L 37002-66 EWT(m)/T/EWP(v)/EWT(l)/EWP(k)/ETI JD/HM

ACC NR: AP6021487 SOURCE CODE: UR/0413/66/000/011/0129/0129

INVENTOR: Krasulin, Yu. L.; Kuz'min, V. I.; Nikitin, V. G.

ORG: none

TITLE: Method of pressure welding microscopic parts with indirect heat input. Class 49, No. 182490

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 11, 1966, 129

TOPIC TAGS: welding, micropart welding, pressure welding

ABSTRACT: This Author Certificate introduces a method of pressure welding microparts with indirect heat input supplied by an electrically heated punch. To preserve the initial properties of one of the welded materials, to facilitate the welding of low-ductility materials, and to increase the efficiency of the process, the punch is heated by a current pulse. [ND]

SUB CODE: 13/ SUBM DATE: 30Jan64/ ATD PRESS: 5035

Card 1/1 PB UDC: 621.791.66

AR0017966 SOURCE CODE: UR/0196/66/000/001/A009/~~A009~~ A010

AUTHOR: Nikitin, V. G.; Shashin, V. I.

TITLE: Electric field at the axis of a charged disc with a concentric opening

SOURCE: Ref. zh. Elektrotekhnika i energetika, Abs. 1A75

REF SOURCE: Tr. po teorii polya, vyp. 1, 1964, 64-70

TOPIC TAGS: electric field, electric theory, electric conductor

ABSTRACT: The electric field is found at the axis of a charged disc with a concentric opening with consideration to the edge effect and also disregarding this effect. 4 illustrations, bibliography of 2 titles. From the summary. [Translation of abstract]

SUB CODE: 09

Card 1/1 vmb UDC: 537.212

L 44327-66 EWT(1) GD/GW

ACC NR: AT6028288 SOURCE CODE: UR/0000/64/000/000/0066/0075

AUTHOR: Bonchkovskaya, T. V.; Klimova, Ye. I.; Mishina, M. I.; Nikitin, V. G.

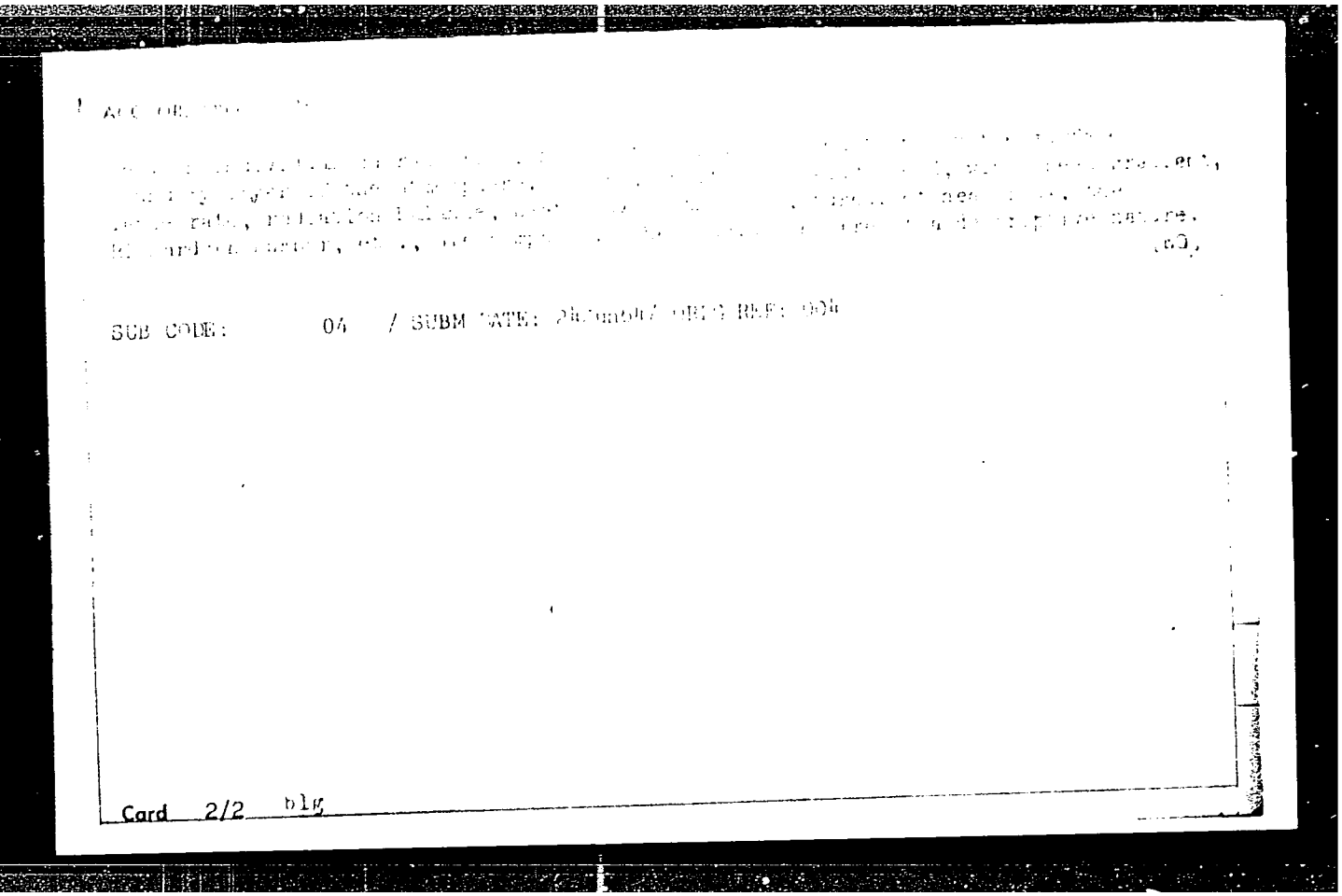
ORG: none

TITLE: The problem of heat transfer in the lower layer of the atmosphere

SOURCE: AN SSSR. Institut prikladnoy geofiziki. Issledovaniya teploobmena v atmosfere (Investigations of heat exchange in the atmosphere). Moscow, Izd-vo Nauka, 1964, 66-75

[illegible] radiation balance, [illegible]

Card 1/1



SUB CODE: 04 / SUBM DATE: [illegible] ORIG REF: 004

Card 2/2 blg

L 44328-66 EWT(1) GD/GW

ACC NR: AT6028290 SOURCE CODE: UR/0000/64/000/000/0086/0090

AUTHOR: Bonchkovskaya, T. V.; Nikitin, V. G.

ORG: none

TITLE: Scales of eddy motions in the atmosphere during turbulent heat exchange

SOURCE: AN SSSR. Institut prikladnoy geofiziki. Issledovaniya teploobmena v atmosfere (Investigations of heat exchange in the atmosphere). Moscow, Izd-vo Nauka, 1964, 86-90

TOPIC TAGS: micrometeorology, ~~radiation balance~~, atmospheric convection, atmospheric turbulence, surface boundary layer, ~~particle motion~~, ~~wind speed~~, wind ~~gradient~~ velocity, theodolite, meteorologic observation, atmospheric thermodynamics

ABSTRACT: Starting with a simplified representation of air-particle velocity as a sum of the velocity of horizontal transfer and the velocity of circular motion c, the authors derive the expression $u = -c \sin \alpha + u_g$ (where α and c are the phase and velocity of circular motion) for the components of velocity along the wind gradient. The values of c and u_g can be determined by measuring the extremal values of the velocity u. If the distance d between the two maximum velocities is also known, the distance r of a particle from the center of revolution will equal $d\sigma/r\pi u_g$. The authors assume that the statistical mean value of r equals half the radius of the eddy R. This reasoning is used to estimate the dimensions of eddies in the atmosphere at a height of 300–400 m by observations of the motion of pilot balloons

Card 1/2

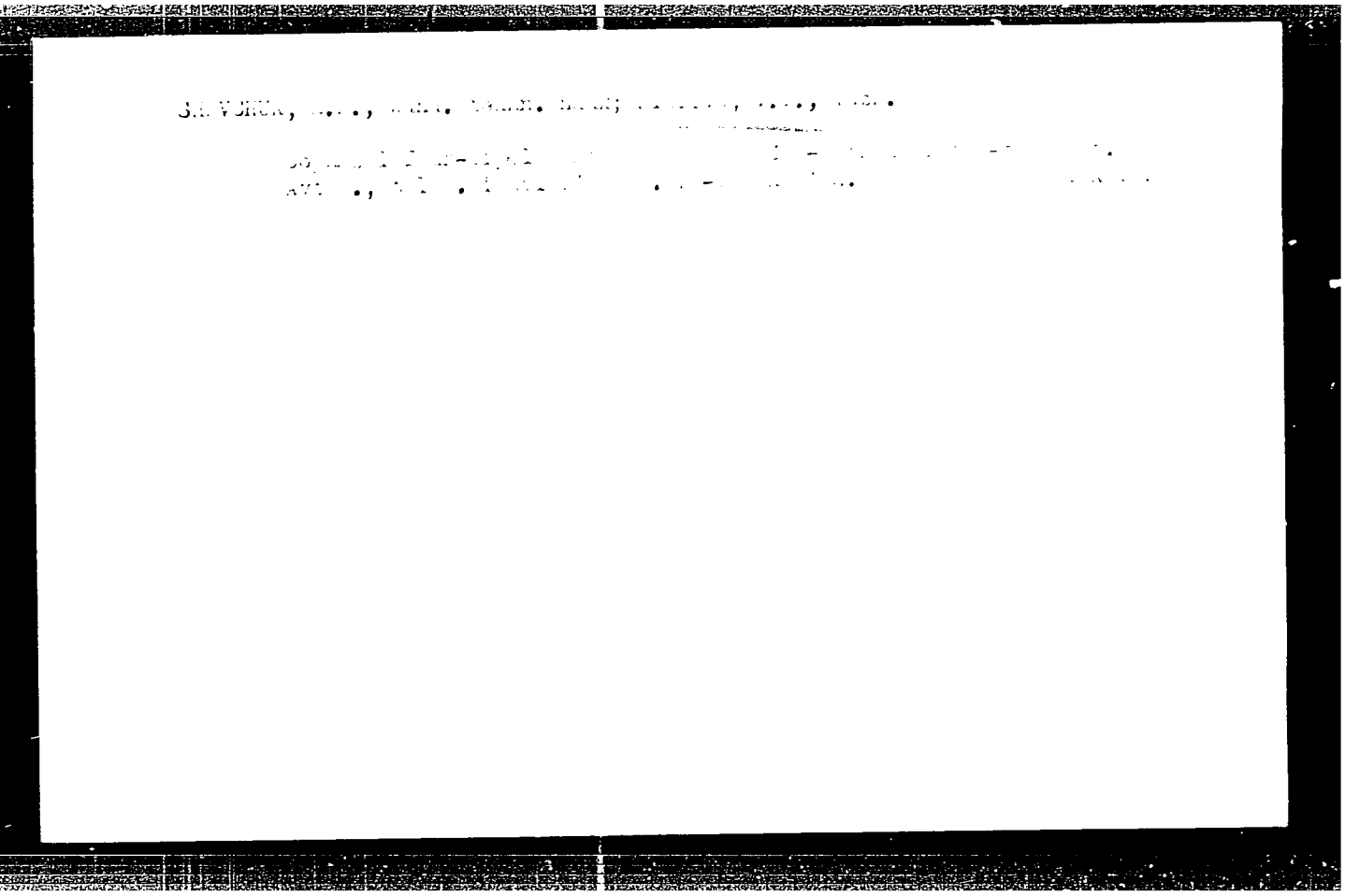
L 44328-66

ACC NR: AT6028290

in a state of equilibrium. The positions of the pilot balloons were determined every 10 seconds by theodolites and phototheodolites. Observations were conducted over the Kuban Steppe in June and July 1960 on days when there was convection and the ground-level wind velocities did not exceed 5—6 m/sec. The mean value of R was found to be 10 m. The scales of disturbances in the atmosphere were also estimated by observations of the periods of oscillations and changes in the altitude of captive balloons with a known lifting force. In this case, a value of R of 10—15 m was obtained for short-period oscillations and 100—200 m for long-period oscillations. [EO]

SUB CODE: 04 / SUBM DATE: 24Jun64/ ORIG REF: 001/

Card 2/2 blg



FILIN, N.P.; KISELEV, I.I.; MASLOV, N.M.; SERDYUKOV, N.I.; NIKITIN, V.I.; KHOKHLOV, N.A.

Unit for breaking up frozen ground. Rats. i izobr. predl. v stroi. no.3:31-35 '57. (MIRA 11:1)
(Frozen ground) (Excavating machinery)

GRANIN, G.I., dorozhnyy master (Stantsiya Shilka, Zabaykal'skoy dorogi); GORYUNOV, A.T., dorozhnyy master (Stantsiya Shilka, Zabaykal'skoy dorogi); NIKITIN, V.I., brigadir (Stantsiya Shilka, Zabaykal'skoy dorogi)

Establish more accurate production norms. Put' i put.khoz., 6 no.2:46 '62. (MIRA 15:2)

(Railroads--Maintenance and repair)

KOROLEV, V.A., inzh. (Tashkent); NIKITIN, V.I., inzh. (Tashkent)

Current maintenance of diesel locomotives on lengthened haul distance sections. Zhel.dor.transp. 45 no.10:64-66 O '63. (MIRA 16:11)

1. Nachal'nik lokomotivnogo otdela Tashkentskogo otdeleniya Sredneaziatskoy dorogi (for Korolev).

BUBLIKOV, Ye.V., inzh.; FEDOROV, G.D., inzh.; NIKITIN, V.I., inzh.

The PK-1 apron conveyor for mines. Ugol.prom. no.5:38-40 S-O '62. (MIRA 15:11)

1. Ukrainskiy nauchno-issledovatel'skiy institut organizatsii i mekhanizatsii shakhtnogo stroitel'stva.
(Conveying machinery)

NIKITIN, V.I.

Regularities of corrosion in liquid metals under isothermal and nonisothermal conditions. Zhur. prikl. khim. 36 no.10: 2192-2201 O '63. (MIRA 17:1)

L 11267-66 EWT(m)/EWP(w)/EPF(n)-2/T/EWP(t)/EWP(b) IJP(c) JD/WW/JG

ACC NR: AP5028378 SOURCE CODE: UR/0369/65/001/005/0609/0611

AUTHOR: Nikitin, V. I. (Leningrad)

ORG: none

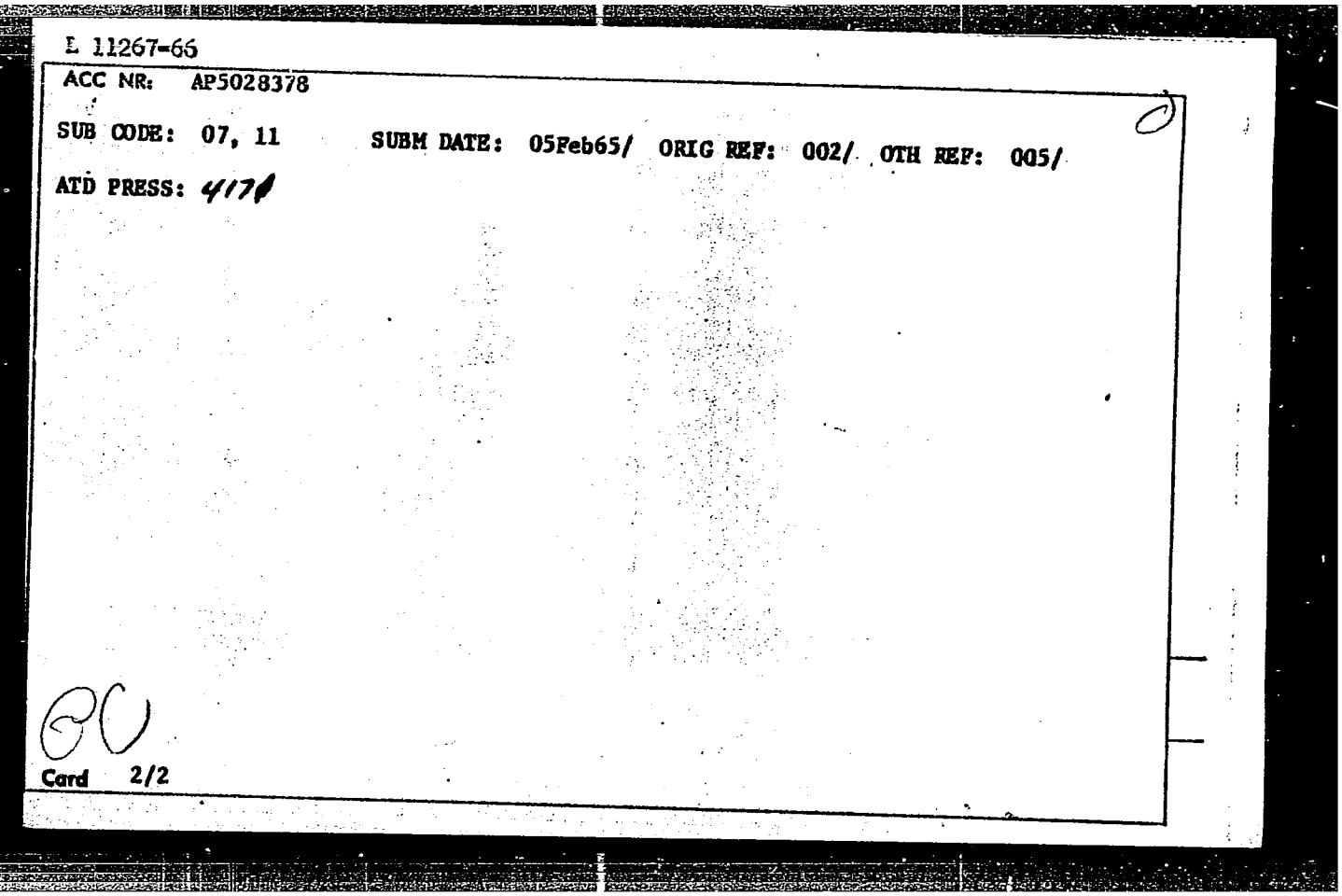
TITLE: Adsorption effect of a liquid-metal medium on creep under compression

SOURCE: Fiziko-khimicheskaya mekhanika materialov, v. 1, no. 5, 1965, 609-611

TOPIC TAGS: copper, liquid metal, bismuth, creep, copper creep, tension creep, compression creep, liquid metal effect, absorption effect

ABSTRACT: The creep behavior in tension or compression of copper tubes 10 x 0.5 x 50 mm filled with liquid bismuth has been studied at 350C to determine the effect of liquid metal. The test results showed that in both tension and compression the creep rate in bismuth was much higher than that in air. The relative effect of the liquid metal increased with decreasing stress. Under an equal stress, liquid bismuth affected the creep rate in tension much more than that in compression. The creep in tension reached the final stage very rapidly and the specimen failed even under very low stresses. The stronger effect of liquid bismuth on the creep in tension can be explained by the formation and propagation of cracks, whereas in compression-induced creep the deformation proceeds without crack formation. Thus, in compression, liquid metal affects only the process of deformation, while in tension it also accelerates crack formation. Orig. art. has: 2 figures and 1 table. [MS]

Card 1/2



L 11267-66

ACC NR: AP5028378

SUB CODE: 07, 11 SUBM DATE: 05Feb65/ ORIG REF: 002/ OTH REF: 005/

ATD PRESS: 4174

EC

Card 2/2

NIKIFIN, V.I.

