

SOV/124-58-2-1645

Translation from: Referativnyy zhurnal, Mekhanika, 1958, Nr 2, p 23 (USSR)

AUTHOR: Abrukov, S. A.

TITLE: A Method for Determination of the Temperature Field of a Carbon Monoxide Flame in Air (Metod opredeleniya temperaturnogo polya plameni okisi ugleroda s vozdukhom)

PERIODICAL: Uch. zap. Kazansk. gos. un-ta, 1955, Vol 115, Nr 12, pp 3-23

ABSTRACT: The article offers a method for the determination of the temperature field of an axisymmetrical flame produced by a Bunsen burner located within a special square hood which eliminates the influence of the extraneous convection air currents from the sides. A Tepler instrument has been employed, with a filament of 0.04 mm diameter placed in the principal focus of the observation tube; the width of collimator gap was 0.035 mm. This combination of the gap and the filament dimensions caused the whole of the flame image to be covered by the interference bands. By the method of an approximate solution of integral equations (Schardin H., Forschungsheft VDI, 1934, p 367) one photograph of the interference picture permits a determination of the field of the index of

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A Method for Determination of the Temperature Field of a Carbon (cont.)

refraction. Further, making use of the similarity between the temperature field and the field of the  $\text{CO}_2$ -and-air mixture concentration in the flame, the author calculates the temperature field. Numerical examples are given. The author assumes that the accuracy of determination of the refractive index by means of the interference bands produced in Tepler's instrument does yield results no less accurate than that of a similar determination by means of an interferometer. A special experiment has demonstrated that the temperatures of the same flame determined from seven different photographs vary within 6% in the inner flame cone and within 3% in the outer cone. The maximum temperature of a stoichiometric mixture was  $1870 \pm 56^\circ\text{C}$  degrees, as against the theoretically calculated temperature of  $2030^\circ$ . The difference between these values is explained by dissociation and radiation into the cold environment.

L. S. Dmitriyev.

Card 2/2

АВРК УАКОВГ Д. П.

USSR/ Physical Chemistry - Kinetics. Combustion. Explosives. Topochemistry.      B-9  
Catalysis

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11249

Author : Abrukov S.A.

Inst : Kazan' University

Title : Effect of Temperature and Composition of the Mixture on Oscillations  
of CO - Air Flames in an Open Tube

Orig Pub : Uch. zap. Kazanskogo un-ta, 1956, 116, No 1, 93-94

Abstract : Flame oscillations in air-CO mixtures are observed by the method of continuous photographic display, in tubes open at the ignition end and closed with stoppers provided with holes of different diameter at the other end. With a given aperture amplitude and frequency of flame oscillation are maximal with mixtures of 45-55% CO. Flame oscillations disappear completely beyond definite concentration limits which become narrower on addition of inert admixtures and adulterants (CO<sub>2</sub>, I<sub>2</sub>, CCl<sub>4</sub>) and become wider on addition of H<sub>2</sub> and H<sub>2</sub>O. With increase in wall temperature >20-30° (up to 250°) and at temperatures < 20° intensity of flame oscillation decreases while the concentration limits become narrower.

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SOV/24-59-2-23/30

AUTHOR: Abrukov, S. A. (Kazan')

TITLE: Observation of Temperature Waves with Vibrating Flames in a Tube (Nablyudeniye temperaturnykh voln pri kolebaniyakh plameni v trubke)

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Energetika i avtomatika, 1959, Nr 2, p 139 (USSR)

ABSTRACT: The paper is a continuation of previous work.(Ref 2). A Schlieren photograph is reproduced of a vibrating flame in a 30% CO-70% air mixture. Examination of the photograph suggests the existence of temperature waves in the combustion products. There is 1 figure and 2 references, of which 1 is Soviet and 1 English.

ASSOCIATION: Kazanskiy gosudarstvennyy universitet (Kazan' State University)

SUBMITTED: June 25, 1958.

Card 1/1

31292  
S/124/61/000/010/027/056  
D251/D301

11.7300

AUTHOR:

Abrukov, S.A.

TITLE:

The dependence of the limits of vibrational flame-spreading on the temperature, pressure, and introduction of inert impurities

PERIODICAL:

Referativnyy zhurnal. Mekhanika, no. 10, 1961, 82-83, abstract 10 B588 (V sb. 3-e Vses. soveshchaniye po teorii goreniya, v. 1, M., 1960, 44-50)

TEXT:

An experimental determination was carried out on the limits of vibrational flame-spreading in dependence on the temperature and inert impurities for a mixture of carbon monoxide and air or oxygen. The mixture was ignited by an electric spark at the open end of a half-closed glass tube. The presence of vibrations was registered either by the photo-analysis of the process of combustion with respect to time or by sound emission from the open end of the tube. Analysis of the results of the photo-analysis of

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The dependence of the limits...

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flame-spreading provides evidence about the periodic oscillations of the flame and the connection with them of the appearance of temperature-waves in the products of combustion, which is caused by the variation of the speed of heat evolution in the zone of combustion. Vibrational combustion was investigated as an auto-oscillatory process in which the energy is the thermal energy liberated in combustion and the column of gas in the tube is investigated for the oscillatory system. The optimum conditions for inciting oscillations occurs in the case when the frequency of the periodic variations of the speed of heat evolution is close to one of the natural frequencies of the tube. The amplitude of the vibrations then increases until all the forms of energy dissipation in the given conditions do not compare with the energy acting on the column of gas from the flame. The limits of oscillation were investigated for vibrational combustion of two types - the first with small amplitude of oscillation and laminar motion of the products of combustion, and the second with sharply increased amplitude of oscillation and turbulent motion of the products of combustion. Transition from

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X

The dependence of the limits...

<sup>31292</sup>  
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D251/D301

the first type of oscillation to the second sharply increases the mean velocity of flame-spreading. [Abstracter's note: Complete translation]

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X

24111  
S/196/61/000/006/006/014  
E073/E535

11.7300

AUTHOR: Abruikov, S. G.

TITLE: Dependence of the limits of vibration propagation of a flame on the temperature, pressure and addition of inert admixtures

PERIODICAL: Referativnyy zhurnal, Elektrotehnika i energetika, 1961, No.6, pp.7-8, abstract 6G51. (Sb. 3-e Vses. soveshchaniye po teorii goreniya. T.I., M., 1960, 44-50)

TEXT: The results are described of experimental determination of the limits of vibratory propagation of a flame as a function of the temperature, pressure and addition of inert admixtures. The experiments were carried out in horizontal glass tubes 50-100 mm long, 1.7-4.8 cm in diameter. The mixture was ignited at the open end by a flame, whilst at the other end the tube was closed with a plug; in some cases plugs were used with circular holes in the centre, the diameter  $d$  of which varied between 1.5 mm and values near to those of the tube diameter. As a fuel, basically CO was used for which data on the integral speed of combustion are available. The influence of the parameters of the tube, the temperature, inert  
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Dependence of the limits of ...

S/196/61/000/000/006/014  
E073/E535

admixtures and of the initial pressure was elucidated. The vibrational propagation of the flame is a self-oscillation process. The self-oscillation system is characterized by the presence of an energy source, an oscillation system proper, a valve allowing the passage of periodic portions of energy from the source to the oscillation system and a feedback by means of which the oscillation system controls the operation of the valve. In the case of vibrational flame propagation, the energy source is the thermal energy released during combustion. The oscillation system, the parameters of which determine the frequency of oscillations of the flame, is the gas column in the tube. Acoustic oscillations of small amplitude generated by some random disturbance in the pressure brings about periodic changes in the pressure  $P$  and the temperature  $T$  in the combustion zone. This in turn leads to periodic changes of the mass speed of combustion and, consequently, of the speed of the heat release  $q_1$ , which is confirmed by the appearance of temperature waves in the combustion products during vibration propagation of the flame. The best conditions for exciting oscillations arises when the frequency of oscillations is near to one of the resonant frequencies of the tube. The existence of

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Dependence of the limits of ...

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definite concentration limits of the vibrational flame propagation, which differ from the limits of ignition, and also the influence of inert admixtures and pressure on these, indicate that in the combustion zone a well defined critical speed of heat release  $q_{1cr}$  exists, below which oscillations will not be generated. The limits of oscillations of the second type are due to the formation of a turbulent movement of gases in the tube on increasing the amplitude of the oscillations, which leads to a change over from laminar to turbulent combustion (this fact is confirmed by instantaneous Schlieren patterns). As a result of this, the average speed of flame propagation increases greatly and the shape of the flame will change sharply.

Abstracted by M. Knorre.

[Abstractor's Note: Complete translation.]

Card 3/3

ABRUKOV, S.A.; KURZHUNOV, V.V.; MEZDRIKOV, V.N.

Use of Tepler's method for the quantitative investigation of  
temperature waves. Izv.vys.ucheb.zav.; fiz. no.2:98-101 '61.  
(MIRA 14:7)

1. Kazanskiy gosudarstvennyy universitet.  
(Heat—Radiation and absorption)

ACCESSION NR: AR4019268

S/0196/64/000/001/T008/T009

SOURCE: RZh. Elektrotehnika i energetika, Abs. 1T84

AUTHOR: Abrukov, S. A.; Mikheyev, M. P.

