"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABIKOV, O. G.

Ryabikov, O. G., Changes in the temperature and salinity in the depressed region of the southern and central parts of the Baltic Sea during the period 1951-1955; Tr. Baltiysk. n.-i. in-ta morsk. rybn. x-va i okeanogr. (Works of the Baltic Scientific Research Institute of the Fishing Economy and Oceanography), No 2, 1956, p 107-114;(RZhGeofiz 6/58-4033)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABIKOV, O.G.

Variations in the oxygen regimen of waters of the Baltic Sea in the region of the Gotland depression. Trudy VNIRO 42:15-18 '60. (MIRA 13:9)

(Gotland region--Water--Oxygen content)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

PROSVIROV, Ye.S.; RYABIKOV, O.G.

Some problems of the biology and fishing of Sardinella aurita in the Takoradi and Dakar regions. Trudy BaltNIRO no.7:3-16 '61. (MIRA 15:2)

(Takoradi region--Sardine fisheries)
(Dakar region--Sardine fisheries)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

DEVISHEV, M.I.; RAKITIN, D.F.; RYABIKOV, S.V.

Photographing particle tracks in connection with the simultaneous measurement of impulse and ionization in large Wilson chambers. Prib.i tekh.eksp. 7 no.1:28-32 Ja-F '62. (MIRA 15:3)

1. Fizicheskiy institut AN SSSR.
(Cloud chamber)(Photography,Particle track)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABIKOV, S.V.

Photometric measurement of ionization in Wilson chambers.
Prib. i tekh. eksp. no.6:56-60 N-D '58. (MIRA 12:1)

1.Fizicheskiy institut AN SSSR.
(Cloud chambers) (Ionization--Measurement)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABIKOV, S. V.

A STUDY OF THE INTERACTION OF NUCLEOUS WITH ENERGY (I - 5) x 10^{11} ev WITH LIGHT ATOMIC NUCLEI

N.L. Grivorev, V.V, Guseva, N.A. Dobrotin, K.A. Kotelnikov, V.B. Murzin, S.V. Ryabikov, S.A. Slavatinskiy

1. The interaction of cosmic-ray nucleons with atomic nuclei has been investigated at 3860 m above sea level (Pamire Station of the Physics Institute, Academy of Sciences, U.S.S.R.) with the aid of an arrangement that permits of a comprehensive study of an individual act of nucear interaction.
2. The arrangement consisted of two cloud chambers with a target of a light substance (LiH in the main series of experiments) interposed between them. In this target the interactions under study were generated. The bottom cloud chamber was placed in a 6500-oersted magnetic field, which enabled us to measure directly the pulses of secondary particles. Under the chambers was a special device ("ionization claorimeter") made up of 120 ionization chambers arranged in 8 trays with filters between them. This device made it possible (from the total amount of energy generated) to determine the energy of the particle that produced the interaction being studied.

Report presented at the International Cosmic Ray Conference, Moscow, 6-11 July 1959

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

SOV/120-58-6-9/32

AUTHOR: Ryabikov, S. V.

TITLE: Measurement of the Ionisation in a Wilson Chamber by a Photometric Method (Izmereniye ionizatsii v kamere Vil'sona fotometricheskim metodom)

PERIODICAL: Pribory i tekhnika eksperimenta, 1958, Nr 6, pp 56-60 (USSR)

ABSTRACT: One of the more important parameters which characterise the track of a charged particle in a Wilson chamber is the ionisation produced by the particle. The specific ionisation is often measured by counting the number of drops in tracks (Refs.1-4). However, the use of this method with the simultaneous measurement of ionisation and the momentum meets with serious difficulties because the method can only be used for tracks consisting of separate drops and therefore considerably "dispersed" so that an accurate measurement of the momentum is then impossible. In addition to drop counts the ionisation can also be measured by a photometric method, which is convenient when the separate drops are not resolved. In this method the blackening on a photographic plate of the track image of known ionisation is compared with the blackening of images of tracks whose ionisation it is required to find. Recently a number of papers (Refs.5 - 7) have appeared on the photometric method and were concerned with showing that the

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

SOV/120-58-6-9/32

Measurement of the Ionisation in a Wilson Chamber by a Photometric Method

blackening of track images is uniquely related to the ionisation. The present author has carried out experiments in which he measured ionisations by the photometric method, using microphotometers and films manufactured in the Soviet Union. In this way he was able to determine masses of a number of particles, the error in the determination of the ionisation being 16 to 20%. The most convenient quantity to describe blackening of track images was found to be the quantity f given by $f = a/b$, where a is the blackening of a track image and b describes the blackening due to the background (Fig.1). The following procedure was used in the determination of the ionisation, using a microphotometer: a) the blackening f of track images produced by particles of known nature and momentum (protons) was measured. Next, the blackening f_{min} of minimum ionisation tracks, was determined and the relation between J/J_{min} and f/f_{min} was found, where

Card 2/4

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

Measurement of the Ionisation in a Wilson Chamber by a Photometric Method

J and J_{min} are the specific ionisation losses. In this way the calibration curve $J/J_{min} = F(f/f_{min})$ was obtained. b) The blackening f_i of the track under investigation was found, c) the blackening of tracks with minimum ionisation f_{min} (comparison track) was found and from the ratio f_i/f_{min} the required ionisation was found from the calibration curve. As a result of these experiments it was concluded that the photometric method for the determination of ionisation is quite promising. Further work is being carried out to improve the method. The following persons are thanked for

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SOV/120-58-6-9/32

Measurement of the Ionisation in a Wilson Chamber by a Photometric Method

advice and assistance: S. A. Slavatinskiy, N. A. Dobrotin, N. G. Birger, K. A. Kotel'nikov, R. I. Sapegina and N. S. Kochurkina. There are 2 tables, 3 figures and 9 references, all of which are in English.

ASSOCIATION: Fizicheskiy institut AN SSSR (Physics Institute of the Academy of Sciences, USSR)

SUBMITTED: December 11, 1957.

Card 4/4

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABIKOV, S.V.

"Analysis of Events of Meson Production by Cosmic Ray Particles. II," by N. G. Birger, V. V. Guseva, K. A. Maksimenko, S. V. Ryabikov, S. A. Slabatinskiy, and G. M. Stashkov, Physics Institute imeni P. N. Lebedev, Academy of Sciences USSR, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 31 No 6 (12), Dec 56, pp 982-986

This work describes three events of the creation of mesons by comsic ray particles with energies above 5 Bev. The momentum of the particles was determined by magnetic deflection in an apparatus made up of two cloud chambers. The measurements were made in winter of 1955-56.

"The analysis confirms the existence of a large spread in the number of secondary particles and in the energy transferred to the π-mesons."

N. A. Dobroton reviewed the results. (U)

Sum. 1345

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABIKOV, S. V.

3/058/61/000/010/017/100
A001/A101

3,2410

AUTHORS: Grigorov, N.L., Guseva, V.V., Dobrotin, N.A., Lebedev, A.M., Kotel'nikov, K.A., Murzin, V.S., Rappoport, P.D., Ryabikov, S.V., Slavatinskiy, S.A.

TITLE: Studying nucleon-nucleon interactions at $\sim 2 \times 10^{11}$ ev energies

PERIODICAL: Referativnyy zhurnal. Fizika, no. 10, 1961, 96, abstract 10B501 ("Tr. Mezhdunar. konferentsii po kosmich. lucham, 1959, v. 1", Moscow, AN SSSR, 1960, 140 - 153)

TEXT: The authors present the results of an investigation, by means of the "calorimetric" method, of nucleon-nucleon interactions at energies of $\sim 2 \times 10^{11}$ ev, conducted at Pamir (3,860 m above sea level). They describe the equipment for determining the energy of primary particles, energy distribution of secondary particles, inelasticity coefficient, and present data on correlated pairs, angular distributions of particles in individual interactions, and consider in detail symmetric and non-symmetric showers.

L. Dorman

[Abstracter's note: Complete translation]

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RYABIKOV, S. V.

Distr: 4E3d

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/3753

AN ANALYSIS OF SOME COSMIC RAY MESON PRODUCTION EVENTS. II. N. G. Birger, V. V. Gusova, K. A. Kotel'nikov, V. M. Maksimenko, S. V. Riabikov, S. A. Slavatinskii, and G. M. Stashkov (Institute of Physics, USSR). Soviet Phys. JETP 4, 836-41(1957) July.

Three cases of meson production by cosmic rays are described. In each one, the momentum of the primary particle was measured by a magnetic method using two cloud chambers. The analysis confirms the existence of a large spread in the number of secondary particles and in the energy carried away by π mesons. (auth)

RML

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

S/120/62/000/001/004/061
E032/E514

AUTHORS: Devishev, M.I., Rakitin, D.F. and Ryabikov, S.V.