Thermal mass transfer in liquid sodium. Zhur. fiz. khim. 38 no.5:1210-1215 My '64. (MIRA 18:12)

1. Kotloturbinnyy institut, Leningrad. Submitted June 11, 1963.

NIKITIN V I.

BRONSHTEYN, L.A., kandidat tekhnicheskikh nauk; NAMOKONOV, K.G., shofer; SMIRNOV, O.S., retsenzent; LIV'YANT, Ya.A., retsenzent; NIKITIN, V.I., shofer, retsenzent; BAUMAN, I.M., inzhener, redaktor; TIKHONOV, A.Ya., tekhnicheskiy redaktor

[Improving the operation of trucks and lowering the cost of transport] Uluchshenie ispol'zovaniia avtomobilei i snizhenie sebestoimosti perevozok. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. i sudostroit. lit-ry, 1954. 146 p. (MLRA 7:10)
(Motor trucks) (Transportation, Automotive)

NIKITIN, Valentin Ivanovich, shofer 2-y avtobazy Glavnogo upravleniya gruzovogo avtotransporta Mosgorispolkoma; VASIL'YEV, N.S., redaktor; GALAKTIONOVA, Ye.N., tekhnicheskiy redaktor.

[Increasing efficiency of the ZIS-150 automobile]Za povyshenie proizvoditel'nosti avtomobilia ZIS-150. Moskva, Nauchno-tekhn.izd-vo avtotransp.;it-ry 1955. 54 p. (Opyt novatorov avtotransporta) (MLRA 9:4)
(Motor trucks)

NIKITIN, Valentin Ivanovich, shofer; BEKASOVA, L.M., redaktor; MAL'KOVA, N.V., tekhnicheskiy redaktor

[Increasing the productivity of trucks] Povyshenie proizvoditel'nosti gruzovogo avtomobilia. Izd. 2-oe, perer. i dop. Moskva, Nauchno-tekhn. izd-vo avtotransp. lit-ry, 1956. 74 p. (MIRA 10:11)

1. 2-ya avtobaza Glavmosavtotransa (for Nikitin)
(Motortrucks)

NIKITIN, Valentin Ivanovich, shofer-novator, udarnik kommunisticheskogo truda

Work and honor are inseparable. Za rul. 20 no.12:4-5 D '62. (MIRA 15:12)

1. Chlen prezidiuma TSentral'nogo komiteta professional'nogo soyuza rabotnikov svyazi i rabochikh avtomobil'nogo transporta i shosseynykh dorog SSSR.
(Farm produce—Transportation)

S/194/62/000/007/043/160
D295/D308

AUTHOR: Nikitin, V.I.

TITLE: Graphical integration of linear and nonlinear differential equations of the first order for plotting transients

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 7, 1962, abstract 7-2-88 e (Sb. nauchn. tr., Temskiy elektromekhan. in-t inzh. zh.-d. transp., no. 30, 1960, 55 - 64)

TEXT: A method of graphical integration of differential equations of the first order is described. In deriving the required relation, use is made of the representation of the equations on the phase plane. The phase path in the integration interval is approximated by a straight line. The value of the derivative in this interval is determined by inscribing rectangular triangles in the phase path. The case of a linear equation of the first order with a [non-zero] right-hand side is considered in general form in detail. The use of the method for non-linear equations is illustrated by the example

Card 1/2

Graphical integration of linear ... S/194/62/000/007/043/160
D295/D308

of an RL-network with a non-linear resistance. 4 references. [Abstracter's note: Complete translation.]

Card 2/2

S/194/61/000/011/014/070
D256/D302

AUTHORS: Nikitin, V.I., Vel't, I.D. and Rukavishnikova, V.K.

TITLE: Induction (electromagnetic) flowmeters of the "RI" type

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 11, 1961, 29-30, abstract 11 A242 (V sb. Teploenerg. i khimikotekhnol. pribory i regulyatory. M.-L., Mashgiz, 1961, 134-140)

TEXT: Flowmeters for electrically conducting liquids developed by NIIT (Thermal Instrumentation Institute) are described. The principle of induction flowmeters is presented and a description is given of a unit consisting of a converter, amplifier, measuring instrument and remote control panel. A table includes basic information on induction flowmeters of the following types: РИ-10 (RI-10), 20, 25, 50 and 80 (range in m^3/hour, and types of converters). Preliminary results of testing are in agreement with the

Card 1/2

S/194/61/000/011/014/070
D256/D302

Induction (electromagnetic)...

technical specifications of the instruments. [Abstracter's note: Complete translation]

Card 2/2

SHEVCHUK, R.M., kand.fiz.-matem.nauk; NIKITIN, V.I., inzh.

Device for determining the location of the source of radio interference. Avtom., telem. i sviaz' 6 no.10:36-38 O '62. (MIRA 16:5)
(Radio—Interference) (Radio direction finders)

L 08446-67 EWT(d)/FSS-2

ACC NR: AR6019074 SOURCE CODE: UR/0274/66/000/001/A084/A084

AUTHOR: Shevchuk, R. M.; Nikitin, V. I.

41

B

TITLE: The use of the radio-station type ZhP-5 for the measurement of signal and noise voltages

SOURCE: Ref. zh. Radiotekhnika i elektrosvyaz', Abs. 1A595

REF SOURCE: Nauchn. tr. Omskiy in-t inzh. zh.-d. transp., v. 52, 1965, 37-48

TOPIC TAGS: radio communication, radio equipment, radio noise, radio transmission, radio receiver, measurement, electronic measurement, interference measurement, electric measuring instrument

TRANSLATION: Since the utilization of measuring instruments for the determination of signal and noise voltages in the UHF range is difficult in certain cases, the receiving end of the radio-station ZhP-5 can be used to good advantage. An HF system which is linear over a certain voltage range is used. For the readout, the high impedance AVO-5 voltmeter may be used. Using this method in the absence of interference, it was possible to measure receiver input voltage down to 0.2 microvolts. To make it suitable for measurement purposes, the receiver is first calibrated by means of a signal generator. To measure noise it is necessary to construct a curve of the noise limiter operation with respect to the state of the limiter's controls and the receiver sensitivity.

UDC: 621.317.743

Card 1/2

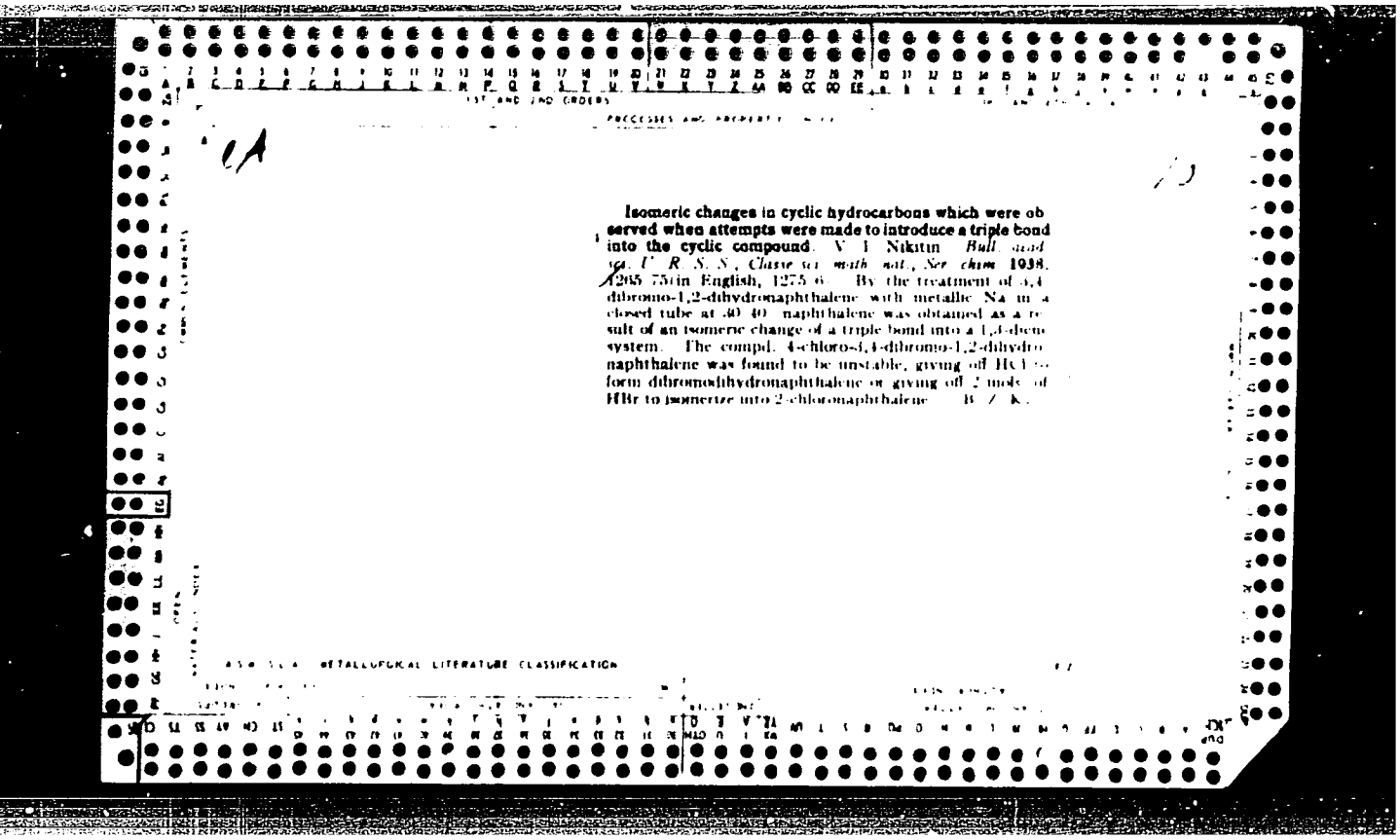
L 08446-67

ACC NR: AR6019074

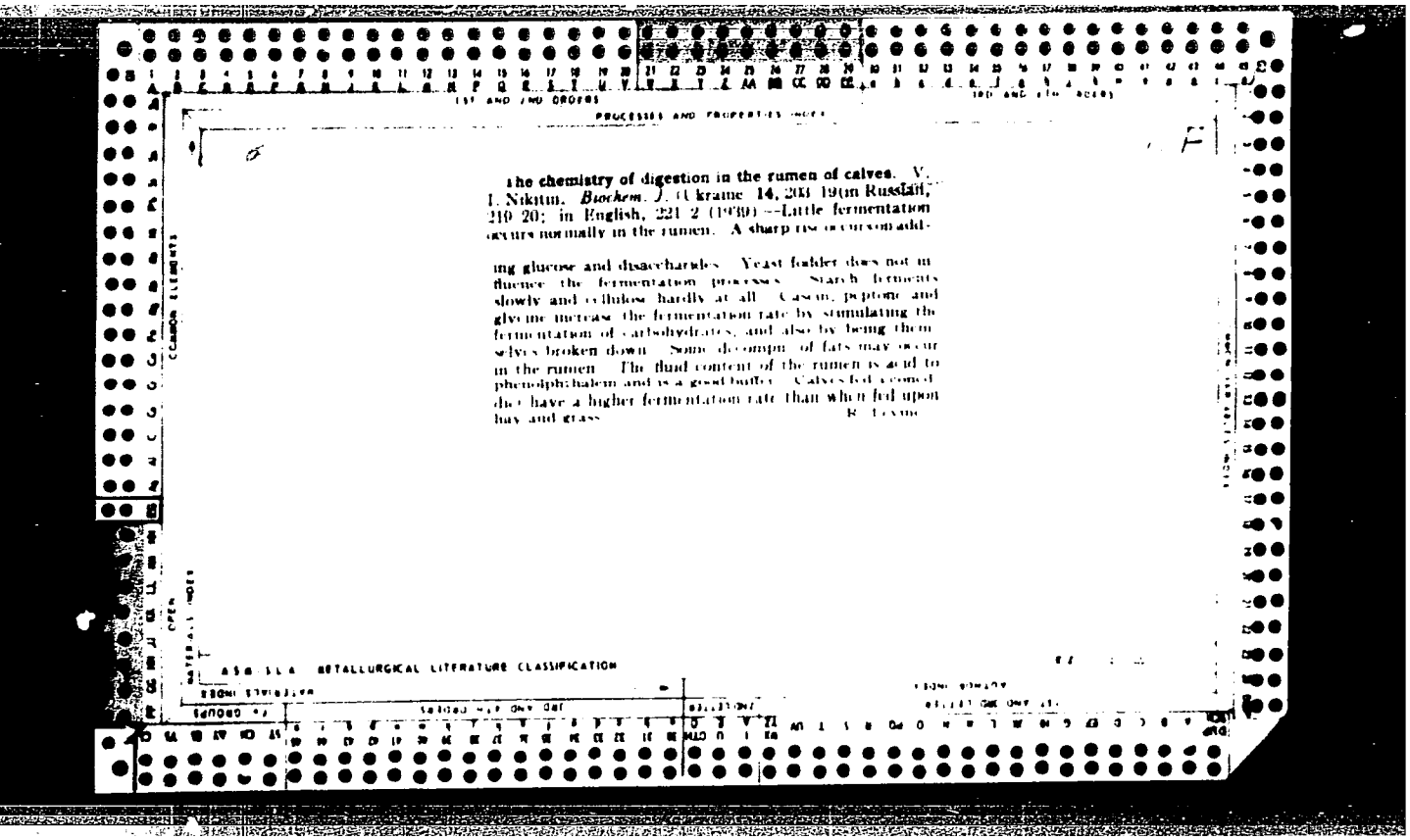
The results of signal and noise voltage measurements at the input of a locomotive radio-station are given for a railroad section of 200 km. The results of the measurements were compared to the field strength values measured with the IP-14 noise meter.
E. Ch.

SUB CODE: 17,09

Card 2/2

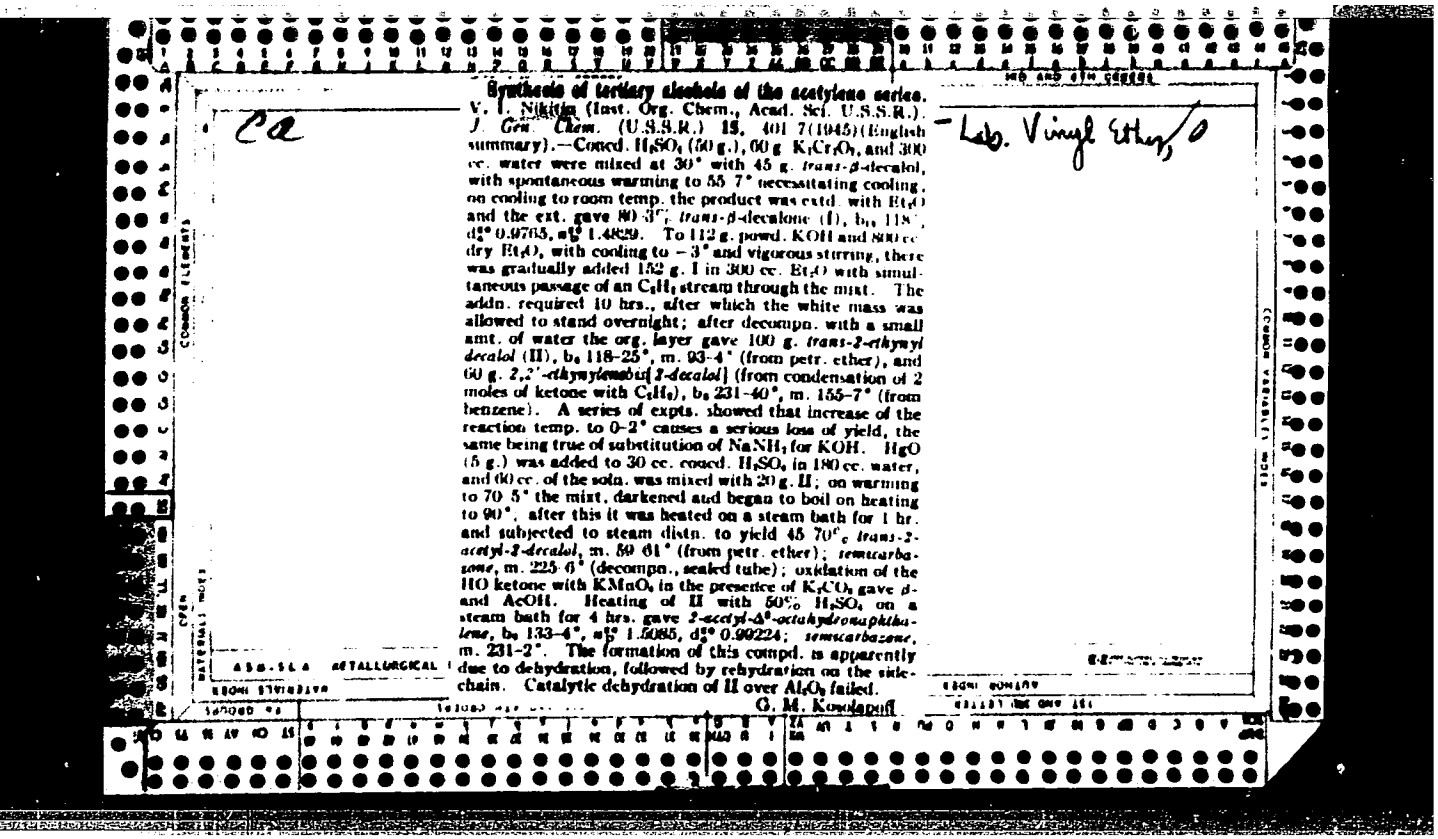


Isomeric changes in cyclic hydrocarbons which were observed when attempts were made to introduce a triple bond into the cyclic compound. V. I. Nikitin. *Bull. acad. sci. U. R. S. S., Classe sci. math. nat., Sér. chim.* **1938**, 1265-75 (in English, 1275-6). By the treatment of 3,4-dibromo-1,2-dihydronaphthalene with metallic Na in a closed tube at 40-50° naphthalene was obtained as a result of an isomeric change of a triple bond into a 1,3-diene system. The compd. 4-chloro-3,4-dibromo-1,2-dihydronaphthalene was found to be unstable, giving off HCl to form dibromodihydronaphthalene or giving off 2 mols. of HBr to isomerize into 2-chloronaphthalene. B. Z. K.



The chemistry of digestion in the rumen of calves. V. I. Nikitin. *Biochem. J.* (Ukraine) **14**, 203–19(in Russian); 219–20; in English, 221–2 (1940).—Little fermentation occurs normally in the rumen. A sharp rise in curve on adding glucose and disaccharides. Yeast fodder does not influence the fermentation process. Starch ferments slowly and cellulose hardly at all. Casein, peptone and glycine increase the fermentation rate by stimulating the fermentation of carbohydrates, and also by being themselves broken down. Some decompn. of fats may occur in the rumen. The fluid content of the rumen is acid to phenolphthalein and is a good buffer. Calves fed a cooked diet have a higher fermentation rate than when fed upon hay and grass.