TITLE: Use of the IAB-451 apparatus for studying vibration propagation of a flame in a tube

CITED SOURCE: Tr. 1-y Vses. nauchno-tekhn. konferentsii po probl. vibratsion. i pul'satsion. goreniya. M., 1962, 19-25

TOPIC TAGS: flame tube, flame, flame vibration, vibration propagation, vibration burning, flame vibration propagation

TRANSLATION: A report on the use of one of the modifications of Tepler's method -- the method of Schlieren-interference in polarized light -- for studying some of the properties of vibration burning in semi open tubes for air mixtures of CO. A description is given of an installation designed at the Department of Molecular Physics of the Kazan State University. Experiments are conducted in a reaction tube with a cross section of 13 X 29 X 630 mm. It is observed that the surface area of the flame changes in a period of one oscillation. It is confirmed that these changes

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ACCESSION NR: AR4019268

are caused by periodic changes in the direction and velocity of motion of particles in the standing sound wave. Nonhomogeneities are observed in the distribution of temperature of the products of combustion along the cross section of the reaction tube which oscillate in correspondence with the oscillations of the gas column. The arising of these temperature nonhomogeneities is apparently connected with convective cooling of the products of combustion. Ill., 2, bibl. 4 titles.  
R. Dulatov

DATE ACQ: 25Feb64

SUB CODE: PH

ENCL: 00

Card 2/2

ABRUKOV, S. A., MIRHEEV, M. P.

Application of the interference method of bands in polarized light using a IAB-451 instrument. Izv. vys. ucheb. zav.; fiz. no.6:115-120 '62. (MIRA 16:1)

1. Kazanskiy gosudarstvennyy universitet imeni V. I. Ul'yanova-Lenina.

(Interferometer)

L 33305-65

EPA/EWT(1)/EPA(g)-2/EWT(m)/EPA(g)/EPA(m)P/EPA

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... in view of their high sensitivity ... also being used for studying heat phenomena, particularly combustion processes. ... is devoted to the ...

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time with the oscillations of the flame. This phenomenon is explained by the periodic change in the direction and velocity of the motion of particles in the standing

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SOURCE: Ref. zh. Fizika. Abs. 17:107

USED BLOW TUBES

ORIGIN SOURCE: CH. IAS. (Soviet Union)

TOPIC TAGS: vibration combustion; flame front; detonation; fuel mix-

TUBE 700 mm long and 20 mm in diameter and in rectangular tubes of  
12 x 18 mm cross section and 855 or 490 mm length. During the exper-

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L 47345-65

ACCESSION NO: AR5009724

iments the tubes were closed at both ends. It is established that the fuel concentration dependence of the initial pressure of the mixture at which vibrational combustion still occurs has the same form as the corresponding curve for the ignition of the mixture, but lies higher than the latter curve. As a function of the length of the closed tube

ions being equal, the flame vibrates at higher values of normal velocities than in half-closed tubes.

ME PP ENCL

Card 2/2 CC

L 4 32-66 EWT(l)/EWT(m)/EWP(j)/T WW/JW/WE/RM  
ACC NR: AP6029757 (A) SOURCE CODE: UR/0414/66/000/002/0068/0071

AUTHOR: Abrukov, S. A. (Kazan'); Kurzgunov, V. V. (Kazan'); Mezdrikov, V. N. (Kazan')

ORG: none

TITLE: The effect of an electric field on the oscillatory combustion of propane

SOURCE: Fizika gorenija i vzryva, no. 2, 1966, 68-71

TOPIC TAGS: combustion, combustion instability, oscillatory combustion, gas combustion, PROPANE, ELECTRIC FIELD

ABSTRACT: A study was made of the effect of a-c (50 cps) and d-c electric fields on the oscillatory combustion of propane-air mixtures. The test assembly consisted of a resonator tube with a burner, an acoustic generator, flat or cylindrical electrodes, and a fuel flow meter. The potential (up to 12 kv) required to suppress acoustic oscillations was measured as a function of fuel flow rate in kinetic and diffusional combustion regimes. The potential was found to be a function of the flame length and the position of the flame in the tube. In both the diffusion and premixed flames, the potential had a maximum in the regime which was optimum for oscillatory combustion. Suppression of the oscillations occurred instantaneously when the required potential was applied. Both d-c and a-c fields were effective. In the diffusion flame, several

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UDC: 536.468

ACC NR: AR6034727      SOURCE CODE: UR/0124/66/000/008/B101/B101

AUTHOR: Abruikov, S. A.

TITLE: Characteristics of vibrational propagation of a flame in closed narrow tubes

SOURCE: Ref. zh. Mekhanika, Abs. 8B720

REF SOURCE: Sb. Itog. nauchn. konferentsiya Kazansk. in-ta za 1962 g. Kazan', Kazansk. un-t, 1963, 27-29

TOPIC TAGS: flame propagation, combustion, oscillating flame, oscillatory combustion, *VIBRATIONAL PROPAGATION*

ABSTRACT: Vibrational propagation of a flame in gaseous mixtures was studied experimentally. The experiments were carried out in a round tube 750 mm in length and 26 mm in diameter and in tubes with a rectangular cross section of 12 x 18 mm<sup>2</sup> and lengths of 855 and 490 mm. The tubes were closed at both ends during the experiments. It was found that the curve showing the dependence of the initial pressure of the mixture on fuel concentration, at which oscillatory combus-

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UKRAINE/Soil Science. Physical and Chemical Properties of Soils. I-2

Abs Jour: Referat.Zh.Biol., No. 16, 25 Aug, 1957 69029

Author : Abrukova, L.P.

Inst :

Title : On the Use of Trilon B in Soil Analysis.

Orig Pub: Dopovid AN URSR, 1956, No. 5, 501-503

Abstract: The trilonometric method of determining water hardness may also be used for determination of the sum of the cations Ca and Mg in salt (1 N NaCl) and aqueous extracts from black earth soils. For partial determination of  $\text{Ca}^{2+}$  and  $\text{Mg}^{2+}$  ions two portions of salt extracts of black earth were taken: in one, the sum of cations ( $\text{Ca}^{2+} + \text{Mg}^{2+}$ ) was established trilonometrically, and in the other Ca was precipitated by ammonium oxalate and was determined by the volumetric method (permanganatometrically). From the difference between the sum of cations, established trilonometrically, and the quantity of Ca ions,

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AFRIKOVA, G.P.

Mineralogical composition of the silt fraction of Crimean Chernozems. Pochvovedenie no.12:83-88 D '60. (MIRA 14:1)

1. Pochvennyy institut imeni V.V. Dokuchayeva, AN SSSR.  
(Crimea---Chernozem soils)

AERUKOVA, L.P.

Adsorption of hydrogen, calcium, and aluminum ions from  
solutions of constant ionic strength. Koll. zhur. 26 no.4:  
401-403 J1-Ag '64. (MIRA 17:9)

1. Pechernyy institut imeni Dokuchayeva, Moskva.

ABRUKOVA, L.F.

Determining exchangeable bases in carbonate rich soils. Pochvovedeni'e  
no.9:103-107 S '64. (MIRA 17:12)

1. Pochvennyy institut imeni V.V.Dokuchayeva, AN SSSR, Moskva.



S/138/62/000/010/003/008  
A051/A126

AUTHORS: Kolyadina, N.G., Bartenev, G.M., Abrushchenko, B.Kh.

TITLE: Effect of residual deformation on highly-elastic regeneration of rubber at low temperatures

PERIODICAL: Kauchuk i rezina, no. 10, 1962, 28 - 31

TEXT: A study was made of rubber properties affected by accumulation of residual deformation, namely, the effect on the highly-elastic regeneration of rubber samples or rubber sealing parts. The causes of residual deformation accumulation are not analyzed. Both accumulation of residual deformation at high temperatures and "freezing" of the highly-elastic deformation at low temperatures cause the negative effect of a decrease of the highly-elastic regeneration. The mathematical calculation of various parameters and graphs plotted from experimental results are presented. It was found that the experimental data agree well with the computed values. The authors conclude that the frost-resistance of commercial rubber sealing parts depends not only on the frost-resistance of the rubber, but also on the degree of accumulation of residual deformation dur-

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Effect of residual deformation on ....

S/138/62/000/010/003/008  
A051/A126

ing storage or usage of the parts under tension, at temperatures over 0°C. There are 5 figures and 1 table.

ASSOCIATION: Leningradskiy filial nauchno-issledovatel'skogo instituta rezinovyoy promyshlennosti. Problemnaya laboratoriya fiziki polymerov MGPI im. V.I. Lenina (Leningrad Branch of the Scientific Research Institute of the Rubber Industry. Laboratory for Problems of Polymer Physics MGPI im. V.I. Lenin)

Card 2/2

POLETAYEV, A.V.; ABRUTSKAYA, Ye.G.

