

S/051/63/014/001/004/031
E039/E120

AUTHORS: Berezin, I.A., and Yanovskaya, G.N.

TITLE: A study of the excitation of iodine in a hollow cathode

PERIODICAL: Optika i spektroskopiya, v.14, no.1, 1963, 23-28

TEXT: The dependence of the intensity of the spectral lines of iodine on the composition of the gas sustaining the discharge, the gas pressure, the current intensity and the presence of an impurity with a lower excitation potential, is investigated. The sensitivity for determining iodine in an atmosphere of neon is one order higher than for argon, while in helium it is two orders higher than for neon (10 mm Hg gas pressure, 250 mA). Standards containing 10% iodine were used with A and Ne, and 0.1% iodine with He. The subsequent measurements were carried out in He. At pressures less than 5 mm and more than 20 mm the condition of the discharge in the hollow cathode deteriorated, hence the pressure dependence of the iodine lines was determined over the range 7.5 to 17 mm. As the pressure was increased the intensity of the majority of the lines either decreased or remained constant; only a few increased in intensity, in particular 5338.19 and 5407.36 Å.

Card 1/2

A study of the excitation of iodine...

S/051/63/014/001/004/031
E039/E120

As the current was increased, so did the intensity of all the lines. The majority increased linearly with the current, but for the 5338.19 and 5407.36 Å lines the intensity depended approximately on the square of the current. With increasing concentration of sodium, which has a low excitation potential, the intensity of all the iodine lines decreased uniformly. In addition, the intensities of the spectral lines of iodine, chlorine, bromine and sulphur in a hollow cathode are compared with line intensities for the same elements in a glow discharge. The results are explained on the basis of collision processes. There are 2 figures and 3 tables.

SUBMITTED: November 27, 1961

Card 2/2

BEREZIN, I.A.; YANOVSKAYA, G.N.

Excitation of the spectrum of iodine in a hollow cathode.
Opt. i spektr. 14 no.1:23-28 Ja '63. (MirA 16:5)
(Iodine--Spectra)

YANOVSKAYA, G.Ya.

Food of copepods and their larvae in the Black Sea. Trudy Hidrobiol.
ob-va 7:163-172 '56. (MLRA 10:2)
(Black Sea--Copepoda)

MORDUKHAY-BOLTOVSKOY, F.D.; MORDUKHAY-BOLTOVSEAYA, E.D.; YANOVSKAYA, G.Ya.

Shore-water fauna of Rybinsk Reservoir. Trudy Biol. sta. "Borok"
no.3:142-194 '58. (MIRA 11:9)

(Rybinsk Reservoir--Fresh-water fauna)

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LA

Sulfonation of 2-acetylpyrrole. A. P. Terent'ev and
V. A. Yanovskaya (Moscow State Univ.). *Vestnik
Moskov. Univ.* 3, No. 10, 155-7 (1948).—See C.I. 44, 3073.
G. M. Kosolapoff

YANOVSKAYA, L. A.

Yanovskaya, L. A. - "Sulfonation of N-substituted pyrroles," Vestnik Mosk. un-ta,
1948, No. 11, p. 123-31

So: U-3566, 15 March 53, (Letopis 'Zhurnal 'nykh Statey, No. 13, 1949)

CA

10

Simplified preparation of diethyl diacetylacrylate. A. P. Frenkel'ev and L. A. Yanovskaya. *Zhur. Obshch. Khim.* (J. Gen. Chem.) 18, 1199-00(1948).—Powd. Mg (0.7 g.), activated by warming with a little iodine, is added to 2.5 g. $\text{AcCl}(\text{CO}_2\text{Et})$, stirring continued until the reaction is complete (2-3 hrs.), and the Mg deriv. filtered from the ester excess and washed with $(\text{CH}_2\text{Cl})_2$; the recovery of unreacted ester averages 185 g. The Mg deriv., suspended in $\text{Cl}_2\text{C}_2\text{H}_2$, is treated, with stirring, with 24 g. Et added dropwise in 2 vols. $\text{C}_2\text{H}_2\text{Cl}_2$ with cooling (in the initial stages); after filtration, the Mg deriv. is washed with the same solvent, the solid, freed of solvent by distn., followed by blowing with steam, and the liquid layer of *di-Et diacetylacrylate* washed with Na_2CO_3 for conversion to the solid form, which is filtered off and dried; yield, 83%. The procedure is much more satisfactory than the customary Na process. G. M. K.

Lab. Organic Chem - Moscow State U.

A 10-31-A METALLOGRAPHIC LITERATURE CLASSIFICATION

YANOVSKAYA, L. A.

"Sulfonation in the Pyrrole and Indole Series." Thesis for degree of Cand.
Chemical Sci. Sub. 8 Jun 49, Moscow order of Lenin State U imeni M. V. Lomonosov.

FDD Summary 82, 18 Dec 52, Dissertations Presented For Degrees in Science and
Engineering in Moscow in 1949. From Vechernyaya Moskva, Jan-Dec 1949.

62/49T14

YANOVSKAYA, L. A.

USSR/Chemistry - Sulfonation
Chemistry - Pyrrole

Mar 49

"Sulfonation and Sulfonacids of Acidophobic Com-
pounds: III, Sulfonation of Pyrrole and Its
Homologues," A. P. Terent'ev, L. A. Yanovskaya,
Lab of Org Chem, Moscow State U, 5 1/2 pp

"Zhur Obshch Khim" Vol XIX, No 3

Prepared pyrrole-2-sulfonic acid, 1-methylpyrrole
2-sulfonic acid, 2-methylpyrrole-5-sulfonic acid
2,4-dimethylpyrrole-5-sulfonic acid, and 1-o-
tolylpyrrole-2-sulfonic acid by sulfonation of
pyrrole and its homologues by pyridine-sulfur

62/49T14

USSR/Chemistry - Sulfonation (Contd) Mar 49

trioxide in a dichloroethane solution. Yield at
150° C, 2,5-dimethylpyrrole was not sulfonated.
Submitted 3 Nov 47.

62/49T14

YANOVSKAYA, L. A.

USSR/Chemistry - Sulfonation Pyrrole

Jul 49

"Sulfonation Sulfo Acids of Acids phobic Compounds: VI, Sulfonation of Alpha-Alpha'-Substituted Homologues of Pyrrole," A. P. Terent'yev, L. A. Yanovskaya, lab of Org Chem, Moscow State U ineni M. V. Lomonosov, 4 pp

"Zhur Obshch Khim" Vol XIX, No 7

Sulfonated 2,5-dimethylpyrrole, 1, 2, 5-trimethylpyrrole, and 2, 3, 5-trimethylpyrrole with pyridinesulfotrioxide. Then, prepared barium salts of: 2,5-dimethylpyrrolesulfonic-(3) acid, 2, 5-dimethylpyrroledi-sulfonic-(3,4) acid, 1,2,5-trimethylpyrrolesulfonic-(3)acid, 1,2,5-trimethylpyrroledisulfonic-(3,4)acid, and 2,3,5-trimethylpyrrolesulfonic-(4) acid. Submitted 21 Mar 48.