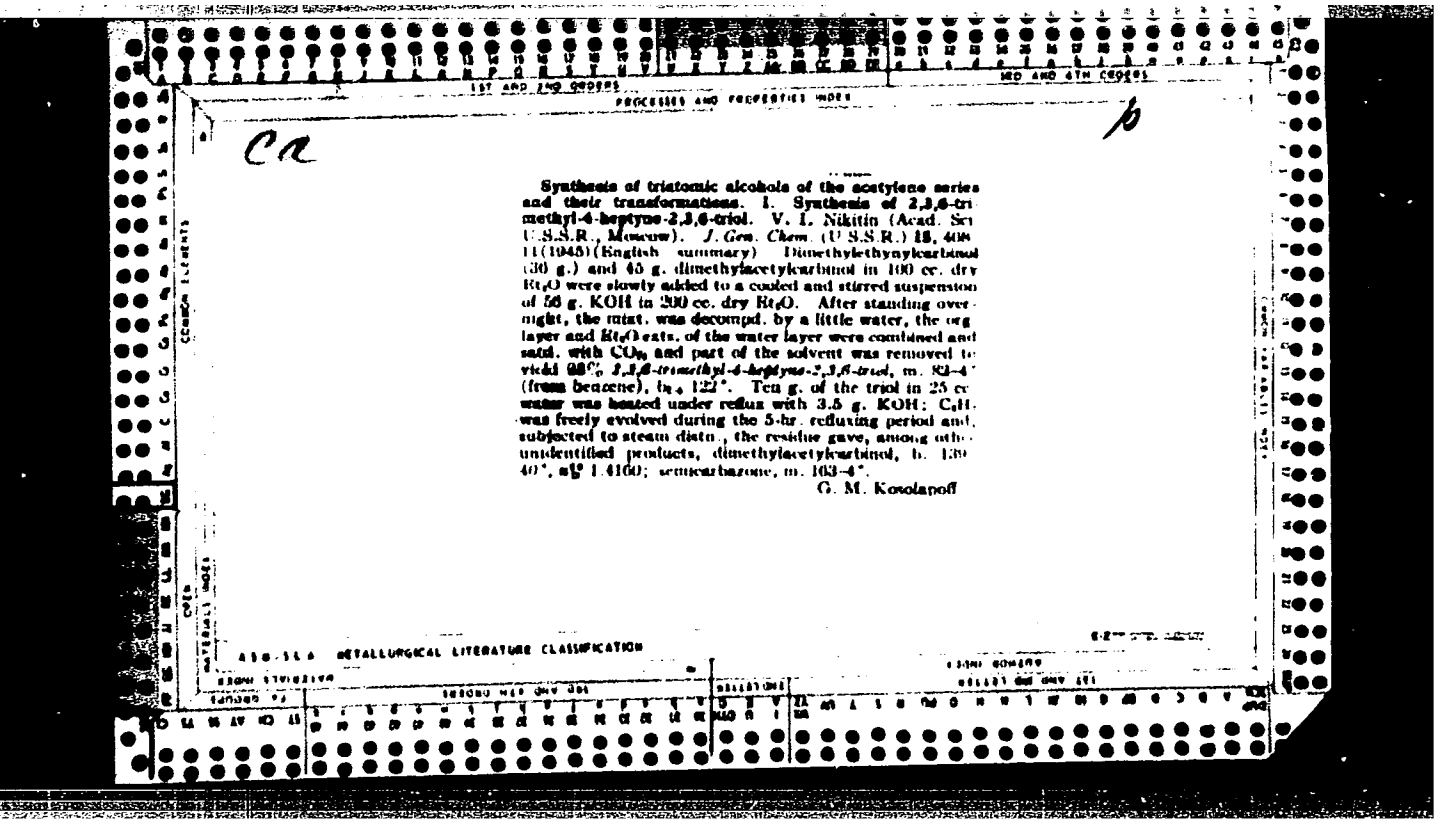
R. Levine



Synthesis of tertiary alcohols of the acetylene series.

V. I. Nikitin (Inst. Org. Chem., Acad. Sci. U.S.S.R.). *J. Gen. Chem.* (U.S.S.R.) **15**, 401–7 (1945) (English summary).—Concd. H_2SO_4 (50 g.), 60 g. $K_2Cr_2O_7$, and 300 cc. water were mixed at 30° with 45 g. *trans*-β-decalol, with spontaneous warming to 55–7° necessitating cooling; on cooling to room temp. the product was extd. with Et_2O and the ext. gave 80–3%; *trans*-β-decalone (I), b_{11} 118°, d_4^{20} 0.9765, n_D^{20} 1.4829. To 112 g. powd. KOH and 800 cc. dry Et_2O, with cooling to −3° and vigorous stirring, there was gradually added 152 g. I in 300 cc. Et_2O with simultaneous passage of an C_2H_2 stream through the mixt. The addn. required 10 hrs., after which the white mass was allowed to stand overnight; after decompn. with a small amt. of water the org. layer gave 100 g. *trans-2-ethynyl decalol* (II), b_6 118–25°, m. 93–4° (from petr. ether), and 60 g. *2,2'-ethynylenebis[3-decalol]* (from condensation of 2 moles of ketone with C_2H_2), b_6 231–40°, m. 155–7° (from benzene). A series of expts. showed that increase of the reaction temp. to 0–2° causes a serious loss of yield, the same being true of substitution of $NaNH_2$ for KOH. HgO (5 g.) was added to 30 cc. concd. H_2SO_4 in 180 cc. water, and 60 cc. of the soln. was mixed with 20 g. II; on warming to 70–5° the mixt. darkened and began to boil on heating to 90°, after this it was heated on a steam bath for 1 hr. and subjected to steam distn. to yield 45–70% *trans-2-acetyl-3-decalol*, m. 59–61° (from petr. ether); *semicarbazone*, m. 225–6° (decompn., sealed tube); oxidation of the HO ketone with $KMnO_4$ in the presence of K_2CO_3 gave β- and AcOH. Heating of II with 50% H_2SO_4 on a steam bath for 4 hrs. gave *2-acetyl-Δ²-octahydronaphthalene*, b_6 133–4°, n_D^{20} 1.5085, d_4^{20} 0.99224; *semicarbazone*, m. 231–2°. The formation of this compd. is apparently due to dehydration, followed by rehydration on the side-chain. Catalytic dehydration of II over Al_2O_3 failed.

G. M. Kosolapoff



CA

b

Synthesis of triatomic alcohols of the acetylene series and their transformations. I. Synthesis of 2,3,6-trimethyl-4-heptyne-2,3,6-triol. V. I. Nikitin (Acad. Sci U.S.S.R., Moscow). *J. Gen. Chem.* (U.S.S.R.) **15**, 408-11 (1945) (English summary) Dimethylethynylcarbinol (30 g.) and 45 g. dimethylacetylcarbinol in 100 cc. dry Et_2O were slowly added to a cooled and stirred suspension of 56 g. KOH in 200 cc. dry Et_2O. After standing overnight, the mixt. was decompd. by a little water, the org layer and Et_2O exts. of the water layer were combined and satd. with CO_2, and part of the solvent was removed to yield 98% *2,3,6-trimethyl-4-heptyne-2,3,6-triol*, m. 82-4° (from benzene), $[\alpha]_D$ 122°. Ten g. of the triol in 25 cc water was heated under reflux with 3.5 g. KOH; C_4H_8 was freely evolved during the 5-hr. refluxing period and, subjected to steam distn., the residue gave, among other unidentified products, dimethylacetylcarbinol, b. 130-40°, n_D^{20} 1.4160; semicarbazone, m. 103-4°.

G. M. Kosolapoff

NIKITIN, V.I.

New derivatives of acetylene. V. I. Nikitin. *Soobshcheniya Tadzhik. Filiala Akad. Nauk S.S.S.R.* No. 30, 19–25 (1951).—$Me_2C(OH)Ac$ with $Me_2C(OH)C{:}CH$ in dry Et_2O in the presence of KOH gave *$Me_2C(OH)CMe(OH)C{:}CCMe_2OH$*, m. 82–4° (from C_6H_6). Similarly were prepd.: *$EtMeC(OH)CMe(OH)C{:}CCMe_2OH$*, b_1 118–19°, d_{20} 1.0239, n^{20}_D 1.4706; *2,5-dimethyl-5-(1-hydroxycyclohexyl)-3-pentyne-2,5-diol*, b_1 151–5°; m. 87–8° (from Et_2O–C_6H_6); *2,4-bis(1-hydroxycyclohexyl)-2-hydroxy-3-butyne*, b_1 174–6°, m. 107–8° [from $(CH_2Cl)_2$]. The course of the Favorskii reaction is discussed and it is pointed out that interesting by-products can arise from it as a result of dissocn. of the acetylenic alcs. (initially formed) into their components during the reaction in the presence of KOH and subsequent reaction of these fragments with other substances in the mixt. Thus in the reaction of $Me_2C(OH)C{:}CH$, there is formed some $[Me_2C(OH)C{:}]_2$ and $[{:}CCMe(OH)CMeEtOH]_2$. Similarly in the reaction of $Me_2C(OH)C{:}CH$ with acetylcycloliexanol there is also formed some 1-(1-hydroxycyclohexyl)-2-methyl-2-propyn-2-ol (sic) and 2,5-bis(1-hydroxycyclohexyl)-3-hexyne-2,5-diol.

G. M. Kosolapoff

1. NIKITIN, [illegible]

2. USSR (60)

3. Tajikistan - Chemistr - History

7. History of the development of chemical r search in Tajikistan. Sovet. Tajikistan no. 31, 1951.

9. Monthly List of Russian Accessions, Library of Congress, March 1953, Uncl.

NIKITIN, V. I.

V-4P 25 Jan 54

Organic Chem

trans-2-Acetyldecahydro-2-naphthol. V. I. Nikitin. *Akad. Nauk S.S.S.R., Inst. Org. Khim., Sintezy Org. Soedinenii, Sbornik* 2, 123–5(1952); cf. *C.A.* 40, 4700⁸.—To 50 g. concd. H_2SO_4, 60 g. $K_2Cr_2O_7$, and 300 ml. H_2O is added at 30° rapidly with stirring 45 g. *trans*-2-decahydronaphthol (temp. rise to 55°) and cooling to maintain the temp. under 57°. On cooling to room temp. the mixt. is extd. with Et_2O and the ext., after washing with NaOH until colorless, then with H_2O, is evapd. yielding 65–70% *trans-decahydro-2-oxonaphthalene*, b_{18} 118°, d_{20} 0.9765, n_D^{20} 1.4829. The ketone (152 g.) in 300 ml. dry Et_2O is added over 10 hrs. to a suspension of 112 g. powd. KOH in 800 ml. dry Et_2O through which dry C_2H_2 is passed at −2 to −3°.—The resulting solid mass is treated with a little H_2O, the aq. layer is extd. with Et_2O and the combined org. layers are treated with CO_2 until colorless; after drying over K_2CO_3 the soln. is distd. yielding 56% *trans-2-ethynyl-2-decahydronaphthol*, b_6 118–25°, m. 93–4° (from petr. ether) This (20 g.) is added to 60 ml. of soln. obtained by dissolving 5 g. HgO in 30 ml. concd. H_2SO_4 and 180 ml. H_2O, and the mixt. is heated slowly to 90° (vigorous reaction); after 1 hr. on a steam bath the mixt. is steam-distd. (10–12 hrs.), the distillate is satd. with $(NH_4)_2SO_4$ and extd. with Et_2O. Evapn. of the ext. gives 45–70% *trans-2-acetyldecahydro-2-naphthol*, m. 59–61° after treatment with petr. ether. G. M. K.

NIKITIN, V. I.

Chem

(2)

Chem abs V 48
1-25-54
Organic Chemistry

2,3,6-Trimethyl-4-[illegible]-2,3,6-triol. V. I. Nikitin. *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk, Sintezy Org. Soedinenii, Sbornik* 2, 129–31(1952); cf. *C.A.* 40, 4665⁴.—A mixt. of 36 g. $Me_2C(OH)C{:}CH$ and 45 g. $AcCMe_2OH$ in 100 ml. dry Et_2O is added slowly to stirred mixt. of 56 g. powd. KOH in 300 ml. dry Et_2O with ice cooling. After stirring for some time, the mixt. is left at room temp. 2–3 hrs., after which it is treated with a little H_2O, the aq. layer is extd. with Et_2O and the combined org. layers, after satn. with CO_2 and drying over Na_2SO_4, are distd. yielding 91% $Me_2C(OH)CMe(OH)C{:}CCMe_2OH$, $b_{3.4}$ 122°, m. 82–4° (from C_6H_6); the product cannot be heated in the presence of bases as this leads to dissocn. to original components. Similarly can be prepd.: 74.4% $Me_2EtC(OH)CMe(OH)C{:}CCMe_2OH$, b_3 118–19°, $n^{19}D$ 1.4796, d_{20} 1.0239; 42.7% 1,4-dimethyl-1-(1-hydroxycyclohexyl)-2-pentyne-3-diol, b_3 151–5°, m. 87–8° (from Et_2O-C_6H_6); and 70% 2,5-bis(1-hydroxycyclohexyl)-3-hexyne-2,5-diol, b_3 174–6°, m. 107–8° [from $(CH_2)_5$].

G. M. Kosolapoff

4/15/54
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NIKITIN, V. I.

Pudovil, A. N., Nikitin, V. I.- "Allyl rearrangements. XVI. Formation of acetates and alcohols from isomeric butoxychloropentenes." (p. 1377)

SO: Journal of General Chemistry, (Zhurnal Obshchei Khimii), 1952, Vol. 22, No. 8.

NIKITIN, V.I.; SAVRANSKAYA, S.D.

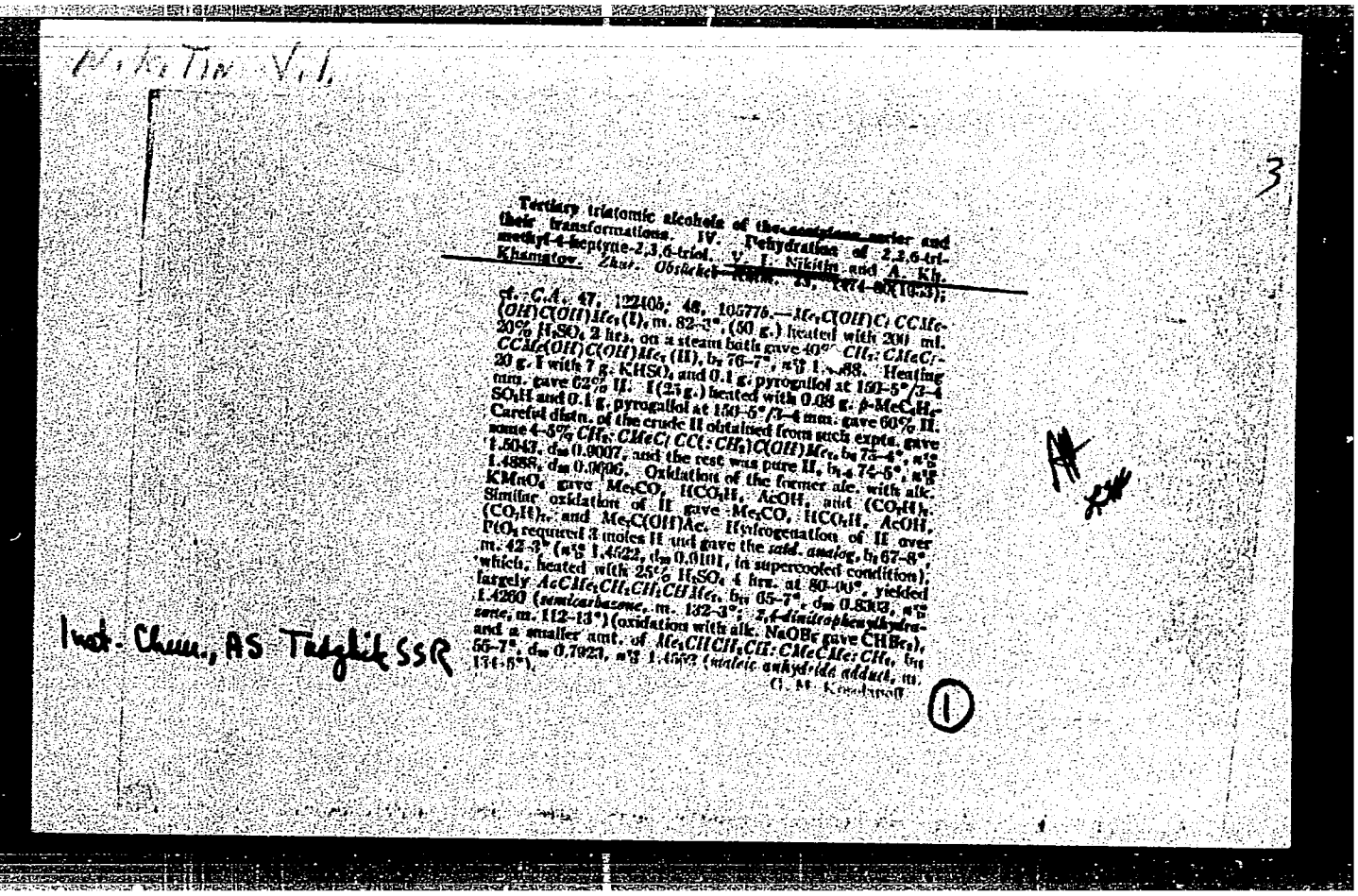
Tertiary triatomic alcohols of the acetylene series and their conversions. Part 2. Synthesis of 3,4,7-trimethyloctyne-5-triol-3,4,7,2,5,-dimethyl-5-(1-oxycyclohexyl)-pentene-3-diol-2,5 and 2,4-di-(1-oxycyclohexyl)-butine-3-ol-2. Zhur.ob.khim. 23 no.7:1146-1153 Jl '53. (MLRA 6:7)

1. Institut khimii Akademii Nauk Tadzhikskoy SSR. (alcohols)

NIKITIN, V. I.

Tertiary triatomic alcohols of the acetylene series and their transformations. III. Oxidation with potassium permanganate. V. I. Nikitin and S. D. Savranskaya (Inst. Chem. Acad. Sci., Ukrainian S.S.R.). *Zhur. Obshchei Khim.* 23, 1330–8(1953); cf. *C.A.* 47, 12240i.—It was shown that in reality no tautomeric forms of tertiary acetylenic γ-glycols or other tertiary polyatomic alcs. have any existence. Such alcs. are oxidized by $KMnO_4$ at the triple bond to diketones in the 1st stage, followed by 2-fold oxidation: cleavage between C atoms (one being a carbonyl, the other an alc. C atom) to yield $(CO_2H)_2$, and cleavage of the chain between 2 HO groups (cf. Krestinskii and Perfiantseva, *J. Russ. Phys.-Chem. Soc.* 58, 1077(1926); Dupont, *C.A.* 8, 1879). The following list describes the oxidation products of various polyatomic alcs. $Me_2C(OH)C{:}CCMe(OH)C(OH)Me_2$, m. 82–3°, (20 g.) in 100 ml. H_2O treated slowly with 1134 ml. 3% $KMnO_4$ at room temp. gave, after filtration of the MnO_2, 3.51 g. unreacted alc., some 0.55 g. Me_2CO, 1.2 g. $Me_2C(OH)Ac$, AcOH, and HCO_2H (requiring 0.76 g. NaOH for neutralization), 0.6 g. $(CO_2H)_2$, and 4.7 g. $Me_2C(OH)CO_2H$. Similarly 20 g. $Me_2C(OH)C{:}CCMe(OH)CMe(OH)Et$ gave 0.8 g. Me_2CO, about 1 g. MeEtCO, 1.6 g. $MeEtC(OH)Ac$, AcOH, HCO_2H, 0.93 g. $(CO_2H)_2$, and 4.1 g. $Me_2C(OH)CO_2H$. 2,5-Dimethyl-5-(1-hydroxycyclohexyl)-3-pentyne-2,5-diol (20 g.) gave 0.7 g. Me_2CO, 1.4 g. cyclohexanone, about 4 g. acetylcyclohexanol (semicarbazone, m. 184–5°), AcOH, HCO_2H, 3.2 g. $(CO_2H)_2$, and 4.2 g. $Me_2C(OH)CO_2H$. Similarly 20 g. 2,4-bis(1-hydroxycyclohexyl)-3-butyn-2-ol gave 1.5 g. cyclohexanone, a small amt. of acetylcyclohexanol, AcOH, 1.6 g. $(CO_2H)_2$, 4.6 g. α-hydroxyhexahydrobenzoic acid, and 2.6 g. adipic acid. Oxidation of 8.5 g. 2,5-bis(1-hydroxycyclohexyl)-3-hexyne-2,5-diol gave 2.5 g. unreacted triol, 0.9 g. cyclohexanone, 1.3 g. acetylcyclohexanol, some AcOH and HCO_2H, 0.6 g. $(CO_2H)_2$, and 0.3 g. adipic acid. Oxidation of 6 g. 2-(1-hydroxycyclohexyl)-3-butyn-2-ol gave 1.3 g. unreacted alc., 0.3 g. cyclohexanone, 1 g. acetylcyclohexanol, AcOH, HCO_2H, 0.4 g. $(CO_2H)_2$, and a little adipic acid.