TITLE: Some features of particle track photography in connection with the simultaneous measurement of momentum and ionization in large Wilson chambers

PERIODICAL: Pribory i tekhnika eksperimenta, no.1, 1962, 28-32

TEXT: It is pointed out that the photography of Wilson chamber tracks in the GeV region leads to specific difficulties and the aim of the present paper was to investigate the possibilities of the drop-count method and to select the optimum photographic systems for use with large Wilson chambers. The experimental part of the work was carried out with a rectangular Wilson chamber (60 x 20 x 30 cm^3) and a control system which selected relativistic μ-mesons travelling in the vertical direction. Each track was photographed with two objectives on a photographic film with a resolution of 90-100 lines/mm. The chamber was filled with a 1:8 argon-helium mixture to a total pressure of 2.5 atm and a 1:4 alcohol-water mixture. The calculated drop density was 28 cm^{-1}. A determination was made of:

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

a) the resolution of the system, b) the dependence of the resolution of drop images on the magnification, c) depth of focus, d) effect of under-development of the film, and e) specific ionisation. It is concluded that with a track width of about 2 mm the ionization density can be increased to 30 drops/cm or more, since a reduction in the statistical error does not lead to an increase in the error due to overlap so long as the drops can still be counted. Under these conditions the simultaneous measurement of momentum and ionization by the drop-count method can be carried out up to a magnification ratio of about 10. With Soviet objectives and films the minimum diameter of drop images turns out to be 25-30 μ. This may be reduced to 20 μ by under-development. There are 4 figures.

ASSOCIATION: Fizicheskiy institut AN SSSR (Physics Institute AS USSR)

SUBMITTED: May 20, 1961

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABIKOV, V.

107-57-7-8/56

AUTHOR: Ryabikov, V. (Stalino ?)

TITLE: About Two Thousand Communications
(Okolo dvukh tysyach svyazey)

PERIODICAL: Radio, 1957, Nr 7, p 6 bottom (USSR)

ABSTRACT: A short note on the radio amateurism at the Stalin Mining Engineering College (Tekhnikum).

Teacher Gennadiy Timerti organized a Shortwave Section and, together with amateurs Vladimir Olenin, Valentin Mironenko, Gennadiy Tsybenko, constructed a collectively-owned short-wave radio station UB5KIC.

This station has established contact with about 2,000 hams in many countries of the world.

Photo: Gennadiy Timerti assembling an ultrashort-wave station.

AVAILABLE: Library of Congress

Card 1/1

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABIKOV, V. [Riabykov, V.]

The contribution of state farm builders. Sil'. bud. 12 no.8:5-6 Ag '62. (MIRA 15:9)

1. Starshiy proizvoditel' rabot sovkhoza "Znam"ians'kyi" Zaporozhskoy oblasti.
(Zaporozh'ye Province--Construction industry)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABIKOV, V.

GREVNOV, D.; RYABIKOV, V.; VASIL'YEVA, L. (Tyumenskaya oblast'); SHITIKOVA, V.

Readers have the floor. Radio no.7:6-7 Jl '57. (MIRA 10:8)

1. Starshiy inzhener Tbilisskogo radiokluba Dobrovol'nogo obshchestva armii, aviatsii i flotu (for Grevnov).
(Radio)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

KRUPIN, Grigoriy Vasil'yevich, prof.; KHAN, Kharlampy Kharitonovich, inzh. Prinimali uchastiye: RYABIKOV, V.F.; LEVIN, B.K.; DEDYULIN, N.D., retsenzent; GATILIN, N.F., retsenzent; KUZ'MINA, V.S., red.

[Designing enterprises of the dairy industry] Proektirovanie predpriiatii molochnoi promyshlennosti. Moskva, Pishchevaia promyshlennost', 1964. 399 p. (MIRA 18:3)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

L 8508-66 (A) EWT(m)/EWP(j)/T RPL WW/WE/RM

ACC NR: AP5028491 SOURCE CODE: UR/0286/65/000/020/0066/0066

AUTHORS: Sirota, A. G.; Ryabikov, Ye. P.; Chopko, L. F.; Lavrovskiy, K. P.; Brodskiy, A. M.; Rumyantsev, A. N.; Il'chenko, P. A.; Gol'denberg, A. L.

ORG: none

TITLE: A method for obtaining ethylene copolymers. Class 39, No. 175658

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 20, 1965, 66

TOPIC TAGS: polymer, copolymer, ethylene, olefin, chromium compound, catalyst, copolymerization, paraffin, cracking, petroleum

ABSTRACT: This Author Certificate presents a method for obtaining ethylene copolymers by copolymerizing ethylene with an α-olefin-containing compound at 60-130C and at a pressure of 30-40 atm in the presence of acid chromium catalyst. To simplify the technique of copolymerization, benzine distillate of rapid contact cracking of petroleum paraffins is used as the α-olefin-containing compounds.

SUB CODE: 07/ SUBM DATE: 07Feb63

Card 1/1 UDC: 678.742.2-139

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

47009-66 EWT(m)/EWP(j)/T IJP(c) WW/RM

ACC NR: AP6027284 (A) SOURCE CODE: UR/0191/66/000/008/0058/0060

59
55
B

AUTHOR: Sirota, A. G.; Gol'denberg, A. L.; Il'chenko, P. A.; Ryabikov, Ye. P.; Fedotov, B. G.; Karaseva, M. G.; Zyuzina, L. I.; Kharitonova, O. K.

ORG: none

TITLE: Modification of the structure and properties of polyolefins. Effect of radiation on ethylene-propylene copolymers

SOURCE: Plasticheskiye massy, no. 8, 1966, 58-60

TOPIC TAGS: irradiation effect, electron radiation, copolymer, ethylene, propylene, radiation chemistry

ABSTRACT: The effect of irradiation with fast electrons (2.0-2.2 MeV) on the structure and properties of ethylene-propylene copolymers (EPC) was studied on films of these copolymers (50 μ thick) containing 7 mole % propylene (EPC-7) and stabilized with the heat and light stabilizers "P-24" phosphite and 2-hydroxy-4-alkoxybenzophenone. The irradiation effect was determined from the solubility of the films, given by the content of the soluble sol fraction extracted with boiling o-xylene. The cross-linking produced by the electrons decreases the crystallinity of the copolymer: the degree of crystallinity, determined by x-ray diffraction, decreased with increasing irradiation dose, but there was no appreciable change in the fusion temperature. A study of the change in physicomechanical characteristics showed the specific elongation at rupture to decrease (particularly at 50 Mrad) and the ultimate tensile strength to fall off

UDC: 678.742.2-134.23.019.3:539.124

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L 47009-66

ACC NR: AP6027284

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slightly with increasing dose. The most significant change occurs above the melting range of the film: at 135°C, the initial film has no strength of extension at all, whereas the irradiated film has a strength of extension of about 10 kg/cm^2. The degree of unsaturation of the copolymer increases substantially with increasing dose up to 100 Mrad, and approaches a constant value with further increase in dose. The main type of unsaturation are the trans-vinylene groups (R-HC=CH=R'). The irradiated copolymer samples oxidize rapidly in air, and IR spectra show an increase in the concentration of carbonyl groups. In conclusion, authors thank A. V. Lysov, S. A. Subbotkin, A. S. Andreyev and A. M. Khomyakov for their assistance in the irradiation of the samples. Orig. art. has: 5 figures.

SUB CODE: 07,18/ORIG REF: 003/ OTH REF: 005

Card 2/2 vmb

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

L 20371-66 EWT(m)/EWP(j)/T/ETC(m)-6 WW/RM

ACC NR: AP6006535 (A) SOURCE CODE: UR/0191/65/000/011/0005/0008

AUTHORS: Sirota, A. G.; Ryabikov, Ye. P.; Gol'denberg, A. L.; Il'chenko, P. A.; Chopko, L. F.