PA 2/5CT63

Sulfonation and sulfonic acids of acidophobic substances. IX. Sulfonation of 1- and 2-acetylpyrrole. A. P. Terent'ev and L. A. Yanovskaya (Moscow State Univ.). *Zhur. Obshch. Khim.* (J. Gen. Chem.) 19, 2118 22(1949); cf. C.A. 44, 10954, 1954. — 2-Acetylpyrrole (I) (1.3 g.) in 25 ml. 6% oleum, poured into H_2O , neutralized with $BaCO_3$, filtered, and concd. gave 76% *Ba* 2-acetyl-4-pyrrolesulfonate, sol. in H_2O , giving $BaSO_4$ with Br water, and SO_2 on boiling with 15% HCl , while oxidation with CrO_3 gave sulfonmaleamic acid, isolated as the *Ba* salt, $BaC_{11}H_{10}O_5SN$. I (1.00 g.) and 4.77 g. pyridine- SO_2 in $(CH_2Cl)_2$ in 8 hrs. at 100° , then 3 hrs. at $120-30^\circ$, give on evapn. and neutralization with $BaCO_3$, 1.2 g. *di-Ba* 2-acetyl-3,5-pyrroledisulfonate (from dil. $EtOH$), while the mother liquor yields the monosulfonate described above (0.7 g.). 1-Acetylpyrrole (1.5 g.) and 5 g. pyridine- SO_2 in $(CH_2Cl)_2$ in 5 hrs. at 101° and 6 hrs. at $110-20^\circ$ give 2 disulfonates, apparently the 2,5- and 2,4-isomers, isolated as the *Ba* salts by fractional pptn. from dil. $EtOH$; oxidation by Cl_2 gave *N*-acetyl-maleimide, m. 54° . G. M. Kosolapoff

CA

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Substitution rules in the pyrrole series. A. P. Terent'ev
and L. A. Yanovskaya. *Uspekhi Khim.* 19, 202-19
(1950).—A crit. review. N. Thon.

1937

CA

Sulfonation and sulfonic acids of acidophobic substances. XI. Application of the leaching method to the investigation of sulfonation products of pyrrole. A. P. Terent'ev, L. A. Yanovskaya, and V. G. Yashinskiy (Moscow State Univ.). *Zhur. Obshch. Khim. (J. Gen. Chem.)* 29, 510-13(1959); cf. *C.I.* 43, 7015; 41, 8925. Sulfonation of pyrrole yielded only the 2-sulfonate. The Ba salt was converted to the Na salt by Na_2CO_3 and this was rubbed with PCl_5 , fused, extr. with cold CCl_4 , and washed with H_2O ; evapn. of the org. soln. gave the *sulfonyl chloride*, which failed to yield the amide with NH_4OH but did yield the amide, m. 142° (from C_6H_5), on treatment with PhNH_2 . The Ba salt was taken up in aq. MeOH and titrated, with exclusion of Cl^- , with 0.1 N Na_2CO_3 and phenolphthalein; the result checked ($\text{C}_{11}\text{H}_{10}\text{NS}_2$) $_2\text{Ba}$. The salt (1.627 g.) shaken 2 hrs. with 35 ml. aq. MeOH (2:3 by vol.) gave a satd. soln. at 20° and an aliquot of the soln. was again analyzed while the aliquot vol. was replaced by an equal vol. of soln. of the same compn., and the process was repeated 4 times; the soly. of the solid phase, i.e., the compn. of the undissolved salt, remained the same. The same procedure used on the unpurified Ba salt obtained by pyridine- SO_3 sulfonation of pyrrole gave a similarly const. result, thus showing the homogeneity of the sulfonation reaction product. G. M. Koudupoff

CA

The sulfonation and sulfo acids of acidophobic compounds.
cf. Use of the liltration method to investigate the products
of the sulfonation of pyrrole. A. P. Terent'ev, L. A. Yanov-
skaya, and V. G. Yashunskii (Moscow State Univ.). *J.*
Gen. Chem. U.S.S.R. 20, 509-12 (1950) (Engl. translation). --
See *C.A.* 44, 7829c. R. M. S.

1951

CA YANOVSKAYA, L. A.

The study of pyrrolesulfonic acids by oxidative polarography. A. P. Terent'ev, L. A. Yanovskaya, and E. A. Terent'eva (Lomonosov State Univ., Moscow). *Doklady Akad. Nauk S.S.S.R.* 70, 610 (1970). Cf. C. A. 43, 7015a, 44, 1095a. Pyrrolesulfonic acids are not reduced at the dropping-Hg cathode, but are readily oxidized in acid solns., giving distinct polarographic curves. The oxidation potential was measured with a calomel electrode and 0.5 N KCl; the best oxidation occurred at pH 1.2-1.7 when pure H₂ salts of the acids were used. 2-Pyrrolesulfonic acid gives a half-wave potential of 0.022 v.; 1-methyl-2-pyrrolesulfonic acid gave 0.018 v.; 2,4-dimethyl-2-pyrrolesulfonic acid gave 0.015 v.; 1,2,4-trimethyl-2-pyrrolesulfonic acid gave 0.012 v.; and the 3-isomer gave 0.011 v. Mixts. of the 2- and the 3-sulfonic acids give sets of 2 waves corresponding to the components. The alleged 1-phenylpyrrolesulfonic acid (cf. *Vestnik Mosk. Univ.* 1946, No. 11, 124) gave 2 waves with half-wave potentials 0.026 and 0.052 v. in a mixture with isomer mixt. of 2- and 3-sulfonic acids. The oxypyrrolesulfonic acid (cf. above ref.) similarly is a mixt. of 2,3- and 2,4-disulfonic acids (0.012 and 0.012 v. half-wave potentials), while 1-(p-nitrophenyl)pyrrolesulfonic acid (cf. above ref.) also revealed both 2- and 3-sulfonic acids. However, 1-(o-tolyl)pyrrolesulfonic acid revealed to be a pure 2-isomer, but 1-(m-tolyl)pyrrolesulfonic acid revealed the presence of 2- and 3-sulfonic acids. G. M. K.

CA

Use of dioxane dibromide in bromination of organic compounds. I. A. Yanovskaya (M. V. Lomonosov State Univ., Moscow). *Doklady Akad. Nauk S.S.S.R.* 71, 681-5 (1951). --Dioxane dibromide (I) rapidly brominated org. substances under a variety of conditions. Addition of 2.5 g. I to 1.25 g. pyrogallol in Et₂O, followed by washing and evapn. of the Et₂O, gave 1.95 g. 4-bromopyrogallol, m. 118-20° (decomp.). Similar conditions gave 100% BrC₆H₄OH from PhOH, 100% bromohydroquinone or 2,6-dibromohydroquinone (depending on the ratio used) from hydroquinone, 92% 4-bromopyrocatechol from pyrocatechol, and 93% 4,6-dibromopyrogallol from pyrogallol. Addn. of 6.4 g. C₆H₆ to 13 g. I, followed by 2 min. at 50-60°, gave 7.8 g. 1-C₆H₅Br; 100% 1,4-di-Br deriv. is similarly obtained with double the amt. of I at 40°; 2-MeC₆H₄Me gave 80% 1-Br deriv. and MePh gave 100% p-BrC₆H₄Me; C₆H₆ failed to react, but anthracene in dry dioxane as solvent gave either the 9-Br or 9,10-di-Br deriv. in 100% yields. Aldehydes and ketones (Me₂CO, Ph₂CO, PhCHO, iso-BuCHO) similarly gave 70-100% yields of α-Br derivs. at room temp. In dioxane soln. I at 0° gave 60-80% 2-bromofuran, an stable α-bromo-2-methylfuran, 3-bromomindole, and 3-bromo-2-methylindole from the corresponding heterocycles. G. M. Kosolapoff

2A

Sulfonation of aldehydes and ketones. A. P. Terent'ev and L. A. Yanovskaya (M. V. Lomonosov State Univ., Moscow). *Doklady Akad. Nauk S.S.S.R.* 75, 245 (1970).

