Transformation of α- and β-alkylfuranidines into the corresponding α- and β-alkylpyrrolidines. XXVI. Yu. K. Yur'ev and I. P. Grigorov (Lomonosov State Univ., Moscow). *Zhur. Obshchei Khim.* (J. Gen. Chem.) **20**, 171–4(1950); cf. *C.A.* **44**, 1482*d*, 4460*b*.—Alkylfuranidines (tetrahydrofurans) were converted to the corresponding alkylpyrrolidines (I) by dropping them (6–7 drops/min.) in strong NH_3 stream into an Al_2O_3-filled tube at 350°; fresh catalyst was used for each run. The following I are described: *3-Me* (30% from *3-methylfuranidine*), b_{760} 102.3°, d_4^{20} 0.8550, n_D^{20} 1.4430 (*picrate*, m. 108.5–7.5°); *3-Et* (10%), b_{760} 131°, d_4^{20} 0.8570, n_D^{20} 1.4501 (*picrate*, m. 101–1.5°); *3-Pr* (15%), b_{760} 158°, d_4^{20} 0.8535, n_D^{20} 1.4521 (*picrate*, m. 100.5–101°); *3-Bu* (12%), b_{760} 179–9.5°, d_4^{20} 0.8461, n_D^{20} 1.4501 (*picrate*, m. 76–6.5°); *2-Pr* (10%), b_{760} 149–51°, d_4^{20} 0.8250, n_D^{20} 1.4480; *2-Bu* (10%), b_{760} 173.5–4.5°, d_4^{20} 0.8277, n_D^{20} 1.4490).

G. M. Kosolapoff

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Simultaneous catalytic dehydration of 2-butyne-1,4-diol with ammonia and with hydrogen sulfide. Catalytic dehydration of *cis*-2-butene-1,4-diol. Yu. K. Yur'ev, I. K. Korobitsyna, and E. K. Brige (M. V. Lomonosov State Univ., Moscow). *Zhur. Obshchei Khim.* (J. Gen. Chem.) 20, 744-8(1950); cf. *C.A.* 43, 5011c.—Passage of $(CCH_2OH)_2$ (I) at 6-8 drops/min. in N over Al_2O_3 at 400° gave much C, some C_4H_4, H_2O, and traces of *furan* (detected qualitatively). At 350° I gave C_4H_4, detected as $(CHBr_2)_2$ by absorption in Br-$CHCl_3$. I (10 g.) treated as above over alumosilicate catalyst at 6 drops/min. with concurrent passage of NH_3, gave 6.3-6.75 g. *pyrrole*, the max. yield being obtained at 400°; the use of a H_2S atm. at 350° over Al_2O_3 similarly gave a trace of *thiophene*, and at 400° 0.5 g. was obtained. Hydrogenation of I over Raney Ni in EtOH gave 80.3% *cis-2-butene-1,4-diol*, b_5 115-16°, n_D^{20} 1.4734, d_4^{20} 1.0603; this (10 g.) heated with 2 g. alumosilicate catalyst to 160-70° gave 4 g. nonaq. distillate, yielding on distn. 33% *dihydrofuran*, b_{760} 65.5-6.0°, d_4^{20} 0.9225, n_D^{20} 1.4240, which with Br in CCl_4 with strong cooling gave *3,4-dibromotetrahydrofuran*, b_5 90.5-1.5°, n_D^{20} 1.5468, d_4^{20} 2.0414, while the remainder of the catalyzate yielded 20% *MeCH(OH)CHCHO*, b_{760} 160-2°, n_D^{20} 1.4352, d_4^{20} 0.951 (*semicarbazone*, m. 186-7°).

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C.A.

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Comparative reactivity of ammonia and aniline in reaction with furan and furanidine. XXVIII. Yu. K. Yur'ev, I. K. Korobitsyna, and M. I. Kuznetsova (M.V. Lomonosov State Univ., Moscow). *Zhur. Obshchei Khim.* (J. Gen. Chem.) 20, 1083-7(1950); cf. *Uchenye Zapiski Moskov. Gosudarst. Univ. im M. V. Lomonosova* No. 79, 81, 89, 115, 61(1945); *C.A.* **44**, 5800h. On the basis of the comparative reactivity of NH_3 and $PhNH_2$ in simultaneous addn. to furan or furanidine the following is noted: Furan with mixts. of NH_3 and $PhNH_2$ yields only 1-phenylpyrrole, and only traces of pyrrole; furanidine gives only 1-phenylpyrrolidine, and traces of pyrrolidine. The results are due to more ready opening of polar C—O links to the ring by the weaker base ($PhNH_2$). The reactions were performed in a tube over Al_2O_3 at 400-50° with the vapors of the desired N derivs. for gas flow. Yields of 18-20% of phenylated products were obtained. *1-Phenylpyrrole*, b. 91.5°, m. 61.2°; *1-phenylpyrrolidine*, b. 109.11°, n_D^{20} 1.5702, d_4^{20} 1.0152. Passage of $PhNHNH_2$ over Al-O, in a N stream at 400° readily gives a mixt. of NH_3 (90% of theory) and $PhNH_2$ (61% isolated), which can be used for the competition expts. Reactions with $PhNHNH_2$ and furanidine gave a small yield of *carbazole*, m. 241.6°, as a by-product.

G. M. Kosolapoff

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A comparison of the activities of ammonia and anilino in the reaction with furan and furanidine. XXVIII. Yu. K. Yur'ev, I. K. Korobitsyna, and M. I. Kuznetsova. *J. Gen. Chem. U.S.S.R.* 20, 1555-9(1950)(Engl. translation). See *C.A.* 45, 6689b.

R. M. S.

C.A.

Preparation of 2,4-dimethylfuran by pyrolysis of a sultone. Yu. K. Yur'ev, G. Va. Kondrat'eva, and S. N. Petrov (M. V. Lomonosov State Univ., Moscow). *Doklady Akad. Nauk S.S.S.R.* 72, 523-5(1950).—Mesityl oxide with $ClSO_3H$ in Ac_2O (Eastman and Gallup, *C.A.* 42, 3317a) gave 45% of the *sultone*, m. 66°, 5 g. of which, dry-distd. with 20 g. CaO, 20 g. CuO, 10 g. Fe filings, and 25 g. $Pb_3(NH)_2$, and the distillate washed with 2 *N* Na_2CO_3, $NaHSO_3$, and H_2O, gave 76% *2,4-dimethylfuran*, b$_{760}$ 94°, n_D^{20} 1.4371, d_4^{20} 0.8993; with maleic anhydride it yields the adduct, *Δ^1,3,5-dimethyl-3,6-endoxotetrahydrophthalic anhydride*, m. 75° (from Et_2O), decomp. 160°. If the distn. above is done only with CaO-Na_2CO_3, with solid NaOH, or with 40% NaOH, only Me_2CO (40–55%) is obtained and no furan deriv. is detected.

G. M. Kosolapoff

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1,2-Dithiolane (trimethylene disulfide) from trimethylene sulfide. Yu. K. Yur'ev and I. S. Levi (M. V. Lomonosov State Univ., Moscow). *Doklady Akad. Nauk S.S.S.R.* 73, 953-6(1950).—Passage of $CH_2(CH_2)_2S$ (50 g.) over Al_2O_3 at 250° at 10 g./hr. in a N atm. gave much H_2S and 6 g. catalyzate, which on dilu. with Et_2O gave 0.3 g. solid, m. 72–4°, and much C; the off-gas contained much H and olefins. A similar expt. with 25 g. sulfide run in a H_2S atm. gave 8.0 g. catalyzate that solidified on standing and, on redistn., m. 76.5–7.5° (from pyridine); some 0.6 g. pure product thus obtained was *1,2-dithiolane*, confirmed by analysis, mol. wt., and conversion to *1,3-propanedithiol*, b$_{760}$ 170–1°, n_D^{25} 1.5392, d_4^{25} 1.0772, upon heating 16 hrs. with Zn and 50% H_2SO_4; the *dibenzoate*, m. 55.5–6.5° (from EtOH), was identical with an authentic specimen. Repetition of the synthesis at 330° with 50 g. sulfide gave 2 g. dithiolane, b$_{760}$ 183–100°, m. 76.5–7.5°. The product fails to give reactions characteristic of mercaptans or sulfides.

G. M. Kosolapoff

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Reaction of ethylene oxide and ethylene glycol with ammonia at elevated temperature in the presence of aluminum oxide. Yu. K. Yur'ev, K. Yu. Novitskii, and E. I. Mingulina (M. V. Lomonosov State Univ., Moscow). *Doklady Akad. Nauk S.S.S.R.* **74**, 87–90 (1950). While ethylene oxide (I) and NH_3 in the presence of Al_2O_3 at 400–50° are reported to yield pyridine and no homologs (Malinovskii and Moryganov, *C.A.* **42**, 1565b) and AcH and NH_3 over Al_2O_3 at 425° yield alkylated pyridines, an investigation of the reaction of I with NH_3 over Al_2O_3 at 400° gave indications that only pyridine homologs form, and no pyridine can be detected among the products; the reaction probably proceeds by isomerization of I into AcH. Passage of I at 10 g./hr. in NH_3 at 400° over Al_2O_3 gave 453 g. catalyzate from 500 g. I; fractionation gave 2.6 g. AcH.NH_3, m. 97°, and mixed 2- and 4-methylpyridines (identified after extensive fractionation and further crystn. of the picrates and methiodides). Although a fraction b. 113–17° was obtained, it was not pyridine, but a crude mixt. of the methylpyridines (Malinovskii, *et al.*, *loc. cit.*). Passage of $(CH_2OH)_2$ (8 drops/min.) in NH_3 over Al_2O_3 at 400° gave, from 275 g. glycol, 276 g. catalyzate that yielded 1 g. AcH.NH_3 and mixed 2- and 4-methylpyridines, identified as above; no pyridine was detected. G. M. Kosolapoff

1951

YUR'YEV, YU. K.; KONDRAT'YEVA, G. YA.; DERBENEVA, A. A.

Furanidines

Simultaneous catalytic dehydration of 2, 5-dialkyland 2, 2, 5, 5-tetraalkylfuranidines with hydrogen sulfide. Uch. zap. Mosk. un., No. 132, 1950.

Monthly List of Russian Accessions, Library of Congress, October 1952 UNCLASSIFIED.

YUR'YEV, Yu. K., VEYDELISHTEYN, ZINOV'EVA, L. A.

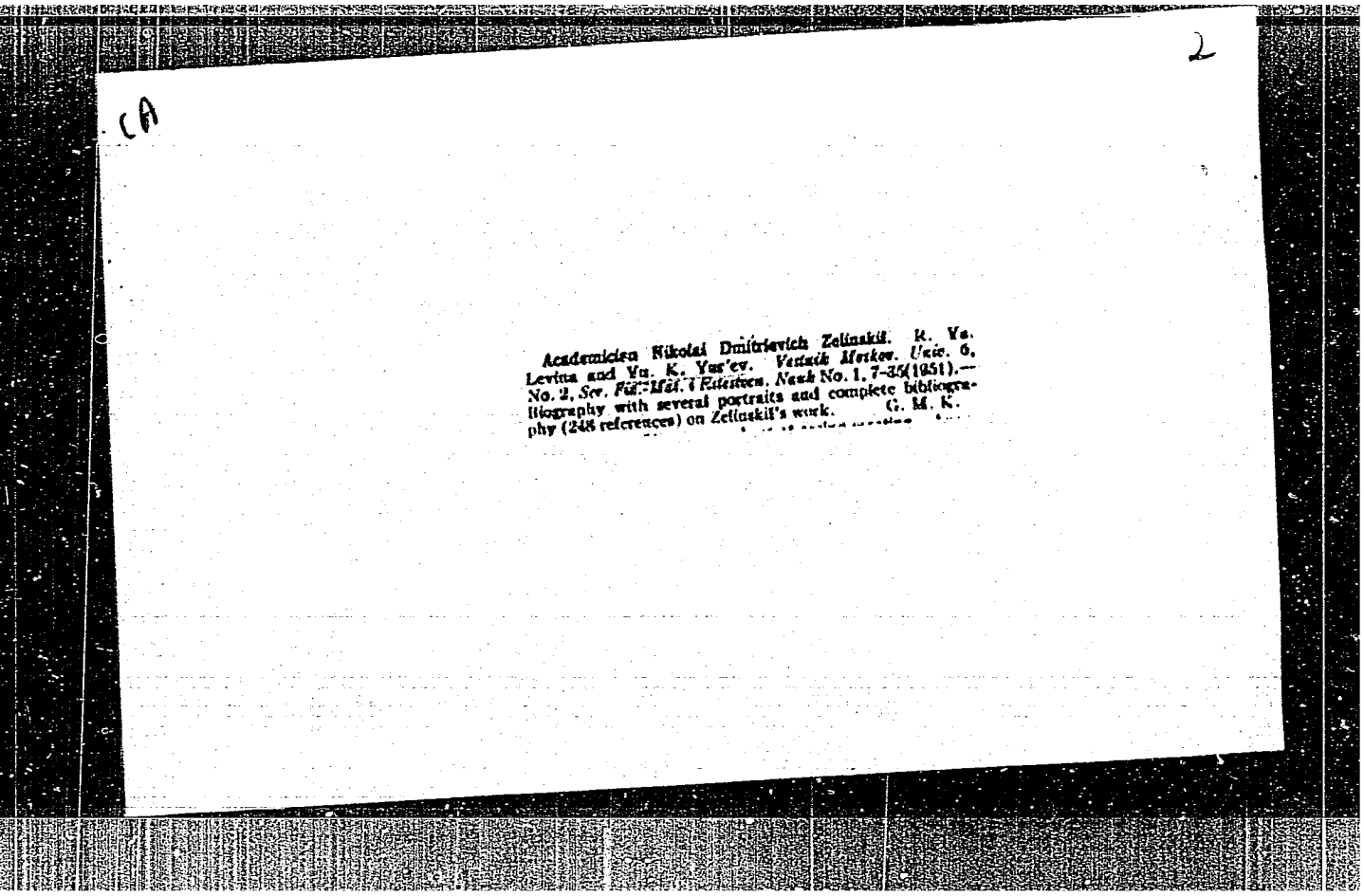
Pyrrolidones

Transformation of butyrolactone into ∝-pyrrolidone and N-phenyl- ∝-pyrrolidone, Uch. zap. Mosk. un., No. 132, 1950.