Highways of Uzbekistan. Avt.dor. 22 no.11:8 N '59.  
(MIRA 13:2)

(Uzbekistan--Roads)

POLETAYEV, A.V.; ABRUTSKAYA, Ye.G.

Petroleum-gravel pavements in Uzbekistan. Avt.dor. 23 no.3:  
11-12 Mr '60. (MIRA 13:6)  
(Uzbekistan--Pavements, Bituminous)

MOTYLEV, Yu.L., kand. tekhn. nauk; ZALESSKIY, Ye.P., prof.; KALYUZHNIY, I.S., kand. sel'khoz. nauk; AZIZOV, A.A., mlad. nauchnyy sotr.; FOLETAYEV, A.V., kand. khim. nauk; ABRUTSKAYA, Ye.G., mlad. nauchnyy sotr. Prinimali uchastiye: BUTLITSKIY, Yu.V., mlad. nauchnyy sotr.; FEDOSEYFVA, T.I., mlad. nauchnyy sotr.; BIRUL', A.K., prof., doktor tekhn. nauk, retsenzent; ZVERINSKIY, G.I., inzh., retsenzent; KOVALEV, T.G., inzh., retsenzent; BASIN, M.M., inzh., retsenzent; DEBERDEYEV, B.S., red.; DONSKAYA, G.D., tekhn. red.

[Stability of earth roadbed and road mats in regions with artificial irrigation] Ustoichivost' zemlianogo polotna i dorozhnykh odezhd v raionakh iskusstvennogo orosheniia. [By] Iu.L.Motylev i dr. Moskva, Nauchno-tekhn.izd-vo M-va avtomobil'nogo transp. i shos. dorog RSFSR, 1961. 178 p. (MIRA 15:2)

(Uzbekistan--Road construction) (Uzbekistan--Irrigation)

ABRUJAN, Vasile, ing.

Making metal highly valuable. Probleme econ 16 no.10:160-161 0 '63.

1. Director tehnic, Uzinele de vagoane Arad.

KARASINA, E.S., kand. tekhn. nauk; KROPP, L.I., kand. tekhn. nauk;  
ABRYUTIN, A.A., inzh.; MINTS, M.S., inzh.

Use of a heat probe in the study of the heat exchange of furnaces  
and steam boilers. Tepolenergetika 12 no.2:69-72 F '65.  
(MIRA 18:3)

1. Vsesoyuznyy teplotekhnicheskiy institut.

ABRYUTIN, Leonid Ivanovich, starshiy prepodavatel'

A stage with a self-exciting collector clutch. Izv. vys.  
ucheb. zav.; elektromekh. 5 no.11:1306-1310 '62.  
(MIRA 16:1)

1. Chelyabinskiiy politekhnicheskiiy institut.

(Clutches(Machinery))      (Electric motors, Induction)



AERYUTIN, Viktor Nikolayevich; FRIDENBERG, Rikhard Arnol'dovich;  
BULGAKOV, K.V., dots., retsenzent; RUZIN, Ya.L., dots.,  
retsenzent; SHABADASH, B.I., dots., retsenzent; VOL'PE, L.,  
red.

[Electrical section of large capacity thermal electric  
power plants] Elektricheskaja chast' moshchnykh teplo-  
vykh elektrostantsii; uchebnoe posobie. Leningrad, Se-  
vero-Zapadnyi zaohryi politekhnicheskii in-t, 1962. 197 p.  
(MIRA 17:3)

ABRYUTIN, Viktor Nikoloyevich; TIMOFEYEV, V.A., doktor tekhn. nauk, prof., retsenzent; GESSEN, V.Yu., dots., retsenzent; IVANOV, Ye.A., dots., retsenzent; NAKHMANSON, Ye.Ye., dots., retsenzent; RUZIN, Ya.L., dots., kand. tekhn. nauk, retsenzent; KLIMOV, V.A., st. prepod., retsenzent; VOL'PE, L., red.

[Electromagnetic transients in electrical networks and systems]  
Elektromagnitnye perekhodnye protsessy v elektricheskikh setiakh i sistemakh; uchebnoe posobie. Leningrad, Severo-zapadnyy zaachnyy politekhn. in-t, 1962. 278 p. (MIRA 17:5)

L 33115-66

ACC NR: AP6024083

SOURCE CODE: UR/0144/64/000/002/0235/0236

AUTHOR: Zav'yalov, A. S.; Get'man, A. A.; Molchanov, V. D.; Krasnyuk, N. P.;  
Agranovskiy, K. Yu.; Berger, A. Ya.; Greyer, L. K.; Yesakov, V. P.; Miller, Ye. V.;  
Fyatman, K. I.; Abryutin, V. N.; Gubanov, V. V.; Oranskly, M. I.; Yevseyov, H. Ye.;  
Morkin, G. B.; Sinol'nikov, Ye. M.; Avilov-Karnauidzhov, B. N.; Bogush, A. G.;  
Dolyayev, I. P.; Pekker, I. I.; Chernyavskiy, F. I.

ORG: none

TITLE: O. B. Bron (on his 70th birthday)

SOURCE: IVUZ. Elektromekhanika, no. 2, 1966, 235-236

TOPIC TAGS: electric engineering personnel, circuit breaker

ABSTRACT: Osip Borisovich Bron was born in 1896 in Klintsi. In 1920, he graduated from the physics-math faculty of Khar'kov Technological Institute. He became a professor in 1930. He defended his doctor's thesis in 1940. During the second world war, he was in the navy. After demobilization in 1950, Engineer Colonel Bron went to work teaching at the Leningrad Industrial Correspondence School. He became the head of the Chair of Theoretical Bases of Electrical Technology in 1958. He is closely associated with scientific and development work, and has cooperated closely in this area with the Leningrad "Elektrosila" plant since 1946. His work has been in the areas of spark-damping and high-power circuit breakers. He has published over 140 scientific works and 19 inventions. [JPRS]

SUB CODE: 05, 09 / SUBM DATE: none

Card 1/1

BOR, Mikhail Zakharovich. Prinsipialni uchastiye: USPENSKAYA, Ye.P.; BALASHOVA, A.A.; ABRYUTINA, M.S.; ZHUKOV, V.N.; YAKUNINA, N.I.; VOROB'YEV, V.P.; STRUMILIN, S.G., akademik, red.; LISOV, V.Ye., red.; KHOLIN, I.A., red.; GERASIMOVA, Ye.S., tekhn.red.

[Planned balance of the national economy of the U.S.S.R.; practice in working out the balance] Planovyi balans narodnogo khoziaistva SSSR; opyt razrabotki. Pod red. S.G.Strumilina. Moskva, Gosplan-izdat, 1959. 158 p. (MIRA 13:6)

1. Podotdel balansa narodnogo khozyaystva Gosplana SSSR (for Uspenskaya, Balashova, Abryutina, Zhukov, Yakunina, Vorob'yev). (Russia--Economic policy)

TURETSKIY, Sh.Ya., doktor ekon. nauk; AGANBEGYAN, A.G., doktor ekon. nauk; FERSITS, M.M.; LUSHIN, S.I., kand. ekon. nauk; CHUBAKOV, G.N., kand. ekon. nauk; SNEKHOV, B.M., prof., doktor ekon. nauk; KOKOREV, M.A., kand. ekon. nauk; ABRUYUTINA, M.S.; MITINA, E., red.; BESSUDNOVA, N., mlad. red.

[Large-scale socialist reproduction and the national economic balance] Rasshirennoe sotsialisticheskoe proizvodstvo i balans narodnogo khoziaistva. Moskva, Izd-vo "Mysl'," 1964. 373 p. (MIRA 17:5)

KOSHELEV, I.I., kand. tekhn. nauk; ESKIN, N.B., inzh.; TARATUTA, V.A.,  
inzh.; KAPCHITS, D.A., inzh.; ABRYUTINA, N.V., inzh.; POLYAKOVA,  
V.P., inzh.; LEBEDEVVA, I.G., inzh.

Study of salt extraction by the flushing and separating  
system of the PK-24 boiler. Elek. sta. 35 no. 4:10-15 Ap '64.  
(MIRA 17:7)

ABSALYAMOV, A.

Absalyamov, A. - "Along the broad waterway", (Captains N. Sh. Akhtyamov and M. N. popova of Volga steams ips, outline), Lit. Tatarstan, book 2, 1949, p. 112-53.

SO: U-4110, 17 July 53, (Letopis 'Zhurnal 'nykh Statey, No. 19, 1949).

ABSALYAMOV, I.F., kand. veter. nauk; DAMINOV, R.A., aspirant; KHACHATURYAN,  
Yu.S., starshiy nauchnyy sotrudnik

Hemolytic jaundice in Karakul sheep. Veterinariia 42  
no.11:66-68 N '65. (MIRA 19:1)

1. Uzbekskiy nauchno-issledovatel'skiy veterinarnyy institut  
i Vsesoyuznyy nauchno-issledovatel'skiy institut karakulevodstva.