Addn. of an alkylidene or ketone with strong cooling to dioxane- SO_3H in $(CH_2Cl)_2$, letting stand overnight, treatment with $BaCO_3$, evapn., extr. with hot H_2O , and pptn. of the insol. ext. with HCl - H_2O gave Ba salts of mono- or di-sulfonic acids, depending on the ratio of reagents used. Except for $AcPh$, all ketones gave sol. Ba sulfonates, usually monohydrates, as did all aldehydes, the derivatives of which also give the Ag mirror test, reduce Fehling soln., but give no color with fuchsin- SO_3H , and do not form oximes, phenylhydrazones, or semicarbazones. The location of SO_3H w. shown, by oxidation, to be in the α position. The following sulfonic acids (as Ba salts) (% yields given) were prepd: AlH monosulfid 38 and disulfid 78; $n-C_4H_9CHO$ monosulfid 61 and disulfid 78; $n-C_5H_{11}CHO$ monosulfid 61 and disulfid 78; C_6H_5CHO monosulfid 65; $n-C_7H_{15}CHO$ monosulfid 78; $C_6H_5C(CH_3)CHO$ monosulfid 65; $n-C_8H_{17}CHO$ monosulfid 78; $C_6H_5C(CH_3)_2CHO$ monosulfid 65; $n-C_9H_{19}CHO$ monosulfid 78; $Me_2C=O$ monosulfid 52 and disulfid 100; $Pr_2C=O$ monosulfid 67; $Me_2C=O$ monosulfid 52 and disulfid 100; $Pr_2C=O$ monosulfid 67, and disulfid 100; $n-C_{10}H_{21}CHO$ monosulfid 78; $AcPh$ monosulfid 81; cyclohexanone monosulfid 84. (Note by authors: after completion of this work there appeared the report of Truce and Alberti (C. 45, 1966), covering similar preps. but with lower yields and different technique) © M. Kowaloff

4

CA

Polarography of some sulfo derivatives of conjugated diene hydrocarbons. A. P. Terent'ev, L. A. Yanovskaya, and A. V. Dombrovskii. *Vestnik Mosk. Univ.* 6, No. 2, Ser. Fiz.-Mat. i Estestv. Nauk No. 1, 93-5 (1951).—1-Di-vinylsulfonic acid polarographed as the Ba salt gave only one wave with half-wave oxidation potential of 0.023 v. This was the limiting value for the location of the sulfo group (terminal) and the absence of other waves confirmed the purity of the specimen. Hydrogenated isoprenesulfonic acid oxidized with $KMnO_4$ gave $MeEtCO$, indicating the structure of 2-methyl-1,3-butadiene-1-sulfonic acid; polarography of its Ba salt gave 2 waves with half-wave potentials of 0.021 and 0.031 v. Probably, the first was caused by the 1-sulfonic acid, the location of the other being unknown at this time. The 2,3-dimethylbutadienesulfonic acid on oxidation gave diacetyl; polarography gave 1 wave with half-wave potential 0.017 v. showing it to be the 1-sulfonic acid. Cyclopentadienesulfonic acid gave 1 wave with half-wave potential 0.016 v. G. M. Kosolapoff

YANOVSKAYA, L. A.

Feb 51

USSR/Chemistry - Sulfonation

"Sulfonation and Sulfonic Acids of Acidophobic Compounds. XIV. Sulfonation of 2-Chloropyrrole and 2-Benzolazopyrrole," A. P. Ierent'yev, L. A. Yanovskaya, Lab Org Chem, Moscow State U

"Zhur Obshch Khim" Vol XXI, No 2, pp 281-284

Pyridine-sulfotrioxide can be used for sulfonation of 2-chloropyrrole and 2-benzeneazopyrrole
Obtained for 1st time 2-chloropyrrolesulfonic-5 and 2-benzeneazopyrrolesulfonic-5 acids
in form of their barium salts.

PA 177T16

191T27

YANOVSKAYA, L. A.

USSR/Chemistry - Sulfonation

Jul 51

"Sulfonation and Sulfonic Acids of Acidophobic Compounds. XVI. Sulfonation of Certain Indole Derivatives," A. P. Terent'yev, L. A. Yanovskaya, Lab Org Chem, Moscow State U

"Zhur Obshch Khim" Vol XXI, No 7, pp 1295-1297

Pyridine-sulfur trioxide is suitable sulfonating agent for indole derivs. Prepd for 1st time and isolated in form of Ba salts 2-phenylindolesulfonic-3, 2-sulfo-3-indolylacetic, 3-acetylindolesulfonic-2, and 1-acetylindolesulfonic-2 acids.

191T27

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CA YANOVSKAYA, L. H.

Sulfonation and sulfonic acids of acidophobic substances.
XVI. Sulfonation of derivatives of indole. A. P. Terent'ev
and L. A. Yanovskaya. *J. Gen. Chem. U.S.S.R.* 21, 1415-
17 (1951) (Engl. translation).— See C.A. 46, 2048a. D. R.

CA

Dipole moments of pyrrole derivatives. R. N. Gur'yani-
va, L. A. Yamskaya, and A. P. Terent'ev (Institute of
Chemistry, Moscow). *Zh. Fiz. Khim.* 35, 1027 (1961).
—Dipole moments of pyrrole derivs. in CCl₄ soln. at
25° are measured. The results (in Debye units) are: 2,5-
dimethylpyrrole 2.03; 1,2,5-trimethylpyrrole 2.08; 1-
phenyl-2,5-dimethylpyrrole 1.90; 1-*p*-nitrophenyl-2,5-di-
methylpyrrole 2.50; 2,4-dimethylpyrrole 1.75; 1-phenyl-
pyrrole 1.61; 1-acetylpyrrole 2.59; 3-methylpyrrole 1.89;
1-phenyl-2-methylpyrrole 1.94. Thus, in the pyrrole ring,
the dipole has the direction (N-ring) opposite to that in
amines. Also, the electronegativity of C atoms in *N*-sub-
stituted pyrrole derivs. is larger than in pyrrole itself.
This explains some chem. properties of pyrrole derivs.
(Cowley and Partington, *C.A.* 78, 90; Dhoot and Wilburt,
C.A. 38, 2330). Michel Boudart

YANOVSKAYA, L. A.

USSR/Chemistry - Sulfonation

May 52

"Sulfonation and Sulfonic Acids of Acidophobic Compounds, XIX. Polarographic Investigation of Pyrrole-sulfonic Acids," A. P. Terent'yev, L. A. Yanovskaya, Ye. A. Terent'yeva, Org Chem Lab, Moscow State U

Zhur Obshch Khim, Vol 22, No 5, pp 859-865

Pyrroles, e.g., 1- and 2-acetylpyrrole and 1-phenylpyrrole, can be sulfonated with pyridine sulfotrioxide to form α - and β -sulfonic acids. The method of oxidative polarography can be used to determine the position of the sulfo group in pyrrole sulfonic acids. Separate polarographic determination of α - and β -pyrrole sulfonic acids in a mixt is possible.

263335

YANOVSKAYA, L. A.

May 52

USSR/Chemistry - Sulfonation

"Sulfonation and Sulfonic Acids of Acidophobic Compounds, XX. Polarographic Investigation of Indole Sulfonic Acids," A. P. Terent'yev, L. A. Yanovskaya, Org Chem Lab, Moscow State U

Zhur Obshch Khim, Vol 22, No 5, pp 866-870

Pyridine sulfotrioxide was used to prepare indole sulfonic acid. The oxidative polarographic method can be used to det the position of the sulfo group in indole sulfonic acids.

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YANOVSKAYA, I. A.