ORG: none

TITLE: Modification of the structure and properties of polyolefins. Copolymers of ethylene with higher α-olefins

SOURCE: Plasticheskiye massy, no. 11, 1965, 5-8

TOPIC TAGS: polymer, crystalline polymer, conjugated polymer, catalytic polymerization, catalyst, organic synthetic process, copolymer, ethylene, olefin, polymer structure

ABSTRACT: The synthesis of ethylene-higher α-olefin copolymers in the presence of an oxychromic catalyst was studied. The catalyst was prepared after Z. V. Arkhipova, A. S. Semenova, A. G. Sirota, A. L. Gol'denberg, and P. A. Il'chenko (Plast. massy, No. 2, 4, 1960), and the higher α-olefins were synthesized after A. L. Gol'denberg and S. G. Lyubetskiy (Vysokomolek. soyed., 5, No. 6, 905, 1963). The reaction was carried out in an autoclave at a temperature of 80--100C. The degree of crystallinity, modulus of elasticity, density, viscosity in decaline at

Card 1/3 UDC: 678.74-13.01:539.2

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135C, melting point, and the number of CH_3 groups per 1000 atoms of C of the synthesized polymers were determined. The experimental results are presented in graphs and tables (see Fig. 1). The degree of crystallinity and the extent of

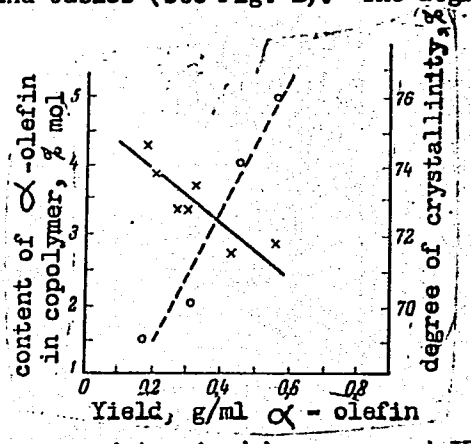

Fig. 1. Composition (_____) and degree of crystallinity (- - - -) of ethylene- α -heptene copolymer as a function of the reaction yield.

branching were determined by x-ray and IR spectra respectively. It was found that the ethylene-higher α-olefins have properties intermediate between those of medium and high pressure polyethylene. B. I. Vol and N. V. Sarana participated in

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L 20371-66

ACC NR: AP6006535

4

the experimental work. Thanks are given to B. A. Krentsel', K. P. Lavrovskiy, A. M. Brodskiy, and A. N. Rumyantsev for their valuable advice. Orig. art. has: 2 tables and 5 graphs.

SUB CODE: 07,11/ SUBM DATE: none/ ORIG REF: 009/ OTH REF: 009

Card 3/3 vmb

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

SIROTA, A.G.; RYABIKOV, Ye.P.; GOL'DENBERG, A.L.; IL'CHENKO, P.A.; CHOPKO, L.F.

Modification of the structure and properties of polyolefins. Ethylene copolymers with higher α-olefins. Plast. massy no.11:5-8 '65. (MIRA 18:12)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

GOL'DENBERG, A.L.; IL'CHENKO, P.A.; SIROTA, A.G.; RYABIKOV, Ye.P.; KULIKOVSKAYA, L.F.

Structure of copolymers of ethylene with propylene. Plast.massy no.6:8-11 '62. (MIRA 15:6)

(Ethylene polymers) (Propene)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABIKOV, YE.P.

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S/191/62/000/006/003/016
B110/B138

15.2061

AUTHORS: Gol'denberg, A. L., Il'chenko, P. A., Sirota, A. G., Ryabikov, Ye. P., Kulikovskaya, L. F.

TITLE: Investigation of the structure of ethylene-propylene copolymers

PERIODICAL: Plasticheskiye massy, no. 6, 1962, 8-11

TEXT: The paper reports research into the relationship between the branching of propylene-ethylene copolymers (30-40 at) and crystallinity, which determines physicomechanical properties. The copolymer contained up to 50% C_3H_6. Its branching was examined using samples 0.020 mm thick and an ИКС-11 (IKS-11) spectrometer with an NaCl prism. The number of CH_3 groups per 100 carbon atoms was found from the intensity ratio of the 1378 and 1465 cm^{-1} absorption bands. The degree of crystallinity was determined from X-ray diffraction curves obtained with an УРС-50 (URS-50) apparatus. It was found that the degree of crystallinity increased almost linearly with decreasing number of CH_3 groups. The crystallinity and

Card 1/2

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

density of copolymers containing 2-3.3 CH_3 groups are substantially higher than for high-density polyethylene (copolymer 80-87%, high-density polyethylene 50-70% crystallinity), as branching of ethyl and butyl is present in the latter. For less than 2 CH_3 groups the X-ray pictures of copolymers and polyethylene differ only in crystallinity. For 4-5 CH_3 groups the crystallinity falls and the diffraction pattern is shifted toward larger interplane distances. Examination under an electron microscope revealed greater formations of spherolites in polyethylene than in the copolymer. Crystallinity and density thus decrease as the number of propylene links in the macromolecular increase. It was established by examining the crystallinity by infrared absorption spectra that the 730 cm^{-1} absorption band increased almost linearly with crystallinity while the 1302 cm^{-1} band decreased non-linearly. There are 8 figures.

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

L 20364-66 EWT(1)/EWT(m)/T

ACC NR: AP6012076 SOURCE CODE: UR/0062/65/000/010/1731/1740

AUTHOR: Dubinin, M. M.; Berezkina, Yu. F.; Polstyanov, Ye. F.; Ryabikova, Z. A.; Sarakhov, A. I.

ORG: Institute of Physical Chemistry, AN SSSR (Institut fizicheskoy khimii AN SSSR)

TITLE: Study of the adsorption properties and secondary porous structure of adsorbents having molecular-sieve action. Report 11. Specific surface of secondary pores of molded synthetic zeolites, type A

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 10, 1965, 1731-1740

TOPIC TAGS: adsorption, zeolite, porosity, molecular sieve

ABSTRACT: The analysis of the physical content of various methods of determining the specific surface of the secondary pores of formed zeolites is presented. The specific surface of secondary pores of an equivalent sorbent model with an accepted geometric form of the pores can be calculated from experiments on the depression of mercury and the capillary condensation of benzene. By using a highly sensitive weight adsorption device the specific surfaces, close to actual, of secondary pores of formed Type A zeolites and external surfaces of the zeolite crystals contained in them are determined. The specific surfaces of the secondary pores of the formed zeolites are determined mainly by the porous structure of additives of the binding substances. The specific surfaces of the secondary pores for equivalent porus sor-

Card 1/2 UDC: 541.18+661.183

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L 20364-66

ACC NR: AP6012076

3

bent models as a rule are considerably greater than the actual specific surfaces of the secondary pores of real formed zeolites. Hence methods of depression of mercury and capillary condensation of vapors cannot serve as any accurate estimation of the specific surfaces of secondary pores of the formed zeolites. The authors thank B. A. Lipkind, T. G. Plachenov and Ya. V. Mirskiy for making available for research the samples of crystalline and formed zeolites. Orig. art. has: 6 figures, 7 formulas, and 3 tables. [JPRS]

SUB CODE: 07, 11 / SUBM DATE: 17Jul63 / ORIG REF: 012 / OTH REF: 001

Card 2/2 vmb

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

DUBININ, M.M.; [illegible], Yu.F.; POLSTYANOV, Yu.F.; [illegible], Z.A.; SARAKHOV, A.I.

Adsorption properties and the secondary porous structure of adsorbents having molecular-sieve action. Report No.11: Specific surface of secondary pores of molded type-A synthetic zeolites. Izv. AN SSSR.Ser.khim. no.10:1731-1740 '65. (MIRA 18:10)

1. Institut fizicheskoy khimii AN SSSR.

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

ORLOVSKIY, A.G.; AGEYKIN, G.I.; RYABIN, M.O.

Power supply for several hardening treatment apparatus from a single generator. Prom.energ. 17 no.2:11-12 F '62. (MIRA 15:3)
(Electric power supply to apparatus)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABIN, V.A.; VIL'NYANSKIY, Ya.Ye.; PAVLOVA, V.P.

Certain variations in the phase composition of the reaction mass in the process of oxidative calcination of chromite charges. Dokl.AN SSSR 149 no.3:652-655 Mr '63. (MIRA 16:4)

1. Ural'skiy politekhnicheskiy institut im. S.M.Kirova. Predstavleno akademikom S.I.Vol'fkovichem.
(Chromates) (Oxidation)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

KUZNETSOV, N.R.; RYABIN, V.A.; TEL'PISH, V.V.

Kinetics of chromium oxidation in chromite charges formed from ores with various FeO content. Zhur. prikl. khim. 36 no.12: 2754-2757 D'63. (MIRA 17:2)

1. Pervoural'skiy khrompikovyy zavod i Ural'skiy politekhnicheskiy institut.

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABIN, V.A.; PAVLOVA, V.P.

Production of sodium and potassium chromates from chromite, nepheline, and lime. Zhur. prikl. khim. 38 no.7:1600-1602 Jl '65. (MIRA 18:7)

1. Ural'skiy politekhnicheskiy institut imeni Kirova.

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

MEKHTIYEV, S.D.; MAMEDOV, Z.F.; NARIMANBEKOV, O.A.; RYABINA, L.V.

Cyanoethylation of acetaldehyde in the presence of strongly basic ion exchanges. Azerb. khim. zhur. no.3:37-43 '65. (MIRA 19:1)

1. Institut neftekhimicheskikh protsessov AN AzerSSR i Azerbaydzhanskiy institut nefti i khimii im. M. Azizbekova.

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BORISOV, Yu.P.; RYABINA, Z.K.