9. Monthly List of Russian Accessions, Library of Congress, October 1953. 4/2 Unclassified.

CA

Nitration, bromination, and carboxylation of 1-phenylpyrrolidine. Yu. K. Yur'ev, I. S. Korsakova, and A. V. Arbatskii (Moscow State Univ.). *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1951, 166–71.—Slow addn. of 13 ml. HNO_3 (d. 1.35) to 10 g. 1-phenylpyrrolidine (I) in 70 ml. AcOH at −20° leads to an active reaction when the addn. is complete; after standing overnight the soln. yields 52% *1-(p-nitrophenyl)pyrrolidine*, yellow, m. 100° (from EtOH). A higher temp. and slower addn. (20 min. instead of 10 min.) give poorer yields. (Lavalle, *et al.* (*C.A.* 43, 5944), give a m.p. of 167–8° for the product.) Reduction by powd. Sn-concd. HCl gave the *p-NH_2 analog*, isolated as the *HCl salt*, m. 208°, which with NaOH and BzCl gave the *1-(p-benzamidophenyl) analog*, m. 236° (from EtOH). Addn. of an equimolar amt. of Br to 10 g. I in AcOH at 15° gave the *p-Br deriv.*, isolated as the *HBr salt*, m. 178° (from abs. EtOH), which with alkali gave the *free base*, m. 103° (from Et_2O). The best yield (90%) is obtained with 10.5 g. Br and 40 ml. AcOH as solvent when addn. takes 10 min. at 15°; higher or lower temps. give lower yields, the former yielding some di-Br deriv. which is difficult to sep. Treatment of 1 g. p-Br deriv. suspended in H_2O with a soln. of HNO_2 from 0.3 g. $NaNO_2$, 10 ml. H_2O, and an equimolar amt. of HCl immediately gave the yellow ppt. of the *p-NO_2 analog*, m. 100°, identical with above described specimen. Addn. of 9 g. p-Br deriv. in 100 ml. Et_2O to a soln. of BuLi (contg. 5.8 g. BuLi (by titration) in 28 ml. Et_2O) in a N atm. and refluxing 5 hrs. gave upon pouring the mixt. on Dry Ice, extn. with 5% KOH, and acidification with AcOH, 0.2 g. *p-(1-pyrrolidyl)benzoic acid*, m. 270° (decomps.; from EtOH), also formed in 17% yield on treating 0.7 g. Li in Et_2O in a N atm. with 3.5 g. p-Br deriv. in Et_2O refluxing 2 hrs., and filtering onto Dry Ice. G. M. K.



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Academician Nikolai Dmitrievich Zelinskiĭ. K. Ya. Levina and Yu. K. Yus'ev. *Vestnik Moskov. Univ.* 6, No. 2, *Ser. Fiz.-Mat. i Estestven. Nauk* No. 1, 7-35(1951).—Biography with several portraits and complete bibliography (248 references) on Zelinskiĭ's work. G. M. K.

YUR'YEV, Yu.K.; KORSAKOVA, I.S.; ARBATSKIY, A.V.

Nitration, bromination and carboxylation of N-phenylpyrrolidine. Izv.Akad.nauk SSSR; Khim.otd. no.2:166-171 Mar-Apr 51. (CLML 20:7)

1. Laboratory of Organic Chemistry imeni N.D. Zelinskiy of Moscow State University.

YUR'YEV, Yu.K.; NOVITSKIY, K.Yu.; LIBEROV, L.G.

Obtaining of monoethanolarylamines from the ethylene and arylamines oxide. Izv.Akad.nauk.SSSR;Khim.otd. no.3:317-327 May-June 1951. (CLML 20:9)

1. Laboratory of Organic Chemistry imeni N.D. Zelinskiy of Moscow State University.

CA

2

Academician Nikolai Dmitrievich Zelinskii. Ya. K. Yur'ev and R. Ya. Levina. *Zhur. Obshchei Khim.* (*J. Gen. Chem.*) 21, 201-32(1951).—Biography, with portrait, and summary of scientific work (248 references) on 90th jubilee.
G. M. Kosolapoff

eA

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Behavior of furan and furanidine with metallic sulfides and amides. XXIX. Yu. K. Yur'ev and V. A. Trotsova (Moscow State Univ.). *Zhur. Obshchei Khim.* (J. Gen. Chem.) 21, 256–8(1951); cf. *Uchenye Zapiski Moscow. Gosudarst. Univ.* 79, 166(1945); *C.A.* 45, 5680b.—Furan and furanidine heated with sulfides or amides of metals do not exchange their O for S or NH. Thus, pyrites, FeS_2, FeS, Al_2S_3, at 325–60° fail to yield any S-heterocycles from either O-heterocycles, which are recovered (28–92% recoveries, depending on conditions used); the decompn. products were not studied. However, passage of furanidine in the presence of 2 parts steam at 300–400° over Al_2S_3 gave up to 32.5% *thiophane*, b_{760} 119–20°, n_D^{20} 1.5050, d_4^{20} 0.8888. Furan (at 0.6°) or furanidine (at 400°) passed over Mg amide gave a *trace of pyrrole* (qual. test) or *pyrrolidine*, resp. **Reaction of methyl pyromucate with aniline. XXX.** Yu. K. Yur'ev and E. G. Vendel'shtein. *Ibid.* 260–64.—Passage of 8 g. *Me 2-furoate*, b_4 60–61°, n_D^{20} 1.4673, d_4^{20} 1.1783, and 24 g. $PhNH_2$ over Al_2O_3 in a N stream at 475° gave 14 g. $PhNH_2$ and 1.5 g. (17%) *1-phenylpyrrole* (I), m. 58°. At 400° the yield is 35%, while at 350° 22% is obtained, along with about 8% furan if a 1:2 molar ratio of $PhNH_2$ is used. Heating 1 g. ester with 2.7 g. $PhNH_2$ and 0.3 g. activated Al_2O_3 in a sealed tube 8 hrs. to 320° gave 0.2 g. I, but at 340°, 87.5% *2-furanilide*, m. 124°, was obtained; at 270° as at 220°, the yield was 68.5%. Reducing 10 g. ester, 27 g. $PhNH_2$, and 1 g. Al_2O_3 15 hrs. at 180° gave $PhNH_2$, a trace of I, and 54% 2-furanilide if Al_2O_3 is omitted no reaction occurs. Passage of 10 g. ester over Al_2O_3 in a N atm. at 350° gave CO_2, 0.9 g. furan, and 4 g. unchanged ester; the ester is unchanged on passage over glass in a N atm. at 350° (a trace of CO_2 forms). Furan and $PhNH_2$ passed over Al_2O_3 in a N atm. at 400° gave 21% I; hence the MeO_2C group in position 2 facilitates replacement of the nuclear O. **Reaction of methyl tetrahydropyromucate with aniline. XXXI.** *Ibid.* 264–7.—Passage of Me 2-furoate in a H atm. over Pt-asbestos at 160° gave 78% *Me tetrahydro-2-furoate*, b_{760} 179.5–80.5°, n_D^{20} 1.4371, d_4^{20} 1.1040. This (10 g.) and 27 g. $PhNH_2$ passed in a N atm. over Al_2O_3 at 360° gave CO_2, 1.4 g. $PhNH_2$, and 1.5 g. *1-phenylpyrrolidine*, b_4 101.5°, n_D^{20} 1.5640, d_4^{20} 1.0014; *picrate*, m. 116°. Passage of the ester at 360° over Al_2O_3 in a N atm. gave CO_2, propene, and MeOH. Hydrolysis of the ester with 2 *N* NaOH 4 hrs. at reflux gave 76% *free acid*, a sirupy microcryst. mass; this heated to 270–80° begins to lose CO_2, which occurs freely at 300–5°, yielding *furanidine*, b_{760} 65°, n_D^{20} 1.4088, d_4^{20} 0.8890. G. M. K.

1957

YUR'EV, YU. K.

"XXX. The reaction of methyl furoate with aniline." by Yu. K. Yur'ev, and E. G. Vendel' shuein. (p.259)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1951, Volume 21, No. 2

YUR'EV, YU. K.

"XXXI. The reaction of methyltetrahydrofuroate with aniline." by Yu. K. Yur'ev E. G. Vendel'shtein. (p.264)

SO: Journal of General Chemistry (Zhurnal Obshchei Khimii) 1951, Volume 21, No. 2

C.A.

Preparation of monoethanolarylamines from ethylene oxide and arylamines. Yu. K. Yur'ev, K. Yu. Novitskii, and L. G. Liberov (Moscow State Univ.). *Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk* 1951, 317-20.—Passage of ethylene oxide (I) (44 g.) into 186 g. $PhNH_2$ and 35 ml. H_2O at 14-16° in 3 4 hrs. (at the end of the reaction the temp. rises spontaneously to 70-80° in spite of the cooling bath) and distn. yields 78.8% *PhNHCH₂CH₂OH*, b_{10} 170°, n_D^{20} 1.5700, d_4^{20} 1.0945; *picrate*, m. 124° (from EtOH). When equimolar amts. are used, the yield drops to 32%. Stirring does not appear to affect the yield. Similarly, *p*-toluidine at 50-70° in the presence of 20% (by wt.) of H_2O gives 80% *p-MeC₆H₄NHCH₂CH₂OH*, b_6 155°, m. 42° (*picrate*, m. 99°); *o-isomer* (90% yield), b_6 149°, n_D^{20} 1.5709, d_4^{20} 1.0794 (*picrate*, m. 130°). *1-$C_{10}H_7NH_2$* (71.5 g.), 10 ml. EtOH, and 10 ml. H_2O treated with 11 g. I after initial heating on a steam bath gave 76.5% *1-$C_{10}H_7NHCH_2CH_2OH$*, b_6 182°, m. 50° (*picrate*, m. 160°). *o*-Anisidine under the above conditions gave 80% *o-MeOC₆H₄NHCH₂CH₂OH*, b_6 183-4°, n_D^{20} 1.5727, d_4^{20} 1.1501 (*picrate* m., 139°); *p-isomer* (70%), b_6 187°, m. 41°. G. M. K.

Chem A

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Chromium oxide on aluminum oxide as a catalyst in transformation of heterocycles. XXXII. Yu. K. Yur'ev and V. A. Tronova (Moscow State Univ.). *Zhur. Obshchei Khim.* (J. Gen. Chem.) 21, 742-9(1951); cf. *Bull. Moscow State Univ.* 79, 135, 146(1945); C.A. 41, 1653i; 45, 7763h.—The optimum temp. of transformation of *furanidine* (I) into *pyrrolidine* (II) or *thiophane* (III) lies below that of similar reactions over Al_2O_3 alone, but the yields of II and III are severely reduced. In the presence of Cr_2O_3 the formation of II from I at 350–500° is accompanied by dehydrogenation, forming pyrrole, best at 400°; *carbazole* (IV) also forms best at 500°. The latter probably forms from pyrrole and either butadiene or furan arising from I, which dehydrogenates over Cr_2O_3-Al_2O_3 at 500°. Passage of I over the catalyst (9.5–33.5% Cr_2O_3) in a NH_3 stream at 300–500° at 0.7 drops/min. readily gave II, pyrrole, and carbazole; the formation of II appears even at 300° with all catalysts, but as the temp. is raised to 500° the amt. of II declines rapidly to 0, while the yield of carbazole rises with increased temp., and that of pyrrole is best at about 400°. The best catalyst compn. is in the higher range of Cr_2O_3 concn. (20–33%). The max. yield of II is but 17% at 300–50° (with Al_2O_3 alone it reaches 30.5% at 350° and 46.5% at 400°). Pure II b_{760} 85.5–6.5°, n_D^{20} 1.4431, d_4^{20} 0.8585; *picrate*, m. 111–12° (from EtOH). Pure pyrrole b_{760} 130–1°, n_D^{20} 1.5060, d_4^{20} 0.9502. Pure carbazole m. 236°. Passage of I over the catalyst in a H_2S stream gave best results in the formation of III (78%) at 300°, which were still below the results with Al_2O_3 alone. Pure III, b_{760} 119.6–20.0°, n_D^{20} 1.5050, d_4^{20} 0.9959. Passage of 30 g. I over the catalyst (22.5% Cr_2O_3) at 8 drops/min. at 500° gave 11.5 g. condensate and 14.1 l. gas (0.4% O_2, 0.25% CO, 11% CO_2, 23% olefins, 6% dienes, 59% H); the liquid condensate gave *furan*, b. 28–32°, n_D^{20} 1.4185.

G. M. Kosolapoff

1951

C.A.

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Activity of amines in transformations of oxygen-bearing into nitrogen-bearing heterocycles. XXXIII. Yu. K. Yur'ev and I. K. Korobitsyna (Moscow State Univ.). *Zhur. Obshchei Khim.* (J. Gen. Chem.) 21, 973-80(1951); cf. C.A. 45, 5582b, 9524e.—Comparative reactivity studies of $PhNH_2$ and aliphatic amines with furanidine (I) showed that in reactions of I with mixed $EtNH_2$ and $PhNH_2$, $PrNH_2$ and $PhNH_2$, $BuNH_2$ and $PhNH_2$, and cyclohexylamine and $PhNH_2$, there is formed 1-phenylpyrrolidine (II), while in reactions with secondary amines ($PhNHEt$, $PhNHPr$, $PhNHBu$, and cyclohexylaniline), are formed II, alkenes, and traces of butadiyl (III). Passing 10 g. I, 12 g. $PhNH_2$, and 6 g. $EtNH_2$ at 6–8 drops/min. over Al_2O_3 in N at (0)° gave 0.5 g. *1-ethylpyrrolidine*, b_{760} 102–10° (picrate, m. 185–6°), and 7 g. II, b_6 105–6°, n_D^{20} 1.5850, d_4^{20} 1.018, as well as 18 g. $PhNH_2$ (the amts. are from 2 combined runs). I (9 g.) and 15 g. $PhNHEt$ similarly gave 55% $PhNH_2$ and 11% II, as well as C_2H_4 (isolated as the dibromide, 60%) and III (isolated as the tetrabromide). I (5 g.), 4 g. $PrNH_2$, and 6.5 g. $PhNH_2$ similarly gave 58.5% $PhNH_2$ and 10% II. Similarly 9 g. I and 17 g. $PhNHPr$ gave 50% $PhNH_2$, 8.5% II, C_2H_4 (isolated as the dibromide, 78%), and a trace of III (as above). I, $BuNH_2$, and $PhNH_2$ likewise gave 54.5% $PhNH_2$ and 4% II; I with $PhNHBu$ similarly gave 57% $PhNH_2$ and 13% II, as well as 60% C_4H_8 and a little III. I with $PhNH_2$ and cyclohexylamine (2:1:1 molar ratio) gave 60.5% cyclohexene, 60% $PhNH_2$, and 4% II; at 1:1:1 ratio 67%, 62.5%, and 60%, resp., were formed. A 1:1 molar mixt. of I with cyclohexylaniline gave 60% cyclohexene, 50% $PhNH_2$, and 6% II. G. M. Kosolapoff

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Catalytic dehydration of trimethylene glycol. Yu. K. Yur'ev and L. S. Levi (Moscow State Univ.). *Doklady Akad. Nauk S.S.S.R.* 79, 725-8(1951). $HO(CH_2)_3OH$ (I) (140 g.) passed over Al_2O_3 in a weak stream of N_2, at 10 g./hr. at 250° gave 121 g. catalyzate, of which the fraction b$_{760}$ 48-53° (5 g.) of the aq. layer (101 g.) was identified by the Raman spectrum as a mixt. of acrolein and EtCHO, and the fraction b$_{760}$ 93.5-5.7° (10 g.) as a mixt. of allyl and Pr alcs. Further distn. of the aq. part of the catalyzate yielded unchanged 21 g. I and 3 g. $OCH_2CH_2CH_2OH$. At 350°, 143 g. I gave 95 g. catalyzate (62 g. aq. layer and 23 g. oil). The aq. part gave 2.5 g. unchanged I; the 45-51° fraction (3.5 g.) is a mixt. of about 60% acrolein and 40% EtCHO; the fraction b. 94-7° (3 g.) is a mixt. of 40% PrOH and 60% allyl alc. The fraction b. 130-40.5° is EtCH:CMeCHO. The amts. of gas from 25 g. I were 730 and 2300 cc. (S.T.P.) at 250 and 350°, resp., and their compn. (% CO_2, CO, H_2, C_nH_{2n+2}, C_nH_{2n}) at 250°, 12.4, 2.2, 5.8, 10.7, 69.9, and at 350°, 7.0, 7.0, 2.8, 3.8, 78.0. Trimethylene oxide was not detected, and it is considered to be an unstable intermediate product, giving rise to EtCHO. Allyl alc. is another intermediate. The formation of acrolein and PrOH is attributed to disproportionation of H between allyl alc. and EtCHO. To some extent, acrolein can be formed through dehydrogenation of allyl alc., and PrOH through its hydrogenation.