232T24

USSR/Chemistry - Bromination

Sep 52

"Bromination With Dioxane-Dibromide. I. Bromination of Phenols," L. A. Yanovskaya, A. P. Terent'yev, L. I. Belen'kiy, Moscow State U

"Zhur Obshch Khim" Vol 22, No 9, pp 1594-1598

Authors propose a convenient new method for brominating phenols, naphthols, and oxyanthraquinones in which the addn product of bromine to dioxane, i.e., dioxane-dibromide, is used.

232T24

YANOVSKAYA, L. A.

232T25

USSR/Chemistry - Bromination

Sep 52

"Bromination With Dioxane-Dibromide. II: Bromination of Aldehydes and Ketones," L. A. Yanovskaya, A. P. Terent'yev, Moscow State U

"Zhur Obshch Khim" Vol 22, No 9, pp 1598-1602

Authors describe a new method of brominating aldehydes and ketones under use of dioxane-dibromide.

(CA 47 no.18:92-98 '53)

232T25

YANOVSKAYA, L.A.

Polymers and Polymerization

New refractory polymers. Priroda 41, no. 2, 1952.

9. Monthly List of Russian Accessions, Library of Congress, DECEMBER 1952, 1953, Unclassified.

1. YANOVSKAYA, L. A.
2. USSR (600)
4. Compounds, Racemic
7. A new method for separating racemic compounds, Priroda, 41, No. 10, 1952.

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

USSR

Sulfonation of some saturated compounds
 (From *U.S.S.R. Zh. Khim. Fiz.*, 1953, 29, 117, 2019-2021)
 Different methods of sulfonation of the following were investigated: MeNO₂ (I), nitrocyclonehexane II MeCN (III), MeCH₂CN (IV), AcOEt (V), EtCO₂Et (VI), and PrCO₂Et (VII); PrCO₂H (VIII), Me₂CCH₂CN (IX), and CH₂(CO₂Et)₂ (X). Pyridine-SO₃ did not sulfonate the above even at 150°. SO₃ soln. with I at first gave a homogeneous, transparent liquid, which suddenly underwent a violent reaction with evolution of CO₂, NO₂, and SO₂. The following 3 reagents in (CH₂Cl)₂ gave variable results: (a) SO₃; (b) pyridine-2SO₃ prepd. by adding SO₃ to pyridine-SO₃ under (CH₂Cl)₂; and (c) dioxane-SO₃. The products as Ba salts and the yields in % from a, b, and c were as follows: I, (C₆H₁₀O₂NS₂)₂Ba, 14.9, 4, 0; II, (C₆H₁₀O₂NS₂)₂Ba (sic), 25.5, 22, 20; III (C₆H₁₀O₂NS₂)₂Ba·H₂O, 35, 28, 70; IV (C₆H₁₀O₂NS₂)₂Ba·2H₂O, 7.7 g. from 4 g. IV, 80, —; V C₆H₁₀O₂S₂Ba, 45, quant., quant.; VI C₈H₁₆O₂S₂Ba, 48, quant., —; VII C₈H₁₆O₂S₂Ba, 15, —, quant.; VIII (C₈H₁₆O₂NS₂)₂Ba·2H₂O, 12.7 g. from 7 g. VIII, quant., —; IX and X with c have yields of 25 and 80%, resp. All Ba salts were H₂O-sol. Those of I and II did not hydrolyze in boiling water; the salts of the nitriles hydrolyzed in boiling H₂O to give amides, in alk. solns. to give NH₃. The ethers gave diacids very readily; the monoacids could be obtained only with the greatest care, the salts were difficult to isolate in the pure state.

I. Bencowitz

MA

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YANOVSKAYA, L. A.

Sulfonation and sulfonic acids of acidophobous substances.
XXIII. Sulfonation of aldehydes and ketones. A. P. Tret'ev and L. A. Yanovskaya (Moscow State Univ.)
Zhur. Obshch. Khim. 23, 618-23 (1953); cf. *C.A.* 46, 11178b; 48, 4430a.—As a result of expts. with various sulfonating agents (SO_3 in $(\text{CH}_2\text{Cl})_2$, pyridine- SO_3 , pyridine-2 SO_3 , dioxane- SO_3), it was shown that for sulfonation of aldehydes dioxane- SO_3 is most suitable, while for ketones all the above agents except pyridine- SO_3 can be employed. To 5.6 g. AcH in 10 ml. $(\text{CH}_2\text{Cl})_2$ was added with cooling dioxane- SO_3 from 6.6 g. SO_3 and 25 ml. $(\text{CH}_2\text{Cl})_2$ with excess dioxane; after 12 hrs. at 0° and neutralization with a suspension of BaCO_3 in an aq. ext. of the evapd. mixt. gave 6.6 g. Ba acetalsulfonate hydrate, $(\text{C}_6\text{H}_5\text{O}_2\text{S}_2\text{Ba}\cdot\text{H}_2\text{O})$ (from aq. EtOH-Et $_2\text{O}$). Addn. of 5.8 g. AcH to a suspension of dioxane- SO_3 from 35 g. SO_3 in $(\text{CH}_2\text{Cl})_2$ at 0° gave after 12 hrs. 100% Ba disulfonate, $\text{C}_6\text{H}_5\text{O}_2\text{S}_2\text{Ba}\cdot\text{H}_2\text{O}$. Similarly 5.8 g. EtCHO in $(\text{CH}_2\text{Cl})_2$ treated with 8 g. SO_3 in 20 ml. $(\text{CH}_2\text{Cl})_2$ with cooling and then immediately with BaCO_3 gave 7 g. $(\text{C}_6\text{H}_5\text{O}_2\text{S}_2\text{Ba}\cdot\text{H}_2\text{O})$ (I); 8.5 g. EtCHO treated with cooling with pyridine-2 SO_3 from 24 g. pyridine- SO_3 and 12 g. SO_3 in $(\text{CH}_2\text{Cl})_2$ gave 12.5 g. $\text{C}_6\text{H}_5\text{O}_2\text{S}_2\text{Ba}$. EtCHO and dioxane- SO_3 under similar conditions give 55% I.

YANOVSKAYA, L.A., kandidat khimicheskikh nauk.

