Institut der Wissenschaftlichen Akademie
der USSR, Moskau.

(ENZYMES)

ENGEL'GAJUT, V.A., akademik

Concerning "molecular" diseases. Zdrav.Belor. 5 no.8:3-6
Ag '59. (MIRA 12:10)

1. Institut radiatsionnoy i fiziko-khimicheskoy biologii Akademii
nauk SSSR.

(BLOOD--DISEASES)

ENGEL'GARDT, V.A.; BAYEV, A.A.; VENKSTERN, T.V.

Conversion of nucleotides in nuclear erythrocytes and its relation
to respiration [with summary in English]. *Biokhimiia* 24 no.1:157-170
Ja-F '59. (MIRA 12:4)

1. Institute of Biochemistry, Academy of Sciences of the U.S.S.R.,
Moscow.

(ERYTHROCYTES,
nucleotide conversion, eff. of resp. (Rus))
(NUCLEOSIDES AND NUCLEOTIDES, in blood,
erythrocytes, eff. of resp. on conversion (Rus))

5 (3), 17 (3)

AUTHOR:

Engel'gardt, V. A.

SOV/74-28-9-1/7

TITLE:

Some Problems of Modern Biochemistry

PERIODICAL:

Uspekhi khimii, 1959, Vol 28, Nr 9. pp 1011-1035 (USSR)

ABSTRACT:

This is an attempt to high-light some problems of modern biochemistry in those fields to which the experts pay actually the highest attention, and which are decisive for the further development of biochemical sciences. The matter at issue are the albumins and the nucleic acids. The action of nucleic acids is generally known and sufficiently founded. This refers particularly to the desoxyribonucleic acid (DNA) which is to transmit the features of heredity from generation to generation. Any change of its structure causes changes in the progeny, which are scientifically called mutations. Thus the unchangeableness of DNA is the condition for a constancy of heredity. On the other hand, mutations are the basis of changeability and thus of evolution. It warrants a perfection of the organism by natural or artificial selection. Under these circumstances the chief problem of so-called "molecular biology" is to explain the mechanisms of mutation, to determine its chemical nature, and thus to find the way of how to control it. The problem of

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Some Problems of Modern Biochemistry

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the chemical origin of the mutations is inseparably connected with the problem of the synthesis of polynucleotide chains of the nucleic acids. In the last 5 years the greatest achievements in biochemistry are doubtlessly the results obtained in the field of the fermentative synthesis of polynucleotides. (Ref 9, 10). The most important problem to be solved in the investigation of the nucleic acids, will be the determination of their chemical structure. The scheme set up by Watson and Crick (Ref 2) roughly represents the structure. The next step will now be to establish the sequence of the nucleotide members in the gigantic chain of the nucleic acid. The problems mentioned directly lead to the problem concerning the mechanism of the synthesis of albumins. This synthesis is controlled by the ribonucleic acid (RNA), and takes place under its vigorous participation. Science has hitherto succeeded in dividing the process of synthesis of the albumin molecule into clearly distinguished stages (Ref 11). These steps are the following: 1) Activation of the amino acids. 2) The activated amino acids combine in an orderly manner. 3) A steric structure is built up. But only the first step is the object of clear chemical concepts. As to the two other steps which are of particular

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importance, since they determine the chemical nature of each individual albumin, they will be investigated in the future. Though determining the arrangement of the amino acids in the albumin molecule is still a difficult task the determination of the general amino-acid composition of any albumin has already become a routine work. (Ref 13). To this day already a remarkable number of peptide-hormones have been investigated in regard to the arrangement of the amino acids in their structure. In some cases even a complete identification in this arrangement could be attained. Another group, not less important and far more comprehensive, are the ferments. The scientists succeeded not only to determine the composition and the sequence of amino acid traces in their peptide-chain, but also to find out the probable contours of the ferment configuration. Even some problems have been solved in regard to the connection between the structure and the enzymatic activity. It was found that the catalytical activity in the ferment molecule is not - as a rule - determined by the entire chemical structure and the molecular configuration. It seems that the catalytic activity is but concentrated in a limited, and clearly defined section of the molecule (similar observations were made already with peptide

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hormones). This section is decisive for the biological properties of the albumin, and it is, therefore, designated as the nucleus or the "active center". Biochemistry, however, deals also with a number of diseases. Thus it is possible to determine the nature of these diseases based on the chemical structure of molecules or on the interaction of chemical substances and on the chemical reactions, caused by ferments. Functional biochemistry may be considered as the prevalent trend and the ultimate aim in the problems of biochemistry. In other words, it is the tendency of explaining by chemical methods the nature, the mechanism, and the essence of certain physiological functions. There are 6 figures, 1 table, and 24 references, 4 of which are Soviet.