ABSALYAMOVA, N. B., Candidate Med Sci (diss) -- "The blood supply of the sciatic nerve of the newborn". Alma-Ata, 1959. 17 pp (Kazakh State Med Inst), 300 copies (KL, No 23, 1959, 171)

ABSALYAMOVA, N.P.

Case of a mermaidlike monstrosity. Trudy Semipal. med. inst. 2:355-361 '59. (MIRA 15:4)

1. Iz kafedry normal'noy anatomii (zaveduyushchiy kafedroy dotsent I.M.Turetskiy) Semipalatinskogo gosudarstvennogo meditsinskogo instituta. (MONSTERS) 1

ABSALYAMOVA, R. A.

USSR/Medicine - Wheat  
Medicine - Cold, Effects of

Apr 48

"Frost Resistance of Young Sprouts of Winter Wheat at  
Low Temperatures," R. A. Absalyamova, All-Union Acad  
Agr Sci imeni V. I. Lenin, 5 pp

"Dok V-S Ak Selkhoz Nauk" No 4

Report of experiments. Young sprouts can withstand  
vary low temperatures if inured to them in autumn.  
Dry or slightly swollen seeds also withstand winter  
conditions. Fully swollen but unsprouted seeds perish  
in light frosts. Submitted 28 Apr 1947.

15/4978

ABSALYAMOVA, R.A.

Effect of the complex of rhizosphere micro-organisms developed as a result of the application of organic-mineral fertilizers on the growth of plants. Agrobiologia no.1:77-81 Ja-F '63.

(MIRA 16:5)

1. Moskovskoye otdeleniya Vsesoyuznogo nauchno-issledovatel'skogo instituta sel'skokhozyaystvennoy mikrobiologii.  
(Rhizosphere microbiology) (Fertilizers and manures)

ACC NR: AT6027421

SOURCE CODE: UR/3213/66/000/003/0154/0163

AUTHOR: Abshayev, M. T.; Bibilashvili, N. Sh.

ORG: none

TITLE: Radar method of determining spectrum and concentration of hail stones in convective clouds

SOURCE: Leningrad. Vysokogornyy geofizicheskiy institut. Trudy, no. 3(5), 1966.  
Mekhanizm obrazovaniya i vypadeniya grada (Mechanism of the formation and precipitation of hail), 154-163

TOPIC TAGS: cloud physics, hail, <sup>meteorologic</sup> radar reflection

ABSTRACT: The use of the function of hail distribution by size is suggested in order to determine the microstructures of hail clouds, as is the measurement of the radar reflections from the same cloud volume obtained on several wavelengths, depending on the number of distribution parameters involved. The Rokard distribution was used to describe the hail spectrum for purposes of simplicity and to provide an operational method for indicating hail sizes and concentrations. Two radars, operating on different wavelengths, were used to find the calculated concentration and the distribution parameter. The general form of the hail distribution must be used, and measurements must be made on three wavelengths, in order to arrive at a more accurate determination of the hail spectrum in the cloud. An average value on the order of

Card 1/2

ACC NR: AT6027421

$10 \text{ m}^{-3}$  was obtained for the hail concentration in the cloud in the interval  $d_{\text{min}} - d_{\text{max}}$  with  $d$  equal to the hail stone diameter. The method requires substantial refinement with respect to making the function of hail distribution in the cloud and the dielectric properties of hail stones, more precise. More work is needed as well to establish the most suitable wavelengths. Orig. art. has: 8 formulas, 3 figures, and 2 tables.

SUB CODE: 04, 17 / SUBM DATE: none / ORIG REF: 008 / OTH REF: 010

Card 2/2

ARCHILAVA, S.Ye., Cand Med Sci -- (disc' "On the problem of the develop-  
ment of certain <sup>pathological</sup> processes in the lungs in a cerebral insult." Tbilisi, 195  
20 pp (Tbilisi) State Med Inst), 200 copies (VI, 24-58, 123)

-92-

... .., . . .

... .., S. Ye. "Material on cosmetic cerebral", in the collection: 'Izvestiya' let  
nauch.-prakt. tsyatel'nosti Kliniki i Otd-nya nervnykh bolezney (Etils. gos. med.  
in-a, I dor, b-tse), Tbilisi, 1948, p. 73-77.

SO: U-4631, 16 Sept 53, (Letopis, 'Zhurnal 'lykt Statoy, No. 34, 1949).



AESOLIN, R., promovany ekonom

"Records and analysis of fixed assets" by B. Partyk. Reviewed  
by R. Absolin. Podn org 17 no. 98431 S'63

ABSOLON, Adolf

Methods of mapping the Quaternary in the area of Cretaceous  
marl rocks. Vest ust geol 39 no.2: 147-150 Mr'64

1. Geologicky ustav, Ceskoslovenska akademie ved.

ABSOLON, Karel, inz.

Spectrographic determination of lead, zinc and copper in  
polymetallic raw ores. Rudy 10 no.6:Suppl:Prace vyzk ust  
no.5:29-32 Je '62.

1. Ustav pro vyzkum rud, Praha.

ABSOLON, Karel, inz.

Some direct methods of spectographic analysis of solutions.  
Rudy 11 no.10:Supplement: Prace vyikunnych ustavu no.5:  
31-35.0 '63.

1. Ustav pro vyzkum rud, Praha.

ABSOLON, Karel, inz.

Spectrographic analysis of tin ores. Geolog pruzkum 5 no.2:56-57 F  
'63.

1. Ustav pro vyzkum rud, Praha.

ABSOLON, Karel

~~Spectral determination of beryllium. Chem prum 13 no.8:416-417~~  
Ag'63.

1. Ustav pro vyzkum rud, Praha.

ABSOLON, Karel, inz. chem.

Determining calcium, aluminum, and iron in magnesites by spectral solution analysis. Rudy 12 no.6:184-187 Je '64.

1. Institute of Ore Research, Prague.

COUNTRY : Czechoslovakia H-30  
CATEGORY :  
ABS. JOUR. : AZKhim., No. 1959, No. 28544  
AUTHOR : Absolon, O.  
INST. :  
TITLE : Painting of Low-Current Devices and Units  
Exposed to the Action of Atmospheric Agents  
ORIG. PUB. : Sdelovaci techn., 1959, 7, No 1, 30-31  
ABSTRACT : Brief information concerning protective  
coatings and their application.

CARD:



ABSOLONOVA, O.; FRAGNER, P.; PATERA, V.

Mycological findings in sputum of patients with lung tuberculosis.  
Cesk. epidem. mikrob. imun. 6 no.3 192-194 May 57.

1. Krajska hygienickoepidemiologicke stanice KVV Praha.  
(TUBERCULOSIS, PULMONARY, compl.  
    Monilia albicans isolata from sputum (Cz))  
(MONILIASIS  
    M. albicans isolation from sputum of patients with  
    pulm. tuber. (Cz))

*APPROVED FOR RELEASE*

SURNAME, Given Names

Country: Czechoslovakia

-to Degree:

Affiliation:

Source: Ceskoslovenska Hygiene, Vol V, No 2-3, Prague, Mar 60, p 152.

Date:

KELETI, J.

Affiliation: Institute of Hygiene LFUK [?], Bratislava, Institute of Hygiene of the University in Brno, and member of the Kraj Hygiene and Epidemiological Station-KNV [?] in Prague.

Date: Co-author of "The Problem of Methaemoglobinemia in Infants in Czechoslovakia," Source, p 152.

VOETAL, F.

Affiliation: Institute of Hygiene LFUK [?], Bratislava, Institute of Hygiene of the University in Brno, and also, member of Kraj Hygiene and Epidemiological Station-KNV [?] in Prague.

Date: Co-author of "The Problem of Methaemoglobinemia in Infants in Czechoslovakia." Source, p 152.

ARSLOANOVA, O.

Affiliation: Institute of Hygiene LFUK [?], Bratislava, Institute of Hygiene of the University in Brno, and also, member of Kraj Hygiene and Epidemiological Station-KNV [?] in Prague.

Date: Co-author of "The Problem of Methaemoglobinemia in Infants in Czechoslovakia." Source, p 152.

POSPISIL, J.

Affiliation: Institute of Hygiene LFUK [?] in Bratislava, Institute of Hygiene of the University in Brno, and also, member of Kraj Hygiene and Epidemiological Station-KNV [?] in Prague.

Date: Co-author of "The Problem of Methaemoglobinemia in Infants in Czechoslovakia," Source, p 152.

1. ABCOMMOVA, J.
2. USSR (600)
4. Singing - Instruction and Study
7. Why are drawing and singing lessons boring. *Sen'ia i shkola* 8, No. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, May 1953, Unclassified

ABSTORSKI, J.

ABSTORSKI, J. Systematization of organizational tables in the cement industry.  
p. 205. Vol. 12, no.9, Setp. 1956. CEMENT, WATOC, GHS. Krakow, Poland.

SOURCE: East European Accessions List (EEAL) Vol. 6, No. 4--April 1957

ABSTORSKI, J.

Intensification of the production process in the cement industry. p. 43.