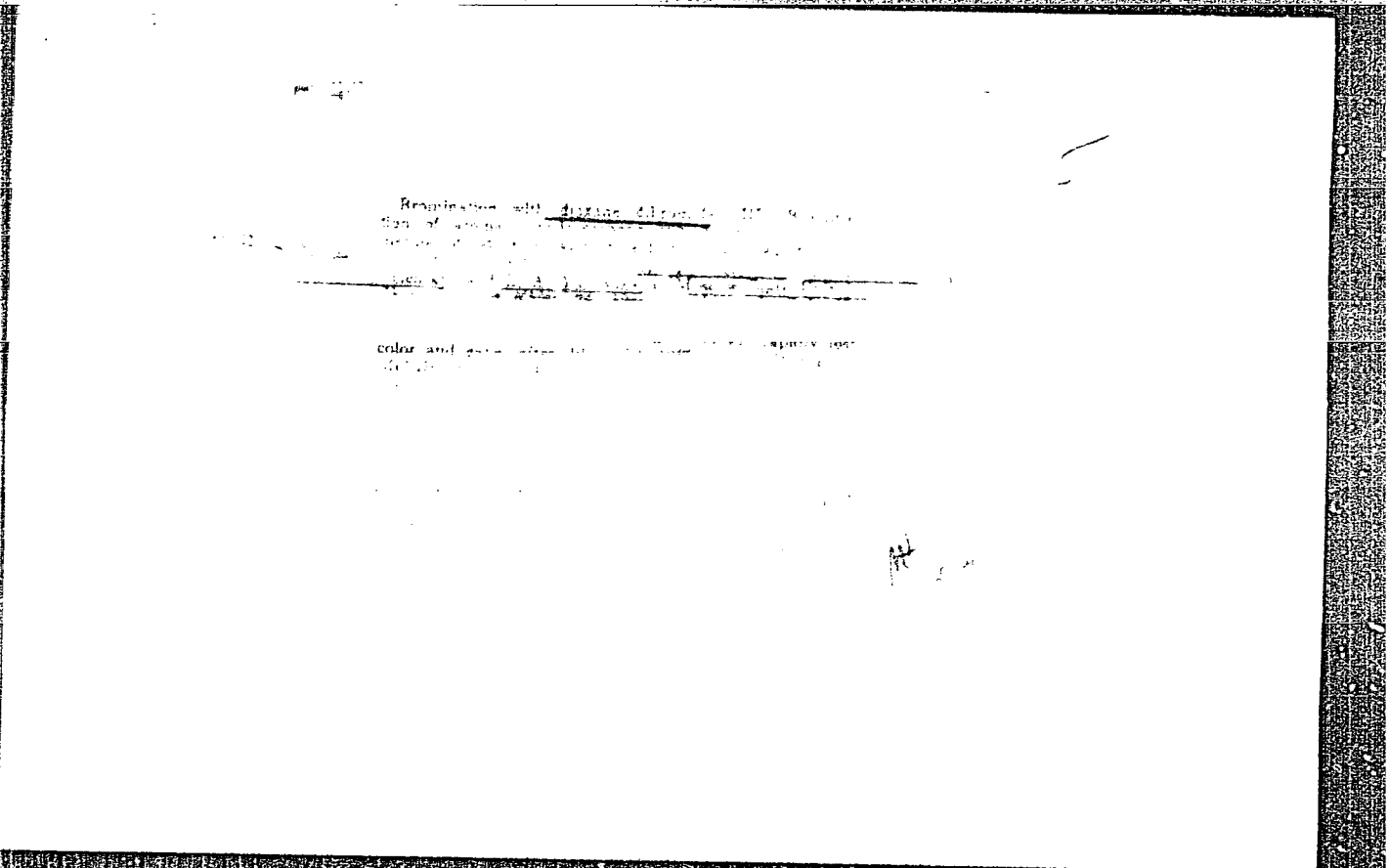
Polarographic method of analysis. Priroda 42 no.12:90-94 D '53.

(MIRA 6:11)

(Polarograph and polarography)

YANOVSKAYA, L.A.

Subject : USSR/Chemistry AID P - 1120
Card 1/1 Pub. 119 - 3/5
Authors : Terent'yev, A. P. and Yanovskaya, L. A. (Moscow)
Title : Methods of synthesizing compounds of the pyrrole series
Periodical : Usp. khim., 23, no. 6, 697-736, 1954
Abstract : An extensive review on the preparation of pyrrole compounds by condensation and cyclization of aliphatic compounds and by conversion of heterocyclic compounds is given. The review is based principally on non-Russian sources. 346 references (51 Russian: 1884-1953).
Institution : None
Submitted : No date



"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001962110015-5

[REDACTED]

APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001962110015-5"

H. P. TERRY

2,4-Di- $C_6H_4NH_2$, m. 70-80°. PhOH (3 g.) in CCl_4 treated with 1 g. Cl_2 and 5 ml. benzene; and the mixt. washed after 1.5 hrs. with Na_2CO_3 and dried with $CaCl_2$, yielded 5.1 g. of 2,4-dichlorophenol, m.p. 75-76°. Yield 75%.

2,4-Di- $C_6H_4NH_2$ (3 g.) in CCl_4 treated with 1 g. Cl_2 and 5 ml. benzene; and the mixt. washed after 1.5 hrs. with Na_2CO_3 and dried with $CaCl_2$, yielded 5.1 g. of 2,4-dichlorophenol, m.p. 75-76°. Yield 75%.

USSR/Biology - Botany

Card 1/1 : Pub. 86 - 14/46

Authors : Yanovskaya, L. A., Cand. Chem. Sci.

Title : The formation of rubber in plants

Periodical : Priroda, 43/9, 83-85, Sep 1954

Abstract : The author states the chemical formula for rubber and recounts the efforts of various scientists to reproduce in the laboratory the process of the formation of rubber which takes place in certain plants. It is shown how the efforts to transform isoprene into rubber led to the conclusion that polymerization is the result of the rearranging of the atoms. The series of steps in this process is given. One German reference, three English and four Russian (1948-1952).

Institution :

Submitted :

TERENT'YEV, A.P.; YANOVSKAYA, L.A.; RUKHADZE, Ye.G., redaktor;
RODIONOV, V.M., akademik, redaktor [deceased]; KAZANSKIY, B.A.,
akademik, redaktor; KNUNYANTS, I.L., akademik, redaktor;
SHEMYAKIN, M.M., redaktor; MEL' NIKOV, N.H., prof, redaktor;
LUR'YE, M.S., tekhnicheskii redaktor.

[Polarographic analysis in organic chemistry] Poliarograficheski
method v organicheskoi khimii. Moskva, Gos. nauchno - tekhn. izd.
vo khim. lit-ry, 1957. 388 p. (Reaktsii i metody issledovaniia
organicheskikh soedinenii, vol.5) (MIRA 10:10)

1.Chlen-korrespondent AN SSSR (for Shemyakin).
(Polarography) (Chemistry, Organic)

~~YANOVSKAYA, L.A.~~
TERENT'YEV, A.P.; YANOVSKAYA, L.A.

Using halogen-containing compounds for substitution halogenation
of organic substances. Reakts.org, soed. 6:7-342 '57. (MIRA 10:12)
(Halogenation) (Substitution (Chemistry)) (Organic compounds)

YANOVSKAYA, L. A.

20-2-27/60

AUTHORS: Nazarov, I. N. , Member of the Academy, Yanovskaya, L. A. ,
Gusev, B. P. , Yufit, S. S. , Gunar, V. I., Smit, V. A.

TITLE: The Synthesis of Methylheptenone and Methylheptadienone
(Sintez metilgeptenona i metilgeptadiyenona)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 114, Nr 2, pp. 331-334
(USSR)

ABSTRACT: The two substances mentioned in the title of the paper under review are of importance for the synthesis of the natural scented substances of the isoprenoid type. The authors of the present paper investigated the production of the former on basis dimethylvinylcarbinol or isoprene with the aid of three different methods : (1) by condensation of prenylhalogenids by aceto-ethylacetate; (2) by interaction between dimethylvinylcarbinol and the same ether; and (3) by pyrolysis of the same ether of dimethylvinylcarbinol. As was shown in a previously published scientific paper originating in the same laboratory, there are produced at influence by hydrogen halides on dimethylvinylcarbinol corresponding prenylhalides

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20-2-27/60

The Synthesis of Methylheptanone and Methylheptadienone

with high yields. They can be easily condensed by sodium-aceto-ethylacetate and at a subsequent saponification they yield methylheptenone. The second method of synthesis takes place at a temperature of 160 - 170° and yields 60 - 70 % methylheptenone in addition to an almost theoretical amount of ethanol and CO₂. The reaction must be carried out under pressure or by using high-boiling Vaseline oil. The remainder after distillation is aceto-ethylacetate of dimethylvinylcarbinol. At 160 - 170° this is subjected to a pyrolysis, and here methylheptenone and CO₂ are produced. This supports the reactions mechanism as illustrated in the paper under review. The pyrolysis of pure dimethylvinylcarbinol-acetoacetate was investigated further. It is produced with a yield of 90 %, when diketone affects dimethylvinylcarbinol in presence of small amounts of pyridine, best at a temperature between 145 and 160°. During this process, methylheptenone is produced (65 - 70 %). The pyrolysis has also a lateral direction and leads to isoprene, acetone and CO₂. Sometimes this lateral direction predominates. The authors of the present paper studied in detail the production methods of methylheptadienone both by interaction between dimethylethylcar-

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The Synthesis of Methylheptenone and Methyl ptdienone

20-2-27/60

binol and aceto-ethylacetate, and also by pyrolysis of pure dimethylathinylcarbinol-acetoacetate with a yield of 90 %by influence of diketone on pure dimethylethinyl in presence of triethylamine. The reaction takes place only at 170 - 180°. Below 160° the initial products are obtained again, because no interaction takes place. In the gaseous phase the reaction takes place only at 250-300°. There the yield is low (15-20 %). Inert diluting agents, acids, salts and metallic oxides do not favor the reaction, but rather frequently lead to a complete resinification of the substance. Here again lateral processes take place, with isopropenylacetylene and acetone being produced. The experimental part of the paper under review contains a detailed description of the production methods together with constants and yields. There are 5 references, 1 of which is Soviet.