ASSOCIATION: Institut radiatsionnoy i fiziko-khimicheskoy biologii AN SSSR
(Institute of Radiation- and Physico-chemical Biology AS USSR)

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ENBELIGARDT, VA

306(9)
 AUTHOR: Base Given
 TITLE: All-Union Conference on Philosophic Problems of Modern Natural Science (Vsesoyuznyye nauchno-filosofskie seminarovskoye yubileynoye zasedaniye) By the Editor (Ot redaktsii) Uspikhi Fizicheskikh nauk, 1959, Vol 68, Nr 4, PP 717-727 (USSR)
 PERIODICAL: The above conference took place at Moscow in October 1958; it was attended by more than 600 scientists, among them 10 Academicians from the USSR Academy of Sciences, as well as by delegates from Bulgaria, Hungary, Czechoslovakia, and Czechoslovakia. The following lecturers delivered at the conference are listed: Academician K. B. Hishin (on Lenin's book "Materialism and Empirio-criticism"), Academician AS Darsk E. E. Ostrovskiy ("V. I. Lenin and the Philosophical Problems of Modern Criticism"), Doctor of Philosophical Sciences K. B. Fedorov ("On the Relationship of the Form of Motion of Matter in Nature"), Academician Y. A. Izik ("Interpretation of Quantum Mechanics" - already published in Sveshki Fizicheskikh nauk, 1957, Vol 67, Nr 4), Corresponding Member AS USSR A. R. Aleksandrov ("The Philosophical Content of and the

Significance of the Theory of Relativity"), Academician V. A. Izrael ("On the Methodological Problems of Cosmology"), Academician E. E. Ebeler and Engineer A. A. Erguzer ("Experiment and Natural Science"), Corresponding Member AN Sverdlovskiy and Academician Y. A. Izrael ("On the Methodological Problems of the Theory of Relativity"), Academician K. B. Hishin ("On the Origin of Life in the Light of the Problem of the Role of the Modern Natural Science"), and finally, Corresponding Member AS USSR K. I. Gerasimov ("Lenin's Theory of Reflection and the Modern Psychology of the Sensory Organ"). About 50 delegates took part in the discussion of these lectures. Next, the introductory speech delivered by the President of the AS USSR, Academician A. N. Kosygin, is reproduced, and so is the closing speech by Corresponding Member AS USSR Z. F. Fedoseyev, and finally a resolution passed by the All-Union Conference on philosophical problems of modern natural science is given. The title and the topics of dealing with philosophical problems of modern science. The resolution essentially contains an appeal for the

investigation of all new scientific facts in the sense of the theory of Marx and Lenin and of dialectic materialism for adaptation of ideas to the resolution of the 20th Party Congress, cooperation of institutes, coordination of research work, as well as some problems of organization. In conclusion, a list of printed works is given, in which the lectures delivered during the conference were published. There are 6 Soviet references.

Card 1/3

Card 2/3

Card 3/3

LISOVSKAYA, Nina Petrovna; LIVANOVA, Natal'ya Borisovna; ENGEL'GARIM,
V.A., akademik, otv.red.; LINEVICH, L.I., red.izd-va; DOROSHINA,
I.N., tekhn.red.

[Phosphoproteins] Fosfoproteiny. Moskva, Izd-vo Akad.nauk SSSR,
1960. 110 p. (MIRA 13:7)
(Phosphoproteins)

ENGEL'GARDT, Vladimir Aleksandrovich, akademik

Biology will enrich technology. Izobr. i rats. no.1:18-19
Ja '60. (MIRA-13s4)
(Biological research)

ENGELGARDT, V.A. [Engel'gardt, V.A.]