N. Thon

YUR'YEV, Yu.K.; DYATLOVITSKAYA, S.V.; LEVI, I.G.

Isomerization of α-methyl trimethylene sulfide into tetramethylene sulfide and other characteristics of four-membered saturated sulfides. Vest.Mosk.un. 7 no.12:55-62 D '52. (MLRA 7:9)

1. Laboratoriya organicheskoy khimii im. akad. N.D.Zelinskogo.
(Sulfides) (Isomers and isomerization)

YURY V.

Interaction of α-methyltrimethylene sulfide into tetramethylene sulfide and other properties of four-membered saturated sulfides. Yu. K. Yur'ev, S. V. [illegible], and I. S. Levi. *Vestnik Moskov. Univ., Ser. Mat., Mekh., Astron., Fiz. i Khim.* 1955, No. 2, Fiz.-Mat. i Estestven. Nauk No. 2, 55-67(1955). cf. C.A. 48, 5034c.—Passage of α-methyltrimethylene sulfide (I) over Al_2O_3 in H_2S stream at 280° gave mixed products containing some mercaptan. At 350° the product contained Captan tests and consisted mainly of tetramethylene sulfide (II) whose $HgCl_2$ complex m. 124.5°. The yield of II was about 11%. Use of Al_2O_3 gave more II and the starting material. Similar results were obtained on heating I with Al_2O_3 40 hrs. at reflux. [illegible] variation in the time of heating and also in the temperature had no significant effect on the yield of II. [illegible] Passage of I over Al_2O_3 at 350° in the absence of H_2S gave a polycondensation product, m. 34-6° which was sol. in org. solvents. III treated in C_6H_6 with AcCl and $SnCl_4$ gave after 3 hrs. at room temp. $ClCH_2CH_2CH_2SAc$, b$_{2.5}$ 82.3°, n_D^{20} 1.4869, d_4^{20} 1.1574, this hydrolyzed by MeOH-concd. HCl in 2 hrs. at 70–80°, gave $ClCH_2CH_2CH_2SH$, b$_{15}$ 71.5°, n_D^{20} 1.4940, d_4^{20} 1.1360. I (11.2 g.) [illegible] added to 9.5 g. AcCl and 17 g. $SnCl_4$ [illegible] have after aq. treatment $MeCHClCH_2Cl$ [illegible] b$_{15}$ 79–80°, n_D^{20} 1.4850, d_4^{20} 1.1059 (treated with NaI in Me_2CO, it failed to yield a ppt. of NaCl even after 0.5 hr.; the reaction also gave a product, b$_5$ 80–95°, which contained S and Cl and which might have been a mixture of isomeric chlorobutyl thiocyanates). Hydrolysis of the γ-chlorobutyl ester with MeOH-concd. HCl gave 70% $MeCHClCH_2CH_2SH$, b$_{50}$ 90–5°, [illegible] 1.4856, d_4^{20} 1.0754. Reducing III 22 hrs. with Bu_3NH [illegible] reduction, the same failure was observed after heating [illegible] sealed tube at 110–15°. No change was observed on heating this sulfide with alc. KSH, except for slight [illegible]

G. M. Kosolapoff

CA

Organic Chemistry 10

Catalytic dehydration of 2,2,5,5-tetraalkyl- and 2,5-dialkyltetrahydrofurandines in a hydrogen sulfide atmosphere. Va. K. Yur'ev, G. Ya. Kondrat'eva, P. A. Aktishin, and A. A. Ustinova (Moscow State Univ.). *Zhur. Obshchei Khim.* (J. Gen. Chem.) 23, 339–47(1953).—*2,2,5,5-Tetramethyltetrahydrofuran*, (I), prepd. by the Grignard route from $(CH_3CO_2Et)_2$, followed by dehydration of the glycol, bp 112°, n_D^{20} 1.4050, d_4^{20} 0.8013; *2,2,5,5-tetra-Et homolog* (II), prepd. similarly, bp 75–6°, n_D^{20} 1.4440, d_4^{20} 0.8012. *2,5-Dimethyltetrahydrofuran* (III) was prepd. from *4-acetyl-2,5-dimethyltetrahydrofuran* (IV), by hydrogenation and dehydration; EtMgBr (from 90 g. EtBr), treated with C_6H_6, followed by 43.5 g. EtCHO, gave 50% IV, bp 119°, n_D^{20} 1.4700, d_4^{20} 0.9786, hydrogenated over Pt black to 70% *2,5-octanediol*, bp 102.5–4.0°, n_D^{20} 1.4522, d_4^{20} 0.9331, yielded 59% III [cf. Pogorzhel'skii, *J. Russ. Phys. Chem. Soc.* 30, 984(1898)], b. 142–3°, n_D^{20} 1.4215, d_4^{20} 0.8419. Passage of I in a H_2S stream over Al_2O_3 at 250–400° gave the following results: at 250° 26% *2,5-dimethyl-2,4-hexadiene*, b. 133.5–4.5°, n_D^{20} 1.4753, d_4^{20} 0.7697; at 320°, 30%; and at 400°, 25%. II similarly gave at 325° about 30% hydrocarbon, bp 197–9°, possibly crude *2,5-diethyl-3,5-octadiene*; at 275° 27.5%; the purified product bp 199.5–200.5°, n_D^{20} 1.4600, d_4^{20} 0.8065. Similarly, III at 350° gave 12% *2,5-diethylthiophane*, bp 153.5–4.5°, n_D^{20} 1.4825, d_4^{20} 0.9104, along with a small amt. of S-free material, b. 76–150°; 2,5-dimethylfuranidine under these conditions gave 43% *2,5-dimethylthiophane*, bp 140–1°, n_D^{20} 1.4618, d_4^{20} 0.9236. Passage of I over Al_2O_3 at 350° in a N atm. gave mixed unsatd. compds. from which was obtained a mixt. of moderately pure *2,5-dimethyl-2,4-hexadiene* with other products, detected by Raman spectra, which appear to have been *trans-2,5-dimethyl-3-hexene* and the *cis*-isomer, as well as some alkanes, possibly 2,5-dimethylhexane.

G. M. Kosolapoff

YUR'YEV, YU. K.; VENDEL'SHTEYN, YE. G.; ZINOV'YEVA, L. A.

Lactones

Part 35. Conversion of butyrolactone to thiophanon pyrrolidone-2 and 1-phenylpyrrolidone-2. Zhur. ob khim. 22, 84, No. 3, 1952. Laboratoriya Organicheskoy Khimii im. N. D. Zelinskogo Moskovskogo Ordena Lenina Gosudarstvennogo Universiteta.

Monthly List of Russian Accessions, Library of Congress, August 1952. UNCLASSIFIED.

YUR'YEV, Yu. K.; KONDRAT'EVA, G. Ya.; KARTASHEVSKIY, A. I.

Heterocyclic compounds

Part 36. Conversion of α, β-dimethylfuran and α, β-dimethylfuranidine to corresponding nitrogen- and sulfur-containing heterocyclic compounds. Zhur. ob. khim. 22 (84) No. 3, 1952. Laboratoriya Organicheskoy Khimii im. N. D. Zelinskogo Moskovskogo Ordena Lenina Gosudarstvennogo Universiteta.

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SO: Monthly List of Russian Accessions, Library of Congress, August 1953, Uncl.

USSR/Chemistry - Organic Sulfur Compounds Apr 52

"XXVII. Conversion of Tetrahydrofuryl Alcohol and Tetrahydrofurfuryl Mercaptane Into Δ^2-Dihydrothiopyrane," Yu. K. Yur'yev, Ye. G. Vendel'shteyn, Lab of Org Chem, Moscow State U

"Zhur Obshch Khim" Vol XXII, No 4, pp 687-693

It has been demonstrated previously, that furanidine and its homologues will be converted into thiophane and its homologues under the action of H_2S in presence of Al_2O_3 at 250 to 400°, and that Δ^2-dihydropyrane and tetrahydropyrane undergo the same conversion, forming Δ^2-dihydrothiopyrane and tetrahydrothiopyrane. 22Mr48

The behavior of tetrahydrofuryl alc and the behavior of tetrahydrfurfuryl mercaptane in contact with Al_2O_3 in this reaction was investigated. 22Mr48

YUR'YEV, YU. K.

USSR/Chemistry - Effect of Sulfur Compounds Apr 52
on Dehydrogenation

"Catalytic Dehydrogenation of 1,4-Endoxocyclohexane and 1,4-Dioxycyclohexane in a Hydrogen Sulfide Atmosphere," Yu. K. Yur'yev, G. Ya. Kondrat'yeva, Ye. P. Smyslova, Lab of Org Chem imeni N. D. Zelinskiy, Moscow State U

"Zhur Obshch Khim" Vol XXII, No 4, pp 691-696

When 1,4-endoxocyclohexane is introduced into an H_2S atm over Al_2O_3 at 275° dehydrogenation of the oxide takes place and cyclohexadiene-1,3 is formed. Catalytic dehydrogenation of 1,4-dioxycyclohexane in an H_2S atm over Al_2O_3 also proceeds only 224T49 to cyclohexadiene-1,3. The sulfur comp corresponding to 1,4-endoxocyclohexane, 1,4-endothiocyclohexane is not formed by either of the 2 above substances under the conditions of the reaction.

224T49

YUR'YEV, YU. K.

YUR'YEV, Yu. K.

(4) 9

The catalytic dehydration of 1,4-cyclohexanediol and 1,4-dihydroxycyclohexane in a hydrogen current atmosphere. Yu. K. Yur'ev, G. Ya. Kondrat'eva, and E. P. Smyslova (Moscow State Univ.). *J. Gen. Chem. U.S.S.R.* 22, 797–8 (1952) (Engl. translation). See *C. A.* 47, 2714*d*.

H. L. H.

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

May 52

YU. K. YUR'YEV, I.K. KOROBITSYNA

USSR/Chemistry Cyclic Amin s

"XXXVIII. The Mechanism of Joint Catalytic Dehydration of Furanidine and Secondary Amines," Org. Chem. Lab im Zelinskiy, Moscow State U.

Zhur Obshch Khim, Vol22, No5, pp 852-859

In the reaction between furanidine and secondary amines in the presence of Al_2O_3 at 400^0, hydrolysis of the secondary amine takes place first. The primary amine thus formed then enters into reaction with the furanidine.

263 T 34

YUR'EV, Yu. K.

Chem Abs

V.48 25 Jan 54

Organic Chem

α-Oxides and synthesis of compounds of the thiophene series. Yu. K. Yur'ev and K. Yu. Novitskii (Moscow State Univ.). *Zhur. Obshchei Khim.* 22, 2157–9(1952). Ethylene oxide (I) (200 g.) passed over Al_2O_3 at 250° in H_2S atm. gave 150 g. catalyzate which yielded 5.6 g. AcH; 3.4 g. dioxane; 2.5 g. 1,4-thioxane; and 2.9 g. 1,4-dithiane, b_{15} 95–115°. Similarly 170 g. I at 300° gave 113 g. catalyzate which yielded 5.3 g. AcH and 2.4 g., 1.4%, thiophene (after distn. from Na) in addn. to 2.4 g. thioxane and 1.8 g. dithiane; 210 g. I at 350° gave 4.1 g. thiophene (2%); at 400° the yield of thiophene was 5.1%; and at 450° it was 5.3%. Propylene oxide (II) passed over Al_2O_3 at 400° in H_2S atm., gave (from 212 g. II) a range of products which yielded 15.6 g. crude *2,4-dimethylthiophene* (III), b_{744} 136.5–9.0°, which, purified through *chloromercuri deriv.* (m. 138°), b_{744} 138.5°, n^{20}_D 1.5150, d_{20} 0.9899. At 225° the same amount of II gave a very low yield of III (1.6 g.). The formation of the dimethylthiophene can be explained by isomerization of II into EtCHO followed by reaction with H_2S.

G. M. Kosolapoff

YUR'YEV, Yu.K.

Reaction of ethylene oxide with ammonia in the presence of aluminum oxide as well as zinc oxide on aluminum oxide. Zhur. Prikład. Khim. 25, 1336-7 '52. (MLRA 5:12)
(CA 47 no.21:11191 '53)

1. Moscow State Univ.

YUR'YEV, YU. K., KOROBITSYNA, I. K., SAVINA, L. A.

Furanidines

Synthesis and transformation of β-furanidone. Dokl. AN SSSR 86 no. 1, 1952.

Monthly List of Russian Accessions, Library of Congress, December 1952. Unclassified.