G. M. Kosolapoff



Inst. Chem., AS Tadzh SSR

Tertiary triatomic alcohols of the acetylene series and their transformations. IV. Dehydration of 2,5,6-trimethyl-4-heptyne-2,3,6-triol. V. I. Nikitin and A. Kh. Khamatov. *Zhur. Obshchei Khim.*, 23, 1974-80(1953); cf. *C.A.*, 47, 12240b; 48, 10577b.—$Me_2C(OH)C:CC(Me)(OH)C(OH)Me_2$ (I), m. 82–3°, (50 g.) heated with 200 ml. 20% H_2SO_4 2 hrs. on a steam bath gave 40% $CH_2:CMeCH:CCMe(OH)C(OH)Me_2$ (II), b$_{15}$ 76–7°, n_D^{20} 1.4488. Heating 20 g. I with 7 g. $KHSO_4$ and 0.1 g. pyrogallol at 150–5°/3–4 mm. gave 62% II. I (25 g.) heated with 0.08 g. *p*-$MeC_6H_4SO_3H$ and 0.1 g. pyrogallol at 150–5°/3–4 mm. gave 60% II. Careful distn. of the crude II obtained from such expts. gave some 4–5% $CH_2:CMeCH:CC(:CH_2)C(OH)Me_2$, b$_{15}$ 73–4°, n_D^{20} 1.5043, d_4^{20} 0.9007, and the rest was pure II, b$_{15}$ 74–5°, n_D^{20} 1.4888, d_4^{20} 0.8906. Oxidation of the former ale. with alk. $KMnO_4$ gave Me_2CO, HCO_2H, AcOH, and $(CO_2H)_2$. Similar oxidation of II gave Me_2CO, HCO_2H, AcOH, $(CO_2H)_2$, and $Me_2C(OH)Ac$. Hydrogenation of II over PtO_2 required 3 moles H and gave the *satd. analog*, b$_{15}$ 67–8°, m. 42–3° (n_D^{20} 1.4622, d_4^{20} 0.8111, in supercooled condition), which, heated with 25% H_2SO_4 4 hrs. at 80–90°, yielded largely $AcCMe_2CH_2CH_2CHMe_2$, b$_{15}$ 65–7°, d_4^{20} 0.8313, n_D^{20} 1.4260 (*semicarbazone*, m. 132–3°; *2,4-dinitrophenylhydrazone*, m. 112–13°) (oxidation with alk. NaOBr gave $CHBr_3$), and a smaller amt. of $MeCHCH_2CH_2CH:CMeCMe:CH_2$, b$_{15}$ 66–7°, d_4^{20} 0.7921, n_D^{20} 1.4662 (*maleic anhydride adduct*, m. 134–5°).

G. M. Kondratyeva

NIKITIN, V.I.

Works of the Institute of Chemistry of the Academy of Sciences of the Tajik S.S.R. in the field of the acetylene based synthesis of new substances. Izv.otd.est.nauk AN Tadzh.SSR no.8:63-98 '54.(MLRA 9:9)

1.Direktor Instituta khimii AN Tadzhikskoy SSR.
(Acetylene compounds)

NIKITIN, V. I.

USSR/ Chemistry Conversion processes

Card : 1/1 Pub. 151 - 19/33

Authors : Nikitin, V. I., and Khamatov, A. Kh.

Title : Tertiary tri-atomic alcohols of the acetylene series and their conversions. Part 5.- Dehydration of 3,4,7-trimethyloctine-5-triol-3,4,7

Periodical : Zhur. ob. khim. 24/8, 1390 - 1397, August 1954

Abstract : The effect of dehydrating media on 3,4,7-trimethyloctine-5-triol-3,4,7 and the product formed therefrom, are described. The dehydration process is followed by separation of two H_2O atoms and formation of a certain amount of diene alcohol. Other dehydration products of tertiary tri-atomic acetylene alcohols, are listed. Five USSR references (1940 - 1953).

Institution : Acad. of Sc. Tadzhik-SSR, Institute of Chemistry

Submitted : April 22, 1954

NIKITIN, V.I.

Emergence, main tasks, and development of chemistry in Tajikistan. Izv.Otd.est.nauk AN Tadzh.SSR no.9:43-56 '55. (MLRA 9:10)

1. Institut khimii AN Tadzhikskoy SSR.
(Tajikistan--Chemistry)

Nikitin, V. I.

3

Tertiary trihydric alcohols of the acetylene series and their transformations. VI. Synthesis of 2,3,6-trimethyl-4-octyne-2,3,6-triol, 3,6,7-trimethyl-5-nonyne-3,4,7-triol, 2-methyl-5-(1-hydroxycyclopentyl)-3-hexyne-2,5-diol, and 2,6-bis(1-hydroxycyclopentyl)-3-butyn-2-ol. V. I. Nikitin and S. D. Savranskaya. *Zhur. Obshchei Khimii* 25, 1085-11 (1955); cf. C.A. 47, 12240i; 49, 10850d.—MeEtC(OH)-C:CH (bp 117–19°, d_4^{20} 0.8062, n_D^{20} 1.4311; 24 g.) and 20 g. Me_2CAcOH were added in 150 ml. Et_2O over 4 hrs. to 30 g. powd. KOH under dry Et_2O at −2°; the mixt. was treated with H_2O the following day and extd. with Et_2O, yielding some [*MeEtC(OH)C*]$_2$, b$_3$ 90–120°, m. 54°, 60% $Me_2C(OH)$-*CMe(OH)C:CCMeEtOH*, b$_3$ 120–6° (crude), b$_{1.5}$ 124–5°, d_4^{20} 1.0215, n_D^{20} 1.4709, which on standing solidified and m. 57–9°, and 2.6 g. [$Me_2C(OH)CMe(OH)C$]$_2$, b$_3$ 155–60° (crude), m. 154–5°. Similar reaction of 30 g. EtMeC(OH)-C:CH and 25 g. EtMeAcCOH with 30 g. powd. KOH in Et_2O gave a little [*MeEtC(OH)C*]$_2$, 83.5% [*EtMeC(OH)*-*Et*]$_2$O, and a little [*MeEtC(OH)CMe(OH)C*]$_2$, m. 155–6°. $Me_2C(OH)$-C:CH (30 g.) and 32 g. $(CH_2)_4C(OH)Ac$ (I) [b$_{10}$ 70–1°, d_4^{20} 1.0437, n_D^{20} 1.4674; prepd. by hydration of 1-ethynylcyclo-pentanol (II)] treated similarly yielded 72.3% $(CH_2)_4C$-*(OH)CMe(OH)C:CCMe*$_2$*OH*, b$_3$ 150–1°, m. 68–9°, and a small amt. of unknown material, m. 221–5°. Similar reaction of 35 g. II with 32 g. I gave 73% $(CH_2)_4C(OH)CMe$-*(OH)C:CC(OH)*$(CH_2)_4$, m. 81–4°, b$_3$ 168–70°. Heating $Me_2C(OH)C:CC(OH)Me_2$ with K_2CO_3 resulted in cleavage to C$_5$H$_8$ and the products with K_2CO_3 resulted in cleavage to C$_5$H$_8$ and the corresponding carbonyl compds. Abs in *J. Gen. Chem. U.S.S.R.* 25, 1083-7 (1955) (Engl. translation).

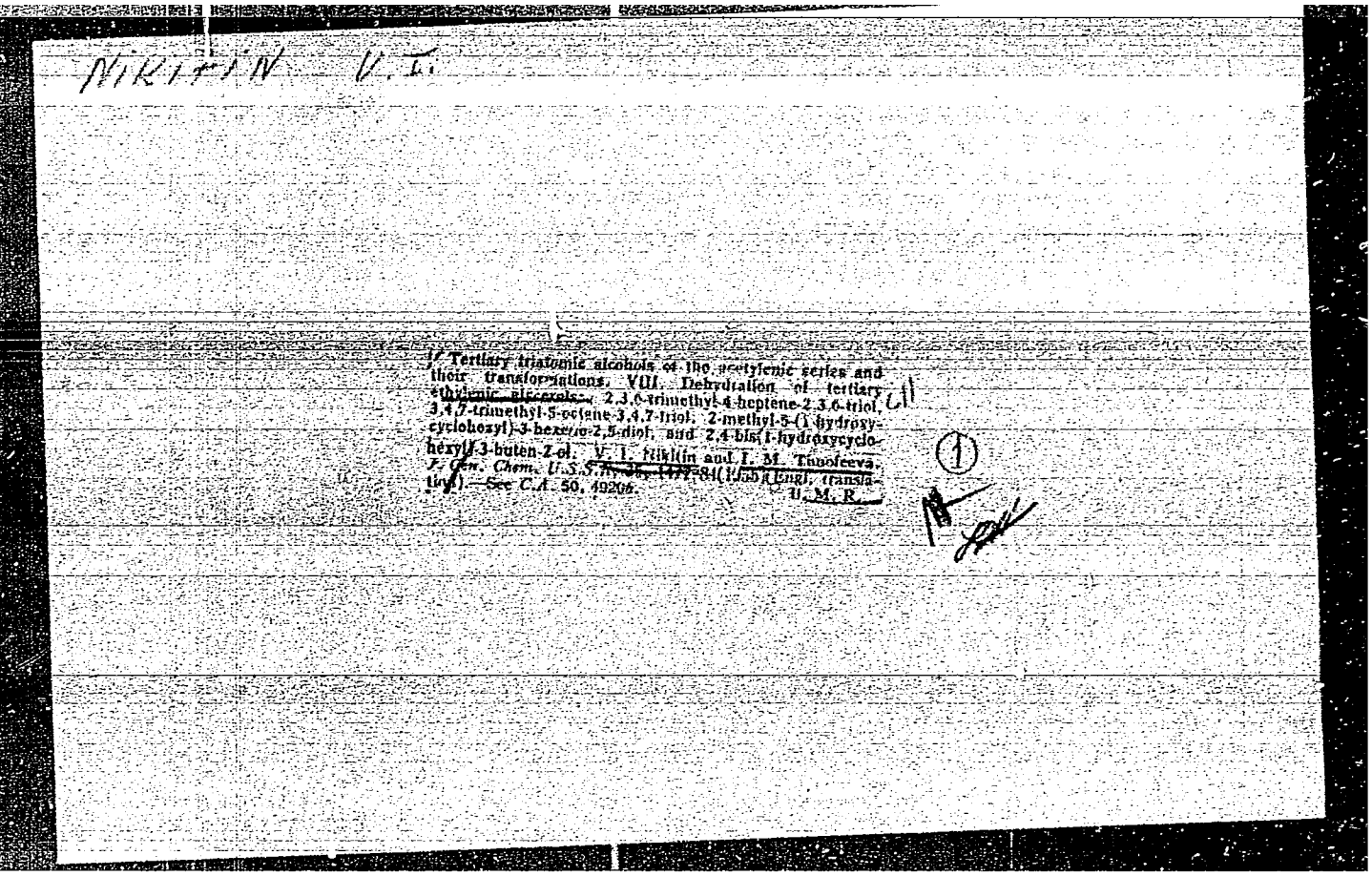
G. M. Kosolapoff

Inst. Chemistry, Acad. Sci Tadchik SSR.

NIKITIN, V. I.

Tertiary triatomic alcohols of the acetylenic series and their transformations. VII. Hydrogenation of 2,3,6-trimethyl-4-heptyne-2,3,6-triol, 3,4,7-trimethyl-5-octyne-3,4,7-triol, 7-methyl-5-(1-hydroxycyclohexyl)-3-hexyne-2,5-diol, and 2,4-bis(1-hydroxycyclohexyl)-3-butyn-2-ol. V. I. Nikitin and L. M. Timofeeva. *Zhur. Obshchei Khim.* 25, 1145-8(1955); cf. *C.A.* 50, 2253g.—Pt and Pd catalysts cause the hydrogenation of acetylenic tertiary glycerols to the corresponding ethylenic alcs., yielding apparently the cis isomers. The hydrogenation curves over Pt or Pd have similar character in this group of compds., although the reaction rate over Pt is somewhat greater. Neither Pt-$CaCO_3$ nor PtO_2 is capable of effecting hydrogenation of these compounds to the satd. analogs. In AcOH the Pt catalyst causes further absorption of H by the ethylenic derivs. but the reaction takes place at the expense of replacement of HO groups. *2,3,6-Trimethyl-4-heptyne-2,3,6-triol*, b$_4$ 122°, m. 82°, hydrogenated in MeOH over PtO_2 at normal conditions to 90% corresponding *heptene deriv.*, m. 116–17°, also formed over Pd, and identified as *cis-2,3,6-trimethyl-4-heptene-2,3,6-triol*. *3,4,7-Trimethyl-5-octyne-3,4,7-triol*, b$_1$ 118–19°, n_D^{20} 1.4794, similarly hydrogenated to the corresponding *octene analog*, b$_4$ 117–18°, n_D^{20} 1.4774, d_4^{20} 1.0061. The reaction in AcOH over PtO_2 gave a range of products, b$_4$ 83–97°, all fractions showing a decidedly decreased no. of HO groups from the initial 3. *7-Methyl-5-(1-hydroxycyclohexyl)-3-hexyne-2,5-diol*, b$_5$ 151–5°, m. 87–8°, hydrogenated in MeOH over PtO_2 to *cis-2-methyl-5-(1-hydroxycyclohexyl)-3-hexene-2,5-diol*, m. 102–3°, the same being formed over Pd. *2,4-Bis(1-hydroxycyclohexyl)-3-butyn-2-ol*, m. 107–8°, hydrogenated over Pd or PtO_2 in MeOH to *cis-2,4-bis(1-hydroxycyclohexyl)-3-buten-2-ol*, m. 111–12°. VIII. Dehydration of tertiary ethylenic glycerols: 2,3,6-trimethyl-4-heptene-2,3,6-triol, 3,4,7-trimethyl-5-octene-3,4,7-triol, 2-methyl-5-(1-hydroxycyclohexyl)-3-hexene-2,5-diol, and 2,4-bis(1-hydroxycyclohexyl)-3-buten-2-ol. *Ibid.* 1946–35.—Dehydration of ethylenic glycerols with H_2SO_4 occurs with the loss of 1 mole H_2O, yielding dihydropyrans. Heating 15 g. 2,3,6-trimethyl-4-heptene-2,3,6-triol with 360 ml. 10% H_2SO_4 1 hr. at 70–80° gave 85% *2,2,5,6-pentamethyldihydropyran-3-ol*, b$_4$ 117–18°, b$_{10}$ 0.9[illegible] n_D^{20} 1.4547; hydrogenation over PtO_2 gave the *tetrahydro analog*, b$_{10}$ 99°, d_4^{20} 0.9257, n_D^{20} 1.4491, which heated with $KHSO_4$ in the presence of pyrogallol gave a moderate yield of *2,2,5,6-pentamethyl-Δ^4-dihydropyran*, b$_{10}$ 79–80°, d_4^{20} 0.8519, n_D^{20} 1.4360 [with $KMnO_4$ this gave a ketone (2,4-dinitrophenylhydrazone, m. 127°), AcOH, $(CO_2H)_2$, and an acid $C_9H_{16}O_6$, b$_4$ 103–3°; no HCO_2H was found]. Keeping 30 g. *3,4,7-trimethyl-5-octene-3,4,7-triol* (b$_4$ 117–18°, n_D^{20} 1.4774) with 630 ml. 10% H_2SO_4 for 3 days gave 84% *2,2,5,6-tetramethyl-6-ethyldihydropyran-3-ol*, b$_4$ 70–2°, d_4^{20} 0.9442, n_D^{20} 1.4559 (with 5% H_2SO_4 the yield was 54%, with 30% H_2SO_4 it was 56%); hydrogenation over PtO_2 gave the *tetrahydro analog*, b$_4$ 74.5–5°, d_4^{20} 0.9297, n_D^{20} 1.4474, which with $KHSO_4$-pyrogallol was dehydrated to *2,2,5,6-tetramethyl-6-alkyl-Δ^4-dihydropyran*, b$_{10}$ 79–80°, d_4^{20} 0.8673, n_D^{20} 1.4466 [with $KMnO_4$ this gave AcOH, $(CO_2H)_2$, a ketone, b$_4$ 93–100° (semicarbazone, m. 200–1°), and another ketone (2,4-dinitrophenylhydrazone, m. 127°)]. 2-Methyl-5-(1-hydroxycyclohexyl)-3-hexene-2,5-diol (m. 102–3°) heated with 360 ml. 10% H_2SO_4 4 hrs. at 50–60° gave 84.7% *2,2,5-trimethyl-6-spirocyclohexanedihydropyran-5-ol*, b$_4$ 108–9°, d_4^{20} 0.9984, n_D^{20} 1.4828, which hydrogenated to the *tetrahydro analog*, b$_4$ 109.5–10°, d_4^{20} 0.9848, n_D^{20} 1.4740, which dehydrated with $KHSO_4$ to *2,2,5-trimethyl-6-spirocyclohexane-Δ^4-dihydropyran*, b$_4$ 108–10°, d_4^{20} 0.92703, n_D^{20} 1.4739. 2,4-Bis(1-hydroxycyclohexyl)-3-buten-2-ol, m. 111–12°, similarly treated with 10% H_2SO_4 gave 84.3% *6-methyl-2,6-dispiracyclohexanedihydropyran-5-ol*, b$_4$ 121–2°, d_4^{20} 1.0365, n_D^{20} 1.5065, which hydrogenated to the *tetrahydro analog*, b$_4$ 118–19°, d_4^{20} 1.0227, n_D^{20} 1.4963. Also in *J. Gen. Chem. U.S.S.R.* 25, 1781–8(1955)(Engl. translation).

G. M. K.



NIKITIN V. I.