Some problems of the modern biochemistry. Analele chimie 15 no.1:
137-165 Ja/Mr '60. (EEAI 9:8)
(Biochemistry)

ENGEL'GARDT, V.A., akademik

Session of the administration of the International Council of
Scientific Unions. Vest.AN SSSR 30 no.8:96-97 Ag '60. (MIRA 13:8)
(Scientific societies)

ENGEL'GARDT, V.A.; VINOGRADOV, V.A.

Three hundredth anniversary of the Royal Society in London. Vest.AN
SSSR 30 no.12:72-77 D '60. (MIRA 13:12)
(England--Scientific societies)

ENGEL'GARDT, V.A., akademik, red.; ABROSIMOVA, N.M.[translator];
DAYEV, A.A.[translator]; VENKSTERN, T.V.[translator];
TATARSKAYA, R.I.[translator]; LEVINA, A.B., red.; GOR'KOVA,
Z.D., tekhn. red.; REZOUKHOVA, A.G., tekhn. red.

[Contemporary problems of biochemistry; collection of
translated articles]Sovremennye problemy biokhimi; sbornik
statei. Moskva, Izd-vo inostr.lit-ry, 1961. 416 p.
(MIRA 15:8)

(Biochemistry)

ENGEL'GAPDT, V. A., akademik

Life, intelligence, universe. Vest. Vozd. Fl. no.4:57-59 Ap '61.
(MIRA 14:7)

1. Direktor Instituta radioatsionnoy i fiziko-khimicheskoy biologii
AN SSSR.

(SPACE MEDICINE)

ENGLIGARDT, V.A., akademik

Chemical aspects of the science of life. Zhur.VKHO 6 no.3:244-
253 '61. (MIRA 14:6)
(Biochemistry)

ENGEL'GARDT, V.A., akademik

New stage in the drive of Soviet science. Vest. AN SSSR
31 no.8:24-27 Ag '61. (MIRA 14:8)
(Biological research)

ENGEL'GARDT, V.A., akademik

The road to a discovery. Znan.sila 36 no.11:30-31 H '61.
(MIRA 14:11)

(MUSCLES) (RESEARCH)

ENGELGARDT, V. A.

Fifth International Biochemistry Congress. Biokhimiia
26 no.6:1108-1117 N-D '61. (MIRA 15:6)
(BIOCHEMISTRY--CONGRESSES)

ENGEL'GARDT, V. A.

TATARSKAYA, R.I. Prinsipialni uchastiye: MALKOVA, M.G.; KOSAREVA, Ye.A.;
SISAKYAN, N.M., akademik, glav. red.; ~~ENGEL'GARDT, V.A., aka-~~
demik, red. toma; VETROVA, I.B., red.; POLYAKOVA, T.V., tekhn.
red.

[Biological structures and functions at the molecular level;
symposium 1] Biologicheskie struktury i funktsii na molekulyarnom urovne; simpozium I. Moskva, Izd-vo Akademii nauk SSSR, 1962. 298 p. (Its: Trudy) (MIRA 15:12)

1. International Congress of biochemistry. 5th, Moscow, 1961. (BIOCHEMISTRY--CONGRESSES)

ENGEL'GARDT, V.A., akademik, glav. red.; KUZIN, A.M., zam. glav. red.;
NUZHIDIN, N.I., red.; ALIKHANYAN, S.I., doktor biol. nauk, red.;
SHAPIRO, N.I., kand. biol. nauk, red.; KOCHEREZHKIN, V.G.,
kand. biol. nauk, red.; ARSEN'YEVA, M.A., red. izd-va;
PRUSAKOVA, T.A., tekhn. red.

[Radiation genetics] Radiatsionnaya genetika; sbornik rabot. Mo-
skva, Izd-vo Akad. nauk SSSR, 1962. 367 p. (MIRA 15:2)

1. Akademiya nauk SSSR. Otdeleniye biologicheskikh nauk. 2. Chlen-
korrespondent AN SSSR (for Kuzin, Nuzhdin). 3. Institut biologiche-
skoy fiziki AN SSSR, Moskva (for Kuzin).