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20-2-27/60

The Synthesis of Methylheptenone and Methylheptadienone

ASSOCIATION: Institute of Organic Chemistry imeni N. D. Zelinskiy, AS
USSR
(Institut organicheskoy khimii im. N. D. Zelinskogo Akademii
nauk SSSR)

SUBMITTED: January 7, 1957

AVAILABLE: Library of Congress

Card 4/4

YANOVSKAYA, L. A.

20-5-31/60

AUTHOR NAZAROV, I.N., member of the Academy,
YANOVSKAYA, L.A., GUSEV, B.P., MAKIN, S.M. and
NAZAROVA, I.I.

TITLE The Synthesis of Geranylacetone, 3-Methylgeranylacetone,
Pseudoionon and Pseudoiron.
(Sintez geranilatsetona, 3-metilgeranilatsetona,
psevionona i psevdirona.- Russian)

PERIODICAL Doklady Akademii Nauk SSSR 1957, Vol 114 Nr 5,
pp 1029-1032 (U.S.S.R.)

ABSTRACT In the course of systematic work on the synthesis of
isoprenoid compounds a paper by Carrol attracted the
attention of the author. That author reports that with
the heating of linalool with acetoacetic ether, in the
presence of a small amount of sodium alcoholate, gerany-
lacetone with a 40-45 % yield develops. Kimel and Cope
obtained 61 % linalylacetoacetate from interaction of
linalool with diketone, in the presence of metallic
sodium. Its pyrolysis at 170-235 °C yielded 78 % gerany-
lacetone. The authors thoroughly examined both synthesis
varieties on linalool and 3-methyl linalool, in order to
work out a production method for geranylacetone and
3-methylgeranylacetone. It was found out that reaction
proceeds best at 160-180°C without any catalysts.

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20-5-31/60

The Synthesis of Geranylacetone, 3-Methylgeranylacetone, Pseudonon and Pseudoiron.

90-95% of the theoretical CO_2 -amount precipitate, and an almost theoretical amount of alcohol (with admixture of acetone) is distilled. Since the latter process is terminated considerably earlier than the CO_2 -elimination, it may be assumed that the reaction passes the acetoacetate-stage. A system is given. This mechanism was proved by the authors for the reaction between dimethylvinylcarbinol and acetoacetic ether. From a study of the second variety of synthesis the authors found that the acylation of linalool and methylalool with diketone may best be performed in the presence of pyridine or triethylamine, and not of metallic sodium. Based upon the results obtained, the authors decided to investigate both varieties of dehydrolinalool and 3-methyl dehydrolinalool, in order to work out synthesis methods for pseudononon and pseudoiron. Sometime during the beginning of this work a paper by Lacey was published demonstrating the possibility of a synthesis of dienones on most simple ethinylcarbinols according to a general system mentioned here. The second half of the reaction the pyrolysis of acetoacetate, was performed by Lacey in the presence of small amounts of p-toluolsulfonic acid. This kind of dienone synthesis was thoroughly

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The Synthesis of Geranylacetone, 3-Methylgeranylacetone, Pseudoionon and Pseudoiron.

studied in the laboratory of the authors. During the work the paper by Naves of the same topic was published. He also described a production method for 3-methylpseudoiron from 3-methyldehydrolinalool and α -methyl acetoacetic ether. Recently Preobrazhenskiy and collaborators wrote on this topic. The authors studied both synthesis varieties and found that the reaction between dehydrolinalool or 3-methyl dehydrolinalool and acetoacetic ether proceeds best at 180-180°C. The yield of pseudoionon and pseudoiron amounts to about 55 %. The acylation of dehydrolinalool or 3-methyldehydrolinalool by diketone proceeds best in the presence of pyridine or triethylamine. The pyrolysis of the two mentioned substances thus obtained was performed at 185-195°C. In this connection about 80 % of the theoretical CO₂-amount is obtained. The yield of pseudoionon and pseudoiron amounted to 50-55 %, of the initial materials. The cyclization of the thus obtained pseudoionon with a mixture of sulfur- and ice-acetic acid gave ionon

CARD 3/4

20-5-31/60

The Synthesis of Geranylacetone, 3-Methylgeranylacetone,
Pseudoionon and Pseudoiron.

with a 65 % yield. Experimental part with the usual data.
(2 Slavic references)

ASSOCIATION: "N.D. ZELEZINSKY" Institute for organic chemistry of the
Academy of Sciences of the U-SSR.
(Institut organicheskoy khimii im.N.D. Zelinskogo Akademii
nauk SSSR)

PRESENTED BY: -

SUBMITTED: 7.2.57

AVAILABLE: Library of Congress.

CARD 4/4

AUTHORS: Nazarov, I. N. (Deceased), Yanovskaya, L. A. 74-27-3-1/7
(Moscow)

TITLE: Achievements in the Field of the Synthesis of Carotenoids
and Vitamin A (Uspekhi v oblasti sinteza karotinoidov i
vitamina A)

PERIODICAL: Uspekhi Khimii, 1958, Vol. 27, Nr 3, pp. 241-276 (USSR)

ABSTRACT: In the course of the last years great success was made in
the field of the above synthesis. Synthetic vitamin A and
 β -carotene are produced in industrial scale already in
some Western countries. At the beginning the author reports
on the results of the structural investigation of the caro-
tenoids which already in 1930 had found the most important
results. At present there exist more than 70 so-called in-
dividual carotenoids. Following, the methods of synthesis
are described. Already in 1952, Undon elaborated a new
method according to which a yield of 14% could be obtai-
ned (formulae IV). Karrer and Inhoffen (References 5,6)
worked with magnesium organic compounds (see formulae I
and II) and obtained tetraol with a yield of 60 - 70%.

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Achievements in the Field of the Synthesis
of Carotenoids and Vitamin A

74-27-3-1/7

According to this method only a small percentage ($\sim 3\%$) of β -carotene could be synthesized. In the course of a series of intensive investigations Inhoffen succeeded in elaborating 3 further possibilities of synthesis. One of them is equally based on the principle $C_{16} + C_8 + C_{16} = C_{40}$. On further methods see formulas VI - VII. The methods of synthesis of ketone C_{18} are sufficiently elaborated to day. For its synthesis β -ionons condenses with the ester of the β -bromo carotenic acid (according to Reformatskiy). Karrer used the same method of synthesis (see formulas IX - XIII). Huisman suggested another variant of the scheme of synthesis (ketone- C_{18}) according to Maylas. It was found that the reaction of simultaneous dehydration and saponification of the oxy ester is accompanied by an allyl regrouping. As the result, the acid C_{15} forms with a yield of 97-99%. (See formulae IX, XIV, XIII). The scheme of synthesis of β -carotene according to the principle

Cont 2/4

Achievements in the Field of the Synthesis of
Carotenoids and Vitamin A

74-27-3-1/7

$C_{19} + C_2 + C_{19} = C_{40}$ is the most favourable. A description follows of the methods of synthesis of the aldehyde C_{19}

(formulas XX - XXV and XXXIII - XXXV).