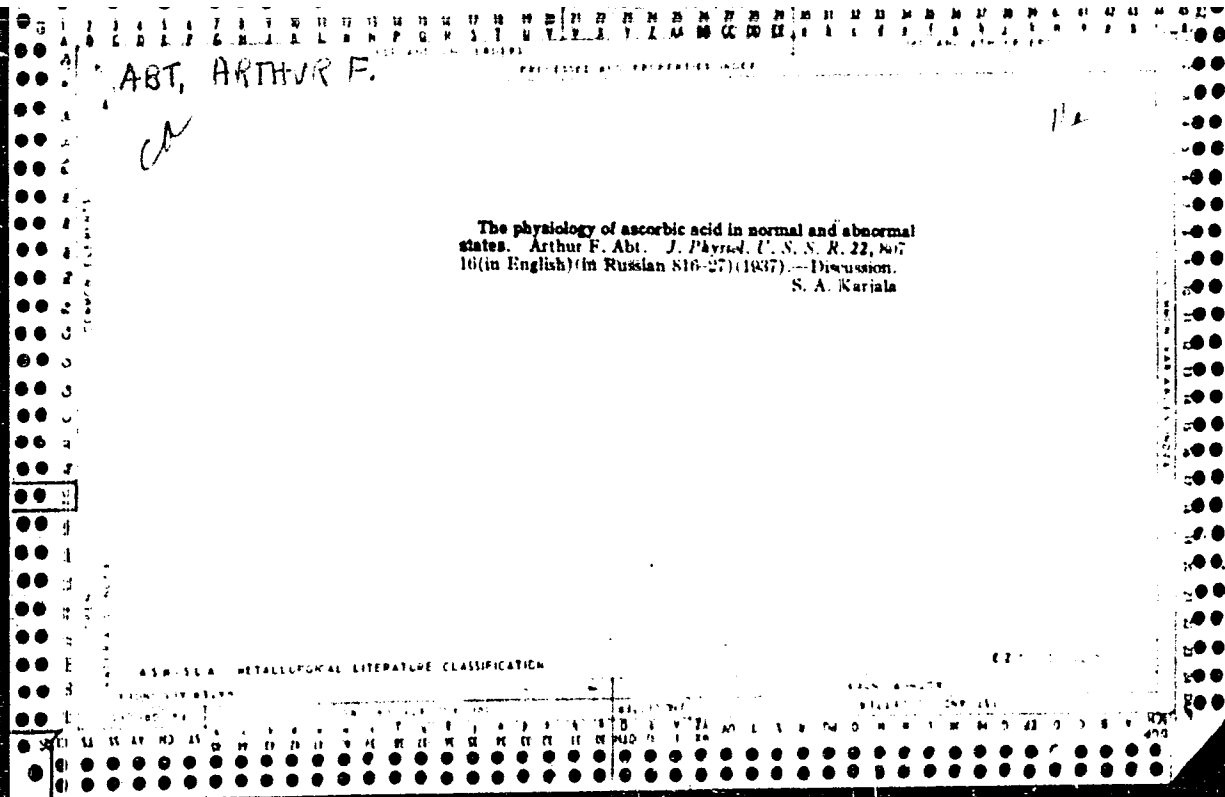
CEMENT, WAPNO, GIPS. (Wydawnictwo "Budownictwo i Architektura") Krakow, Poland. Vol. 13, no. 2, Feb. 1957.

Monthly list of East European Accessions Index (EEAI), LC, Vol. 8, no. 6, June 1959  
uncla.

SAIDAKHMEDOV, A.A.; ~~ABSUZHABBAROV, A.A.~~

Study of the cerebrospinal fluid in tuberculosis meningitis.  
Dokl. AN Uz. SSR no.8:65-67 '57. (MIRA 11:5)

1. Uzbekskiy nauchno-issledovatel'skiy tuberkuleznyy institut.  
Predstavleno akad. AN UzSSR A.Yu. Yunusovym.  
(CEREBROSPINAL FLUID) (MENINGES--TUBERCULOSIS)



EDUKASHINOV, R. R.

"Precipitation Color Reactions of Urine in Certain Infectious Diseases."  
Candidate Sci, Kazakh State Medical Institute N. N. Lolotov, Alma-Ata, 1954.  
(Ill. No 8, Feb 55)

SO: Sum. No. 631, 26 Aug 55 - Survey of Scientific and Technical Dissertations  
Defended at USSR Higher Educational Institutions (14)



ABUBAKIROV, I.K.; PARPIYEV, N.A.; ASHFULATOV, Yu.

Petrography of burned rocks in the Angren Valley.      Uzb.geol.zhur.  
no.4:16-23 '61.      (MIRA 14:9)

1. Institut geologii i Institut khimii AN UzSSR.  
(Angren Valley--Rocks, Sedimentary)

ABUBAKIROV, I.K.

Underground coal fire and conditions of the formation of burned  
rocks in the Angren Valley. Vop. geol. Uzb. no. 3:30-37 '62.  
(MIRA 16:6)

(Angren Valley--Coal geology)

ABUBAKIROV, I.K.

Magnetite-hematite bodies in burnt rocks of the Angren Valley  
and conditions governing their formation. Uzb.geol.zhur.  
6 no.3:53-57 '62. (MIRA 15:6)

1. Institut geologii AN UzSSR.  
(Angren Valley--Magnetite) (Angren Valley--Hematite)

~~The alkaloids of Delphinium...~~  
~~Yunusov and N. K. Abubakirov, Doklady Akad. Nauk~~  
~~USSR 1980, 206, 207; Zh. Obshch. Khim. 45, 2000, 47,~~  
~~1971. Report of a study of the chemical nature of the alk...~~

... frothing at 125°, [α]<sub>D</sub> 3.0°. Attempts to remove the  
water of crystal, by vacuum drying leads to destruction of

... glossy mass. m. 140° with frothing and gives a series of  
... HCl, HBr, HI, HClO<sub>4</sub>, and MeI. Solub. of

Alkaloids of Ranunculaceae. II. Alkaloids of *Delphinium biternatum*. S. Yunusov and N. K. Abubakirov, *Dokl. Akad. Nauk. (U.S.S.R.)* 19, 869 (1949), *ibid.* (English transl.) *J. Gen. Chem.* 19, 869 (1949), *ibid.* (C.A.) 42, 7049. Exhaustive extn. of 2.0 kg dried roots with  $\text{CH}_2\text{Cl}_2$  in the presence of 5%  $\text{NH}_4\text{OH}$ , followed by sepn. of the pett. ether-sol. fraction, gave 13.3 g *delphinine perchlorate*, m. 212-14° (from the pett. ether-sol. fraction), and 1.0 g crude *delbine*, m. 77-80° (from sol. fraction), and 1.0 g other unknown alkaloids were also present. Similarly 1.5 kg. of the upper parts of the plant gave 9.3 g total alkaloids, contg. 6.4 g *delphinine* and 0.3 g *delbine*. *Delphinine*,  $\text{C}_{22}\text{H}_{33}\text{O}_4\text{N}$ , isolated from the perchlorate by  $\text{NH}_4\text{OH}$  treatment, m. 101-6° (from  $\text{Et}_2\text{O}$ -pett. ether),  $[\alpha]_D^{25} 38.5^\circ$  ( $\text{CHCl}_3$ ), contains 20.5% MeO groups (5 MeO) and 2 OH groups; the pure *perchlorate* m. 230-1° (from  $\text{EtOH}$ ),  $[\alpha]_D^{25} 8.4^\circ$  (in  $\text{H}_2\text{O}$ ); *monomethylide*, m. 197-8° (decompn.); from  $\text{Me}_2\text{CO}-\text{Et}_2\text{O}$ . Hydrolysis of 1 g. *delphinine* by refluxing 3 hrs. with 1 g. KOH in 15 ml. MeOH failed to show any degradation, while keeping 2 g. alkaloid with 15 ml.  $\text{AcCl}$  in a sealed tube 10 days gave 0.5 g. *mono-Ac. derr.*, an amorphous powder, which yields the alkaloid on heating 2 hrs. with 10% KOH in MeOH. *Delbine* forms a *monohydrate*, m. 116-18° (from  $\text{EtOH}-\text{Et}_2\text{O}$ , after  $\text{EtOH}-\text{H}_2\text{O}$ ), becoming *anhydrous in vacuo*, m. 158° (decompn.), picks up 1 mol.  $\text{H}_2\text{O}$  in the air; this alkaloid,  $\text{C}_{22}\text{H}_{33}\text{O}_5\text{N}$ ,  $[\alpha]_D^{25} 33.0^\circ$  (in  $\text{CHCl}_3$ ), has not been even partially identified because of low yields. *Delphinine* is believed to contain an  $\text{EtN}$  group and is apparently based on the  $\text{C}_{22}\text{H}_{33}\text{O}_4\text{N}$  nucleus common to several acorn alkaloids. (G. M. Kosolapoff)

ABUBAKIROV, N. K.