USSR/Chemistry - Organosilicon Compounds 11 Sep 52

"Tetraacyloxysilanes in the Synthesis of Ketones of the Thiophene and Furan Series," Yu. K. Yur'yev, G. B. Telyakov, Lab of Org Chem imeni N. D. Zelinskiy, Moscow State U imeni M. V. Lomonosov

"Dok Ak Nauk SSSR" Vol 86, No 2, pp 337-340

Tetraacyloxysilanes (mixed anhydrides of orthosilicic and org acids), obtained from $SiCl_4$ and org acids, were used in the synthesis of ketones of the thiophene and furan series. The reaction

235T28

235T28

was carried out in benzene in the presence of $SnCl_4$. The following were prepd: methyl-2-thienyl ketone, ethyl-2-thienyl ketone, n-propyl-2-thienyl ketone, n-butyl-2-thienyl ketone, n-amyl-2-thienyl ketone, n-heptadecyl-2-thienyl ketone, phenyl-2-thienyl ketone, and methyl-2-furyl ketone. Presented by Acad A. N. Nesmeyanov.

(CA 47 no.4:2133 '53)

235T28

YUR'YEV, YU. K.

YURYEV, IU. K.

Zhizn' i deiatel'nost' akad, N. D. Zelinskogo /Life and work of Academician N. D. Zelinskii/. Moskva, Izd-vo Moskovskogo obshchestva ispytatelei prirody, 1953. 118 p

SO: Monthly List of Russian Accessions, Vol 6 No 8 November 1953

ELDERFIELD, Robert Cooley, 1904- ; YUR'YEV, Yu.K., professor [redaktor]
LUTSENKO, I.F.; REUTOV, O.A.; KOCHETKOV, N.K. [redaktors].

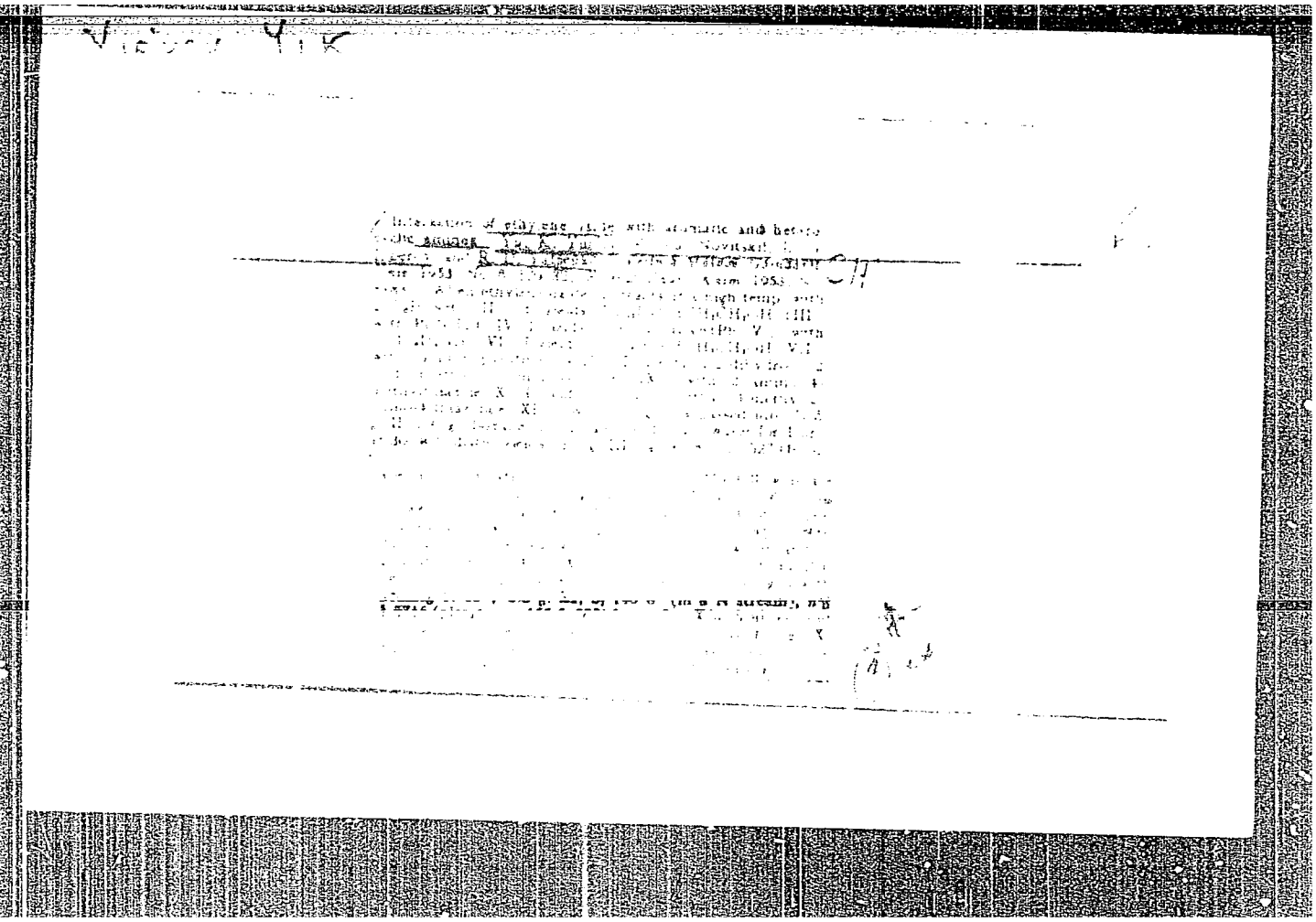
[Heterocyclic compounds] Geterotsiklicheskie soedineniia. Perevod s angliiskogo I.F.Lutsenko, O.A.Reutova, N.K.Kochetkova, pod red. IU.K.IUr'eva. Moskva, Izd-vo inostrannoi lit-ry, 1953- .

(MLRA 6:8)

(Heterocyclic compounds)

YUR'YEV, Yu.K.; LEVINA, R.Ya.

[Life and work of Academician N.D. Zelinskii] Zhizn' i deiatel'nost' Akademika Nikolaia Dmitrievicha Zelinskogo. Moskva, Izd-nie Moskovskogo obshchestva ispytatelei prirody, 1953. 115 p. (MLRA 7:7)
(Zelinskii, Nikolai Dmitrievich, 1861-) (Chemistry, Organic)



YUR'YEV, Yu.K.; ABRATSKIY, A.V.

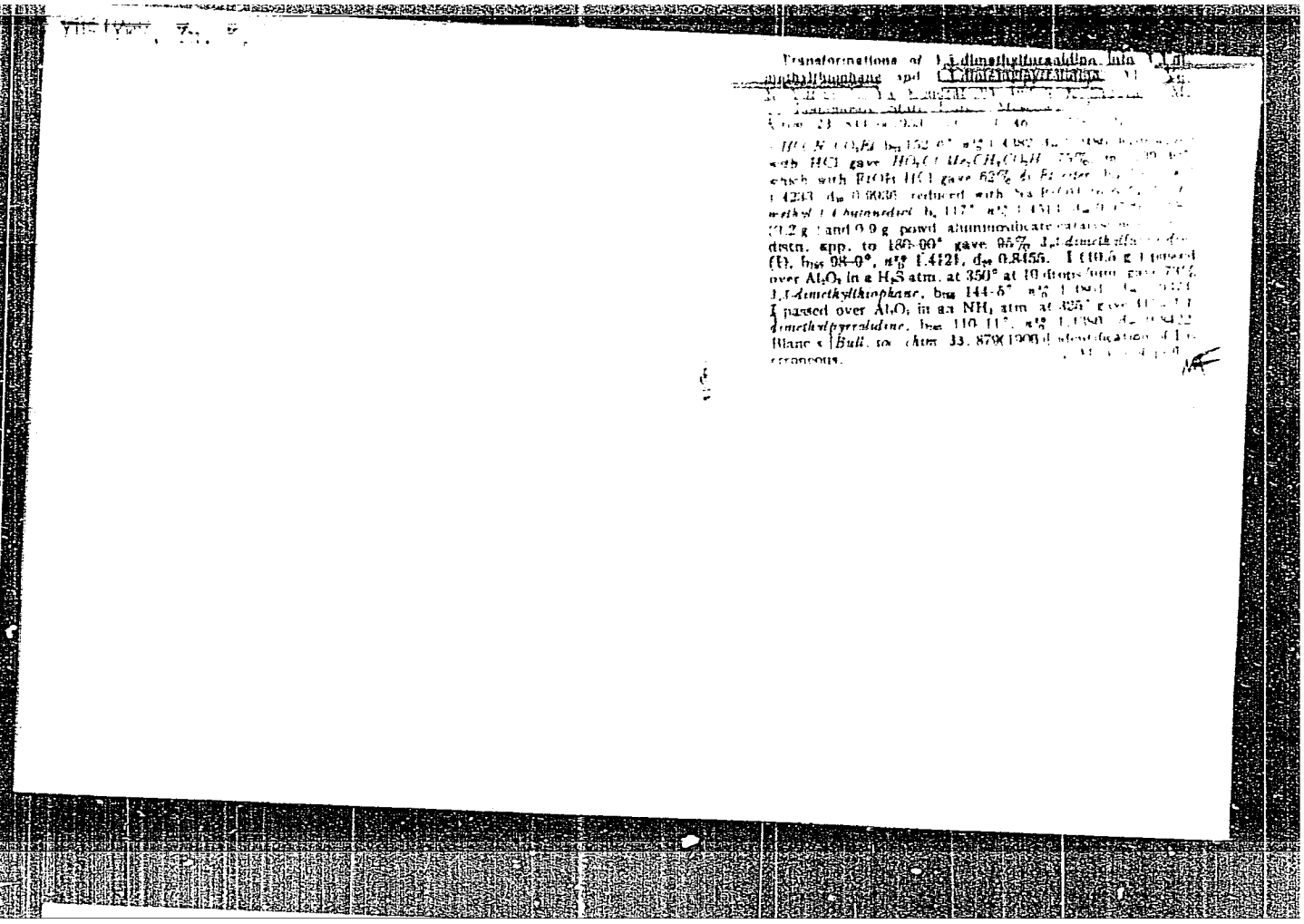
Sulfamides, containing a pyrrolidine ring. Vest.Mosk.un. 8 no.2:83-87 F '53. (MLRA 6:5)

1. Laboratoriya organicheskoy khimii im. akad. N.D. Zelinskogo.
(Sulfamides) (Pyrrolidine)

USSR

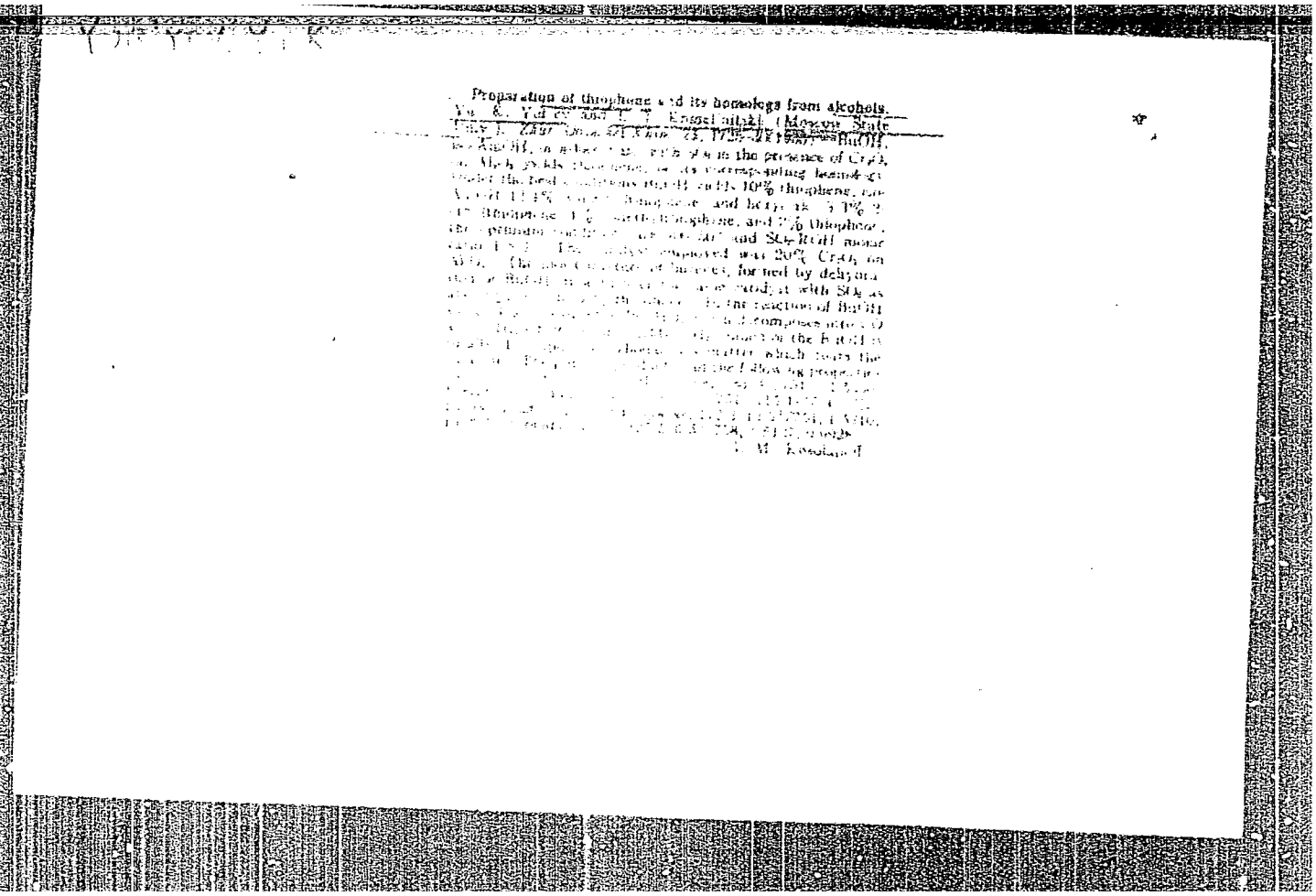
Mechanism of the reaction of tetrahydrofuran with secondary amines. [illegible] and L. S. Efros. [illegible] By passing [illegible] at 250° and collecting the product [illegible] 1 g PhNH, and [illegible] same conditions [illegible] 1 g. Et_2NH, [illegible] Et_2NH, and 0.6 g [illegible] I over ordinary [illegible] were isolated 0.3 g [illegible] III gave 36% C_2H_4, [illegible] IV, and 1 g V. It is assumed that [illegible] tetrahydrofuran is first [illegible] and then [illegible] secondary amines pro- [illegible]