Calculating reservoir discontinuity in programming the development of a round pool. Trudy VNII no.40:271-281 '63 (MIRA 17:7)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABIN'KIY, B.Ya.

DEGTYAREV, Lev Grigor'yevich; RYABIN'KIY, B.Ya., red.; KHUTORSKAYA, Ye.S., red.izd-va; ISLENT'YEVA, P.G., tekhn.red.

[The economics of open-hearth plants] Ekonomika martenovskogo proizvodstva. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1957. 133 p. (MIRA 10:11)
(Open-hearth process)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABININ, A.I.; SOROKINA, L.A.

Separation of rare-earth elements by fractional precipitation with the aid of ion exchangers. Zhur.prikl.khim. 38 no.1 [illegible] 2415 N '65. (M [illegible])

1. Institut neorganicheskiy khimii Sibirskogo otdeleniya AN SSSR. Submitted September 7, 1963.

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

SOKOL'SKAYA, A.M.; RYABININA, S.A.; SOKOL'SKIY, D.V.

Hydrogenation of dimethylethynylcarbinol in the presence of alkali metal cations. Elektrokhimiia 1 no.9:1098-1103 S '65. (MIRA 18:10)

1. Kazakhskiy gosudarstvennyy universitet imeni S.M. Kirova.

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

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1979. **Tumours of the mammary glands in rats (Russian text)** RYABININA Z. A. Inst. of Exp. Biol., USSR Acad. of Med. Scis, Moscow *Byull. Eksper. Biol. i Med.* 1958, 45/9 (105–107) Illus. 3

Fibroadenoma of the breast appeared in 24 of the 60 rats which received s.c. injec-

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1979

tions of CCl_4 for 9·5 months. It is assumed that prolonged administration of CCl_4 creates conditions favourable for the development of tumours of the mammary gland.

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RYABKIN, Ye. B.

Phys
&
Med

6701. Changes in colour vision induced by means of conditional reflexes. E. B. Riabkin *Probl. Fiziol. Opt.*, 1955, 11, 48—52; *Referat. Zh. Biol.*, 1956, Abstr. No. 92460.—Using Sokolov's apparatus and polychromatic plates measurements were made in eight normal trichromats of time thresholds required to effect changes in colour vision both before and after the action of conditioned reflexes. The sound stimulus of a metronome, at 80 beats min., was synchronised with the action of an unconditioned light stimulus. In 12 out of 18 experiments, after many of these double stimuli it was found that the colour vision became more stable in relation to disturbance by the action of an isolated sound having the same significance as the light stimulus. In 6 experiments the conditioned reflex was not established, which is ascribed to an insufficient number of coincidences of the conditioned and unconditioned stimuli. (Russian)

H. ASHER

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABOV, M.S., kandidat tekhnicheskikh nauk.

Reviewing the norms for electric lighting. Svetotekhnika 3 no.3:7-11 Mr '57. (MIRA 10:3)

1. GPI "Tyazhpromelektroproyekt"
(Electric lighting--Standards)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABIKOV, S.S., inzhener.

Training for handling emergency cases. Energetik 1 no.6:1-2 N '53. (MLRA 6:11)

(Electric power stations)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

BIRGER, N.G.; GUSEVA, V.V.; KOTEL'NIKOV, K.A.; MAKSIMENKO, V.M.; RYABIKOV, S.V.; SLAVATINSKIY, S.A.; STASHKOV, G.M.

Analysis of meson production events due to cosmic ray particles. Part 2. Zhur.eksp. i teor. fiz. 31 no.6:982-986 D '56. (MLRA 10:3)

1. Fizicheskiy institut im. P.N. Lebedeva Akademii nauk SSSR.
(Mesons) (Cosmic rays) (Nuclear reactions)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABIKOV, S.V. RYABIKOV, S. V.

CARD 1 / 2 PA - 1848

SUBJECT USSR / PHYSICS

AUTHOR BIRGER,N.G., GUSEVA,V.V., KOTEL'NIKOV,K.A., MAKSIMENKO,V.M., RJABIKOV,S.V., SLAVATINSKIJ,S.A., STAŠKOV,G.M.

TITLE The Analysis of the Cases of the Production of Mesons by Particles of Cosmic Radiation. II.

PERIODICAL Žurn.eksp.i teor.fis,31, fasc.6, 982-986 (1956)
Issued: 1 / 1957

Three such cases are described here. For the direct measuring of the energy of the particles producing electron-nucleon showers the authors in the winter of 1955-1956 added a further WILSON chamber fitted below the gap of the electromagnet to their apparatus (described by BIRGER et al., Zurn.eksp.i teor. fis, 31, 971 (1956)). The charged particle is deflected after passage through the upper chamber by the field of the electromagnet with a field strength of about 10^4 Ørsted. In the lower chamber the trace of the primary particle can be followed on a beryllium plate, and from the traces of the secondary particles the point of the production of the shower in the beryllium plate is determined. From the deviation of this point from the direction of the motion of the particle before being deflected in the magnetic field it is possible to determine the momentum and the sign of the charge of the shower-producing particle. In the case under investigation p_{max}=50 BeV/c. However, by using two WILSON chambers the "light intensity" of the device was considerably diminished. Altogether, four pictures of showers with more than four charged secondary particles were taken, from which it was possible to determine

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the momentum of the primary particles. In the case of three showers it was possible to determine the distribution of the energy of the primary particle over the secondary particles and the angular distribution of the particles in the center of mass system.

Shower No 27.16.: The particle producing this shower, which has a positive charge, is most probably a proton. If a nucleon-nucleon collision is assumed the conservation of energy and momentum within the limits of measuring errors holds, if a neutron emitted under a small angle carried off a momentum of about 2,3 BeV/c. Reaction must then develop according to the scheme $p + p \rightarrow 3\pi^+ + 2\pi^- + p + n$. Conservation of charge excludes the possibility of pn-interaction. The angle of emission and the momentum of the particles are shown in a table.

Shower No 68.18.: The primary particle is apparently a negative pion with ~ 6,5 BeV, which has been produced in the graphite filter arranged above the measuring device. This shower was probably produced by the reaction $\pi^- + n \rightarrow 2\pi^+ + 3\pi^- + p + m\pi^0$, where m denotes the number of neutralized pions.

Shower No 6.116.: The momentum of the primary particle amounted to 54 BeV/c. The process was able to take its course according to one of the following schemes: $p + n \rightarrow 3\pi^+ + 2\pi^- + n + m + k\pi^0$ or $p + p \rightarrow 3\pi^+ + 2\pi^- + p + n + k\pi^0$.

INSTITUTION: Physical Institute "P.N.LEBEDEV" of the Academy of Science in the USSR

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

NOVIKOV, G.Ye., inzhener; RYABIKOVA, E.S.

Use of relay protection, automatic control and secondary circuits. Elek.sta. 27 no.7:60-61 Jl '56. (MLRA 9:10)

(Electric engineering)

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABIN, N. V.

(1)

Tyabin, N. V. Motion of a sphere in a viscous-plastic liquid dispersive system. Doklady Akad. Nauk SSSR (N.S.) 88, 57–60 (1953). (Russian)

L'auteur utilise les équations dynamiques du milieu visco-plastique qui lui sont dues pour résoudre le problème du mouvement d'une sphère solide animée d'un mouvement de translation rectiligne dans un liquide indéfini. Les forces d'inertie sont négligées vis-à-vis des forces de viscosité.

J. Kravtchenko (Grenoble).

Mathematical Reviews
Vol. 15 No. 4
Apr. 1954
Mechanics

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABININ, A.

GRIB, A.A.; RYABININ, A.G.

Approximate integration of equations for two-dimensional continuous supersonic gas flow. Dokl. AN SSSR 100 no.3:425-428 Ja '55. (MLRA 8:3)

1. Leningradskiy gosudarstvennyy universitet im. A.A.Zhdanova. Predstavleno akademikom S.A.Khristianovichem.
(Gas flow) (Ultrasonics)

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RYABININ A.

BC

B-II-2

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

3RD AND 4TH ORDERS

COMMON ELEMENTS

COMMON VARIABLES INDEX

[illegible] F. [illegible] and A. Rjabinin (*Lesochim. Prom.*, [illegible]).—The vitamin-C content is >0·3%. [illegible] April—May may have three times as much -C as those collected in August. [illegible] Ann. (e)

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

MATERIALS INDEX

AUTHOR INDEX

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

84-58-6-13/59

AUTHOR: Ryabinin, A.