"The Alkaloids Delphinium Biternatum: XI. Alkaloids of the Ranunculaceae Family,"  
Zhur, Obshch. Khim., 19, No.5, 1949

Lab. Chemical Alkaloids, Inst. Chemistry, Uzbek AS SSR

ABU BAKIROV, N. S.

CA

Alkaloids of *Delphinium semibarbatum*. IV. Alkaloids of Ranunculaceae. S. Yunusov and N. S. Abubakirov (Uzbek Acad. Sci.). *Zhur. Obshchei Khim. (J. Gen. Chem.)* 21, 174-84 (1951); cf. *ibid.* 19, 269-70 (1949). — *Ratn. of D. semibarbatum* (superterranean parts) with  $\text{CH}_2\text{Cl}_2$  in the presence of 5%  $\text{NH}_4\text{OH}$  and treatment of the crude alkaloids with  $\text{Et}_2\text{O}$  and  $\text{EtOH}$  gave 20.2 g. total alkaloids from 22.8 kg. plant matter; roots have about 30% higher alkaloid content. Extn. of crudes with  $\text{Et}_2\text{O}$ , extn. of  $\text{Et}_2\text{O}$  ext. with  $\text{N HCl}$ , extn. of this with  $\text{CHCl}_3$  and fractional pptn. with  $\text{N KOH}$  gave 0.4 g. *delsimine*,  $\text{C}_{12}\text{H}_{19}\text{O}_5\text{N}$ , which on storage loses  $2\text{H}_2\text{O}$ , while at  $70-80^\circ$  a *hemihydrate* is obtained; at  $100-5^\circ$  the alkaloid decomp. The *hemihydrate* softens at  $110^\circ$ , m.  $125^\circ$  (with decompn.),  $[\alpha]_D^{25}$  43.07° ( $\text{EtOH}$ ). Hydrolysis with 0.1 N  $\text{KOH}$  and  $\text{EtOH}$  or  $\text{MeOH}$  gave *anthranilic acid* and *delsine*, m.  $137-8^\circ$ ; if hydrolysis is handled rapidly, 90% recovery of *delsine* is possible and *delsimine acid*, m.  $168-70^\circ$ , can be isolated. The latter,  $\text{C}_{12}\text{H}_{19}\text{O}_5\text{N}$ , m.  $170-1^\circ$  (from  $\text{EtOH}-\text{Et}_2\text{O}$ ),  $[\alpha]_D^{25}$  40.84° ( $\text{EtOH}$ ). The  $\text{Et}_2\text{O}$  ext. of the aq. mother

liquor from isolation of *delsimine* also yields small amts. of *delsine*, best purified by  $\text{HBr}$  salt (from  $\text{MeOH}-\text{Et}_2\text{O}$ ), the free base forms *monohydrate*, decomp.  $140^\circ$  (from  $\text{H}_2\text{O}$ ), losing  $\text{H}_2\text{O}$  only at  $100-5^\circ$ , amorphous *delsine* m. indefinitely at  $125^\circ$ , decomp.  $138^\circ$ , which behavior resembles Goodson's *lycoctonine* (C.A. 37, 4401; 38, 3658). Pure *delsine*,  $[\alpha]_D^{25}$  51.74° ( $\text{EtOH}$ ) has 4MeO groups;  $\text{HCl}$  salt ( $2/3\text{H}_2\text{O}$ ), deliquescent, *anhydrous* form, m.  $165^\circ$  (decompn.),  $[\alpha]_D^{25}$  13.84 ( $\text{H}_2\text{O}$ );  $\text{HBr}$  salt, dec.  $185^\circ$ , forms *tetrahydrate* in air;  $\text{HI}$  salt, m.  $188-9^\circ$ , while product crystd. from  $\text{EtOH}$  contains 8  $\text{H}_2\text{O}$  or  $\text{EtOH}$  and m.  $173-6^\circ$ ,  $[\alpha]_D^{25}$  31.37°; *perchlorate*, m.  $145-6^\circ$  (from  $\text{EtOH}-\text{Et}_2\text{O}$ ),  $[\alpha]_D^{25}$  24.06°; *methiodide*, decomp.  $189-90^\circ$ . Oxidation of *delsine* with cold aq.  $\text{KMnO}_4$  yields  $\text{AcH}$ , isolated as 2,4-dinitrophenyl-hydrate. *Delsine* is  $\text{C}_{12}\text{H}_{19}(\text{NEt})_2(\text{OH})(\text{OMe})$ . G. M. Kosolapoff

1951

CA

Alkaloids of the Ranunculaceae family. V Alkaloids of *Delphinium oreophilum*. S. Yunusov and N. K. Abubakirov. *Zhur. Obshch. Khim. i Gen. Chem.* 21, 1067-71 (1951), et al. 1-45, 5088. From *Delphinium oreophilum* were isolated delsemin and delsem, alkaloids that had been previously found in *D. umbellatum*. The content in the plant varies drastically with the period of examn; the highest value in the roots (1.65%) is attained in August, while in the upper parts the max. (0.35%) is reached in July. Heating delsemine with 10% HCl 1 hr. at 100° gave methylsuccinic acid (I) and anthranoyldelone (II) in 100% (from EtOH); 5:2:92% (EtOH), which forms a perchlorate, decomp. 216° (from EtOH). The I so obtained is the *l*-isomer, m. 180-10°, [α]<sub>D</sub><sup>20</sup> -7.5° (H<sub>2</sub>O). Hydrolysis of II with aq. alic. KOH gave delsem, m. 130°, and anthranilic acid. The *α*-delseminic acid (see previous paper), m. 170-1° (from dil. EtOH), on heating in H<sub>2</sub>O goes over into the *β*-form, m. 180-1°, which reverts to the original form on pptn. from alk. solns. with acids, while on long standing the m.p. changes to 178°. Boiling delseminic acid with lime water gave (methylsuccinyl)anthranilic acid, giving an *α*-form, m. 168° (by salting out from solns. of its salts); *β*-form, m. 171°. The transformations of these are just like those of the delseminic acid parents; the material is optically inactive, and hydrolysis with 10% HCl gave orthoic acid and I. Delseminic acid is therefore the *l*-isomer of  $C_{10}H_{11}N_2O_5$ .  $C_{10}H_{11}N_2O_5$  (CONH) (position of Me group uncertain), and delsemin is  $\alpha$ -C<sub>10</sub>H<sub>11</sub>(CH<sub>3</sub>)C<sub>10</sub>H<sub>11</sub>N<sub>2</sub>O<sub>5</sub>(OH)(OMe)<sub>2</sub>NHCOCHMeCH<sub>2</sub>CONH<sub>2</sub> (same as marked above). G. M. Kosolapoff.



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U S S R .

Delphinium alkaloids. V. Delbine and delphatine. N. K. Abubakirov and S. Yu. Yunusov. *Soviet State Chemistry* 2: 1463-7 (1953); *Ch. C.A.* 24, 7023a; 46, 8120d. Sapon. of delbine with alkali (by soln. in MeOH, addn. of KOH, distn. of MeOH and replacement of it with H<sub>2</sub>O, followed by keeping the mixt. overnight at room temp.) yields an amino alc. *delphatine* (cf. *loc. cit.*) and *delseminic acid*. On this basis delbine is assigned the formula C<sub>17</sub>H<sub>17</sub>N

O<sub>15</sub>N<sub>1</sub>H<sub>17</sub>O. It is believed that alkaloid delsonine from *Delphinium consolida* is identical with delphatine. Delphatine is not isomerized by alkali.  $\alpha$ -*Delseminic acid*, from hydrolysis of delbine, m. 169°. *Delphatine* forms a picrate, deromp. 216°,  $[\alpha]_D^{20}$  20.6° (in 65% EtOH); *HI salt*, m. 196°,  $[\alpha]_D^{20}$  31.7° (in EtOH). Heating delphatine with MeI in a sealed tube to 130° failed to effect any reaction; it cannot be hydrogenated over PtO<sub>2</sub> catalyst. Oxidation with KMnO<sub>4</sub>-H<sub>2</sub>SO<sub>4</sub> gave AcH. Heating delphatine with MeI in MeOH gave delphatine (II salt). This confirms the presence of the NH<sub>2</sub> group in this substance. Repetition of the work of Marion and Edwards (*C.A.* 42, 102c) yielded pure delsonine in cryst. form and the analysis of its salts and the alkaloid itself suggested its identity with delphatine. G. M. Kozlov

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11570  
ABURAKIROV, N. K.: YUNUSOV, S. Yu.

"On the Nature of N-Alkyl Groups in Aconitic Alkaloids," Dokl. AN Uz. SSR, No 1, 1954, pp 29-32

The presence of the N-ethyl group was established in the two aconitic alkaloids decline and its isomer delphonine was found by splitting off the N-alkyl group and alkylating the remaining base with MeI and EtI. Comparison of the product with the original compound established the presence of the N-ethyl group. (FZhKhim, No 18, 1954)

SO: Sum. No. 568, 6 Jul 55

ABUBAKIROV, N. K.

USSR/Chemistry

Card 1/1

Authors : Abubakirov, N. K.; and Yunusov, S. Yu.