M. Meguerian

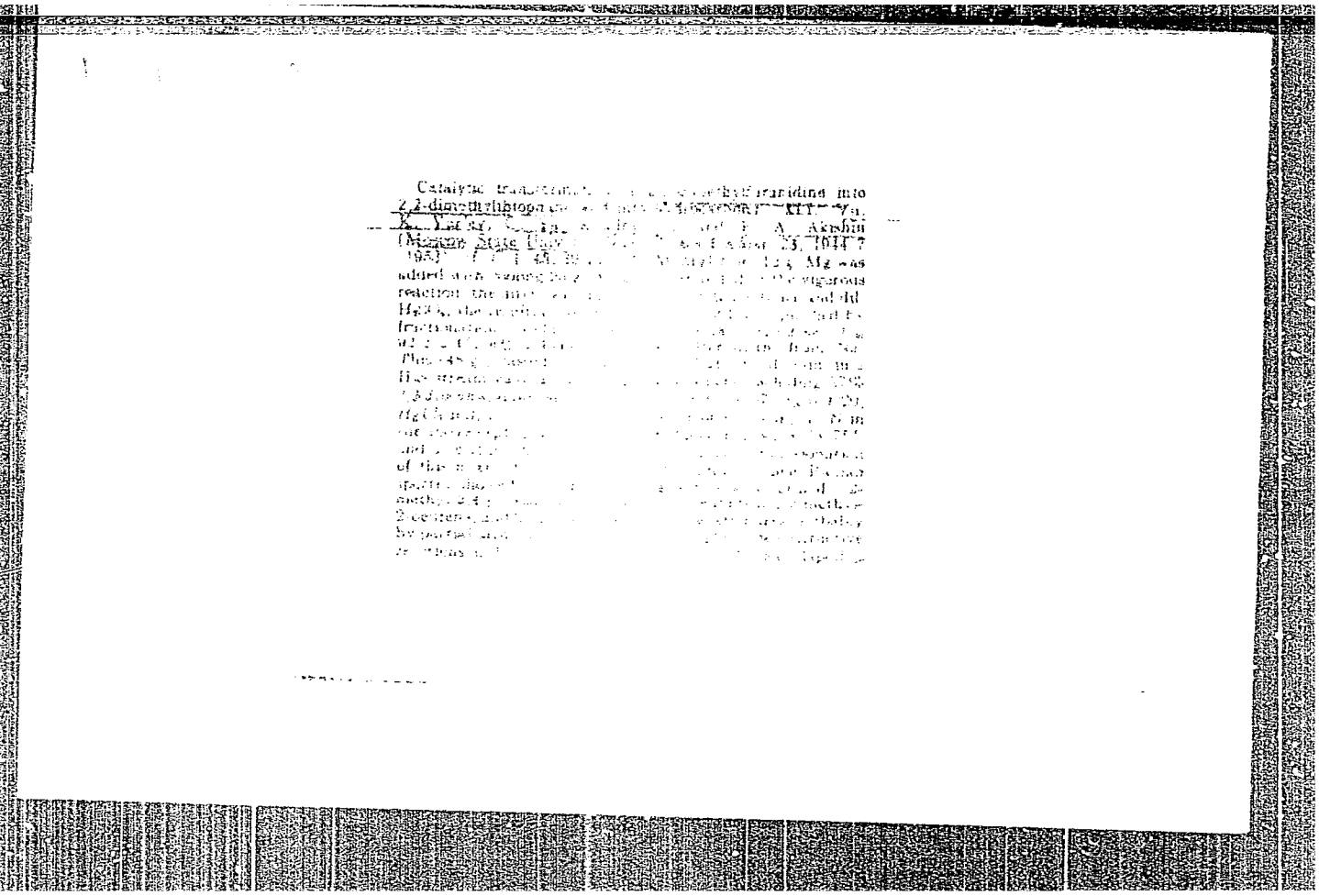


Transformations of 1,1-dimethylthiacyclohexane into [illegible]

[illegible] with HCl gave [illegible] 55% [illegible] stock with EtOH HCl gave 62% [illegible] 1.4243 d_{20} 0.8038, reduced with Na [illegible] methyl-1-thiapentane, b_{760} 117°, n^{20}_D 1.4511, [illegible] (21.2 g.) and 0.9 g. powd. aluminosilicate catalyst [illegible] distn. app. to 180-90° gave 95% 1,1-dimethylthiacyclohexane (I), b_{755} 98-9°, n^{20}_D 1.4721, d_{20} 0.8455. I (10.6 g.) passed over Al_2O_3 in a H_2S atm. at 350° at 10 drops/min gave 70% 1,1-dimethylthiophane, b_{760} 144-5°, n^{20}_D [illegible]. I passed over Al_2O_3 in an NH_3 atm. at 325° gave [illegible] dimethylpyrrolidine, b_{760} 110-11°, n^{20}_D 1.4360. [illegible] Blanc (Bull. soc. chim. 33, 879 (1905)) identification of [illegible] erroneous.



Preparation of thiophene and its homologs from alcohols.

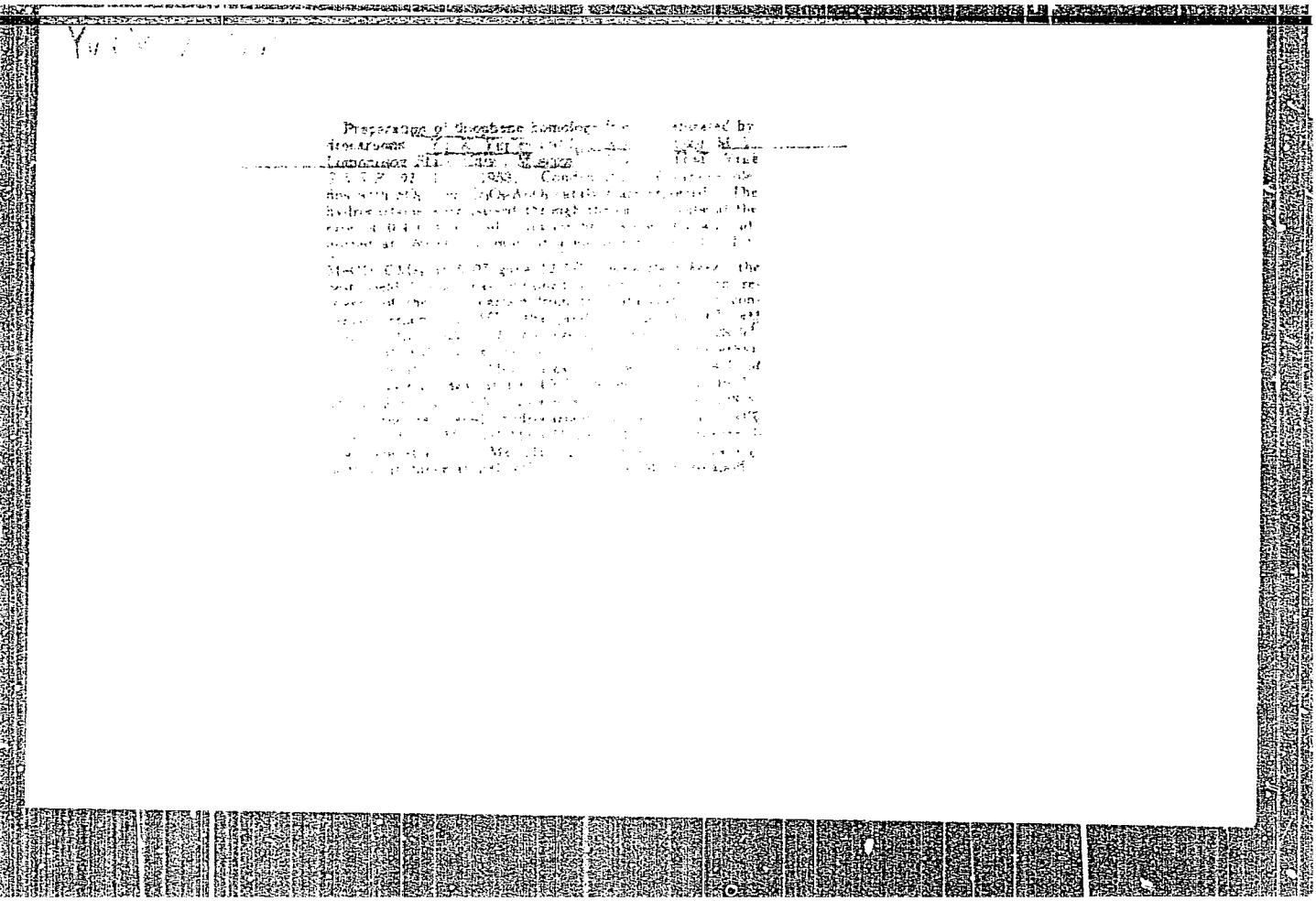


Catalytic transformations of heterocyclic compounds. XLII. Catalytic transformations of trimethylene oxide and trimethylene glycol. Yu. K. Yur'ev and [illegible] S. Levi (Moscow State Univ.). *Zhur. Obshchei Khim.* 23, 2047–62 (1953); cf. *C.A.* 43, 2944h; 49, 2814d.—Trimethylene oxide (I) passed over Al_2O_3 at 250° gives the same products as are formed by trimethylene glycol (II): BrCHO, acrolein, PrOH, and CH_3CH_2CHO; considerable decompn. of the oxide is observed. I and II passed over Al_2O_3 in a H_2S stream at 290° or 420° also give the same products: BrCHO, acrolein, PrOH, CH_3CH_2SH, PrOH, and $CH_3CHOHCH_2OH$; however, II also yields $CH_3CHCH_2)_2S$ and $(CH_2)_4OH_2$. The decompn. of I under these conditions is severe. Neither I nor II passed over Al_2O_3 in H_2S yield trimethylene sulfide or other heterocyclic derivs. XLIII. Transformation of α-acetofuran furfural, and furfurylideneaniline into N-phenylpyrrole. Yu. K. Yur'ev and R. G. Vendel'shtein. [illegible]. 2053–6.—Passage of 15 g. α-acetofuran furfural [illegible] NH_3 at 400° over Al_2O_3 in N gave 28% N-phenylpyrrole [illegible] 57° (crude); at 420°, the yield was 18% [illegible] was 15.7%, and at 475° it was 10%. The gases contained CO_2, O, CO, unsatd. hydrocarbons, and saturated hydrocarbons, while the liquid fractions contained [illegible] also form under such conditions. [illegible]. Passage of 100 g. furfural and 20 g. [illegible] the reaction zone only [illegible] Al_2O_3 at [illegible] product, furfurylideneaniline and PhNH[illegible]. Thus the azomethine and the pyrrole [illegible] furfurylideneaniline are also [illegible] and [illegible]. G. M. Kosolapoff.

YUR'YEV, Yu.K., i VENDEL'SHTEYN, Ye.G.

Conversion of α-acetofuran, furfurole, and furfurylidene aniline into N-phenylpyrrole. Zhur.ob.khim.23 no.12:2053-2056 D '53. (MLRA 7:2)

1. Moskovskiy Gosudarstvennyy universitet, Laboratoriya organicheskoy khimii im. N.D.Zelinskogo. (Heterocyclic compounds)



YUR'YEV, Yu. K.

ZELINSKIY, N.D., akademik; KOCHESHKOV, K.A., redaktor; KAVERZNEVA, Ye.D., doktor khimicheskikh nauk, redaktor; LEVINA, R.Ya., redaktor; YUR'YEV, Yu.K., redaktor.

[Collected works] Sobranie trudov. Moskva, Izd-vo Akademii nauk SSSR. Vol. 1. 1954. 514 p. (MLRA 7:8)

1. Chlen-korrespondent AN SSSR (for Kocheshkov)
(Chemistry--Collected works)

USSR/Chemistry

FD-773

Card 1/2 : Pub 129 10/24

Author : Akishin, P. A.; Rambidi, N. G.; Novitskiy, K. Yu.; Yur'yev, Yu. K.

Title : Raman spectra of heterocyclic compounds. I

Periodical : Vest. Mosk. un., Ser. fizikomat. i yest. nauk, Vol 9, No 2, 77-80, Mar 1954

Abstract : Measured the Raman spectra of cyclic sulfur compoinds to obtain experimental proof for the constancy of the line intensity of the C-S bond vibration. In the spectra of sulfur-saturated compounds (thiophane, 1,4-thioxane and alpha-methyltrimethylene sulfide) the sum of the line intensities of the C-S bond was found to be constant within the limits of experimental error. In the spectra of the unsaturated sulfur compound (delta - dihydrothiopyrane) two facts are apparent: a) the sum of the line intensities for the C-S bond is much less than that of the saturated compounds; b) the intensity of the

FD-773

Card 2/2

CsC bond in the compound is greater than that of the isolated C= bond. One table. Fifteen references (one foreign).

Institution : Chair of Physical Chemistry and Chair of Organic Chemistry

Submitted : July 10, 1953

Raman spectra of heterocyclic compounds. I. F. A. Akishin, N. G. Rambidi, K. Yu. Novitskii, and Yu. K. Yur'ev. *Vestnik Moskov. Univ.* 9, No. 8, *Ser. Fiz.-Mat. i Estestven. Nauk* No. 5, 77-82(1954).—The Raman lines of C–S bonds in heterocycles show a [illegible] sum of the intensity of the C–S lines (226 units) in the 600–716-cm.$^{-1}$ region, for the said [illegible]. In the spectrum of Δ^2-dihydrothiopyran this sum is lowered and the C:C line at 1619 cm.$^{-1}$ is intense (24 units). The following values of Raman spectra were observed. α-Methyltrimethylene sulfide, [illegible] 258(4), [illegible] 592(3), 628(90), [illegible] 914(4), 933(0), [illegible] 700(88), [illegible] 1091(18), 1126(0), [illegible] 1270(5), 1435(12), 1149(30), [illegible] 2920(310), 2955- [illegible] 1429(80), [illegible] n_D^{20} 1.5083, [illegible] 2980(46). Thiophane, bp. 119.8–20°, n_D^{20} 1.5083, [illegible] 414(3), 488(31), [illegible] 880(40), 9[illegible](0), [illegible] 1136(22), [illegible] 1377(0), [illegible] 1179(17), 1409(17), [illegible] 1325(19) [illegible] 2948(311), 2967(236), [illegible] 1.1176, 308(9), [illegible] Thioxane, [illegible] 504(179), 693(50), [illegible] 1033(9), 1047- [illegible] 1176(27), 1206(26), [illegible] 1448(27), 1467(13), [illegible] Δ^2-Dihydro- [illegible] dropyran with the [illegible] 1.5318, [illegible] 290(14), 319(5) [illegible] 641(23), 664- [illegible] 806(6), 866(21), [illegible] 1160(36), 1314(104), [illegible] 1425(9), 1445(20), 1509- [illegible] 2930(288), 2961(60), [illegible]

G. M. Kosolapoff

USSR/Chemistry - Dyestuffs FD-1606

Card 1/1 : Pub. 129-9/23

Author : Yur'yev, Yu. K. and Avbatskiy, A. V.