TITLE: Training of Technical Specialists for the Il-18 (Stazhirovka inzhenerno-tekhnicheskogo sostava na samolete Il-18)

PERIODICAL: Grazhdanskaya aviatsiya, 1958, Nr 6, p 8 (USSR)

ABSTRACT: The short note reports on the forthcoming mass introduction into service of the new Il-18 airliners. Technical specialists assigned for their maintenance are undergoing a training course. They were first sent to the manufacturing plant and then to a special training unit with the LERM of the Vnukovo airport. They are trained on a plane used for test flights to perform all maintenance operations.

1. Civil aviation--USSR 2. Personnel--Training

Card 1/1

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1ST AND 2ND ORDERS

3RD AND 4TH ORDERS

PROCESSES AND PROPERTIES INDEX

Ca

17

Removal of bitter constituents from pine-needle extract. F. T. Solodkii and A. A. Ryabinin. Russ 46,679, April 30, 1936. The aq. extract is mixed with a mixt. of alc. and C_6H_6 and the alc.-benzene layer contg. the bitter substance is decanted.

COMMON ELEMENTS

COMMON VARIABLES INDEX

OPEN

MATERIALS INDEX

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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1ST AND 2ND LETTER

2ND LETTER

3RD AND 4TH ORDERS

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

17

CA

Alkaloids of Smirnovia turkestana (Leguminosae). A. A. Ryabinin. *J. Gen. Chem.* (U.S.S.R.) 17, 2265-7 (1947)(in Russian).—Air-dried superterranean parts of the plant were exhaustively extd. with 85% EtOH, and the ext. was concd. The sirup was treated with K_2CO_3 in the presence of $CHCl_3$, the ext. was evapd., and the residue was taken up in a little hot EtOH and satd. with CO_2; on cooling a cryst. carbonate pptd. It was identified as the carbonate of spherophysine previously discovered and identified by Rubinshtein and Men'shikov (*ibid.* 14, 161(1944)); the identification was completed by comparison of other derivs. (carbonate decomp. 193-4°, picrate m. 155-6°, benzoate m. 149-9.5°). The mother liquor after removal of the carbonate was treated with picric acid and concd. to give a mixt. of picrates which, after fractional crystn., gave a little spherophysine picrate and a picrate of another base. The latter, golden needles, m. 154° (from EtOH), mol. wt. 457, picric acid content 48% (indicates monopicrate). Hydrolysis of this base in aq. alkali gives 1 mole isopropylvinylputrescine, 2 atoms of N (as NH_3), and CO_2. Investigation of the base is still in progress.

G. M. Kosolapoff

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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RYABININ, A. A.

USSR/Chemistry - Alkaloids, From Jul 48
Smirnovia Turkestana
Chemistry - Molecules, Structure of,
Of Alkaloids

"Structure of Alkaloids From Smirnovia Turkestana BGE," A. A. Ryabinin, Bot Inst imeni V. L. Komarov, Acad Sci USSR, 3 3/4 pp

"Dok Ak Nauk SSSR" Vol LXI, No 2

Ryabinin's previous article described isolation of alkaloid from aboveground portion of plant, Smirnovia turkestana (Zhur Obshch Khim 17, 2265, 1947). Named alkaloid smirnovine. Here he reports experiments

PA 11/49T8

[redacted] 11/49T8

USSR/Chemistry - Alkaloids, From Jul 48
Smirnovia Turkestana (Contd)

performed to determine structure of the new substance
Submitted 14 Apr 48.

[redacted] 11/49T8

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

CA

The alkaloid of Salsola subaphylla. A. A. Ryabinin and E. M. Il'ina. *Doklady Akad. Nauk S.S.S.R.* 67, 513-16(1949). Extn. of the upper parts of the plant with EtOH, followed by conversion of the alkaloids into picrates, gave, from 12.9 g. plant matter, some 20.9 g. *subaphylline picrate* (I), following pptn. of which betaine picrate seps. from 50% EtOH; the latter was identified as the picrate, m. 184.5°, HCl salt, m. 229.5° (decompn.), HBr salt, m. 218° (decompn.), bisulfate, m. 143.5° (decompn.), and the normal sulfate, m. 236° (decompn.). I with alc. NaOH gave the *free alkaloid*, $C_{11}H_{19}N_2O_3$, needles, hygroscopic and without definite m.p.; *monopicrate*, m. 218.5° (decompn.); *HCl* and *HI salts* were prepd., both having a wide melting range. Hydrogenation over Pt oxide in EtOH gave the *dihydro deriv.*; *picrate*, m. 174.6-5°; *HCl salt*, m. 139-40°. Boiling subaphylline with 30% KOH leads to cleavage and formation of ferulic acid and putrescine. The probable structure of the alkaloid is: $3,4\text{-}MeO(HO)C_6H_3CH{:}CHCONH(CH_2)_4NH_2$.

G. M. Kosolapoff

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CA 10

The structure of the alkaloid subaphylline. A. A. Ryabinin and F. M. Il'ina. *Doklady Akad. Nauk S.S.S.R.* 76, 889-92(1951); cf. C. 1.44, 1155g. The previously proposed structure, *N*-(4-hydroxy-3-methoxycinnamoyl)tetramethylenediamine, is confirmed. Boiling dihydrosubaphylline with 27% $Ba(OH)_2$ 7.5 hrs. yielded putrescine (isolated as the dipicrate) and *dihydroferulic acid*, m. 90°. Subaphylline with BzCl in 8% KOH gave the *di-Bz deriv.*, m. 197-8° (from MeOH). Slow addn. of 32 g. Br and 14.4 g. adipamide to 32 g. NaOH in 200 ml. H_2O at 14°, heating 15 min. to 80°, addn. of KOH (to 10% concn.) and then of 32 g. BzCl gave 18.95 g. *dibenzoylputrescine*, m. 176-6.5°, which (10 g.) boiled 4 hrs. with 150 ml. 89% EtOH and 50 ml. 50% KOH gave 1.76 g. *N-benzoylputrescine-HCl*, m. 163°, after extn. with $CHCl_3$ and acidification with HCl. Shaking 1 ml. BzCl with 1 g. ferulic acid in 100 ml. H_2O and 25 g. $KHCO_3$ in the presence of 1 ml. C_6H_6 gave the mixed *anhydride of benzoylferulic and benzoic acids*, $C_{18}H_{16}O_6$, an undescribed solid (from MeOH). This (0.4 g.) and *N*-benzoylputrescine (from 0.21 g. HCl salt) in $CHCl_3$ gave 0.2 g. *N-(4-benzoxy-3-methoxycinnamoyl)-N'-benzoyltetramethylenediamine*, m. 195.5-6.5°, identical with *dibenzoylsubaphylline*.

G. M. Kosolapoff

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10

CA

Transformations of alkaloids in Smirnovia turkestana

A. A. Ryabinin and F. M. Il'ina. *Doklady Akad. Nauk S.S.S.R.* 76, 851-3(1951). - Extn. of the upper parts of the plant (cf. C.A. 43, 238f) yielded *smirnovinine* as a picrate, m. 140°, and *spherophysine* as a *dipicrate*; on Me_2CO extn. the former alkaloid is found in the 1st exts. and on pptn. with picric acid, smirnovinine is pptd. before the spherophysine. Pure *smirnovinine picrate*, $C_{19}H_{27}N_3O_{10}$, m. 145° (decompn.) (finally from H_2O). Decarboxylation of this (20 g.) at 155° gave 15.9 g. *smirnovine picrate*, m. 150.5° (from EtOH); the *HCl salt*, m. 162.5-3.0° (from MeOH-EtO). Hydrolysis of smirnovinine by hot $Ba(OH)_2$ 1 hr. gave malonic acid. Hence, smirnovine is $Me_2CHCH:CHNAc(CH_2)_3NHC(NH_2):NH$, while smirnovinine is $Me_2CHCH:CHN(COCH_2CO_2H)(CH_2)_3NHC(NH_2):NH$.

G. M. Kosolapoff

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RYABININ, A. A.

1

Chem

Chemical Abst.
Vol. 48 No. 5
Mar. 10, 1954
Organic Chemistry

Transformations of guanidine during acetylation. A. A. Ryabinin. *J. Gen. Chem. U.S.S.R.* 22, 605-8(1952)(Engl. translation). See *C.A.* 47, 2708e. H. L. H.

8-31-54
JP

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

Ryabinin A A

The synthesis of alkylated putrescines. A. A. Ryabinin and E. M. Il'ina. *J. Appl. Chem. U.S.S.R.* 26, 309-11 (1953)(Engl. translation).—See *C.A.* 48, 9326b.

H. L. H.

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABININ, A.A.