(GENETICS) (RADIATION--PHYSIOLOGICAL EFFECT)

ENGEL'GARDT, V., akademik

Keys to the mysteries of life. IUn.tekh. 6 no.4:50-53 Ap '62.
(MIRA 15:6)

(LIFE (BIOLOGY))

ENGEL'GARDT, V.A., akademik

Fifth International Biochemical Congress. Zhur.VKHO 7 no.1:94-98
'62. (MIRA 15:3)
(Biochemistry--Congresses)

ENGELGARDT, V.A., akademik

Thoughts on nonprotein forms of life are entirely unfounded.

Nauka i zhizn' 20 no.4:9 An '62.

(MIRA 15:7)

(LIFE (BIOLOGY))

ENGEL'GARDT, V.A., akademik

Chemistry of life. Nauka i zhizn' 29 no.4:15-19 Ap '62.
(MIRA 15:7)

1. Direktor Instituta radiatsionnoy i fiziko-khimicheskoy biologii
AN SSSR.

(BIOCHEMISTRY) (BIOPHYSICS)

ENGEL'GARDT, V.A., akademik

Pathways and aims of molecular biology. Vest. AN SSSR 32 no.6:
29-36 Je '62. (MIRA 15:6)
(BIOPHYSICS)

POGLAZOV, B.F.; TIKHONENKO, A.S.; ENGEL'GARDT, V.A., akademik

Effect of ATP on the passage on DNA from a bacteriophage. Dokl.
AN SSSR 145 no.2:450-452 J1 '62. (MIRA 15:?)

1. Institut radiatsionnoy i fiziko-khimicheskoy biologii AN SSSR.
(ADESINE TRIPHOSPHATE) (NUCLEIC ACIDS) (BACTERIOPHAGE)

ENGEL'GARDT, V. A.

"Biological Structure and Function at the Molecular Level."
Vol. I of Proceedings of the Fifth International Congress of
Biochemistry, Moscow 1961; ed. by V. A. Engel'gardt.
Pergamon Press, 1963.

AMBARTSUMYAN, V.A., akademik; ASRATYAN, E.A.; BOGOLYUBOV, N.N., akademik; VINOGRADOV, A.P., akademik; GINETSINSKIY, A.G.; KNUNYANTS, I.L., akademik; KOCHETKOV, N.K.; KURSANOV, A.L., akademik; MEL'NIKOV, O.A.; NESMEYANOV, A.N., akademik; NESMEYANOV, An.N., doktor khim. nauk; OBEREIMOV, I.V., akademik; POLIVANOV, M.K., kand.fiz.-mat.nauk; REUTOV, O.A.; RYZHKOV, V.L.; SPITSIN, V.I., akademik; TAMM, I.Ye., akademik; FESENKOV, V.G., akademik; FOK, V.A., akademik; SHCHERBAKOV, D.I., akademik; FRANK, I.M.; FRANK, G.M.; KHOKHLOV, A.S., doktor khim. nauk; SHEMYAKIN, M.M., akademik; ENGEL'GARDT, V.A., akademik; SHAPOSHNIKOV, V.N., akademik; BOYARSKIY, V.A.; LIKHTENSHTEYN, Ye.S.; VYAZEMTSEVA, V.N., red.izd-va; KLYAYS, Ye.M., red.izd-va; TARASENKO, V.M., red.izd-va; POLYAKOVA, T.V., tekhn. red.

[As seen by a scientist: From the Earth to galaxies, To the atomic nucleus, From the atom to the molecule, From the molecule to the organism] Glazami uchenogo: Ot Zemli do galaktik, K iadru atoma domolekuly, Ot molekuly do organizma. Moskva, Izd-vo AN SSSR, 1963. 736 p. (MIRA 16:12)

1. Akademiya nauk SSSR. 2. Chlen-korrespondent AN SSSR (for Asratyan, Ginetsinskiy, Kochetkov, Mel'nikov, Reutov, Ryzhkov, Frank, I.M., Frank, G.M.)
(Astronomy) (Nuclear physics) (Chemistry) (Biology)