Title : Dyestuffs containing the pyrrolidine ring

Periodical : Vest. Mosk. un., Ser. fizikomat. i yest. nauk, 9, No 8, 63-69, Dec 1954

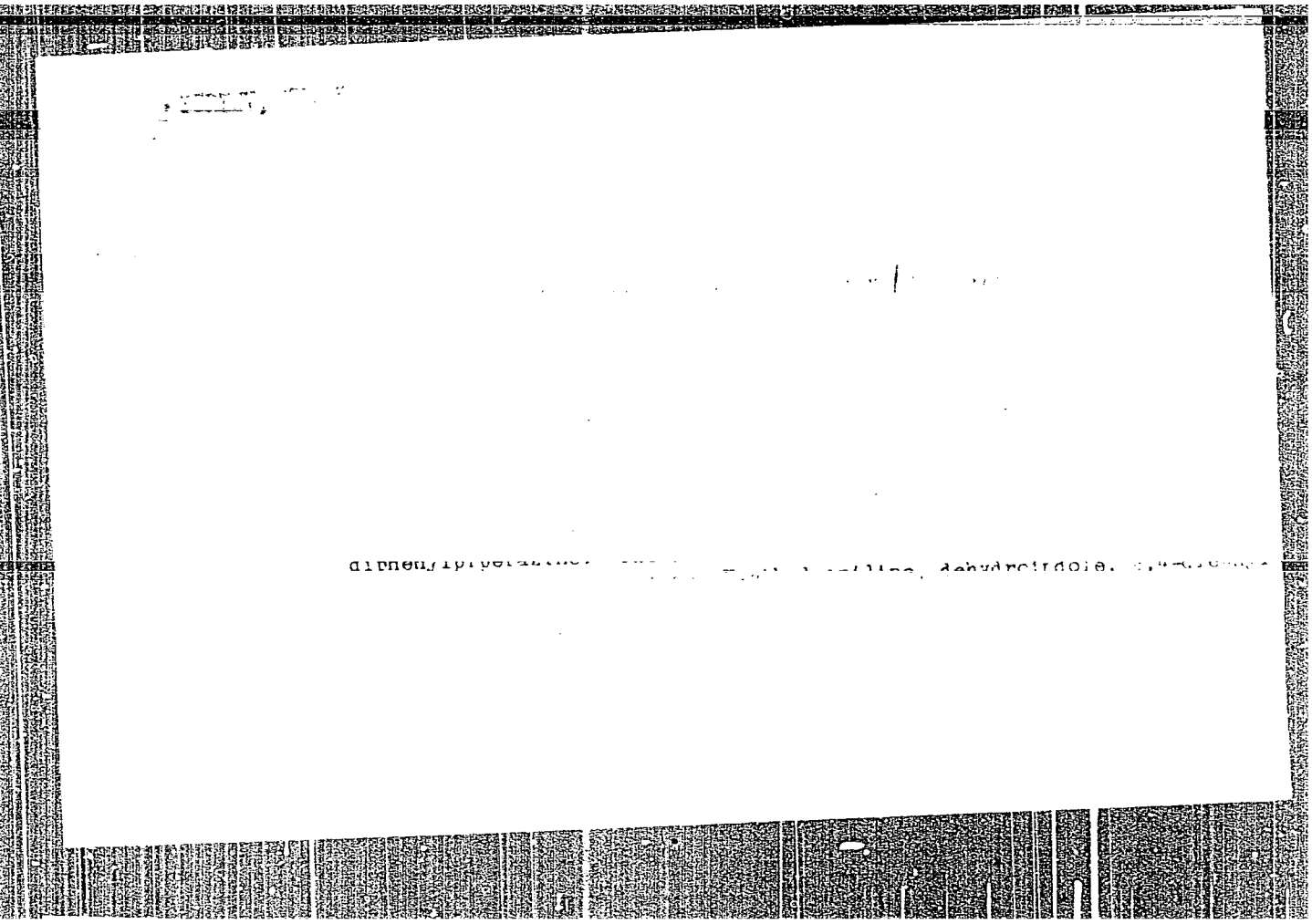
Abstract : Prepared azo dyes containing the pyrrolidine ring by treating N-phenyl-pyrrolidine with diazonium salts. Also prepared tri-phenylmethane dyes containing the pyrrolidine ring by treating N-phenylpyrrolidine with benzaldehyde and with Michler's ketones. An indamine dye containing the pyrrolidine ring was obtained through the oxidative condensation of N-phenylpyrrolidine with N-(para-aminophenyl)- pyrrolidine. The absorption spectra of pyrrolidine orange and N, N'(bis)-tetramethyleneindamine salts are further in the long wave region than those of methyl orange and the corresponding Bindshedler's salts. Five references. (all USSR). Equations; graphs.

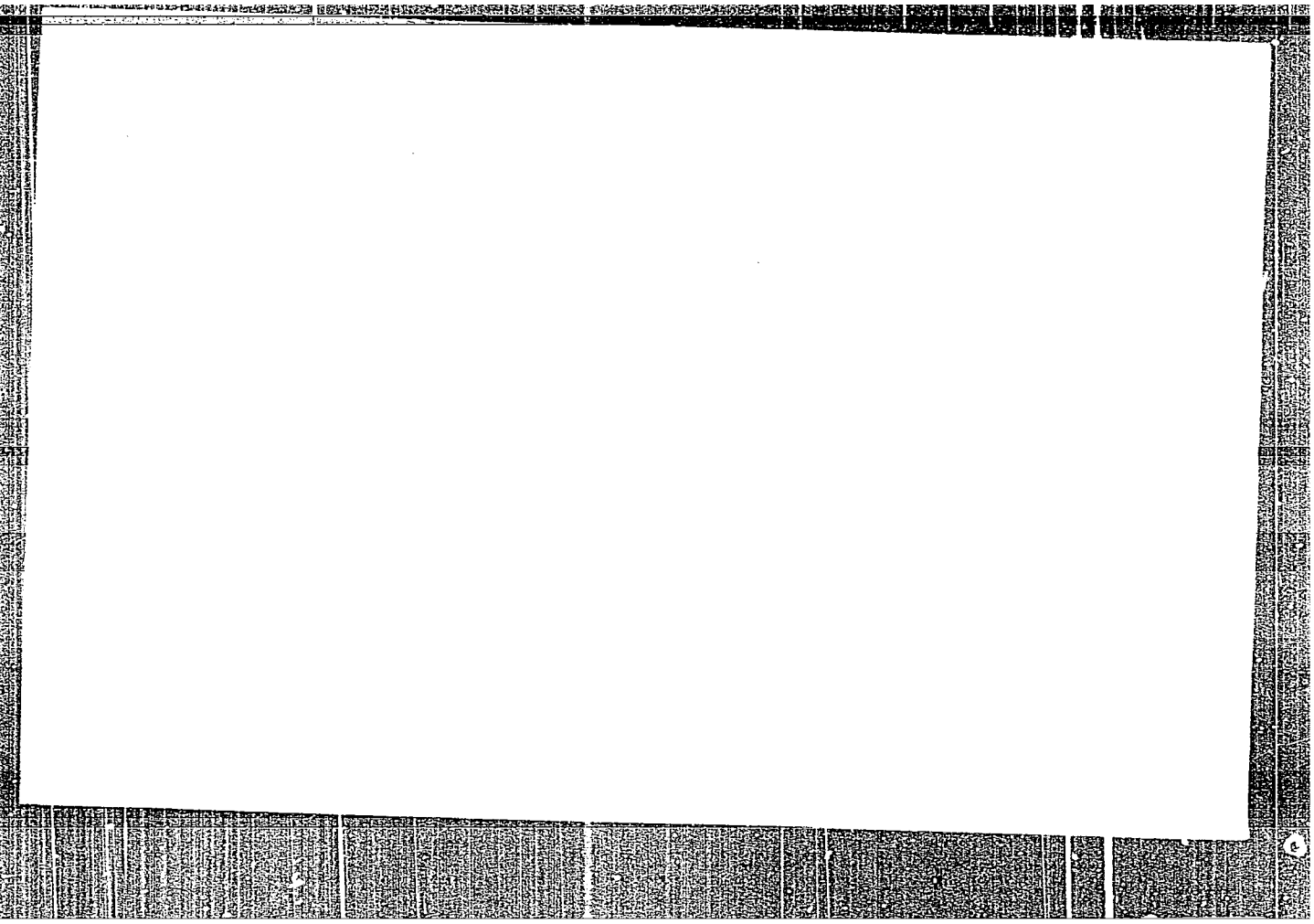
Institution : Chair of Organic Chemistry

Submitted : June 19, 1954

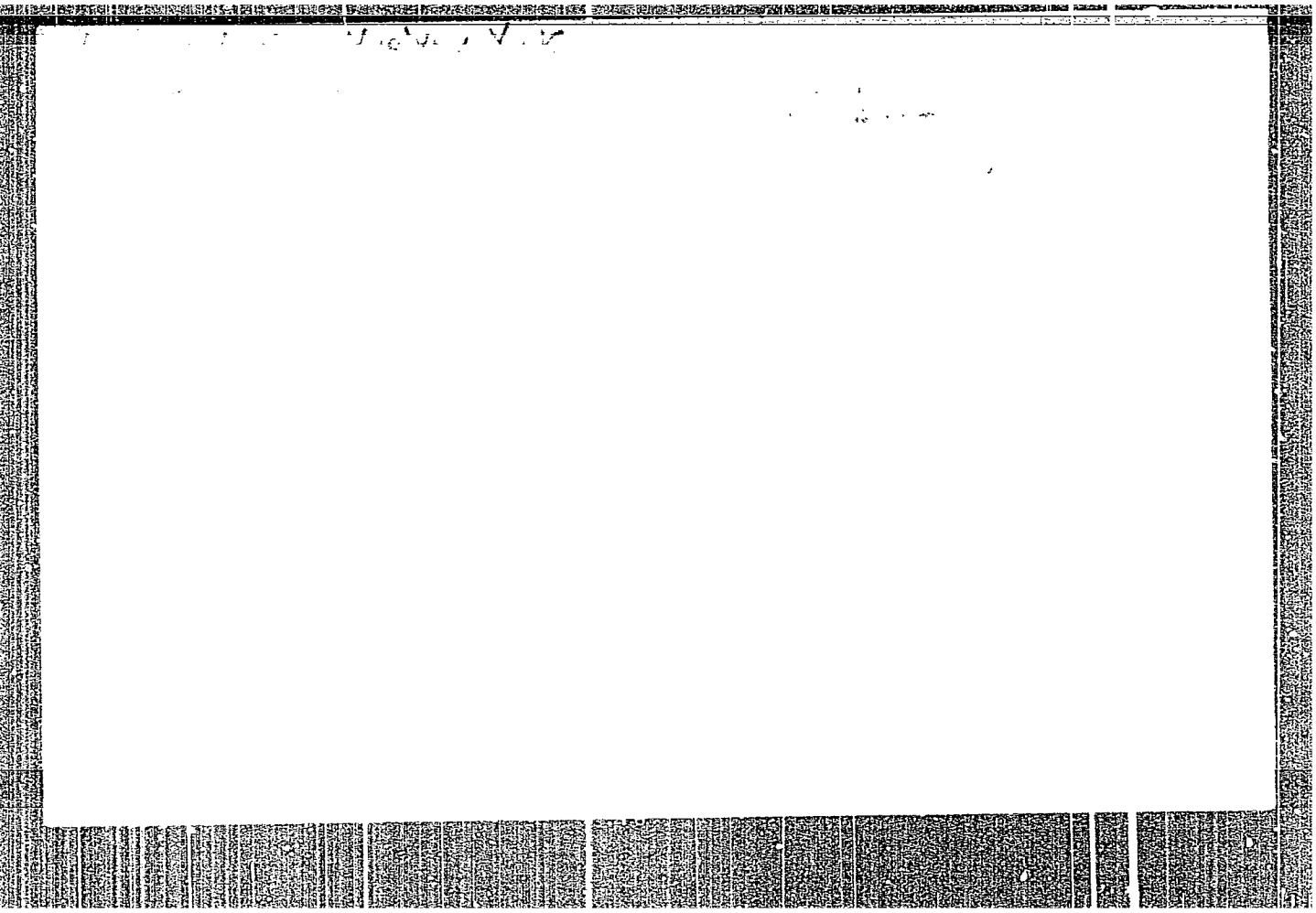
Yur'yev Yu. K.

Title : Synthesis and reactions of 3,4-diketones of the tetrahydrofuran series





APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963220013-4"



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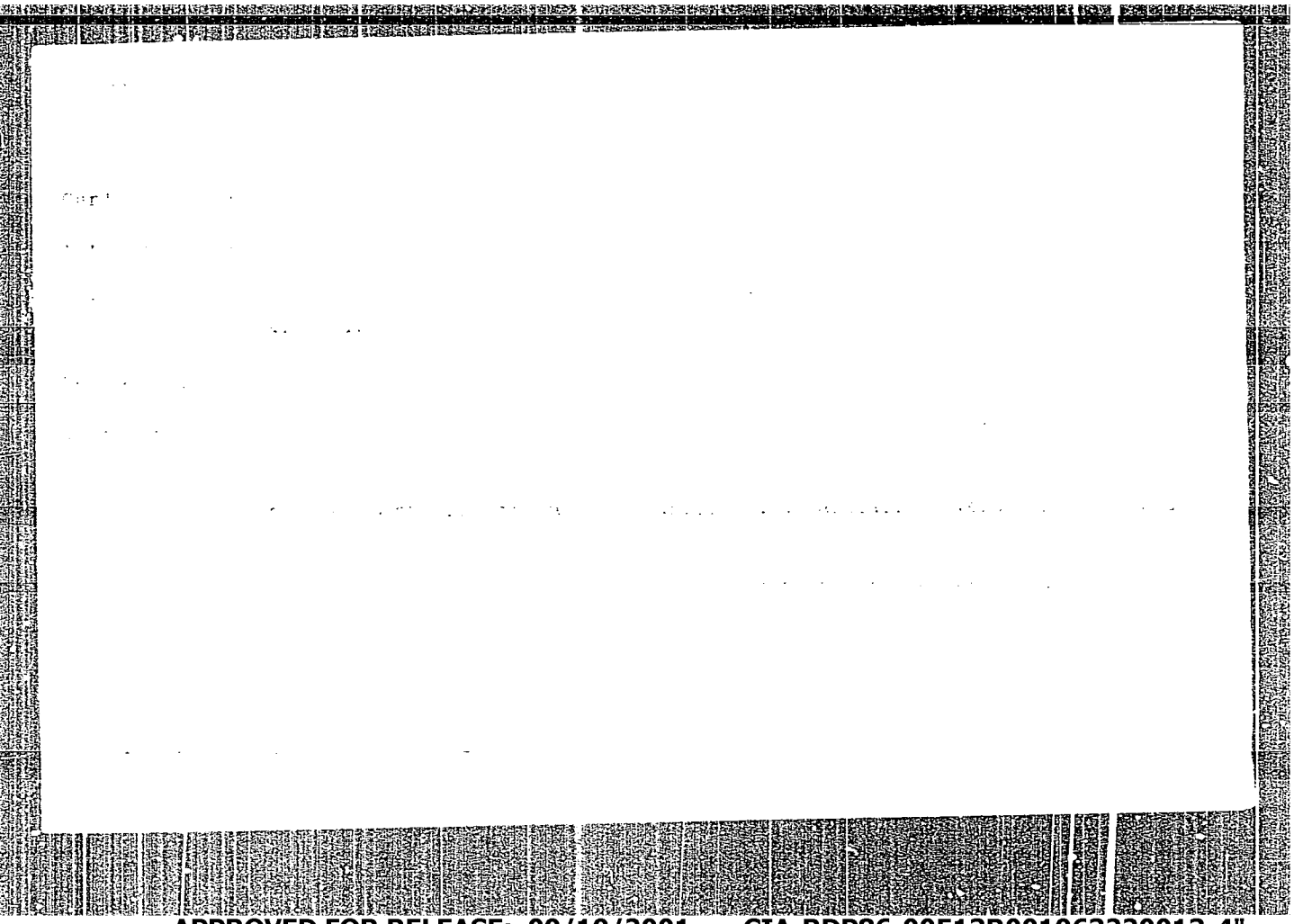


APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R001963220013-4"

'Title : Beta-furanidone in the synthesis of beta-alkyl- and beta-arylfuranones

Card : [illegible]

Authors : Kuryev, Yu. K., and Gorin, L. F.