3

Synthesis of alkylated putrescines. A. A. Ryabinin and E. M. Il'ina. *Zhur. Prikład. Khim.* [illegible] To 250 g. NaOH and 84 ml. Br in 1.6 l. H_2O was slowly added at 9°, 120 g. powd. adipamide, the mixt. heated 20 min. to 80°, concd. *in vacuo* (30–40 mm.), the resulting aq. soln. distd. at atm. pressure, and fractions b. 102–40°, and one b. [illegible], were collected, the residue was pure *putrescine* (I). Redistn. of the above fractions yielded more of the diamine (43.2%) as a cryst. mass. The alkylations were run by addn. of the desired carbonyl compd. to the diamine in 3–4 vols. EtOH and hydrogenation over 0.5–1.0 g. PtO_2, the bases pptd. with picric acid and the picrates purified by crystn. from EtOH and hot H_2O (picrates of diamines are less sol.). Treatment with MeOH-HCl gave the HCl salts. Thus, 0.05 mole I and 0.115 mole Me_2CO consumed 2.45 l. H and gave 23.3 g. (74%) crude *N,N'-diisopropylputrescine dipicrate*, m. 188.5–9° (pur., m. 189.5–90°); *di-HCl salt*, m. 278–9°). I (0.07 mole) and 0.0834 mole iso-PrCHO gave 47% *isobutylputrescine dipicrate*, yellow, m. 163.5–4.5°, and 19% *N,N'-diisobutylputrescine dipicrate*, orange, m. 208–9°; the *di-HCl salts*, m. 256–7°, and above 300°, resp. The di-iso-Bu deriv. (picrate) does not evolve N with HNO_3. With higher concns. of iso-PrCHO the yield of the dialkylated product can rise to 98% (crude). Similarly iso-BuCHO and I gave *N-isoamylputrescine dipicrate*, m. 173–4°; *di-HCl salt*, decomp. 291.5–2°. iso-BuCOPr and I gave 44% $Me_2CHCH_2CHPrNH(CH_2)_4NH_2$ *dipicrate*, m. 172.5–3°, and 16% $(Me_2CHCH_2CHPrNHCH_2CH_2)_2$ *dipicrate*, m. 182–2.5°. In larger runs somewhat better yields can be obtained. *N,N'-Diisopropylputrescine* b. 87.5–8.5°. G. M. Kosolapoff

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABININ A A

Alkaloids of Eremosparton. A. A. Ryabinin and E. M. [illegible] J. Appl. Chem. U.S.S.[redacted]954)(Engl. translation).—See C.A. 49, 2826c. H. L. H

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABININ, A.A.

USSR.

CH
①

Alkaloids of Eremosparton. A. A. Ryabinin and E. M. Ilina. *Zhur. Priklad. Khim.* 27, 221-3(1954); cf. *C.A.* 45, 8183h.—An ext. of *E. flaccidum* plants (0.3 kg.) yielded 0.66 g. spherophysine carbonate, decomp. 192.5–3.0° (dipicrate, m. 155–6°), and 0.60 g. smirovine picrate, m. 152–3° (cf. *C.A.* 42, 4718f, for details of the extn. method). The product of the aq. extn. of 0.35 kg. dry branches of *E. aphyllum* concd., treated with picric acid, and the pptd. picrates extd. with Me_2CO yielded 0.35 g. smirnovine picrate, m. 153.5–4.5°, and 1.05 g. mixed picrates, m. 151–4°, identified as those of smirnovine and smirnovinine; from the amt. of CO_2 evolved on heating, 0.46 g. of the latter mixt. was estd. to be satd. G. M. Kosolapoff

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABININ, A. A.

Derivatives of tetramethylenediamine (putrescine): structure and pharmacological properties. A. D. Panashchenko and A. A. Ryabinin. *Farmakol. i Toksikol.* 18, No. 5, 9-17(1955).—Putrescine and its *N,N*-diisobutyl and *N*-benzoyl derivs., as known compds., were synthesized and compared with the new derivs. *N,N'*-diisopropyl-, *N*-isopentyl-, *N*-isooctyl, *N,N'*-diisooctyl- and *N*-isobutylputrescine. Some tests were also made with suboaphylline [*N*-(4-hydroxy-3-methoxycinnamyl)putrescine] and smirnovine (*N,N*-acetylisopentenylagmatine). The descending order of hypotensive activity of the derivs. (all more active than putrescine) is: $(iso\text{-}Pr)_2$, iso-Bu, $(iso\text{-}Bu)_2$, iso-C_5H_{11}, iso-C_8H_{17}, $(iso\text{-}C_5H_{11})_2$. Acylation does not intensify activity as much as does alkylation. In cats the highest hypotensive effect (30-67.7% decrease, duration 25-180 min.) was given by the $(iso\text{-}Pr)_2$ deriv., which also has low toxicity and is the preferred deriv. for clinical use. In white mice the observed $L.D._{50}$ showed the descending order (in mg./kg.): putrescine 1750, $(iso\text{-}Pr)_2$ 1150, Bz 840, iso-Bu 625, $(iso\text{-}Bu)_2$ 590, iso-C_5H_{11} 345, isopentenyl 227, $(iso\text{-}C_5H_{11})_2$ 141.7. Smirnovine (93) is more toxic than suboaphylline (225). The new alkyl derivs. were synthesized by catalytic (Pt black) hydrogenation of the appropriate aldehydes or ketones in admixt. with putrescine. Tabulated data show the m.p. of picrates and hydrochlorides, hypotensive effect (cats, intravenous dosage 2 mg./kg.), and effect on respiration. Julian F. Smith

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

Ryabinin, A. A.

308

Alkaloids of Tungus scopolia (Scopolia tangutica). A. A. Ryabinin and M. N. Semenova. *Zhur. Obshchei Khim.* 25, 165 6 (1955) (Engl. translation).—Extn. of 205 g. dried plant with $CHCl_3$ gave 6.93 g. mixed bases; crystn. from hot C_6H_6 gave 1.05 g. *l*-hyoscyamine, m. 103° (picrate, m. 165°); the mother liquor extd. with H_2O, acidified and treated with $AuCl_3$ soln. gave a *chloroaurate*, m. 189.5° (decompn.), while picric acid gave a *picrate*, m. 201°; the less sol. material formed a picrate, m. 187.5–8°, identified as that of *l*-scopolamine, formed in 0.26% yield (based on plant wt.). The *unknown alkaloid* (0.33% on plant matter) whose picrate and chloroaurate are described above, was not identified.

G. M. Kosolapoff

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1

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABININ, A.A.; SEMENOVA, M.N.

Study of alkaloids from the Tangut scopolia (Scopolia tangutica Maxim.) Zhur.ob.khim. 25 no.1:181-183 Ja '55. (MIRA 8:4)

1. Botanicheskiy institut Akademii nauk SSSR.
(Alkaloids) (Scopolia)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABININ, A.A.

AID P - 3504

Subject : USSR/Chemistry

Card 1/1 Pub. 152 - 19/21

Authors : Ryabinin, A. A. and Ye. M. Il'ina

Title : Chemical investigation of Thermopsis Fabacea DC

Periodical : Zhur. prikl. khim., 28, 6, 663-664, 1955

Abstract : The green parts of the plant were analyzed, and the isolated substances identified as pratol, cytisine, and methylcytisine. Seven references, 1 Russian (1934).

Institution : Chemical Laboratory of the Section of Plant Resources of the Botanical Institute im. V. L. Komarov, Academy of Sciences of the U.S.S.R.

Submitted : S 19, 1953

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABININ, A.A.; PANASHCHENKO, A.D.; ANISIMOVA, I.L.; LEVINA, G.Yu.

Synthesis of physiologically active putrescine derivatives. Zhur. ob.khim. 26 no.2:577-579 F '56. (MLRA 9:8)

1. Khimicheskaya laboratoriya Botanicheskogo instituta Akademii nauk SSSR.

(Putrescine)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABININ, A. A., PANASHCHENKO, A. D., ANISIMOVA, I. L., LEVINA, G. Yu.

"Synthesis of Physiologically Active Putrescine Derivatives", J Gen Chem USSR 26(2):619-21, (Feb 1956)

SO: A-3074341, 13 Feb 57

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABININ, A.A.

Concerning regularities of the structure of plant matter and the "laws" and "regularities" of A.M.Goldovskii. Bot.zhur.41 no.2: 272-275 F '56. (MIRA 9:7)

1.Botanicheskiy institut imeni V.L.Komarova Akademii nauk SSSR, Leningrad. (Botanical chemistry)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

BOCHANTSEV, V.P.; LEBEDEV, D.V.; RYABILIN, A.A.

Concerning N.I.Sharapov's book "New fatty oilseed plants." Bot.zhur.41 no.6:901-907 Je '56. (MLRA 9:10)

1.Botanicheskiy institut imeni V.L.Komarova Akademii nauk SSSR.
(Oilseed plants)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

AUTHORS: Ryabinin, A. A., and Matyukhina, L. G.