Conclusion: From 1950 to 1957, 6 different principles of synthesis of β -carotene were elaborated (see p. 252).

Vitamin A: The first successful synthesis was based on the aldehyde C_{14} . The greatest achievement made during 1951 -

1957 was the regrouping of allyl in the dehydration of β -ionol alcohols discovered by Oroshnik and Huisman (Refs. 113 - 115). It was named "retro-ionylidene-regrouping"

with retro compounds as products. A detailed description of work carried out in the field of synthesis of vitamin A, of the Huisman investigations of the transition of the retro ionylidene structures into ionylidene follows (formulae 84 - 85). Further works in the fields of vitamin A synthesis developed into two directions: elaboration of new schemes of synthesis which exclude a retro ionylidene regrouping and methods to find out possibilities of re-

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Achievement in the Field of the Synthesis of
Carotenoids and Vitamin A

74-27-3-1/7

grouping of the retro ionylidene structures into the wanted ionylidene structure. Also other variants are found in patent publications which were not described in this paper. There are 151 references, 5 of which are Soviet.

1. Carotenoids--Synthesis
2. Vitamin A--Synthesis

Card 4/4

5(3)

AUTHOR:

Yanovskaya, L. A.

SOV/74-28-8-3/6

TITLE:

Some New Methods for the Synthesis of Isoprenoid Chains
(Nekotoryye novyye metody sinteza izoprenoidnykh tsepey)

PERIODICAL:

Uspekhi khimii, 1959, Vol 28, Nr 8, pp 948-969 (USSR)

ABSTRACT:

In recent years isoprenoid chemistry has greatly developed. Numerous compounds which until recently could be obtained from natural raw materials only can now be produced synthetically. The present survey deals with the most promising reactions by which it has become possible to solve a number of extremely difficult questions with regard to the structure of the isoprenoid chain. These questions are (1) the synthesis of ketones by the pyrolysis of the acetoacetates of the β -, γ -unsaturated alcohols, and (2) the synthesis of polyene aldehydes and ketones by an interaction of acetals and ketals on the one hand and vinyl ethers on the other. The Wittig and Norman reactions were already dealt with in detail in references 1 and 2. The former of the above reactions was discovered by Carrol (Refs 3-5) in 1940. However, it was used in practice for the first time in 1953-54, after publication of references 9 and 10,

Card 1/3

Some New Methods for the Synthesis of Isoprenoid Chains SOV/74-28-8-3/6

on a large scale in organic synthesis as a method of producing unsaturated ketones. This is proved by the numerous patents obtained in the different countries of the world (Refs 11-64). Most frequent is the synthesis of isoprenoid dienes by the pyrolysis of acetoacetates of the ethynylcarbinols. In the investigation of the pyrolysis mechanism an interesting regrouping was discovered (Refs 65, 66) by which the possibility of the formation of allene structures in the pyrolysis of ethynylcarbinol esters was proved. Possibilities of an expansion of the application of the Carrol reaction are shown up in references 67-69. The possibility of adding acetals to vinyl ether in the presence of Friedel-Craft catalysts was mentioned as early as 1939 (Ref 70). But it was not before 1949 (Ref 71) that it was shown that the reactions between acetals and vinyl ethers follow the general pattern. The role of the catalyst consists in the formation of an active complex with the acetal which ensures the formation of a carbonium ion reacting with the double bond of the vinyl ether. Such a mechanism matches entirely with modern concepts of the role of the catalyst in electrophilic reactions taking place via a carbonium ion. The addition of ketals to vinyl ethers is a

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Some New Methods for the Synthesis of Isoprenoid Chains SOV/74-28-8-3/6

sphere rather insufficiently investigated so far. Besides acetals, free aldehydes can react with vinyl ethers as well (Refs 134, 135, 136). In recent times this variant is being used to a higher and higher degree in organic synthesis. It was shown recently (Refs 137, 138) that this reaction follows a general pattern. All kinds of catalysts may be used. The reaction velocity depends on the nature of the reagents and catalysts. It was found (Ref 139) that the yields are much higher in reactions with aldehydes than in reactions with acetals. The condensation mechanism with free aldehydes has not yet been completely cleared up. There are 139 references, 41 of which are Soviet.

ASSOCIATION: In-t organicheskoy khimii AN SSSR im. N. D. Zelinskogo
(Institute of Organic Chemistry AS USSR imeni N. D. Zelinskiy)

Card 3/3

YANOVSKAYA, L. A.

PLATE I BOOK EXPLANATION 807/583

Lebedev, D. I. *Problems in the Theory of Topical Stereocentering* (Problems in the Theory of the Structure of Organic Compounds) [Moscow] 1960. 239 p. Kriks slip inserted. 3,723 copies printed.

Sponsoring Agency: Leningradskiy orden Lenina Gosudarstvennyy universitet in A.S. Zaslavnyy.

Rep. Ed.: I.A. Perovskiy; Ed.: V.D. Prater; Tech. Ed.: S.D. Yodanis.

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

CONTENTS: The collection is concerned with the scientific legacy of A.Ye. Perovskiy and includes discussions of his theoretical ideas and their evolution in connection with the development of theoretical organic chemistry. The articles review problems on the structure, stability and transformations of various classes of organic compounds: alkenes, alkyne and allylic hydrocarbons, saturated and unsaturated cyclic aliphatic and carbonyl compounds. Biographical data are mentioned. References accompany each article.

Perovskiy, I.A., E.G. Kolesnikov, and E.A. Cherkashina. Development of A.Ye. Perovskiy's Work in the Field of Polyene Chemistry. 64

Lebedev, D. I. Development of A.Ye. Perovskiy's Ideas on the Synthesis of Terpenes and Related Compounds by the Soviet School of Chemists. 126

Troshchinskaya, L.I., and V.I. Kucheryav. Role of A.Ye. Perovskiy's Research on the Synthesis of Isoprenoid Compounds. 133

Perovskiy, I.A. Reaction Mechanisms of Alcohols and Aldehydes with Dehydro-2,4-Dihydroxyacetone. 163

Lebedev, D. I. A.Ye. Perovskiy's Reaction in the Synthesis of Tannin 1,2,3-Tri-O-Acetylacetone Series. 183

Zakharov, N.S. Isomeric Transformations of Ketones. 196

Troshchinskaya, L.I. Participation of Bridging Groups in Chemical Processes. Chemical Transformations of α -Ketone Ketides. 210

Abram, A.M. Application of A.Ye. Perovskiy's Ideas and of the Chemical Reactions Discovered by Him in the Chemistry of the Steroid Compounds. 224

*AVIAR: Library of Congress (QA76.L44)

YANOVSKAYA, L.A.