Title : Dehydration of N-(beta-oxethyl)-arylamines in the presence of aluminum silicate

Periodical : Zhur. ob. khim. 24/8, 1444 - 1449, August 1954

Abstract : The products obtained from dehydration of N-(beta-oxethyl-arylamines in [illegible] are described. [illegible] orientations of the methyl or methoxyl in the arylamine and their effects [illegible]

Institution : State University, Moscow

Submitted : March 4, 1954

USSR/ Chemistry Synthesis methods

Author : [illegible]

Title : Synthesis of beta-n-amyl- and beta-phenylthiophane through catalytic [illegible]

Periodical : [illegible]

Abstract : The effect of further alkyl complication in the basic beta-alkylfuranid- [illegible] and the effect of the [illegible] radical in beta-phenylfuranidine, [illegible] was attributed to presence of the phenyl radical [illegible] beta-carbon atom of the furanidine cycle. Eleven references: 6 USSR; 3 German and 2 French (1902 - 1954).

Institution : [illegible]

Submitted : March 22, 1956

USSR/Chemistry

Card 1/1 : Pub. 151 - 17/42

Authors : Kuryev, Yu. K.; Elyakov, G. B.; and Belyakova, Z. V.

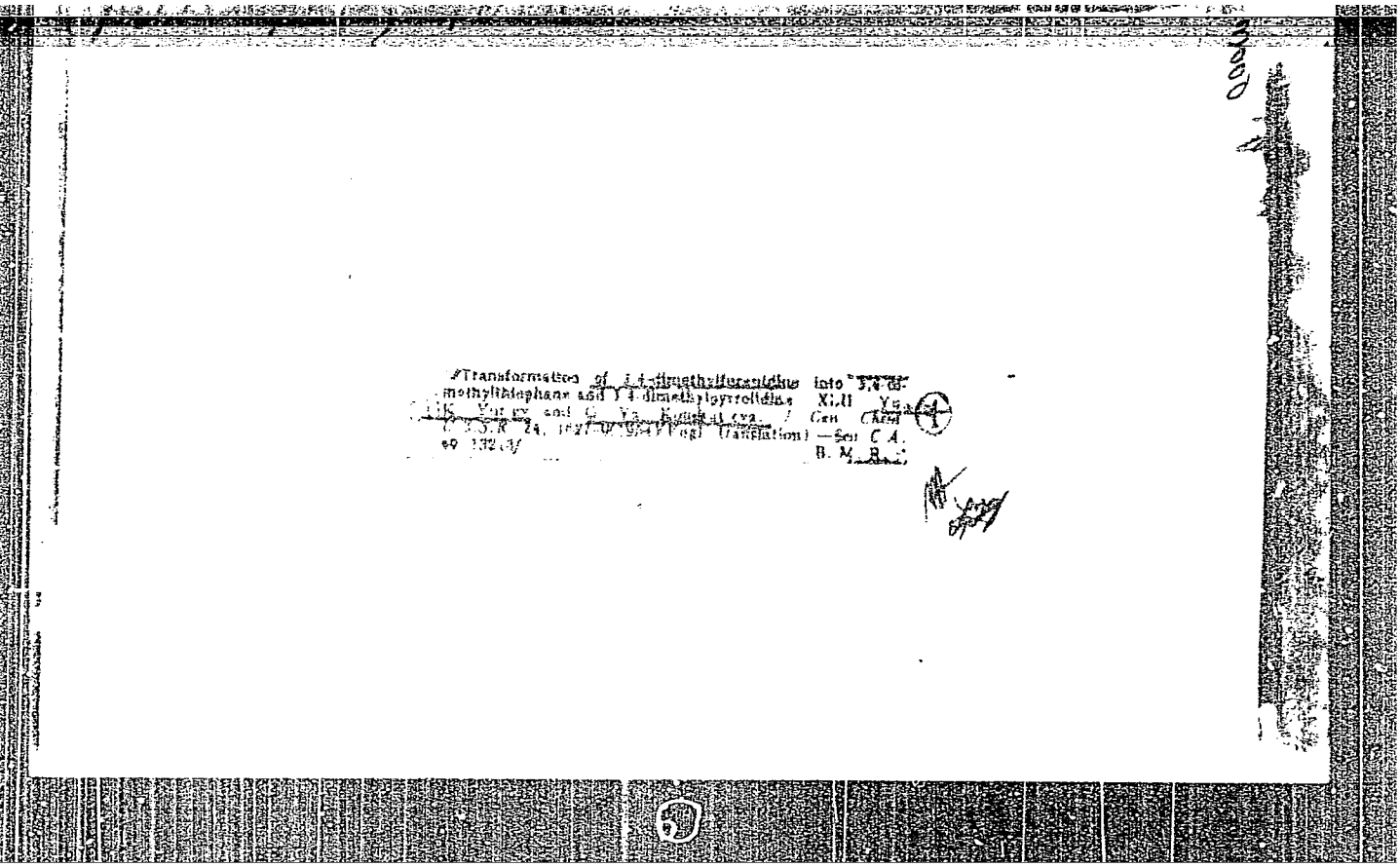
Title : Acyloxylans in the synthesis of aromatic keto acids

Periodical : Zhur. ob. khim. 24/9, 1568-1571, Sep 1954

Abstract : A new method for the synthesis of aromatic keto acids, which utilizes only dibasic acids for its reactions and not anhydrides or chloro-anhydrides, is introduced. The various aromatic acids derived with the aid of this method, are described. The possibility of such acylation of the benzene nucleus with esters of dibasic acids was established by the derivation of benzoyl acetic ethyl ether. Twenty-four references: 3-USSR; 15-German; 3-USA and 3-French (1880-1952).

Institution : State University, Moscow

Submitted : March 8, 1954



/Transformation of 1,1-dimethylfurocolidine into 3,4-dimethylthiophane and 1,4-dimethylpyrrolidine. XI,II Yu. [illegible] and G. Ya. Kuznetsova. / Gen Chem USSR 24, [illegible] (English translation) —Sor C A. B. M. R.:

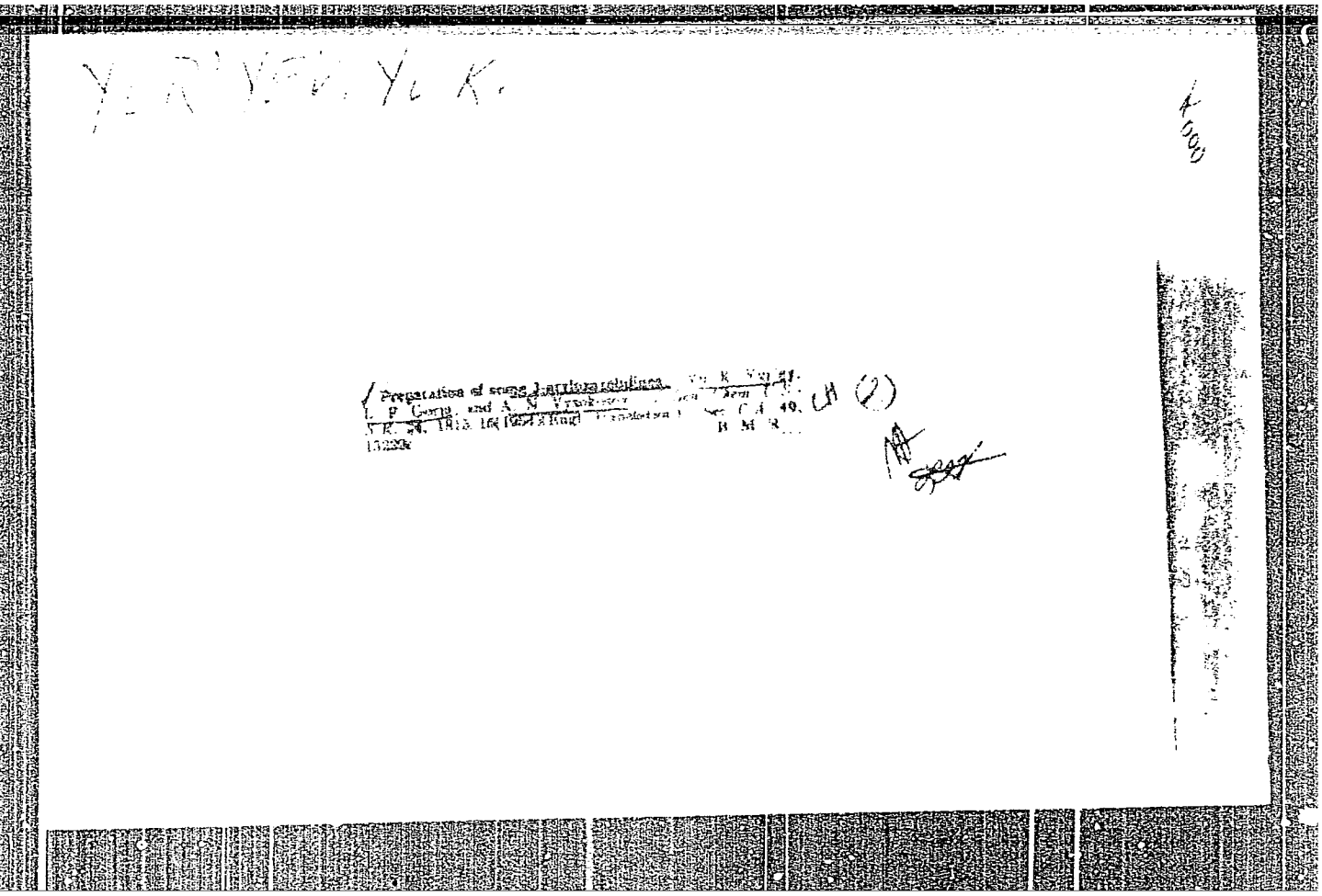
Author :

Title : Conversion of 2,5-dimethylfuranidine into 2,4-dimethylthiophene and

Periodical :

Abstract :

Institution : Stalin Polytechnic Institute



USSR/Chemistry - Synthesis

Card 1/1 Pub. 151 - 20/32

Author

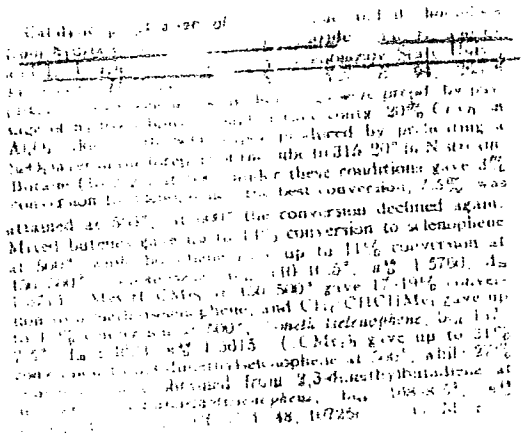
Title

Periodical : Zhur. ob. khim. 24/10, 1851-1853, Oct 1954

Abstract

Institution

Submitted



NOVOSELOVA, A.V., otv.red.; VOL'FKOVICH, S.I., red.; GERASIMOV, Ya.I., red.; YUR'YEV, Yu.K., red.; YUR'YEVA, L.P., red.