Tertiary triatomic alcohols of the acetylenic series and their transformations. VIII. Dehydration of tertiary ethylenic alcohols. 2,3,6-trimethyl-4-heptene-2,3,6-triol, 3,4,7-trimethyl-5-octene-3,4,7-triol, 2-methyl-5-(1-hydroxycyclohexyl)-3-hexene-2,5-diol, and 2,4-bis(1-hydroxycyclohexyl)-3-buten-2-ol. V. I. Nikitin and I. M. Tunoseeva. *Zh. Obshch. Khim.* 17, No. 5, 777-84(1947)(Engl. translation).—See *C.A.* 50, 4920e.

U. M. R.

NIKITIN, V.I.; TIMOFEYEVA, I.M.

Tertiary triatomic alcohols of the acetylene series and their conversions. Part 8. Dehydration of tertiary ethylene glycerols: 2,3,6-trimethylheptene-4-triol-2,3,6; 3,4,7-trimethyloctene-5--triol-3,4,7; 2-methyl-5-(1-oxycyclohexyl)-hexene-3-diol-2,5, and 2,4-di-(-oxycyclohexyl)-buten-3-ol-2. Zhur.ob.khim. 25 no.8: 1526-1535 Ag '55. (MLRA 9:2)

1. Institut khimii Akademii nauk Tadzhikskoy SSR.
(Alcohols)

NIKITIN, V. I.

Tertiary triatomic alcohols of the acetylene series and their transformations. IX. Dehydration of 2-methyl-5-(1-hydroxycyclohexyl)-3-hexyne-2,5-diol and 2,4-di(1-hydroxycyclohexyl)-3-butyn-2-ol. V. I. Nikitin and A. Kh. Khainatov. *Zhur. Obshchei Khim.* 26, 416–23(1956); cf. *C.A.* 49, 10860*h*; 50, 7735*a*.—Heating 20.5 g. 2-methyl-5-(1-hydroxycyclohexyl)-3-hexyne-2,5-diol (b$_5$ 151–5°, m. 87–8°) with 150 ml. 20% H_2SO_4 2 hrs. at 100° gave 8.8 g. *2-methyl-5-(1-hydroxycyclohexyl)-1,5-hexadien-3-yne*, b$_5$ 100–3°, m. 47–8° (from petr. ether); oxidation with $KMnO_4$ gave HCO_2H, AcOH, $(CO_2H)_2$, and *1-hydroxyhexahydrobenzoic acid*, m. 105–6°; hydrogenation over Pt gave *2-methyl-5-(1-hydroxycyclohexyl)hexane*, b$_5$ 100–2°, d_{20} 0.9150, n_D^{20} 1.4789), and 2 g. *2-methyl-5-(1-hydroxycyclohexyl)-1-hexen-3-yn-5-ol*, b$_5$ 120–5°, m. 74–5° (from C_6H_6). The same products formed on dehydration with $KHSO_4$ or *p*-$MeC_6H_4SO_3H$. Oxidation of the last product with $KMnO_4$ gave cyclohexanone, acetylcyclohexanol, HCO_2H, AcOH, and $(CO_2H)_2$, while hydrogenation over Pd gave *2-methyl-5-(1-hydroxycyclohexyl)-2-hexen-5-ol*, b$_5$ 120–2°, d_{20} 0.9853, n_D^{20} 1.4908, which oxidized with $KMnO_4$ to Me_2CO, cyclohexanone, acetylcyclohexanone, AcOH, HCO_2H $(CO_2H)_2$, and adipic acid, while hydrogenation of the olefinic diol over Pt gave *2-methyl-5-(hydroxycyclohexyl)-5-hexanol*, b$_{4.5}$ 115–17°, d_{20} 0.9707, n_D^{20} 1.4820). The latter (10 g.) heated 2 hrs. with 100 ml. 25% H_2SO_4 gave some tar and unchanged starting material, while a distn. at 12 mm. from $KHSO_4$ gave apparently *2-methyl-5-(1-cyclohexen-1-yl)-2-hexene*, b$_{12}$ 112–14°, d_{20} 0.8812, n_D^{20} 1.4985, which readily took up 2 moles H over Pt catalyst. Heating 2,4-di(1-hydroxycyclohexyl)-3-butyn-2-ol (m. 107–9°) at 60–70° with 20% or 60% H_2SO_4 (anon.)

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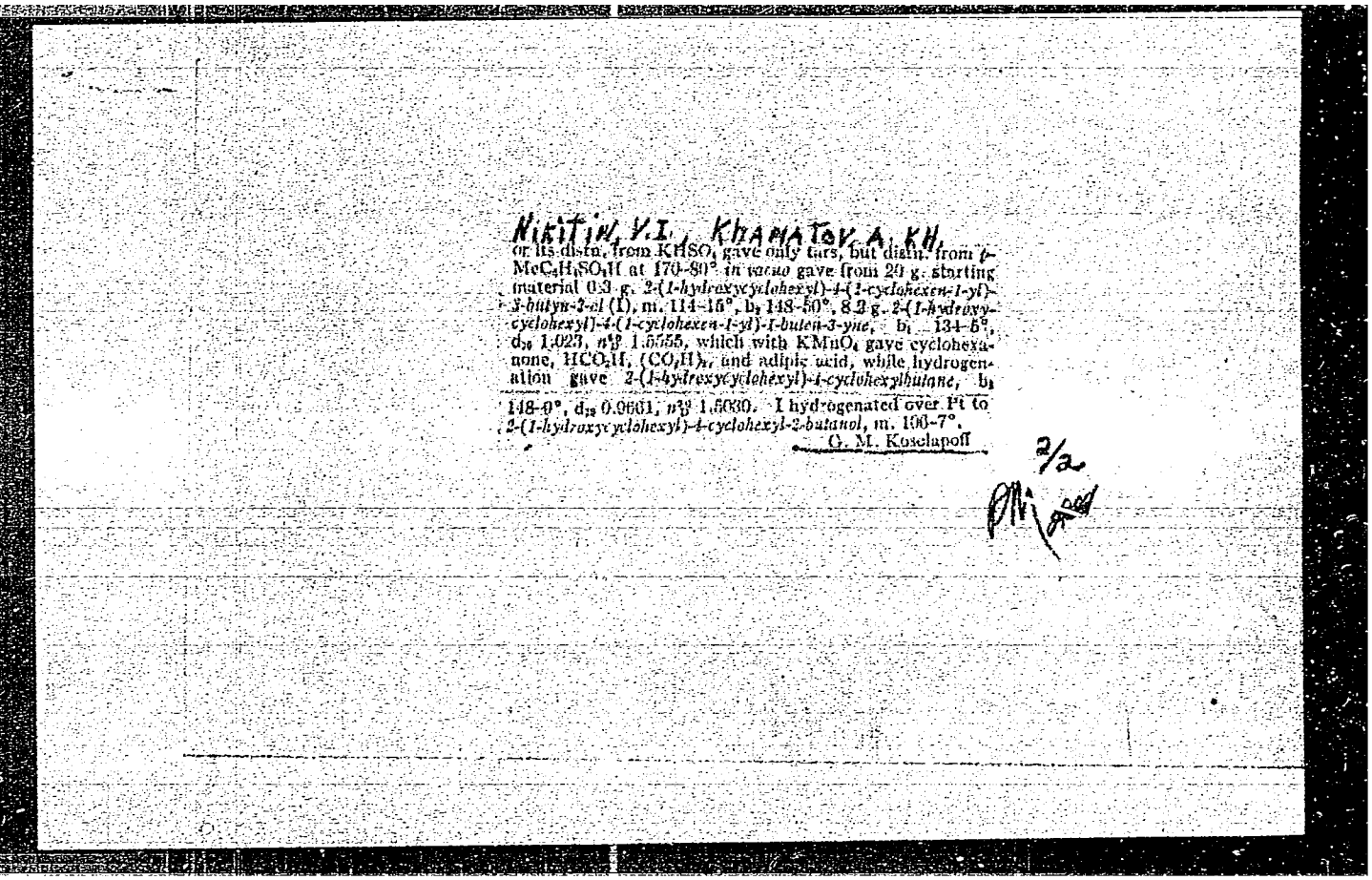

NIKITIN, V.I., KHAMATOV, A.KH.

or its distn. from $KHSO_4$ gave only tars, but distn. from *p*-$MeC_6H_4SO_3H$ at 170–80° *in vacuo* gave from 20 g. starting material 0.3 g. *2-(1-hydroxycyclohexyl)-4-(1-cyclohexen-1-yl)-3-butyn-2-ol* (I), m. 114–15°, b_3 148–50°, 8.2 g. *2-(1-hydroxycyclohexyl)-4-(1-cyclohexen-1-yl)-1-buten-3-yne*, b_1 134–5°, d_{20} 1.023, n_D^{20} 1.5555, which with $KMnO_4$ gave cyclohexanone, HCO_2H, $(CO_2H)_2$, and adipic acid, while hydrogenation gave *2-(1-hydroxycyclohexyl)-4-cyclohexylbutane*, b_1 148–9°, d_{20} 0.9661, n_D^{20} 1.5030. I hydrogenated over Pt to *2-(1-hydroxycyclohexyl)-4-cyclohexyl-2-butanol*, m. 106–7°.

G. M. Koselapoff

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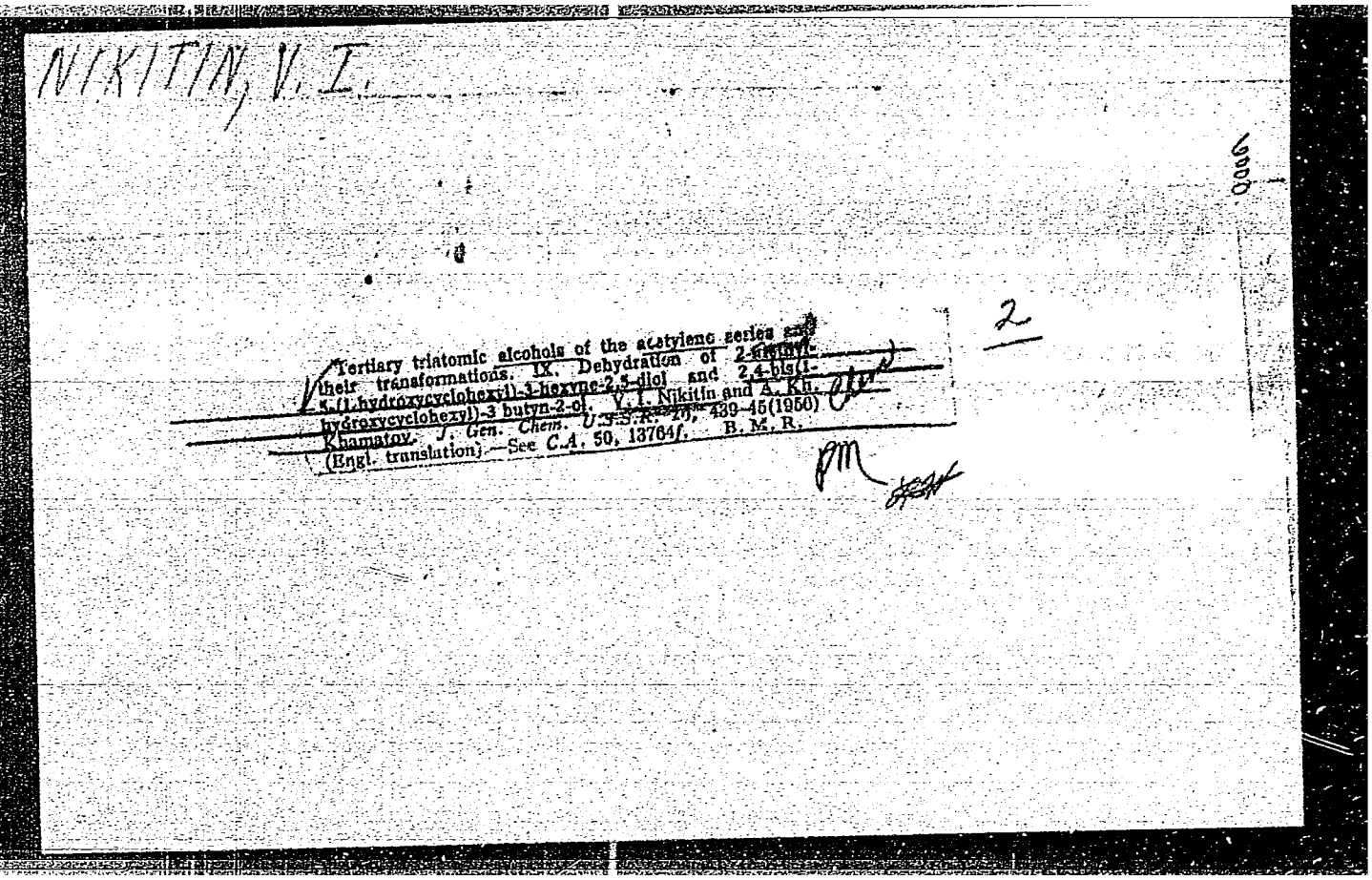

NIKITIN, V. I.

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Tertiary triatomic alcohols of the acetylene series and their transformations. IX. Dehydration of 2-methyl-5-(1-hydroxycyclohexyl)-3-hexyne-2,5-diol and 2,4-bis(1-hydroxycyclohexyl)-3 butyn-2-ol. V. I. Nikitin and A. Kh. Khamatov. J. Gen. Chem. U.S.S.R. 20, 439-45(1950) (Engl. translation).—See C.A. 50, 13764f. B. M. R.

USSR/Organic Chemistry. Synthetic Organic Chemistry. E-2

Abs Jour : Ref Zhur - Khimiya, No. 8, 1957, 26685.

Author : Nikitin, V.I.; Timofeyeva, I.M.

Inst :

Title : Tertiary Triatomic Alcohols of Acetylene Series and Their Conversions. X. Oxidation by Potassium Permanganate of Triols of Ethylene Series: 2,3,6-trimethylheptene-4-triol-2,3,6, 3,4,7-trimethyloctene-5-triol-3,4,7, 2,5-dimethyl-5-(1-oxycyclohexyl)-pentene-3-diol-2,5 and 2,4-di-(1-oxycyclohexyl)-butene-3-ol-2.

Orig Pub : Zh. obshsch. khimii, 1956, 26, No. 8, 2175 - 2180.

Abstract : The oxidation by $KMnO_4$ of tertiary ethylene glycerins (EG) 2,3,6-trimethylheptene-4-triol-2,3,6 (1), 3,4,7-trimethyloctene-5-

Card 1/3

Nikitin, V. I.

Tertiary triatomic alcohols of the acetylenic series and their transformations. X. Oxidation by potassium permanganate of triols of ethylenic series: 2,3,6-trimethyl-4-heptene-2,3,6-triol, 3,4,7-trimethyl-5-octene-3,4,7-triol, 2,5-dimethyl-5-(1-hydroxycyclohexyl)-3-pentene-2,5 - diol and 2,4-di(1-hydroxycyclohexyl)-3-buten-2-ol. V. I. Nikitin and I. M. Timofeeva, *J. Gen. Chem. U.S.S.R.* 26, 2420–33 (1956)(English translation).—See *C.A.* 51, 4943c.

B. M. Bown

Nikitin, V.

USSR/General Problems. Methodology, History, Scientific Institutions and Conferences, Instruction, Questions Concerning Bibliography and Scientific Documentation. A

Abs Jour: Referat. Zhurnal Khimiya, No 2, 1958. 3465.

Author : V.I. Nikitin.
Inst : Academy of Sciences of Tadzhik SSR.
Title : Prominent Russian Scientist-Chemist Mikhail Grigor'yevich Kucherow and His Celebrated Reaction of Combining Water and Acetylene. (To 75th Anniversary of Reaction Discovery.)

Orig Pub: Izv. Otd. yestestv. nauk AN TADZHSSR, 1957, vyp. 19, 117-127.

Abstract: No abstract.

Card : 1/1 -16-

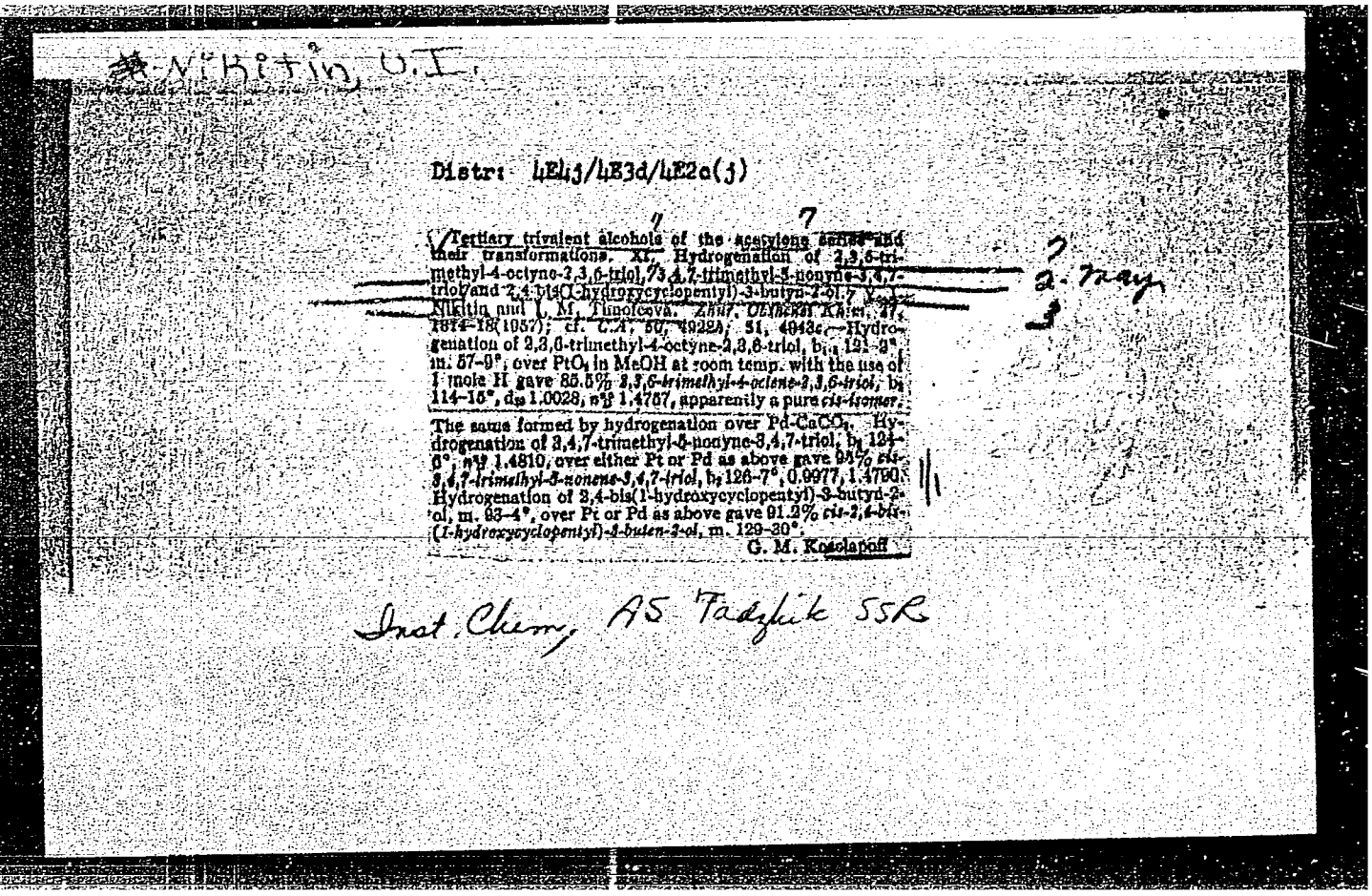
NIKITIN, V.I.