Possible ways of synthesizing compounds similar to vitamin-A.
Izv. AN SSSR Otd. khim. nauk no. 8:1435-1439 Ag '60. (MIRA 15:5)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.
(Vitamins-A)

S/062/60/000/008/029/033/XX
B013/B055

AUTHORS: Kucherov, V. F., Kovalev, B. G., Nazarova, I. I., and
~~Yanovskaya, L. A.~~

TITLE: Application of the Wittig Reaction for the Synthesis of
 α,β -Unsaturated- and Polyene Acids

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk,
1960, No. 8, pp. 1512-1514

TEXT: This is a short communication on the investigation of the reaction of carboethoxymethylene triphenyl phosphorane (I) with various aldehydes. This investigation was undertaken with the purpose of synthesizing different polyene acids. It was found that (I) reacts readily with saturated, unsaturated, aromatic and heterocyclic aldehydes giving the corresponding ethyl esters of α,β -unsaturated acids in high yields. Particularly good results were obtained with polyenals, polyene acid esters being formed in yields of over 80%. By hydrolysis of these esters with sodium hydroxide in aqueous methanol, the polyene acids, up to now difficultly accessible substances, were obtained in satisfactory yields. Owing to the simplicity of execution, general applicability, high yields and purity of reaction

Card 1/2

✓

Application of the Wittig Reaction for the
Synthesis of α,β -Unsaturated- and Polyene
Acids

S/062/60/000/008/029/033/XX
B013/B055

products, the Wittig reaction surpasses many of the better-known prepara-
tion methods. It is undoubtedly one of the most convenient methods to
prepare polyene acids and their esters. There are 1 table and 10
references: 1 Soviet, 1 US, 2 French, 5 German, and 2 Swiss. ✓

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii
nauk SSSR
(Institute of Organic Chemistry imeni N. D. Zelinskiy of the
Academy of Sciences USSR)

SUBMITTED: January 15, 1960

Card 2/2

YANOVSKAYA, L.A ; KUCHEROV, V.F.

Chemistry of acetals. Report No. 3: Reactions of tetraethyl acetals of malonic and methylmalonic dialdehydes with vinyl ethyl and propenyl ether. Izv. AN SSSR. Otd. khim. nauk no. 12:2184-2192 D '60. (MIRA 13:12)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.
(Acetals) (Ethers)

YANOVSKAYA, L. A.

81861

S/020/60/133/02/33/068
B016/B0605.3831
5.3400AUTHORS: Kucherov, V. F., Yanovskaya, L. A., Kovalev, B. G.TITLE: Saponification of Tetraethyl Acetals of the β -Dicarbonyl Compounds and Some Ways of Utilizing the Compounds Formed TherebyPERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 2,
pp. 370-373

TEXT: The saponification of tetraethyl acetals (I) with an equivalent of water in the presence of p-toluene sulfonic acid was found to be a general method of synthesizing the β -formyl-vinyl ethers (Ref. 3). The further saponification of the latter leads to the substituted derivatives of malonic acid dialdehyde (III) (in accordance with Ref. 4). IR spectra of the β -formyl-vinyl ethers produced by the authors confirm their structure as α, β -unsaturated aldehydes. However, they contain a slight admixture of saturated aldehydes. On the saponification of tetraethyl acetals of β -ethoxy glutaric dialdehyde (IV) with an equivalent amount of water there is a cyclization, with 2,4,6-triethoxy tetrahydropyrans

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Saponification of Tetraethyl Acetals of the
 β -Dicarbonyl Compounds and Some Ways of
Utilizing the Compounds Formed Thereby

S/020/60/133/02/33/068
B016/B060

(V) forming as the main products. Here as well, the IR spectra confirm their structure. As the authors had proven earlier (Ref. 2), only corresponding ethoxy aldehydes (VII) result on the saponification of ethoxy tetraethyl acetals of the type (VI) with an excess of water. The saponification of tetraethyl acetal of acetoacetic aldehyde and its derivatives (VIII) with a water equivalent has a peculiar course, inasmuch as only diethyl acetals of the type (IX) are formed here. All of the compounds formed in this connection do not yield any Fehling reaction, and the IR spectrum shows them to possess a free keto group. The dialdehydes of the type (III) and (VII) were found to react readily under the conditions of the Wittig reaction with carbethoxy methylene triphenyl phosphoran (X). In this connection they form corresponding diethyl esters of the unsaturated dicarboxylic acids (XI) and (XII). Also several β -formyl vinyl ethers are capable of undergoing this reaction. Thus, β -formyl- β -methyl vinyl ether benzoate (XIII) yields 1-carbethoxy-4-methyl-5-benzyl oxypentadiene-2,4 (XIV) on the reaction with phosphorane (X). Therefrom, 2,4-dinitro phenyl hydrazone of the corresponding aldehyde ester (XV) was obtained in turn. β -Keto acetals

Card 2/3

81861

Saponification of Tetraethyl Acetals of the
 β -Dicarbonyl Compounds and Some Ways of
Utilizing the Compounds Formed Thereby

S/020/60/133/02/33/068
B016/B060

(IX) do not react with carbethoxy methylene triphenyl phosphorane. Still, they easily enter the acetylene synthesis reaction with the lithium cyclohexene-1-yl-acetylenide and form acetylene alcohols of the type (XVI) with a good yield. Saponification and dehydration of the latter yield unsaturated aldehydes (XVII). All of the conversions investigated here open up great possibilities for the synthesis of several polyene compounds which are related to the natural ones. This constitutes the subject of further studies made by the authors. There are 5 references: 2 Soviet, 1 German, and 1 Swiss. LH

ASSOCIATION: Institut organicheskoy khimii im. N. D. Zelinskogo Akademii nauk SSSR (Institute of Organic Chemistry imeni N. D. Zelinskiy of the Academy of Sciences, USSR)

PRESENTED: January 16, 1960, by M. M. Shemyakin, Academician

SUBMITTED: January 7, 1960

Card 3/3

NAZAROV, Ivan Nikolayevich [1906-1957]; TORGOV, I.V., doktor khim.nauk,
otv.red.; ANDRZYEY, V.M., kand.khim.nauk, red.; GURVICH, I.A.,
kand.khim.nauk, red.; SHVETSOV, N.I., kand.khim.nauk, red.;
YANOYSKAYA, L.A., kand.khim.nauk, red.; RUDENKO, V.A., red.izd-va;
POLYAKOVA, T.V., tekhn.red.

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"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001962110015-5

APPROVED FOR RELEASE: 09/01/2001

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"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001962110015-5

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001962110015-5"

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CIA-RDP86-00513R001962110015-5

APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001962110015-5"

"APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001962110015-5

APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001962110015-5"

"APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001962110015-5

ACCESSION NR AF5000480

APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R001962110015-5"

L 47327-66 EWT(11)/EWP(j) RM

ACC NR: AR6025768

SOURCE CODE: UR/0058/66/000/004/D056/D056

AUTHOR: Kogan, G. A.; Ivanova, T. M.; Yanovskaya, L. A.; Kucherov, V. F.; Popov,

Ye. M.

TITLE: Vibrational and electronic spectra of ethers of polyene carboxylic acids 50
B

SOURCE: Ref. zh. Fizika, Abs. 4D426

REF. SOURCE: Tr. Komis. po spektroskopii. AN SSSR, t. 3, vyp. 1, 1964, 113-124

TOPIC TAGS: ir spectrum, Raman spectrum, uv spectrum, carboxylic acid, electron spectrum, vibration spectrum, conjugate bond system

ABSTRACT: In order to study the mutual influence of functional groups of atoms through a system of conjugated bonds, the authors investigated the frequencies and integral intensities of the IR, Raman, and UV bands of polyene compounds of the type $X(\text{CH}=\text{CH})_n\text{COOC}_2\text{H}_5$ ($X = \text{CH}_3, \text{OC}_2\text{H}_5, \text{COH}, \text{NO}_2$, and COOC_2H_5 ; $n = 1 - 5$). On the basis of an analysis of the obtained data, the authors explain the causes of variations of these parameters and of the spectra of the compounds in the ground and excited states. [Translation of abstract].

SUB CODE: 20

Card 1/1 mjs

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