Title : Investigation of Delphinium alkaloids. Part 6.- About N-alkyl group of delphisine.

Periodical : Zhur, *Ob. Khim.* 24, Ed. 4, 733 - 738, April 1954

Abstract : The author carried out the transformation from delphisine over a nitroso compound into the nor-basis. Alkylation of latter with ethyl iodide produces a compound identical to natural delphisine. The presence of the N-ethyl group in aconite alkaloids was proven by a series of conversions. Fifteen references; 4 USSR since 1942; 11 German, Japanese, English since 1936.

Institution : Institute of Chemistry at the Acad. of Sciences of Uzbek-SSR.

Submitted : December 11, 1953

USSR .

Delphinium alkaloids. VI. The N-alkyl group of del-  
siao. N. K. Abubakirov and S. Yu. Yunusov. *J. Gen.  
Chem. U.S.S.R.* 24, 731-5(1951)(Engl. translation).—  
See C.A. 49, 5498b. H. L. H.

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*Abubakirov, N.K.*

ABUBAKIROV, N.K.; YUNUSOV, S.Yu.

~~Delphinium alkaloids. Zhur.ob.khim. 26 no.6:1798-1808 Je '56.~~

(MIRA 11:1)

1. Institut khimii AN Uzbekskoy SSR.  
(Delphonine)

ABUBAKIROV, N.K.; MASLENNIKOVA, V.A.; GOROVITS, M.B.

New glycoside from jute seeds. Dokl. AN Uz. SSR no.6:23-27 '57.  
(MIRA 11:5)

1. Institut khimii i biologii, respublikanskaya akademiya nauk Uz. SSR

5(3)

SOV/30-58-11-6/48

AUTHOR:

Abubakirov, N. K., Candidate of Chemical Sciences

TITLE:

Researches of Uzbekistan Scientists in the Field of the Chemistry of Natural Compounds (Issledovaniya uchenykh Uzbekistana v oblasti khimii prirodnykh soyedineniy)

PERIODICAL:

Vestnik Akademii nauk SSSR, 1958, Nr 11, pp 38-41 (USSR)

ABSTRACT:

Since more than 25 years researches in the field of natural chemical vegetable compounds are being developed in Uzbekistan. This development is connected with the names S. Yu. Yunusov, A. S. Sadykov, who received their training by A. P. Orekhov. They work in the Institut khimii rastitel'nykh veshchestv Akademii nauk Uzbekskoy SSR (Institute of Chemistry of Vegetable Materials of the AS Uzbekskaya SSR), which was founded in 1956. This institute consists of laboratories for the chemistry of alkaloids, of cotton, of fibers, and of cellulose, which have originated in the institute of chemistry of the same academy as well as in the recently founded laboratory for glycoside chemistry. Some time ago an alkaloid called "Del'semin" was discovered in the plant Delphinium (zhivokost') by S. Yu. Yunusov, N. K. Abubakirov. It is similar in its effects to the

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SOV/30-58-11-6/48

Researches of Uzbekistan Scientists in the Field of the Chemistry of Natural Compounds

poison curare. It is equal to the best preparations imported (P. M. Dozortseva, M. D. Mashkovskiy, K. M. Kovalenkov). A. D. Kuzovkov, M. D. Mashkovskiy, A. V. Danilova, G. P. Men'shikov, S. F. Torf, N. V. Khromov-Borisov obtained a series of preparations synthetically. A. S. Sadykov carries out investigations of the cotton-plant and Kh. U. Usmanov investigations of fiber and cellulose. The method of extracting citric and malic acid from the leaves of the cotton-plant was introduced in the factory Nikotinovo of the Municipal Economy Council of Moscow. Only a relatively small part of the chemistry of natural compounds is comprised by the work of Uzbekistan scientists. It is considered necessary to enlarge the scope of these researches in the Akademies of the Union Republics. There is 1 Soviet reference.

Card 2/2



AUTHORS:      Abubakirov, N. K.,      SOV/79-28-6-60/66  
                 Maslennikova, V. A.; Gorovits, M. B.

TITLE:          Investigations on Jute Glucoside (Issledovaniye  
                 glyukozidov dzhuta)  
                 I. Olitoriside (I. Olitorizid)

PERIODICAL:    Zhurnal obshchey khimii, 1958, Vol. 28, Nr 8,  
                 pp. 2279-2283 (USSR)

ABSTRACT:      The authors investigated the seeds of the long-fruit type of  
                 jute (*Corchorus olitorina* L.), which has recently been  
                 cultivated in **Central Asia**. An infusion of the seeds into 70%  
                 alcohol indicated a rather high cardiotonic activity. The  
                 method of separating out the glucoside is described in the  
                 experimental section. Special care was taken to maintain the  
                 temperature below 40-45° in all operations, including  
                 separation from the solvent. The action of acids and basic  
                 reagents was prevented. Care was taken, contrary to the  
                 methods of other investigators (Refs 2, 3, 5, 8, 9), to  
                 remove the excess lead ions along with hydrogen sulfide, a  
                 very important step, since the jute glucoside hydrolyses in

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Investigations on Jute Glucoside,  
I. Olitoriside

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even weakly acidic media. The separated product shows all the reactions which are characteristic of the heart glucosides of the digitalis-strophanthine group. The elementary analysis (the molecular weight) and the basic titration led to the formula  $C_{35}H_{52}O_{14}$ . Methoxy groups were not found to be present.

The ultraviolet absorption spectrum is characterized by two maxima at 218 and 304 m  $\mu$  (Fig 1). The presence of many oxygen atoms permitted the product to be included in the diglucosides. Since its physico-chemical properties are markedly different from other known glucosides it was given the name "olitoriside". Olitoriside is one of the most toxic of all the glucosides. It is a bioside and hydrolyses in acid to sugar residue and strophanthidine. New data were obtained which showed that corchorin (Korkhorin) and strophanthidine are identical. There are 2 figures and 13 references, 1 of which is Soviet.

ASSOCIATION: Institut khimii rastitel'nykh veshchestv Akademii nauk  
Uzbekskoy SSR (Institute for the Chemistry of Plant Materials,  
Card 2/3 AS Uzbek SSR)

Investigations on Jute Glucoside.  
I. Olitoriside

SOV/79-28-8-60/66

SUBMITTED: June 19, 1957

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ABUBAKIROV, N.K., kand. khim. nauk.

Research of Uzbek scientists in the chemistry of natural products.  
Vest. AN SSSR 28 no.11:38-41 N '58. (MIRA 11:12)  
(Uzbekistan--Chemistry, Organic)

ABUBAKIROV, N.K.; YATSYN, V.K.

Investigation of the Central Asian varieties of licorice  
with regard to their content of glycyrrhizic acid. Uzb.khim.  
zhur. no.5:81-86 '59. (MIRA 13:2)

1. Institut khimii rastitel'nykh veshchestv AN UzSSR.  
(Asia, Central--Licorice) (Glycyrrhizic acid)

ABUBAKIROV, N.K.; YAMATOVA, R. Sh.

Extraction of cymarín from the roots of *adonis chrysocyathus*.  
Dokl. AN Uz. SSR no. 12:28-30 '59. (MIRA 13:5)

1. Institut khimii rastitel'nykh veshchestv AN Uz. SSR. Predstavleno  
akad. AN Uz. SSR. S. Yu. Yunusovym.  
(Cymarín) (Adonis)

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SOV/79-29-4-44/77

AUTHORS:

Abubakirov, N. K., Maslennikova, V. A., Gorovits, M. B.

TITLE:

Investigation of the Jute Glucosides (Issledovaniye glyukozidov dzhuta). II. Structure of Olitoriside (II. Stroyeniye olitorizida)

PERIODICAL:

Zhurnal obshchey khimii, 1959, Vol 29, Nr 4, pp 1235-1240 (USSR)

ABSTRACT:

Olitoriside was prepared by the authors from the seed of the plant *Corchorus olitorius* L. ( $C_{35}H_{52}O_{14}$ ). They showed that it is a diglucoside and is decomposed by acids into the sugar residue and strophanthidin (Ref 1). In the article under review the data permitting the determination of its structure are given. The problem consisted in the interpretation of the nature and the order of affiliation of the two sugar residues in the strophanthidin molecule. For this purpose olitoriside was treated with different enzymes: with emulsin, the ferment produced from jute seed, and the ferment solution obtained from alfalfa seed. It was with the two latter ferments only that it proved possible to obtain the glucoside with the empirical formula  $C_{29}H_{42}O_9$  (the name given to it is desglucoolitoriside). In contrast with

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olitoroside (I, R=H) this glucoside (III, R=H) exhibits the Keller-Kiliani reaction. With acetic anhydride (III) forms a diacetyl derivative (IV, R=COCH<sub>3</sub>). By a slightly acid hydrolysis of (III) (VI) C<sub>23</sub>H<sub>32</sub>O<sub>6</sub> and the 2-desoxymethylpentose (V) are formed. Of 8 isomeric 2-desoxymethylpentoses the d-boivinoside (VII) (Ref 2) is closest to the constants of the sugar obtained. It was proved by synthesis (Ref 3) that (VII) is a d-xylo-2-desoxyhexamethyllose. The results of further investigations may be summarized as follows: During the fermentation hydrolysis of the vegetable diglucoside olitoriside C<sub>35</sub>H<sub>52</sub>O<sub>14</sub> d-glucose splits off from it forming the desgluco-olitoriside C<sub>29</sub>H<sub>42</sub>O<sub>9</sub>, which, in turn, results in d-boivinoside and strophanthidin due to a slightly acid hydrolysis. A comparison of optical molecular rotations shows that in both cases the sugar compounds exhibit the β-glucoside bond. By the reactions mentioned the structure of olitoriside was identified as strophanthidin-(3)-β-d-boivinoside-β-d-glucoside. The scheme given illustrates the hydrolytic splitting of olitoriside. There are 1 figure, 2 tables, and

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Investigation of the Jute Glucosides. II. Structure of Olitoriside

8 references, 2 of which are Soviet.