YEROKHINA, L.I.; IL'INA, T.S.; KAMENEVA, S.V.; KRYLOV, V.N.;
LOMOVSKAYA, N.D.; MINDLIN, S.Z.; NIKIFOROV, V.N.; SOKOLOVA,
Ye.V.; SUKHODOLETS, I.V.; ZAKHAROV, I.A.; INGE-VECHTOMOV,
S.G.; KVITKO, K.V.; KRIVISSKIY, A.S.; KARASEVICH, Yu.N.;
ENGEL'GARDT, V.A., akademik, glav. red.; ALIKHANYAN, S.I.,
prof., red.; IL'INA, T.S., red.

[Genetics and variation of micro-organisms] Genetika i se-
lektsiia mikro-organizmov. Moskva, Nauka, 1964. 304 p.
(MIRA 17:9)

1. Institut atomnoy energii imeni I.V.Kurchatova (for
Yerokhina, Il'ina, Kameneva, Krylov, Lomovskaya, Mindlin,
Nikiforov, Sokolova, Sukhodolets). 2. Kafedra genetiki Le-
ningradskogo gosudarstvennogo universiteta (for Zakharov,
Inge-Vechtomov, Kvitko). 3. Institut radiatsionnoy i fiziko-
khimicheskoy biologii (for Krivisski). 4. Institut mikro-
biologii AN SSSR (for Karasevich).

YAKOVLEV, V.A.; ENGEL'GARDT, V.A., akademik, glav. red.; DEBORIN,
G.A., zam. glav. red.; BRAUNSHTEYN, A.Ye., akademik, red.
POZNANSKAYA, A.A., red.

[Enzymes] Fermenty. Moskva, Nauka, 1964. 310 p.
(MIRA 17:9)

GURVICH, A.Ye.; ENGEL'GARDT, V.A., akademik, glav. red.; DEBORIN,
G.A., zam. glav. red.; ZIL'BER, L.A., prof., red.;
BUZNIKOV, G.A., red.

[Virology and immunology; problems of general virology,
structure and biosynthesis of antibodies] Virusologiya i
immunologiya; problemy obshchei virusologii, struktura i
biosintez antitel. Moskva, Nauka, 1964. 274 p.

(MIRA 18:1)

1. Deystvitel'nyy chlen AMN SSSR (for Zil'ber).

KELER, V.R., otv. red.; MILLIONSHCHIKOV, M.D., akademik, red.;
BLOKHIN, N.N., red.; BLOKHINTSEV, D.I., red.; GNEDENKO,
B.V., akademik, red.; ZAYCHIKOV, V.N., red.; KELDYSH, M.V.,
akademik, red.; KIRILLIN, V.A., akademik, red.; KORTI'NOV,
V.V., red.; MONIN, Andrey Sergeyevich, prof., doktor fiz.-
matem. nauk, red. (1921); NESMEYANOV, A.N., akademik, red.;
PARIN, V.V., red.; REBINDER, P.A., akademik, red.; SEMENOV,
N.N., akademik, red.; FOK, V.A., akademik, red.; FRANTSOV,
G.P., akademik, red.; ENGEL'GARDT, V.A., akademik, red.;
KREMNEVA, G., red.; BALASHOVA, A., red.; BERG, A.I., akademik, red.

[Science and mankind, 1964; simple and precise information
about the principal developments in world science] Nauka i
chelovechestvo, 1964.; dostupno i tochno o glavnom v miro-
voi nauke. Moskva, Izd-vo "Znanie," 1964. 424 p.

(MIRA 18:1)

1. Deystvitel'nyy chlen AMN SSSR (for Blokhin, Parin) ~~2. Chlen-~~
korrespondent AN SSSR (for Blokhintsev). 3. Akademiya nauk
SSSR Ukr. SSR (for Gnedenko).

ENGEL'GARDT, V.A., akademik

State of and outlook for the development of research on problems
in molecular biology. Vest. AN SSSR 34 no.10:36-42 0'64.
(MIRA 17:11)

ODINTSOVA, M.S.; ENGEL'GARDT, V.A., akademik, glav. red.;
DEBORIN, G.A., zam. glav. red.; SPIRIN, A.S., doktor
biol. nauk, red.