Institute of Chemistry of the Academy of Sciences of the Tajik S.S.R. on the fortieth anniversary of October. Izv. Otd. est. nauk AN Tadzh.SSR no.23:129-130 '57. (MIRA 11:8)
(Tajikistan--Chemistry)

NIKITIN, V.I.

Studying the synthesis of new substances derived from acetylene.
Izv. Otd. est. nauk AN Tadzh. SSR no. 24:3-9 '57. (MIRA 11:10)

1. Institut khimii AN Tadzhikskoy SSR.
(Acetylene compounds)



Nikitin, V. I.

Distr: 4E4j/4E3d/4E2a(j)

Tertiary trivalent alcohols of the acetylene series and their transformations. XI. Hydrogenation of 2,3,6-trimethyl-4-octyne-2,3,6-triol, 3,4,7-trimethyl-5-nonyne-3,4,7-triol and 2,4-bis(1-hydroxycyclopentyl)-3-butyn-2-ol. V. A. Nikitin and V. M. Timofeeva. *Zhur. Obshchei Khimii*, 27, 1814–18(1957); cf. *C.A.*, 50, 4922h; 51, 4943c.—Hydrogenation of 2,3,6-trimethyl-4-octyne-2,3,6-triol, $b_{1.5}$ 121–3°, m. 57–9°, over PtO_2 in MeOH at room temp. with the use of 1 mole H gave 85.5% *2,3,6-trimethyl-4-octene-2,3,6-triol*, b_1 114–16°, d_4^{20} 1.0028, n_D^{20} 1.4787, apparently a pure *cis-isomer*. The same formed by hydrogenation over Pd-$CaCO_3$. Hydrogenation of 3,4,7-trimethyl-5-nonyne-3,4,7-triol, b_1 124–6°, n_D^{20} 1.4810, over either Pt or Pd as above gave 94% *cis-3,4,7-trimethyl-5-nonene-3,4,7-triol*, b_1 126–7°, 0.9977, 1.4790. Hydrogenation of 3,4-bis(1-hydroxycyclopentyl)-3-butyn-2-ol, m. 93–4°, over Pt or Pd as above gave 91.2% *cis-2,4-bis(1-hydroxycyclopentyl)-3-buten-2-ol*, m. 129–30°.

G. M. Kosolapoff

Inst. Chem., AS Tadzhik SSR

NIKITIN, V I

AUTHORS: Golovkin, N. N., Ignat'yev, S. S. SOV/30-58-9-57/61

TITLE: Development of Researches on Highly Molecular Compounds (Razvitiye issledovaniy po vysokomolekularnym soyedineniyam) In the Presidium of the Council for Co-Ordination of Scientific Work of the Academies of Sciences of the Union Republics and the Branches (V Prezidiume Soveta po koordinatsii nauchnoy deyatel'nosti akademiy nauk soyuznykh respublik i filialov)

PERIODICAL: Vestnik Akademii nauk SSSR, 1958, Nr 9, pp. 101 - 104 (USSR)

ABSTRACT: The session of the presidium of the council took place on June 21st. A.V.Topchiyev, Vice-President of the AS USSR, stressed the importance of these researches in order to fulfil the resolutions of the plenary session of the TsK KPSS in May. He mentioned that the scope of researches at present carried out is insufficient. In order to prepare a prospective plan for the years 1959 - 1965 a special committee was set up. 42 main trends for researches on the subject of highly molecular compounds were fixed. The chairman of the scientific council V.A.Kargin, Member, Academy of

Card 1/5

Development of Researches on Highly Molecular Compounds. SOV/30-58-9-37/51
In the Presidium of the Council for Co-Ordination of Scientific Work
of the Academies of Sciences of the Union Republics and the Branches

Sciences, USSR, reported about the activities of the council. Further addresses were given by:
M.F.Nagiyev, Vice-President of the AS Azerbaydzhan SSR, on the urgency to intensify researches on the field of technological phenomena.
S.D.Mekhtiyev, Head of the Petroleum-Institute of the AS Azerbaydzhan SSR, on the efforts in the field of petroleum chemistry.
V.I.Nikitin, Head of the Institute of Chemistry of the AS Tadzhikskaya SSR, requested assistance in training scientific caders.
A.Ye.Artuzov, Chairman of the Kazan' Branch of the AS USSR, mentioned the problem of proper assignment of scientific staff.
Kh.U.Usmanov, Head of the Institut khimii rastitel'nykh veshchestv Akademii nauk Uzbekskoy SSR(Institute of Chemistry of Vegetable Materials of the AS Uzbekskaya SSR), outlined the tasks of Uzbekistan scientists in connection

Card 2/5

Development of Researches on Highly Molecular Compounds. SOV/30-58-9-37/51
In the Presidium of the Council for Co-Ordination of Scientific Work
of the Academies of Sciences of the Union Republics and the Branches

with the rich supply of cellulose and natural gases.

— R.D.Obolentsev, Chairman of the Bashkirskiy filial Akademii nauk SSSR (Bashkiriya Branch of the AS USSR), spoke about the urgency to intensify researches on the sulphurous petroleum deposits of Bashkiriya.

— N.F.Yermolenko, Member, Academy of Sciences, Belorusskaya SSR, stressed the problems of development of the chemical industry of his country in connection with her deposits of turf and petroleum.

— Yu.Yu.Matulis, President of the AS Litovskaya SSR, remarked that Lithuania (Litva) is rich in vegetable **raw materials**, thus has to itensify her research on this field.

— S.A.Giller, Corresponding Member, AS Latviyskaya SSR, informed the assembly of the intention of Latvia (Latviya) scientists to carry out research on the use of natural polymers.

— A.T.Kyll, Head of the Institute of Chemistry of the Academy of Sciences, Estonskaya SSR, mentioned problems in connection

Card 3/5

Development of Researches on Highly Molecular Compounds. SOV/30-58-9-37/51
In the Presidium of the Council for Co-Ordination of Scientific Work
of the Academies of Sciences of the Union Republics and the Branches

with the use of the slates of Estonia (Estoniya).
G.M.Shchegolev, Head of the Institute of Heat Energetics of the Academy of Sciences, Ukrainian SSR, recommended to lay more stress upon the use of coal and other solid fuels for the production of polymeric material.

Card 4/5

Development of Research on Highly Molecular Compounds

In the Presidium of the Council for Co-ordination of Scientific Work of the Academies of Sciences of the Union Republics and the Branches

I.P. Bardin, Member, Academy of Sciences, USSR, Vice-President of the AS USSR, pointed out the importance of coal and wood as raw materials for the production of polymeric material. At last the chairman of the Council, A. N. Nesmeyanov, Member, Academy of Sciences, USSR, addressed the assembly and said that the whole scientific staff has to be employed for the development of chemistry. But it is necessary to recruit new scientists for the staff in order to avoid a removal of scientists from tasks likewise important. A resolution was passed to ask the Presidium of the AS USSR for its assistance in training adequate scientific personnel.

Card 5/5

SOV/143-59-6-12/21

8(6), 14(6)
AUTHOR: Nikitin, V.I., Engineer

TITLE: The Investigation of the Circular Guide Vane Grid

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy - Energetika, 1959, Nr 6, pp 66-73 (USSR)

ABSTRACT: The author studied the structure of the flow behind a circular nozzle grid, the determination of energy losses in the grid - among them the end losses, the analysis of flow characteristics and the explanation of some factors on individual grid characteristics. The author investigated for this purpose a natural diaphragm with the following grid characteristics: the ratio of the mean diameter to the channel height $\frac{d_{cp}}{l} = 29.0$; the height in regards to the profile chords $\frac{l}{b} = 0.677$; the height of the channel $l = 26$ mm; the relative pitch $\frac{d_{cp}}{t} = 0.487$; the effective outlet angle $\alpha_{1e} = 20^{\circ}$. All experiments were conducted at $M_t = \frac{c_{1t}}{a} = 0.58$. Figure 1 shows the experimental installation. The results of the experimental invest-

Card 1/3

The Investigation of the Circular Guide Vane Grid

igations are compiled in 5 graphs. The author states that for an actual estimation of the economy of a natural grid, the flow parameter behind the latter must be measured at a distance which is equal to the open axial inlet gap. The distribution of losses along the channel in the circular grid is very irregular even with small fanning of the blades. The losses between the upper and lower halves of the channel are especially irregularly distributed. The decisive losses of the nozzle grid are end losses which amount to 67% of the total. The principle measures which might increase the economy of the investigated grid must deal with the reduction of the end losses. The mean flow outlet angle from the grid, which is composed of relatively short blades, depends on the height of the channel, with unchanged profile, pitch and flow conditions; it will increase with an reduction of $\frac{l}{b}$ angle α_1 c.

Card 2/3

SOV/79-29-6-27/72

5(3)
AUTHORS: Nikitin, V. I., Zegel'man, A. B.

TITLE: Tertiary Trivalent Alcohols of the Acetylene Series and Their Transformations (Tretichnyye trekhatomnyye spirty atsetilenovogo ryada i ikh prevrashcheniya). XII. Hydration of 3,4,7-Trimethyl-nonine-5-triol-3,4,7 (XII. Gidratatsiya 3,4,7-trimetilnonin-5-triola-3,4,7)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 6, pp 1898 - 1905 (USSR)

ABSTRACT: In the present paper the authors describe the hydration of 3,4,7-trimethyl-nonine-5-triol-3,4,7 (I) as they were able in this special case to separate some intermediates and to elucidate the rather complex mechanism of the transformations taking place The hydration was carried out according to H. Scheibler and A.Fischer (Ref 16), but at different temperatures. The initial addition reaction of water on the triple bond in this group of compounds was found to involve a number of further successive processes. The mechanism of the transformations under review is illustrated in the given scheme. It was shown that the 3,4,7-trimethyl-nonine-5-triol-3,4,7 (I) is transformed at

Card 1/2

Tertiary Trivalent Alcohols of the Acetylene Series and Their Transformations. XII. Hydration of 3,4,7-Trimethyl-nonin-5-triol-3,4,7

SOV/79-28-6-27/72

30 - 40° under the hydration conditions to give the diene alcohol 3,7-dimethyl-4-methylene-5-oxynonen-6-one-5 which on its part is subjected at 70-80° to a further transformation into the 2-methyl-2-ethyl-5-sec-butenyl-tetrahydropyranylidene-2'-methyl-2'-ethyl-5'-sec-oxybutyl-tetrahydro-γ-pyrone. The molecule of this pyrone undergoes at 96-98° with dilute sulfuric acid a hydrolytic splitting-up into two molecules of the substituted tetrahydro-γ-pyrone. There are 25 references, 9 of which are Soviet.

ASSOCIATION: Institut khimii Akademii nauk Tadzhikskoy SSR (Institute of Chemistry of the Academy of Sciences, Tadzhikskaya SSR)

SUBMITTED: May 31, 1957

Card 2/2

SOV/79-29-6-28/72

5(3)
AUTHORS: Nikitin, V. I., Zegel'man, A. B., Khamatov, A. Kh.

TITLE: Tertiary Trivalent Alcohols of the Acetylene Series and Their Transformations (Tretichnyye trekhatomnyye spirty atsetilenovogo ryada i ikh prevrashcheniya). XIII. Hydration of 2,3,6-Trimethyl-heptine-4-triol-2,3,6 (XIII. Gidratatsiya 2,3,6-trimetil-geptin-4-triola-2,3,6)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 6, pp 1905 - 1909 (USSR)

ABSTRACT: In addition to the previous paper (Ref 1) this paper presents the results obtained by hydration of 2,3,6-trimethyl-heptine-4-triol-2,3,6 (I), the simplest representative of the triols of this series. This hydration was carried out at about 40°; only one reaction product, compound (II), was separated. Intermediates could not be obtained, in contrast to the hydration of 3,4,7-trimethyl-nonine-5-triol-3,4,7 described in the previous paper (Ref 1). The authors stated that the same transformation scheme which applies to the nonine triol mentioned also, holds for (I). In the present case, however, the separation of a water molecule from (II) took place only with the action of dilute sulfuric acid on it at about 100°. This separation occurs in the oxy-isopropyl group which is situated at the tetrahydropyranyl-

Card 1/2

Tertiary Trivalent Alcohols of the Acetylene Series and Their Transformations. XIII. Hydration of 2,3,6-Trimethyl-heptine-4-triol-2,3,6 SOV/79-28-6-28/72

lidene ring (Ref 1). The end product is compound (III) which under the given conditions further undergoes a partial hydrolytic splitting-up, and yields compound (IV). The composition of compounds (III) and (IV) was confirmed by analytical data, and the structure was proved by oxidation with potassium permanganate. By oxidation of both compounds one and the same product was obtained: acetone and the formic, acetic, oxalic and α-oxy-isobutyric acid. Hydrogenation of (II) on platinum oxide does not take place in methanol but more readily in acetic acid. 2 moles of hydrogen were taken up with the first mole being used only for the substitution of a hydroxyl group. The authors assume that by hydrogenation of (II) the hydroxyl group which is situated in the oxy-isopropyl radical at the tetrahydropyranylidene ring is reduced, which process yields compound (V). The second hydrogen molecule hydrogenates the double bond between both cycles and yields compound (VI). There are 2 Soviet references.

ASSOCIATION: Institut khimii Akademii nauk Tadzhikskoy SSR (Institute of Chemistry of the Academy of Sciences, Tadzhikskaya SSR)

SUBMITTED: May 23, 1957

Card 2/2

NIKITIN, V. I

PHASE I BOOK EXPLOITATION SOV/4583

Leningrad. Universitet

Voprosy teorii stroyeniya organicheskikh soyedineniy (Problems in the Theory of the Structure of Organic Compounds) [Leningrad] 1960. 239 p. Errata slip inserted. 3,725 copies printed.

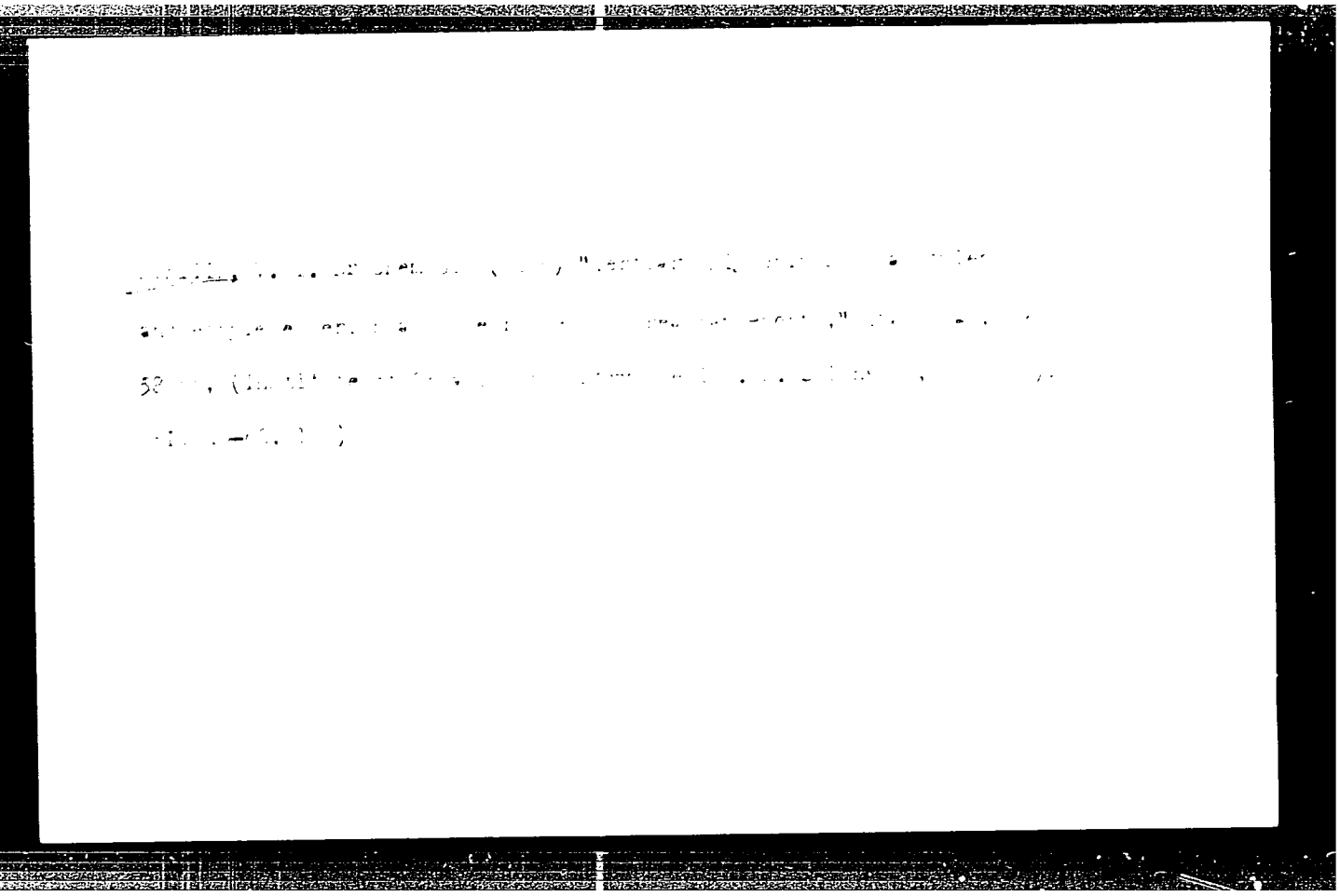
Sponsoring Agency: Leningradskiy ordena Lenina Gosudarstvennyy universitet im. A.A. Zhdanova.

Resp. Ed.: T.A. Favorskaya; Ed.: V.D. Piastro; Tech. Ed.: S.D. Vodolagina.

PURPOSE: This collection of articles is intended for chemists and organic chemists.

COVERAGE: The collection is concerned with the scientific legacy of A.Ye. Favorskiy,
and includes discussions of his theoretical views and their evolution in con-
nection with the development of theoretical organic chemistry. The articles re-
view problems on the structure, reactivity and transformations of various classes
of organic compounds: unsaturated acyclic and cyclic hydrocarbons, saturated
and unsaturated alcohols, glycols and carbonyl compounds. No personalities
are mentioned. References accompany each article.

AVAILABLE: Library of Congress (QD476.L44)



5.3400

77363
SOV/79-30-1-24/78

AUTHORS: Nikitin, V. I., Zegel'man, A. B.