TITLE: Study of the Structure of Triterpene Alcohol of Zeorine (Issledovaniye stroyeniya triterpenovogo spirta tseorina)

PERIODICAL: Zhurnal Obshchey Khimii, 1957, Vol. 27, No. 1, pp. 277-281 (U.S.S.R.)

ABSTRACT: The difficulty in determining the structure of zeorine is due to lack in its molecule of the hydroxyl group in the second carbon atom and double bond which usually exist in such triterpene compounds. This fact hinders its conversion into one of the numerous substances of the given group of known structure. The certain hydrocarbon obtained from zeorine was found to be entirely new. Striving to enlarge the available data about the structure of zeorine, the authors investigated the products of its destructive oxidation. The zeorine was derived from a different source and certain differences in its properties required complex identification by the derivation of numerous products. A comparison of constants (Table 1) shows that such identification was achieved. Oxidation of zeorine with chromic acid at room temperature or at 40-60° revealed the cleavage of the acetone, disappearance of the tertiary hydroxyl and the formation of an active ketone group.

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This indicates that zeorine has an isopropyl group at which the tertiary hydroxyl is oriented.
One of the zeorine rings is therefore assumed to be five-membered.
Another decomposition product separated in a small amount was identified as a hitherto unknown acid $C_{27}H_{42}O_4$ which has one active ketone group and forms monosemicarbazone with melting point of 226°.
Two tables. There are 5 non-Slavic references.

ASSOCIATION: Academy of Sciences USSR, Botanical Institute (Botanicheskiy Institut Akademii Nauk SSSR)

PRESENTED BY:

SUBMITTED: March 28, 1956

AVAILABLE:

Card 2/2

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

DOMAREVA, T.V.; LOPUNOVA, V.F.; RYABININ, A.A.; SALTYKOVA, I.A.

Triterpenes of the bark Alnaster fruiticosus Ledeb. Zhur.ob. khim. 31 no.7:2434-2435 Jl '61. (MIRA 14:7)

1. Leningradskiy gosudarstvennyy universitet imeni A.A. Zhdanova. (Terpenes)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABININ, A.A.

A.M.Goldovskii's "Theoretical generalizations." Bot.zhur.42 no.1:124-128 Ja '57. (MLRA 10:2)
(Plants--Chemical composition)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABININ, A.A.; MATYUKHINA, L.G.

Analysis of triterpenes. Part 2: Structure of zeorin. Zhur.ob. khim. 28 no.9:2595-2598 S '58. (MIRA 11:11)

1. Botanicheskiy institut AN SSSR.
(Zeorin)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

5(3)

AUTHORS: Ryabinin, A. A., Matyukhina, L. G. SOV/20-129-1-34/64

TITLE: Investigation of Triterpenes. Myricadiol From the Bark of Myrica gale L

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 129, Nr 1, pp 125-127 (USSR)

ABSTRACT: The authors isolated a new triterpene with an empiric formula $C_{30}H_{50}O_2$ and a melting point of 273-274° from the bark of Myrica gale L. (vicinity of Leningrad). They called it myricadiol. Its homogeneity was established by saponification of its diacetate whereby the initial substance with the same melting point was recovered. By oxidation with chromic anhydride in pyridine, myricadiol was transformed into the diozo compound $C_{30}H_{46}O_2$ forming a disemicarbazone (called myriconal). Two absorption bands were found in the spectrum of the latter: at 1709 cm^{-1} (cyclohexanone) and at 1726 cm^{-1} (aldehyde). Thus myricadiol is a primary-secondary diol. A hydrocarbon $C_{30}H_{50}$, taraxerene (I), was prepared by reduction of myriconal. In order to identify the latter, taraxerene was prepared from taraxerone (II) which was separated

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

Investigation of Triterpenes. Myriacadiol From the Bark of Myrica gale L SOV/20-129-1-34/64

from the bark of the alder Alnus incana (L.) Moench. The taraxerene prepared in this way proved to be identical with that prepared from myricadiol. Finally, the latter taraxerene was completely isomerized to olean-12-en (according to reference 3). Thus it was proved that myricadiol is a taraxerene diol, i.e. a taraxer-14-en-3-β , 28-diol (V). Ye. A. Sokolova carried out the microanalyses, L. D. Shishkina the spectrum analyses. V. Tikhonov participated in the investigation. There are 5 references.

ASSOCIATION: Botanicheskiy institut im. V. L. Komarova Akademii nauk SSSR (Botanical Institute imeni V. L. Komarov of the Academy of Sciences, USSR)

PRESENTED: June 22, 1959, by B. A. Arbuzov, Academician

SUBMITTED: May 15, 1959

Card 2/2

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

MATYUKHINA, L.G., SHMUKLER, V.E., KYARININ, A.A.

Triterpenes of Alnus subcordata C. A. M. bark. Zhur. ob. khim. 35 no.3:579-580 Mr '65. (MIRA 18:4)

1. Botanicheskiy institut AN SSSR i Leningradskiy gosudarstvennyy universitet.

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYAPININ, A., prepodavatel'

Theoretical luxuries. Grazhd. av. 22 no.6:22-23 Je '65. (MIRA 18:6)

1. Ul'yanovskaya shkola vysshey letnoy podgotovki.

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

MATYUKHINA, L.G.; RYABININ, A.A.

Structure of spherophysine and its derivatives. Zhur. ob. khim. 34 no.11:3854-3855 N '64 (MIRA 18:1)

1. Leningradskiy gosudarstvennyy universitet.

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

DANILOVA, A.S.; BARABANOVA, L.P.; RYABININ, A.A.

Echinocystic acid in the roots of Chenopodium anthelminticum L. Zhur. ob.khim. 34 no.2:706 F '64. (MIRA 17:3)

1. Leningradskiy gosudarstvennyy universitet.

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABININ, A.A.; BELOUS, V.N.

Morolic acid in Pyracantha coccinea Roen. Zhur.ob.khim. 33 no.10:3447 O '63. (MIRA 16:11)

1. Leningradskiy gosudarstvennyy universitet.

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

IVANOVSKAYA, L.Yu.; RYABININ, A.A.; BARABANOVA, L.P.

Ursolic acid in plants. Zhur.ob.khim. 33 no.10:3446-3447 O '63. (MIRA 16:11)

1. Leningradskiy gosudarstvennyy universitet.

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABININ, A.A., inzh.

Bending of the rear legs of wooden chairs. Der.prom. 11 no.6:22 Je '62. (MIRA 15:6)

1. Ufimskaya mebel'naya fabrika No.1.
(Ufa--Chairs)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABININ, A.A.; MATYUKHINA, L.G.; DOMAREVA, T.V.

Study of the structure of alnincanone. Zhur.ob.khim. 32 no.6:2056-2057 Je '62. (MIRA 15:6)

1. Leningradskiy gosudarstvennyy universitet.
(Triterpenes)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABININ, A.A.; LOPUNOVA, V.F.

Triterpenes from Quercus petrea bark. Zhur.ob.khim. 31 no.10:3478 O '61. (MIRA 14:10)

1. Leningradskiy gosudarstvennyy universitet A.A.Zhdanova.
(Triterpenes)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

PANASHCHENKO, A.D.; RYABININ, A.A.

Chemical and pharmacological investigation of natural and synthetic derivatives of the putrescine series. Trudy Bot. inst. Ser. 5 no.8:49-65 '61. (MIRA 14:7)
(Putrescine)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABININ, A.A.; MATYUKHINA, L.G.

Triterpenes of some plant forms. Zhur. ob. khim. 31 no.3:1033-1036 Mr '61. (MIRA 14:3)

1. Botanicheskiy institut AN SSSR i Leningradskiy gosudarstvennyy universitet.

(Terpenes)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

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L 45736-65

ACCESSION NR: AT5011622 UR/0000/64/000/000/0481/0486

8

AUTHOR: Nezhivov, O.A.; Ryabinin, A.D.

5

B+1

TITLE: Use of magnetic ladder-type elements in logical circuits

SOURCE: Vsesoyuznoye soveshchaniye po magnitnym elementam avtomatiki, telemakhaniki, izmeritel'noy i vychislitel'noy tekhniki. Lvov, 1962. Magnitnyye elementy avtomatiki, telemekhaniki, izmeritel'noy i vychislitel'noy tekhniki (Magnetic elements of automatic control, remote control, measurement and computer engineering); trudy soveshchaniya. Kiev, Naukova dumka, 1964, 481-486

TOPIC TAGS: ladder type core, magnetic element, magnetic ladder, logical circuit

ABSTRACT: Earlier, U.F. Gianola and T.H. Crowley (Bell System Technical Journal, January 1959, no. 1, pp 45-72) described devices in which the electrical couplings between magnetic cores are replaced by a magnetic flux linkage. The present authors have designed a ladder-type core which was produced at the Institut metallokeramiki i spetsial'nykh splavov AN Ukr SSR (Institute for Metalloceramics and Special Alloys, AN Ukr SSR). The exposition of the basic principles underlying the operation of such cores is followed by a theoretical description of their basic characteristics and calculational formulas. Satisfactory experimental verifications of the theoretical predictions

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ACCESSION NR: AT5011622

(blocking coefficients, magnetomotive blocking force) were carried out on a two-stroke pulse generator and a commutator device. Orig. art. has: 10 formulas, 7 figures, and 1 table.