ASSOCIATION: Institut khimii rastitel'nykh veshchestv Akademii nauk Uzbekskoy  
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Academy of Sciences, Uzbekskaya SSR)

SUBMITTED: March 18, 1958

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5 (3)

AUTHORS:      Abubakirov, N. K., Chuprova, Z. I.      SOV/79-29-7-79/83

TITLE:      Investigation of the Alkaloids of Aconitum Nemorum  
(Issledovaniye alkaloidov Aconitum nemorum)

PERIODICAL:      Zhurnal obshchey khimii, 1959, Vol 29, Nr 7, pp 2454-2456 (USSR)

ABSTRACT:      The whole plant growing in the Ala-Tau mountains was investigated in different phases so that the alkaloid content varied considerably. The highest amount accumulates in the roots (up to 2.18 %). In all samples investigated the newly discovered alkaloid termed "nemorin" predominated amongst all other alkaloids. It yields a well crystallizing oxalate, tartrate and picrate, but no crystalline salts with mineral acids. The ultimate analysis of nemorin in connection with its molecular weight determined by the cryoscopic and titration method yielded the formula  $C_{24}H_{39}O_4N$ . The attempt of hydrogenation with the platinum catalyst was unsuccessful. Neither did the ultraviolet absorption spectrum of the alkaloid and its salts in the range 220-360 m $\mu$  revealed any absorption maxima characteristic of the double bonds. According to the method of Tserevitinov-Chugayev, two hydroxyl groups were detected in

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Investigation of the Alkaloids of Aconitum Nemorum

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memorin. The acetylchloride reacts with one of them to form O-acetylmemorin. The remaining two oxygen atoms are found in the methoxy groups. On heating with hydroiodic acid they readily hydrolyze and yield the compound  $C_{22}H_{33}O_3N$  with the new name

"aponemorin". Obviously the hydroiodic acid causes in addition to hydrolysis a reduction of one of the hydroxyl groups already existing or set free. Methyl iodide does not affect the memorin dissolved in methanol. In order to determine the character of the N-alkyl groups memorin was oxidized with potassium permanganate. Acetaldehyde was separated there, which indicates in memorin a linkage of nitrogen with the ethyl group. All these results permit the definite formula of memorin to be established as follows:  $C_{22}H_{26}(OH)_2(OCH_3)_2NC_2H_5$ . There are 5 Soviet references.

ASSOCIATION: Institut khimii rastitel'nykh veshchestv Akademii nauk Uzbekskoy SSR (Institute of Chemistry of Vegetable Matter of the Academy of Sciences of the Uzbekskaya SSR) Kazakhskiy meditsinskiy institut (Kazakh Medical Institute)

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Investigation of the Alkaloids of Aconitum Nemorum

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SUBMITTED:      June 11, 1958

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5(3)

AUTHORS: Maslennikova, V. A., Khristulas, F. S., SOV/20-124-4-26/67  
Abubakirov, N. K.

TITLE: ~~Structure of Erysimoside~~ - a Stereoid Diglucoside From Plants  
of the Genus Erysimum (Stroyeniye erizimozida-steroidnogo  
diglyukozida iz rasteniy roda Erysimum)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 4, pp 822-825  
(USSR)

ABSTRACT: The species of the genus Erysimum have been investigated already  
recently as to the content of glucosides. The most favorable  
results were obtained by pharmacological studies, whereby  
several Erysimum species were detected, the extracts of which  
possess the activity of cardiac glucosides (Refs 1-4). The  
chemical study of the respective active substances had been  
neglected and has been begun not before long. The authors  
give a survey of publications (Refs 5-10) on the three lacton-  
like substances which apparently are glucoside aglucones:  
erysimin, helveticoside and erysimotoxin (all of them  
monoglucosides). The above-mentioned glucosides investigated  
here were obtained from Central Asiatic plants: E. diffusum,  
E. gypsaceum, E. Marschallianum, E. repandum, E. violascens

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Structure of Erysimoside - a Stereoid Diglucoside  
From Plants of the Genus Erysimum

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and *E. vitellinum*. In this paper the authors give primarily results of the substances obtained from the seeds of *E. diffusum*. Two procedures of extraction were tested: a) by a prevented hydrolytic splitting of glucosides by specific ferments of the plant and b) by this fermentation. The qualitative composition of glucosides was investigated by paper chromatography at various stages of the work. a) After a complicated separation into several stages a substance was isolated that is similar to olitoriside with respect to the advance which showed one stain on the chromatogram. This new glucoside was called "erysimoside" (I) ( $C_{35}H_{52}O_{14}$ ). It is an amorphous powder with specific rotation, readily soluble in methyl and ethyl alcohol, to a sufficient extent in water, difficult to solve in chloroform and insoluble in ether. Erysimoside gives all color reactions characteristic of cardiac glucosides of the *Digitalis-Strophanthus* group as well as the reaction according to Liebermann that is typical of steroids. Its structure is determined by gradual hydrolysis. On the influence of the pancreatic juice of the snail *Helix plectotropis*

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or the ferment solution from the seeds of *E. diffusum* erysimoside separates a glucose molecule and is converted into a monoglucoside. The separated sugar turned out to be a D-glucose (V). The portion of the molecule deprived of the glucose - desglucoerysimoside (III) - is crystallized from methanol in the form of colorless long needles ( $C_{29}H_{42}O_9$ ) with an unstable melting point. It is readily soluble in methanol, ethanol and chloroform, difficult to solve in cold and warm water and virtually insoluble in ether and benzene. A second sugar molecule was separated from desglucoerysimoside by mild acid hydrolysis. This aglucone (VI) was identified to be a strophanthidin. By comparing the molecular rotations it was found according to Klyne's rule (Ref 13) that the sugar kinds are connected to each other at both points by a  $\beta$ -glucoside bond. Thus, erysimoside represents a strophanthidin-(3)- $\beta$ -D-digitoxoside- $\beta$ -D-glucoside (structural formula I). Erysimoside and olitoriside (Ref 11) are diastereoisomeric compounds. As far as desglucoerysimoside and the previously described helveticoside (Ref 9) and

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From Plants of the Genus Erysimum

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erysimotoxin (Ref 10) have equal chemical structures, they can be considered to be identical, notwithstanding some differences of physico-chemical constants. There are 13 references, 10 of which are Soviet.

ASSOCIATION: Institut khimii rastitel'nykh veshchestv Akademii nauk  
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the Academy of Sciences, ~~Uzbekiya~~ SSR)

PRESENTED: October 2, 1958, by M. M. Shemyakin, Academician

SUBMITTED: September 30, 1958

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ABUBAKIROV, N.K.; GENKINA, G.L.

Photometric determination of cardiac glycosides of the strophanthidin group by means of 3,5-dinitrobenzoic acid. Uzb. khim. zhur. no.6: 63-72 '60. (MIRA 14:1)

1. Institut khimii rastitel'nykh veshchestv AN UzSSR.  
(Strophanthidin)                      (Cardiac glycosides)

ABUBAKIROV, N.K.; YAMATOVA, R.Sh.

New material sources for obtaining strophanthin-K. Med.prom. 14  
no.1:15-17 Ja '60. (MIRA 13:5)

1. Institut khimii rastitel'nykh veshchestv AN Uzbekskoy SSR.  
(STROPHANTHIN)

ABUBAKIROV, N.K.; YATSYN, V.K.

Obtaining glycyrrhizic and glycyrrhetic acid from the extract  
of licorice root. Med. prom. 14 no.5:31-34 My '60.

(MIRA 13:9)

1. Institut khimii rastitel'nykh veshchestv Akademii nauk Uzbekskoy  
SSR.

(GLYCYRRHIZIC ACID)

(GLYCYRRHETININ ACID)

ABUBAKIROV, N.K.; YAMATOVA, R.Sh.

Glucosides from *Apocynum androsaemifolium* L. Zhur.ob.khim.  
30 no.6:2082-2085 Je '60. (MIRA 13:6)

1. Institut khimii rastitel'nykh veshchestv Akademii nauk  
Uzbekskoy SSR.  
(Glycosides)