TITLE: Tertiary Trihydric Alcohols of Acetylenic Series and Their Transformations. XIV. Hydration of 3,4,7-Trimethyloctyne-5-triol-3,4,7 and 2,3,6-Trimethyloctyne-4-triol-2,3,6

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol 30, Nr 1, pp 115-124 (USSR)

ABSTRACT: Hydration of 3,4,7-trimethyloctyne-5-triol-3,4,7 (I), bp 118-119° (2 mm), n_D^{20} 1.4794, at 70° (not higher) yields compound (II), mp 125-126°. When compound (I) is heated on a water bath with a solution of H_2SO_4, the following three compounds are obtained: compound (III), bp 159-160° (3 mm), n_D^{20}

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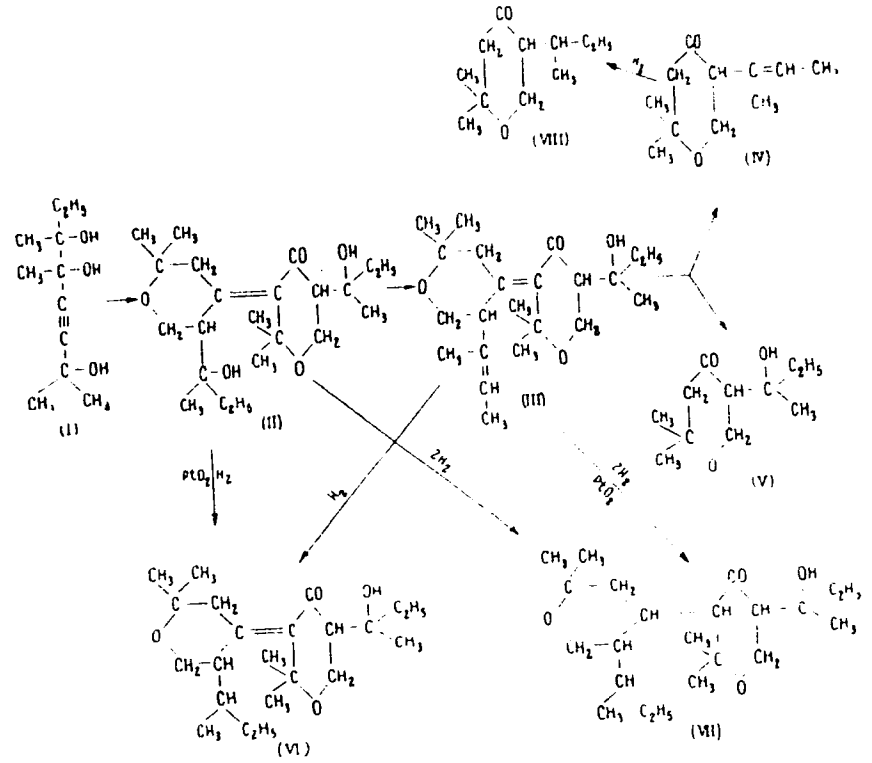
Tertiary Trihydric Alcohols of Acetylenic Series and Their Transformations. XIV.

77393
SOV/79-30-1-24/74

1.4983; compound (IV), bp 61-62° (2 mm), n_D^{20} 1.4525; and compound (V), bp 130-131° (3 mm), n_D^{20} 1.4570. The attempt to oxidize compounds (II) and (V) failed. This shows tertiary hydroxyl groups. The structure of compound (III) was confirmed by oxidation with potassium permanganate, as was the structure of (II), since (III) was obtained by dehydration of (II). Hydrogenation of (II), as well as (III), (one mole of hydrogen yields compound (VI), bp 169-170° (2 mm), n_D^{20} 1.4880. When compounds (II) or (III) are hydrogenated with two moles of hydrogen, compound (VII), bp 147-148° (1 mm), n_D^{20} 1.4820, is formed. Compound (IV) on on hydrogenation yields compound (VII), bp 97-98° (20 mm), n_D^{20} 1.4398.

Card 2/7



77353
SOV/79-30-1-44/78

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Tertiary Trihydric Alcohols of Acetylenic Series and Their Transformations. XIV.

77363
SOV/79-30-1-24/78

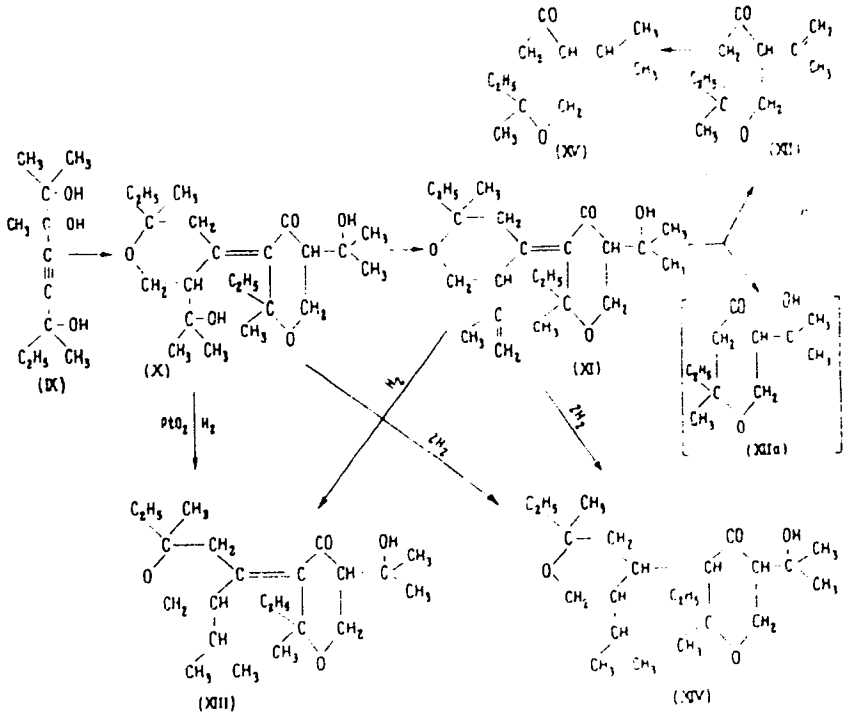
Hydration of compound (IX), bp 121-122° (1.5 mm), n_D^{20} 1.4799, which is isomer of (I), yields compound (X), mp 124-125° and compound (XI), bp 148-149° (2 mm), n_D^{20} 1.4903. When reaction is completed at the temperature of a boiling water bath, compound (XII), bp 95-96° (15 mm), n_D^{20} 1.4468, together with compound (XI) is found among the reaction products. Neither (X) nor (XIIa) can be found in the reaction products in this case, because compound (X) is dehydrated into (XI), and compound (XIIa), into compound (XII). Dehydration of compound (X) with sulfuric acid yields compound (XI), which, in turn, when dehydrated with H_2SO_4 solution, yields compound (XII). This indicates that not compound (X) but the product of its incomplete dehydration undergoes the hydrolytic cleavage. The structure of (XI) and (XII) was confirmed by oxidation with potassium permanganate. Hydrogenation

Card 4/7

of (X) with one mole of hydrogen yields compound (XIII), bp 165-166° (4 mm), n_D^{20} 1.4846. The same compound is obtained when compound (XI) is hydrogenated. This confirms the structure of (XIII). Hydrogenation of compound (X) with two moles of hydrogen yields compound (XIV), bp 182-183° (3 mm), n_D^{20} 1.4793.

Compound (XII) on hydrogenation yields compound (XV), bp 89-90° (13 mm), n_D^{20} 1.4383.

77363
SOV/79-30-1-24/78



Card 6/7

Tertiary Trihydric Alcohols of Acetylenic Series and Their Transformations. XIV.

77303
SOV/79-30-1-24/78

There are 5 Soviet references.

ASSOCIATION: Insitute of Chemistry of the Academy of Sciences of the Tadzhik SSR (Insitut khimii Akademii nauk Tadzhikskoy SSR)

SUBMITTED: January 12, 1959

Card 7/7

5.3400

SOV

AUTHORS: Nikitin, V. I., Timofeeva, I. M.

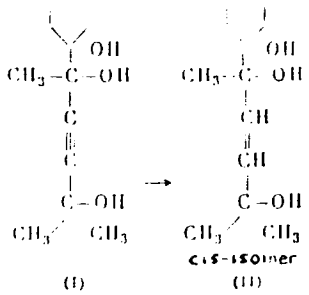
TITLE: Tertiary Triatomic Alcohols of Acetylenic Series and Their Conversions. XVI. Synthesis of 5-Methyl-2-(1-hydroxycyclopentyl)-hex-3-ene-2,5-diol

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol 30, Nr 2, pp 557-560 (USSR)

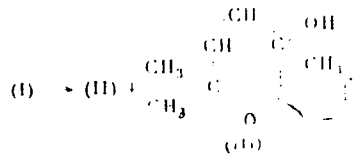
ABSTRACT: The tertiary acetylenic glycerol, 5-methyl-2-(1-hydroxycyclopentyl)-hex-3-ene-2,5-diol (I) by hydrogenation over Pt forms corresponding ethylenic glycerol (II) from which only 66% cis-form was isolated. The residue, a mixture of cis and trans-forms, could not be separated.

Card 1/5

Tertiary Triatomic Alcohols of Acetylenic Series and Their Conversions. XVI



The same hydrogenation over Pd forms III, as well as II.



Card 2/5

Synthesis of Triatomic Alcohols of Acetylenic Series and Their Conversions. XVI

III(cis form) was partially dehydrated by continuous storage with solvent, in the absence of dehydrating reagent. The presence of trans-form was not observed. There are 1 table; and 4 Soviet references.

ASSOCIATION: Chemical Institute, Academy of Sciences, Tadzhikskaya SSR (Institut khimii Akademii nauk Tadzhikskoy SSR)

SUBMITTED: January 19, 1959

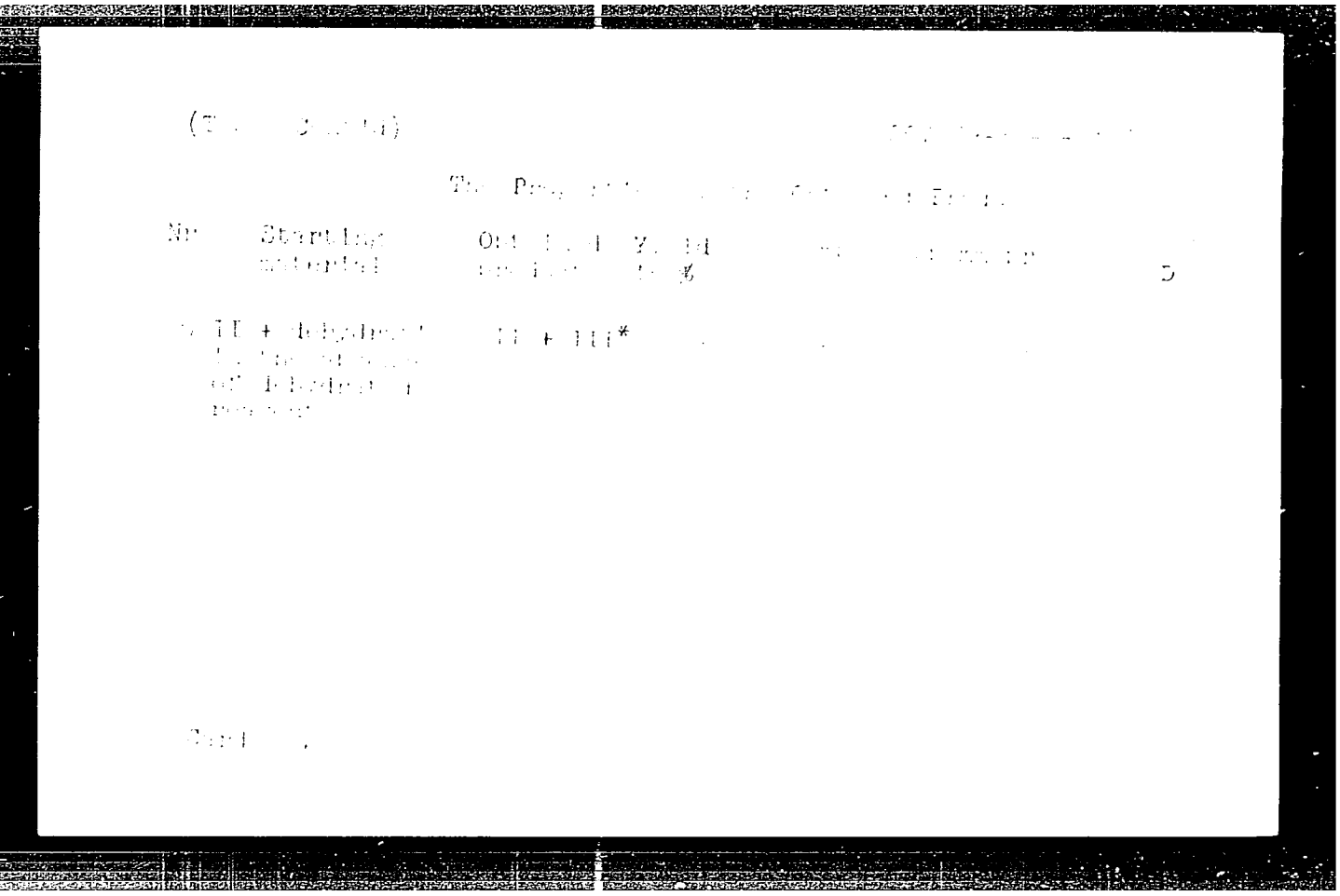
Card 3/5

Card 4/5 [illegible] SOV/79-30-2-55/79

The Properties of the Obtained Products

Nr	Starting material	Obtained product	Yield in %	mp	cp/mm pr	n_D^{20}
1	1-acetylcyclopentan-1-ol + dimethylacetylenylcarbinol	I	-	68-69	150-151/3	-
2	I + hydrogenation over Pt	II	60	113-114	[illegible]	[illegible]
3	I + hydrogenation over Pd	II + product (acid product)	[illegible]	113-114	-	-
4	Liquid product (residue) + isolation	III*	13	-	64-65/3	-

* = 90% product (Table continued on Card 5/5)



3.4100

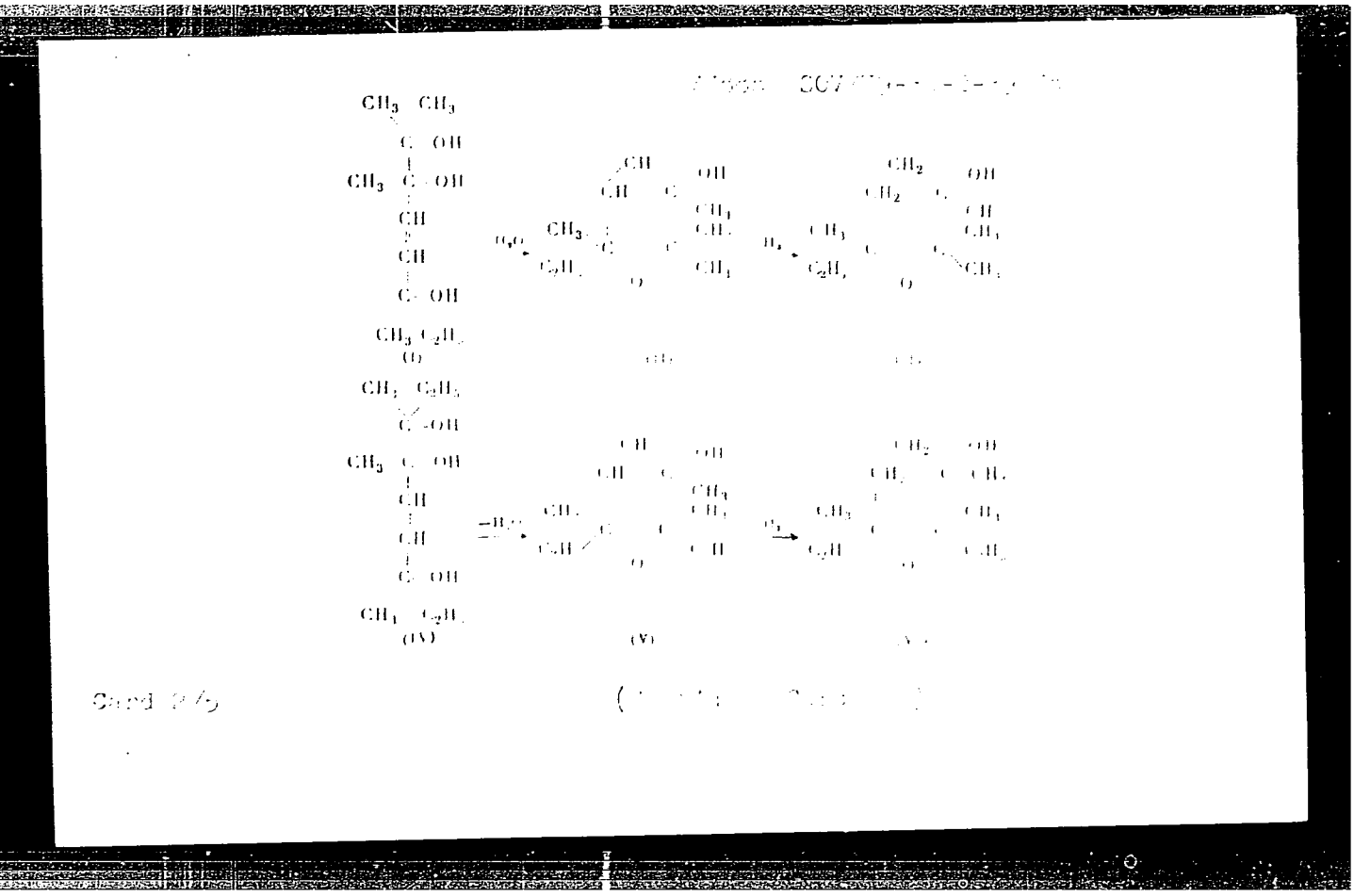
AUTHORS: Nikit[illegible], V. I., Tit[illegible], I. M.