ASSOCIATION: none

SUBMITTED: 29Sep64 ENCL: 00 SUB CODE: DP

NO REF SOV: 001 OTHER: 001

Card 2/2

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"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABININ, A.G.

USSR/ Physics

Card 1/1 Pub. 22 - 6/54

Authors : Grib, A. A. and Ryabinin, A. G.

Title : Regarding the question on the approximated integration of the equations of a flat stabilized supersonic gas movement

Periodical : Dok. AN SSSR 100/3, 425-428, Jan. 21, 1955

Abstract : An approximate integration of the equations expresing a flat, stabilized, lammar gas movement is considered. The authors seek a solution for the equation for M>0 (to be more exact $1'15 < M < 2'35$) in x and y, where $x = x(\xi, \eta)$ and $y = y(\xi, \eta)$; such expressions for x and y greatly facilitate, the authors say, the solution of boundary problems. The so-called Cauchy's boundary problem and a few variations of it are considered. Eight USSR references (1941-1954). Graph.

Institution : Leningrad, A. A. Zhdanov State University

Presented by: Academician S. A. Khristianovich, October 14, 1954

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

RYABININ, A.G.

GRIB, A.A., (Moskva); RYABININ, A.G. (Moskva); KHRISTIANOVICH, S.A. (Moskva).

The reflection plane shock wave in water from a free surface. Prikl. mat.imekh.20 no.4:532-544 Jl-Ag '56. (MLRA 10:2)
(Shock waves)

APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0"

"APPROVED FOR RELEASE: 06/20/2000 CIA-RDP86-00513R001446220020-0

S/057/62/032/001/002/018
B104/B138

AUTHORS: Ryabinin, A. G., and Khozhainov, A. I.

TITLE: Steady laminar flow of electrically conductive liquids in a rectangular pipe under the action of ponderomotive forces

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 32, no. 1, 1962, 15-21

TEXT: The Navier-Stockes equation and the principal electrodynamic equations for a conductive liquid flowing through a rectangular pipe (Fig. 1) and are reduced to the form $\partial^2 v_z/\partial x^2 + \partial^2 v_z/\partial y^2 - \frac{\sigma}{\eta} B_0^2 v_z + \sigma E_0 B_0/\eta - \partial p/\eta \partial z = 0$. On the strength of experimental results, the electric and magnetic fields are assumed to be uniform for $\vec{v} = 0$ at $b/a \lesssim 1$. The above equation can be written as $\partial^2 v/\partial x^2 + \partial^2 v/\partial y^2 - k^2 v + P = 0$ $(v = v_z)$, where $k^2 = 4M^2/b^2$, M is the Hartmann number, and $P = \sigma E_0 B_0/\eta - dp/\eta dz$. The solution to this equation reads

$$v = \frac{b^2 P}{\pi} \sum_{n=1}^{\infty} \frac{(-1)^{n+1}}{(2n-1) M_{*n}^2} \left(1 - \frac{\operatorname{ch} \frac{2x}{b} M_{*n}}{\operatorname{ch} M_{*n}}\right) \cos \frac{2y}{b} (2n-1) \gamma. \quad (15),$$

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where

$$M_{*n}^2 = [(2n-1)^2\gamma^2 + M^2]; \quad \gamma^2 = \frac{\pi^2 b^2}{4a^2}. \qquad (A).$$

This solution can also be generalized for the case of electromagnetic-waves traveling along the pipe axis. It is proved to be unique. The formulas

$$v_{\text{cp.}} = \frac{2b^2P}{\pi^2}\sum_{n=1}^{\infty}\frac{1}{(2n-1)^2M_{*n}^2}\left(1-\frac{\operatorname{th}M_{*n}}{M_{*n}}\right),$$

$$\Delta p = \frac{8\eta lP}{\pi^2}\left\{\sum_{n=1}^{\infty}\frac{\operatorname{th}M_{*n}}{(2n-1)^2M_{*n}} - \gamma^2\sum_{n=1}^{\infty}\left[\frac{\operatorname{th}M_{*n}}{M_{*n}^3} - \frac{1}{M_{*n}^2}\right]\right\}. \qquad (17)-(18)$$

are obtained for the mean flow velocity and the pressure loss due to friction over the length, l, of the channel. Experimental verification

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with an electromagnetic pump furnished satisfactory results. A saturated NaCl solution was used as the conducting liquid. Experimental results of I. Hartmann et al. (Hg-Dynamics, Danske Videnskab. Selskab. Mat.-fys. Medd., 15, no. 7, 1937) were confirmed for laminar flows using a modified formula for the pressure loss. There are 5 figures and 10 references: 7 Soviet and 3 non-Soviet. The reference to the English-language publication reads as follows: I. A. Shercliff. Proc. of the Cambr. Phil. Soc., 49, 1, 136, 1953.

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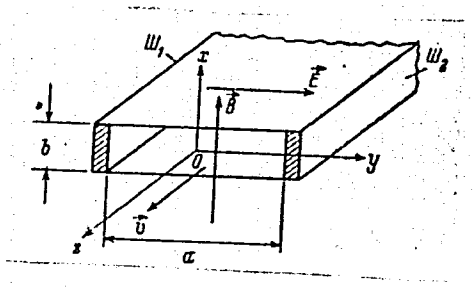
Fig. 1. Rectangular pipe.



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are characterized by the three dimensionless parameters Re, M and Rm. The structure of this current under the action of electrodynamic ponderomotive forces can be represented as a sum of a linear term for the principal components of the current parameters and a term for the effect of the pulsation. This holds also for the total dimensionless friction coefficients of the turbulent magnetohydrodynamic current: $\lambda^m_{tot} = \lambda^m_{lam} + \lambda^m_{t.p.}$. For $M \to 0$, $\lambda^o_{tot} = \lambda^o_{lam} + \lambda^o_{t.p.}$. Also $\lambda^m_{lam} = k(\gamma, M)/Re$. For $M \gg 1$ and $\gamma \sim 0$, $k(\gamma, M) \cong 4M$ and for $M \sim 1, \gamma \sim 0$, $k(\gamma, M) \simeq 4M$ th $0.5\,M/(1-(\text{th}0.5M/0.5M))$. In the general case $\lambda^m_{t.p.} = \lambda^o_{t.p.}(1-\varphi)$ where $\lambda^o_{t.p.} = \lambda^o_t - k(\gamma)/Re$. Up to $Re = 10^5$ the Blasius law $\lambda^o_t = 0.133/Re^{0.25}$ holds. ψ can be obtained from the experimental data with the help of $\psi = 1 - (\lambda^m_t - \lambda^m_{lam})/\lambda^o_{t.p.}$. The smaller the Re number the more rapidly does ψ tend to 1 with increasing M^2/Re. A transverse magnetic field has no effect on $\lambda^o_{lam} = 0.0177$. Therefore the stability condition of the usual hydrodynamic current can be generalized to magnetohydrodynamic currents in rectangular tubes : $Re^m_{crit} = k(\Gamma, M)/0.0177$.

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The stability condition $Re^{m}_{crit} = 226M$ for $M \gg 1$ and $\gamma \sim 0$ deviates less than 1% from the experimental relation of W. Murgatroyd (Phil. Mag., 44, 1348, 1953). The generalized total friction coefficient

$$\lambda^{м}_{т} = \frac{k(\gamma, M)}{Re} + \delta(Re - Re^{0}_{кр.}) \left[\frac{0.133}{Re^{0.25}} - \frac{A(\gamma)}{1 + \frac{A(\gamma)}{k(\gamma)}(Re - Re^{0}_{кр.})} \right] \times$$

$$\times \left[1 - \frac{M^2}{Re} \cdot \frac{1 + \bar{a}(Re)\frac{M^2}{Re}}{b_0(Re) + b_1(Re)\frac{M^2}{Re} + \bar{a}(Re)\left(\frac{M^2}{Re}\right)^2} \right]. \quad (39)$$

of a magnetohydrodynamic current asymptotically approaches the law of Blasius from below for small M and from above for large M. There are 4 figures and 2 tables.

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