[Biosynthesis of protein and nucleic acids] Biosintez belka
i nukleinovyykh kislot. Moskva, Nauka, 1965. 346 p.
(MIRA 18:4)

GEORGIYEV, G.P., doktor biol. nauk; KISELEV, L.L., kand. biol.
nauk; KNUNYANTS, I.L., akademik; ENGEL'GARDT, V.A.,
akademik; CHERNOV, A.G.; NIKOLAYEV, V.R., red.

[Problems of molecular biology. Problemy molekuliarnoi
biologii. Moskva, Znanie, 1965. 63 p. (Novoe v zhizni,
nauke, tekhnike. VIII Seriya: Biologiya i meditsina, no.10)
(MIRA 18:6)

VENKSTERN, Tat'yana Vladimirovna; BAYEV, Aleksandr Aleksandrovich;
ENGEL'GARDT, V.A., akademik, otv. red.

[Absorption spectra of minor bases, their nucleosides,
nucleotides, and some other oligoribonucleotides] Spektry
pogloshchenia minornykh osnovanii, ikh nukleozidov, nukleo-
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1. Institut molekulyarnoy biologii AN SSSR.

ACC NR: AP6027739

SOURCE CODE: UR/0020/66/169/004/0965/0966

AUTHOR: Ulanov, B. P.; Il'yashenko, B. N.; Tashpulatov, R. Yu.; Engel'gardt, V. A.
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epidemiologii i mikrobiologii AMN SSSR)

TITLE: Electron micrographic studies of phage 1F7 DNA

SOURCE: AN SSSR. Doklady, v. 169, no. 4, 1966, 965-966

TOPIC TAGS: electron microscope, bacteriophage, DNA, molecular structure

ABSTRACT:

Sedimentation analysis and studies of fragmented phage DNA reveal the DNA of phage 1F7 to be a closed circular polynucleic chain with a molecular weight between $1.6-1.7 \times 10^6$ units, with single-stranded DNA. The authors are convinced that circular stranded DNA is not an artifact and present preliminary data to support their view. [WA-50; CBE No. 11]

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UDC: 576.858.579

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AVSYUK, G.A., otv. red.; OGANOVSKIY, P.N., red.

[Novaya Zemlya: Snow cover] Novaia Zemlia: Snezhnyi pokrov.
Moskva, (Its Materialy gliatsiologicheskikh issledovani) [Its
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Distr: 4E2c(j)/4E3d

1 ✓ Preparation of low molecular weight hydrocarbons for
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 (sufficiently pure for adsorption and catalytic purposes)
 were prepd. from alcs. and were completely free of con-
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 (EtOH at 350°, iso-PrOH at 320°, BuOH at 360°, iso-BuOH
 at 350°, and *tert*-BuOH at 310°). The olefins formed were
 then hydrogenated at 65°, using Cu catalysts contg. 0.5%
 Ni and 4.3% Cr_2O_3 , and Pt catalysts (0.5 to 2%) on Al_2O_3 .
 Rose Mittelmänn

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 1-BW(Bur)
 1-222(NB)
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KOCHKONOGOV, V.P.; BEGAM, L.G.; BARANOV, M.A.; TAVLINOV,
V.K.; YENIKEYEV, G.Sh.; BARANOVA, A.I.; KUDRYAVTSEV,
G.P.; MALYAVSKIY, B.K.; CHEGODAYEV, N.N.; SURIN, V.S.;
GONIKBERG, I.V., retsenzent; ENGEL'KE, V.A., retsenzent;
KHRAPKOV, V.A., retsenzent; AL'PERT, G.A., retsenzent;
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1. Mathematical Institute of the Polish Academy of Sciences.
(Aggregates) (Topology)

ENGELKING, R. ✓

SURNAME (in caps); Given Names

Country: Poland

Academic Degrees: Not stated ✓

Affiliation: Mathematical Institute (Instytut Matematyczny)
Polish Academy of Sciences (Polska Akademia Nauk)

Source: Warsaw, Bulletin de l'Académie Polonaise des Sciences,
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