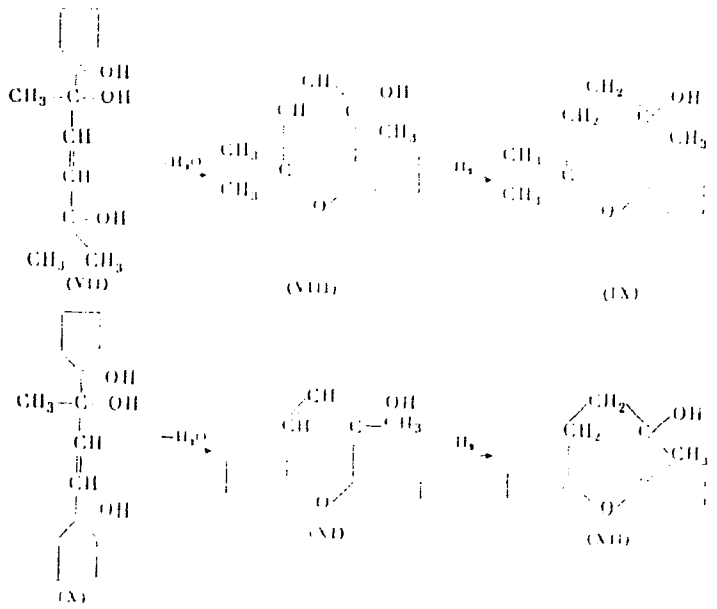
TITLE: Tertiary Ti[illegible] A[illegible] Their Conversions. XVII. [illegible] Ethylene Glycols [illegible] Dihydropyrroles

PERIODICAL: Zh[illegible], [illegible], [illegible], [illegible], pp. [illegible] (USSR)

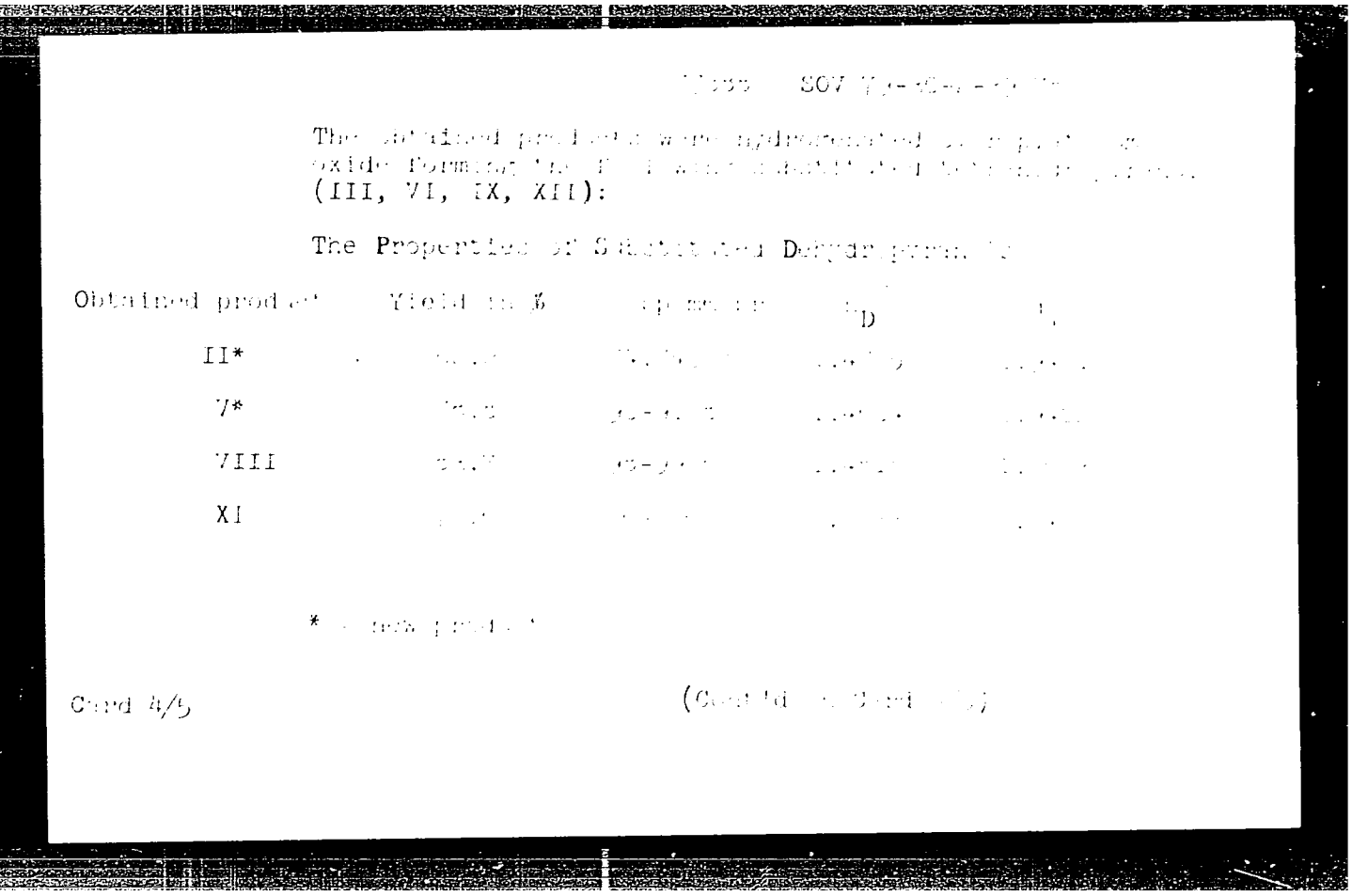
ABSTRACT: The following five members of tertiary [illegible] of ethylenic carbinols (I, IV, VII, X) were [illegible] 10% H_2SO_4 forming the corresponding [illegible] dihydropyrroles (II, V, VIII, XI).

Card 1/5





Card 3/5



[illegible] SOV [illegible]

The obtained products were hydrogenated [illegible]
oxide forming [illegible]
(III, VI, IX, XII):

The Properties of Obtained Dehydrogenation [illegible]

Obtained product	Yield in %	[illegible]	[illegible]D	[illegible]
II*	[illegible]	[illegible]	[illegible]	[illegible]
V*	[illegible]	[illegible]	[illegible]	[illegible]
VIII	[illegible]	[illegible]	[illegible]	[illegible]
XI	[illegible]	[illegible]	[illegible]	[illegible]

* [illegible] product

Card 4/5 (Continued [illegible])

The Properties of Substituted Tetrahydropyranols

Obtained product	Yield in %	Bp mm pr	n_D^{20}	d_4^{20}
III*	[illegible]	[illegible]	[illegible]	0.9302
VII	-	[illegible]	-	-
IX	-	[illegible]	[illegible]	0.9917
XII	-	[illegible]	[illegible]	1.0389

* = new product

There are 5 Soviet references.

ASSOCIATION: Institute of Chemistry, Academy of Sciences, Tadzhik SSR (Institut khimii Akademii nauk Tadzhikskoy SSR)

SUBMITTED: January 19, 1959

Card 2/2

APPROVED FOR RELEASE: 07/19/2001 CIA-RDP86-00513R001137010018-9"

5.3400

AUTHORS: Nikitin, V. I., Savranskaya, S. D., Timofeyeva, I. M.

TITLE: Tertiary Triatomic Acetylenic Alcohols and Their Transformations. XVIII. Oxidation of Acetylenic and Ethylenic Glycerols With Potassium Permanganate

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol 28, No 3, pp 764-770 (USSR)

ABSTRACT: The authors reported previously (this journal, 1953, Vol 23, p 1330; ibid., 1956, Vol 26, p 417) that the oxidation of ethylenic glycerols with $KMnO_4$ involves chiefly the cleavage of single bonds adjoining the multiple bond and that comparatively large amounts of oxalic acid are formed in this reaction. On oxidation of acetylenic glycerols, however, the cleavage occurs at the triple bond and is accompanied chiefly by the formation of hydroxy acids. The above was investigated in detail in the oxidation with $KMnO_4$ of four acetylenic

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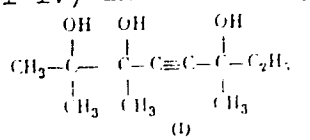
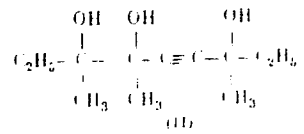
Tertiary Triatomic Acetylenic Alcohols and Their Transformations. XVIII.

7825
SOV/7[illegible]-30-3-3/69

(I-IV) and four ethylenic glycerols (V-VIII).


(I)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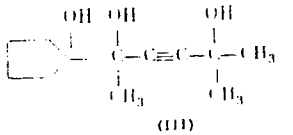
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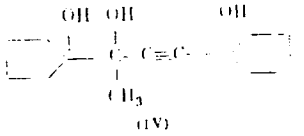
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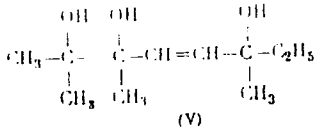
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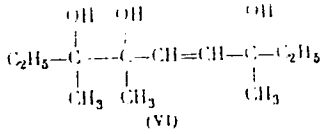
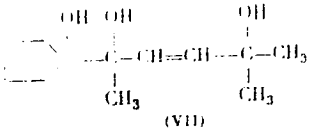
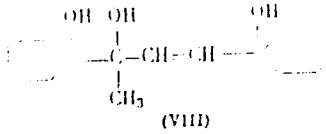

(VI)


(VII)


(VIII)

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Tertiary Trialkylcarbinols and Their Transformations. XIII.

SOV/7[illegible]

The results confirmed the above-mentioned course of the reactions which gave, in the first instance, oxalic acid in preponderant yield, and in the second instance, preponderant amounts of α-hydroxy acids. There is 1 table; and 4 Soviet references.

ASSOCIATION: Chemical Institute, Academy of Sciences Tatar SSR (Institut khimii Akademii nauk Tatarskoy SSR)

SUBMITTED: March [illegible], 1[illegible]

Card 3/3

5.3400

AUTHORS: Nikitin, V. I., Timofeyeva, I. M.

TITLE: Tertiary Triatomic Acetylenic Alcohols and Their Transformations. XIX. Oxidation of Substituted Dihydropyran-3-ols

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 3, pp 771-777 (USSR)

ABSTRACT: It was reported previously (this journal 1956, Vol 26, abstract 7382) that the cleavage of unsaturated triols in the oxidation of glycerols with $KMnO_4$ takes place to a lesser extent in triols than in acetylenic glycerols. This is evidenced by a lower amount of oxalic acid as compared with the amount of acids found in the oxidation products of ethynyl glycerols. Investigation of the oxidation of ethynyl

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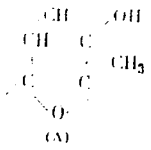
Tertiary Triatomic Acetylenic Alcohols and Their Transformations. XIX.



dihydropyran-3-ols (general formula "A") obtained by hydrogenation of acetylenic alcohols and their subsequent dehydration (this journal 1[illegible], Vol 30, abstracts 77[illegible] and 77[illegible]) showed that dihydropyran-3-ols behaved similarly to the acetylenic alcohols. Mainly single bonds adjoining the double bond were cleaved on oxidation with $KMnO_4$, and the yield of oxalic acid was from [illegible] times as much as that of hydroxy acids. The dihydropyran-3-ols investigated are listed in the table below.

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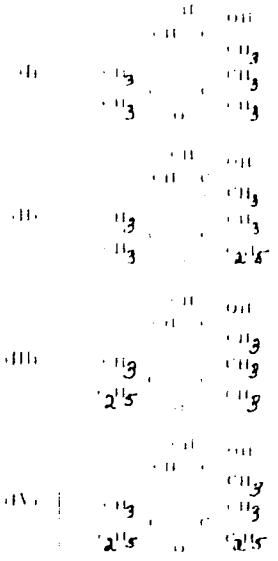
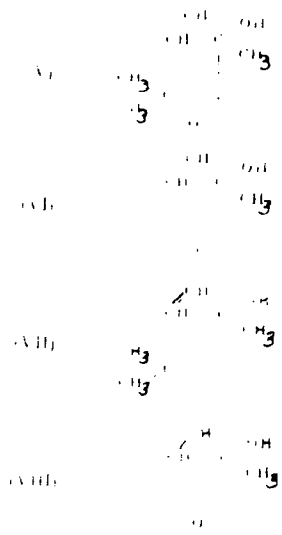
Tertiary Triatomic Acetylenic Alcohols and Their Transformations. XIX.





Card 3/4

Tertiary Triatomic Acetylenic Alcohols and Their Transformations. XIX. 7825c
SOV/7[illegible]-30-3-10/[illegible]

There is 1 table; and [illegible] Soviet references.

ASSOCIATION: Institute of Chemistry, Academy of Sciences Tadzhik SSR (Institut khimii Akademii nauk Tadzhikskoy SSR)

SUBMITTED: March [illegible], 1[illegible]

Card 4/4

S/079/60/030/05/14/074
B005/B126

5.3200

AUTHORS: Nikitin, V. I., Likhtenshteyn, G. I.

TITLE: Tertiary Tetravalent Alcohols of the Acetylene Series and Their Conversions. XX. The Structure of the Dehydration Products of 1,2,5-Triols of the Ethylene Series

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 5, pp. 1461-1471

TEXT: Together with I. M. Timofeyeva in an earlier paper, one of the authors showed that 1,2,5-triols of the ethylene series split off a molecule of water from two hydroxyl groups under the action of diluted sulfuric acid. Ring closure of the remaining molecules then occurs over one of the oxygen atoms left behind, forming an unsaturated heterocyclic alcohol (Ref. 1). This paper gives the clear proof of the structure of these heterocyclic products. From ketones, labeled with O^{18}, the authors synthesized the relevant triols of the acetylene series by a method proposed by one of the authors in Refs. 3 and 4. By hydrating these triols, 1,2,5-triols of the ethylene series were obtained, which were labeled in position 2 or 5 on the oxygen of the hydroxyl group. Potassium sulfate

Card 1/4

was used to dehydrate these triols. Thus the molecule loses first one molecule of water and then a second. The separated water was isolated and its isotope composition was analyzed. Thus, it was possible to determine the structure of the hydration products clearly. Sulfuric acid could not be used for the dehydration because in this case the separated water cannot be isolated. The results obtained by the authors are given in Table 1. Five different triols were examined. The conditions for the dehydration reaction and the yield are given for each triol. It appeared that the dehydration with potassium bisulfate takes place in the same way as the dehydration with sulfuric acid. However, on dehydration with potassium bisulfate another second molecule of water is split off, causing the formation of another secondary, lower boiling fraction as well as the primary, high boiling dehydration product. Both fractions are easily separated by vacuum distillation. From the isotope composition of the water that is split off on the further dehydration of the high boiling fraction, the position of the hydroxyl group remaining after the first separation of water can be determined. According to a given scheme the

Tertiary Tetravalent Alcohols of the Acetylene Series and Their Conversions. XX. The Structure of the Dehydration Products of 1,2,5-Triols of the Ethylene Series

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authors synthesized three further triols of the ethylene series, which were marked on an oxygen atom. These triols were also dehydrated and the isotope composition of the separated water was analyzed by means of a mass spectrograph of the type MC-1 (MS-1). The analyses on the mass spectrograph were carried out in the Institut khimicheskoy fiziki AN SSSR (Institute for Chemical Physics of the AS USSR) of V. I. Gorshkov. The results are given in Table 2. The examinations showed that the hydroxyl group remains in position 2 during the dehydration. Ring closure occurs on the dehydration of the OH-groups in positions 1 and 5, and substituted dihydropyranols are formed. The water separated on the dehydration contains the oxygen of the hydroxyl group in position 5 and the hydrogen of the hydroxyl group in positions 1 and 5. The resulting dihydropyranols can be further dehydrated, producing heterocycles with two double bonds, one of which lies in the ring and the other is semicyclic. The latter double bond can move into the ring, producing pyran derivatives. All the operations carried out are fully described in the experimental part. A method is mentioned there, which was worked

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Tertiary Tetravalent Alcohols of the Acetylene Series and Their Conversions. XX. The Structure of the Dehydration Products of 1,2,5-Triols of the Ethylene Series

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B005/B126

out by one of the authors. A Favorskiy piston was used for the dehydration. There are 1 figure, 2 tables, and 5 Soviet references.

ASSOCIATION: Institut khimii Akademii nauk Tadzhikskoy SSR (Institute of Chemistry of the Academy of Sciences of the Tadzhikskaya SSR)

SUBMITTED: January 19, 1959

Card 4/4

NIKITIN, V.I.; GLAZUNOVA, Ye.M.

Tertiary triatomic alcohols of the acetylenic group and their conversions. Part 21: Dehydration of 2,3,6-trimethyl-4-octyne-2,3,6-triol and 3,4,7-trimethyl-5-nonyne-3,4,7-triol. Zhur. ob. khim. 30 no.12:3907-3915 D '60. (MIRA 13:12)

1. Institut khimii Akademii nauk Tadzhikskoy SSR.
(Octynetriol) (Nonynetriol)

S/081/62/000/024/057/073
B101/B186

AUTHOR: Nikitin, V. I.

TITLE: Tertiary glycerines of the acetylene and ethylene series and their chemical conversions

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 24, 1962, 296, abstract 24Zh92 (Tr. In-t khimii AN TadzhSSR, v. 4, 1961, 258 pp. illustr.)

TEXT: This is a monograph summarising the results of studies on these alcohols conducted by the author and a group of co-workers over a period of many years. They dealt with the synthesis of tertiary trivalent alcohols of the acetylene series by condensating tertiary acetylene carbinols with tertiary acetyl carbinols according to A. Ye. Favorskiy's method; dehydration of these alcohols, and their hydration according to Kucherov into complex heterocyclic compounds with pyranylidene pyrane structure (the conversion mechanism was developed); and hydrogenation of acetylene glycerines into glycerines of the ethylene series and their conversion into substituted dihydropyranols. Extensive experimental data

Card 1/2

S/079/61/031/001/007/025
B001/B066

AUTHORS: Nikitin, V. I. and Glazunova, Ye. M.

TITLE: Tertiary Trivalent Alcohols of the Acetylene Series, and Their Conversions. XXII. Dehydration of 2-Methyl-5-(1-hydroxy-cyclopentyl)-hexine-3-diol-2,5 (I), and 2,4-di-(1-hydroxy-cyclopentyl)-butin-3-ol-2 (VI)

PERIODICAL: Zhurnal obshchey khimii, 1961, Vol. 31, No. 1, pp. 89 - 95

TEXT: Following Refs. 1 and 2, the authors now subjected these two acetylenetriols (I and VI), (with one or two cyclopentyl radicals), to dehydration. The new compounds, (I and VI), were synthesized by one of the authors in co-operation with S. D. Savranskaya (Ref. 5). Compound (I) was allowed to react with p-toluenesulfonic acid and potassium bisulfate. The glycol 2-methyl-5-(1-hydroxy-cyclopentyl)-hexen-1-in-3-ol-5 (II) in both cases resulted as principal and only dehydration product in a yield of between 53 and 59 %. On exhaustive hydrogenation of this glycol in acetic acid the saturated glycol 2-methyl-5-(1-hydroxy-cyclopentyl)-hexanol-5 (III) was obtained. The structure of glycol (II) could be con-

Tertiary Trivalent Alcohols of the Acetylene Series, and Their Conversions. XXII. Dehydration of 2-Methyl-5-(1-hydroxy-cyclopentyl)-hexine-3-diol-2,5 (I), and 2,4-di-(1-hydroxy-cyclopentyl)-butin-3-ol-2 (VI)

S/079/61/031/001/007/025
B001/B066

firmed only by a counter-synthesis from isopropenyl acetylene and 1-acetyl-cyclopentanol with subsequent hydrogenation. This product gave no melting point depression with glycol (III) (melting point of (III) 83.5 - 84.5°C). Glycol (III) is converted in two directions by dehydration with 25 % sulfuric acid: a) under formation of 2-methyl-5-(1-methyl-cyclopentyl)-pentanone-5 (IV), and b) under formation of 2-methyl-5-cyclopentenyl-1-hexene-4 (V). A pinacoline rearrangement also takes place on dehydration of glycol (III) with potassium bisulfate, giving compound (IV). 2,4-di-(1-hydroxy-cyclopentyl)-butin-3-ol-2 (VI) is also dehydrated with p-toluenesulfonic acid and potassium bisulfate to 2-(1-hydroxy-cyclopentyl)-4-cyclopentenyl-butin-3-ol-2 (VII) (28 %) which may be hydrogenated selectively with one mole of hydrogen to the diene α-glycol 2-(1-hydroxy-cyclopentyl)-4-cyclopentenyl-buten-3-ol-2 (VIII). The hydrogenation of glycol (VII) over palladium on chalk apparently yields 2-(1-hydroxy-cyclopentyl)-4-cyclopentenyl-butanol-2 (IX). On exhaustive hydrogenation of glycol (VII) in methanol the glycol 2-(1-hydroxy-cyclo-

Card 2/3

Tertiary Trivalent Alcohols of the Acetylene Series, and Their Conversions. XXII. Dehydration of 2-Methyl-5-(1-hydroxy-cyclopentyl)-hexine-3-diol-2,5 (I), and 2,4-di-(1-hydroxy-cyclopentyl)-butin-3-ol-2 (VI)

S/079/61/031/001/007/025
B001/B066

pentyl)-4-cyclopentyl-butanol-2 (X) results. There are 6 references: 4 Soviet, 1 US, and 1 British.

ASSOCIATION: Institut khimii Akademii nauk Tadzhikskoy SSR (Institute of Chemistry of the Academy of Sciences Tadzhikskaya SSR)

SUBMITTED: January 23, 1961

Card 3/3