[Department of Chemistry of Moscow State University] Khimicheskii fakul'tet Moskovskogo ordena Lenina i ordena Trudovogo Krasnogo Znameni gosudarstvennogo universiteta imeni M.V.Lomonosova. Moskva, 1955. 59 p. (MIRA 13:6)

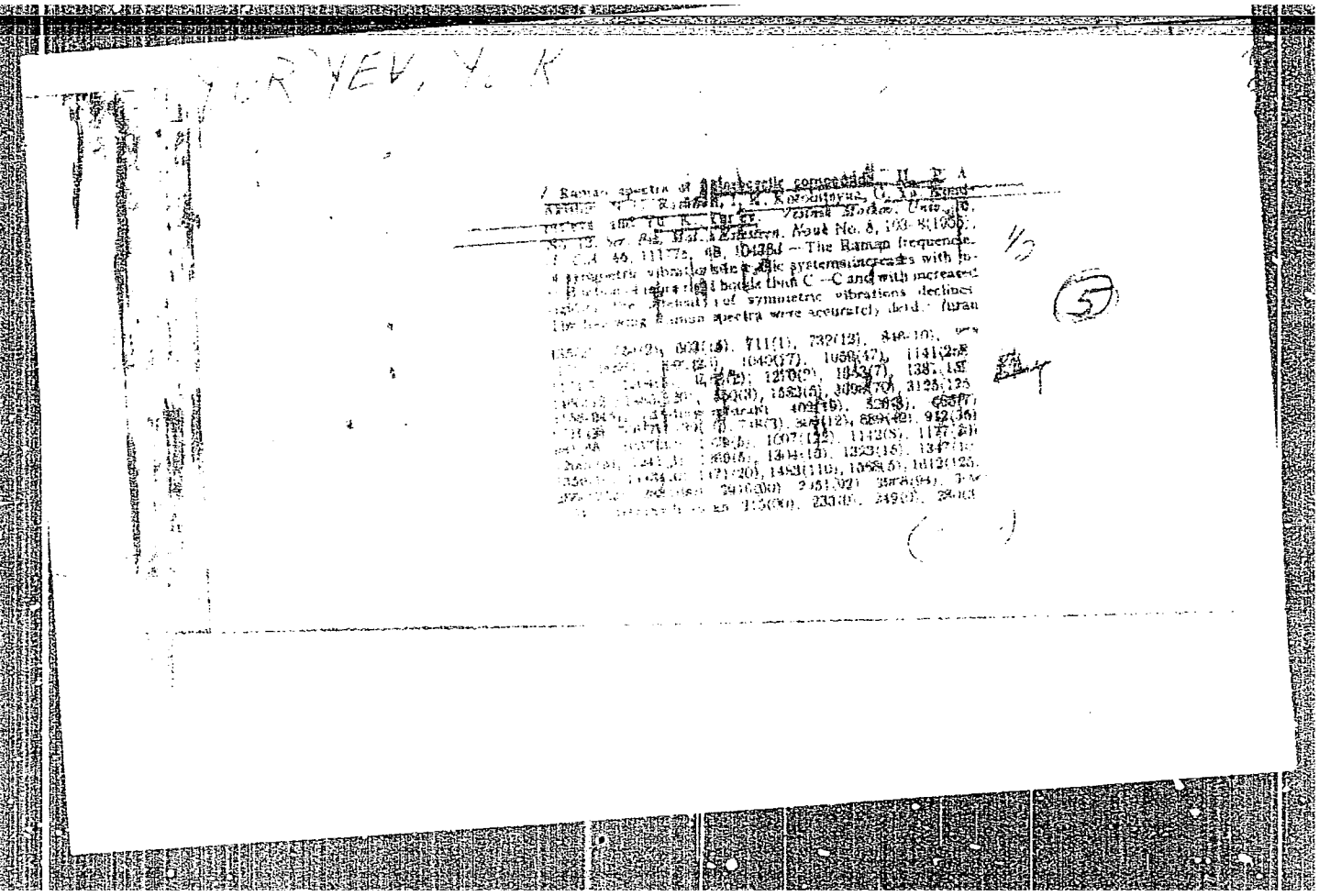
1. Moscow. Universitet. (Moscow University) (Moscow--Chemistry--Study and teaching)

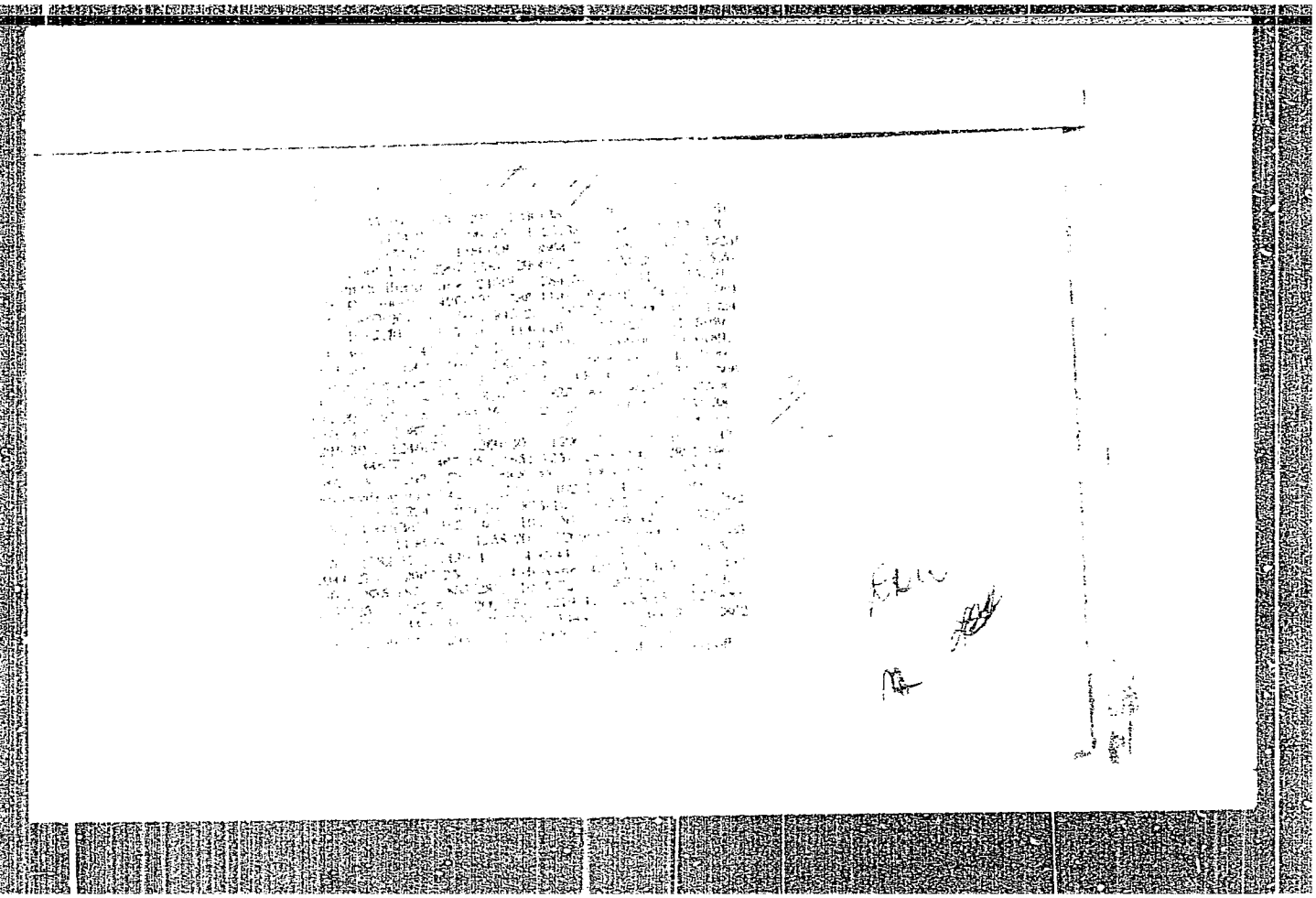
YUR'YEV, Yu.K.

ZELINSKIY, Nikolay Dmitriyevich, 1861-1953 [deceased] KAZANSKIY, B.A., akademik; BALANDIN, A.A., akademik; KOCHESHKOV, K.A.; SHUYKIN, N.I.; KAVERZNEVA, Ye.D, doktor khimicheskikh nauk; LEVINA, R.Ya., doktor khimicheskikh nauk; PLATE, A.F., doktor khimicheskikh nauk; RUBINSHTEYN, A.M., doktor khimicheskikh nauk; YUR'YEV, Yu.K., doktor khimicheskikh nauk; KISELEVA, A.A., tekhnicheskiy redaktor.

[Collected works] Sobranie trudov, Moskva, Izd-vo Akademii nauk SSSR. Vol. 2. 1955. 743 p. (MLRA 8:11)

1. Chlen-korrespondent AN SSSR(for Kocheshkov and Shuykin)
(Hydrocarbons) (Petroleum)





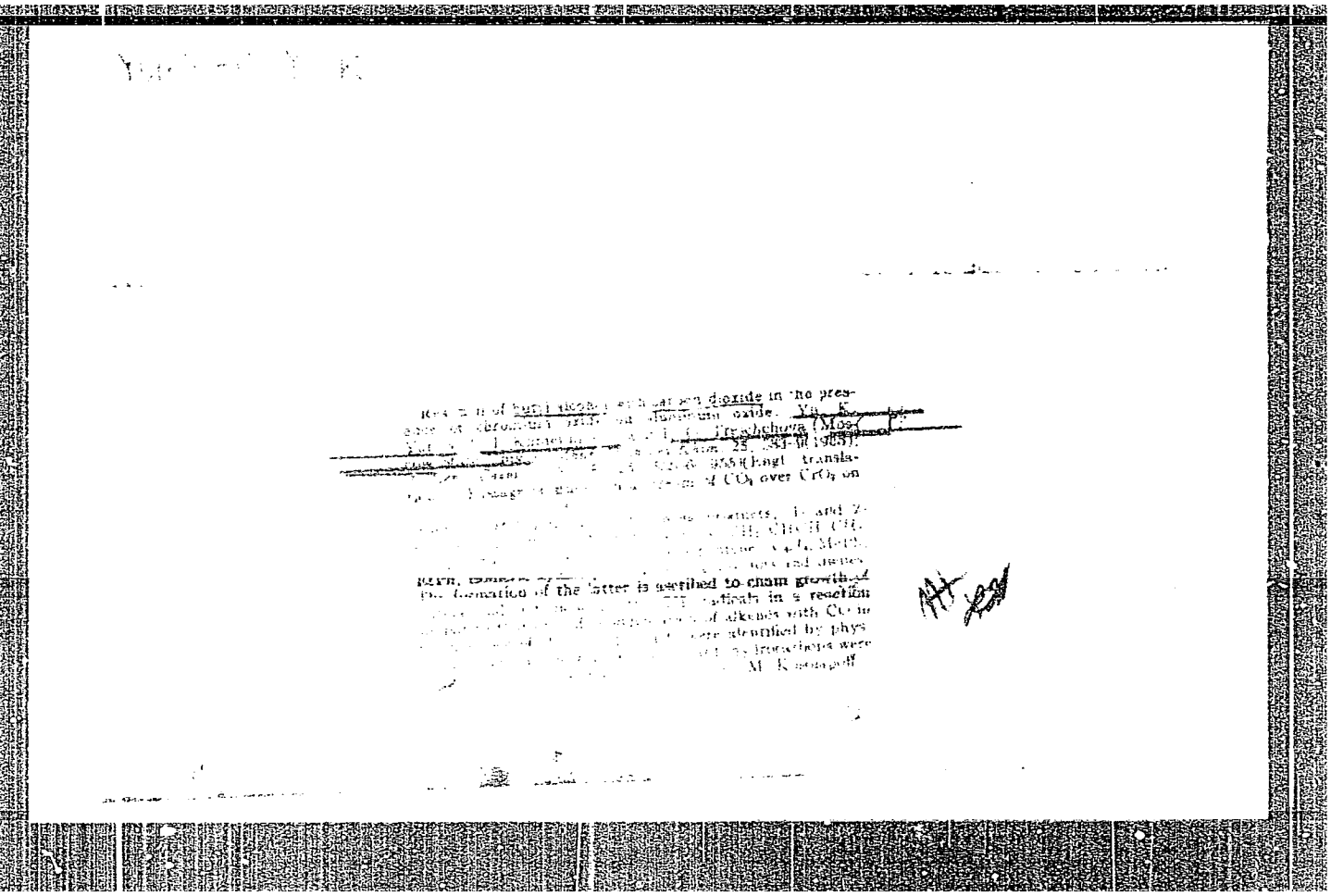
KAZANSKIY, B.A.; LEVINA, R.Ya.; YUR'YEV, Yu.K.

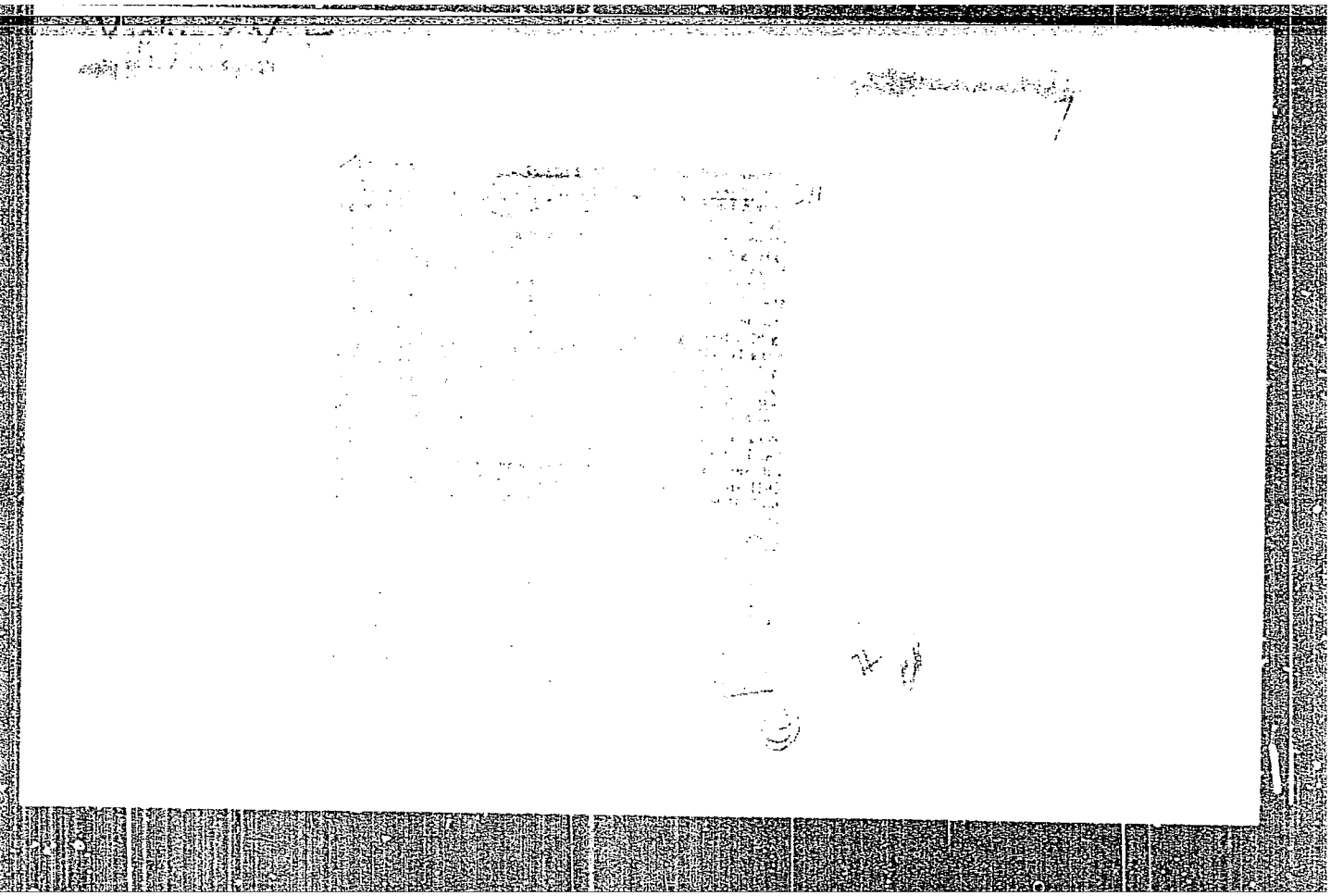
The chemistry of hydrocarbons and heterocyclic compounds in the works of N.D.Zelinskii and his school. Vest. Mosk. un. 10 no.45:145-167 Ap-My '55. (MLRA 8:8)
(Hydrocarbons) (Zelinskii, Nikolai Dmitrievich, 1861-1953)

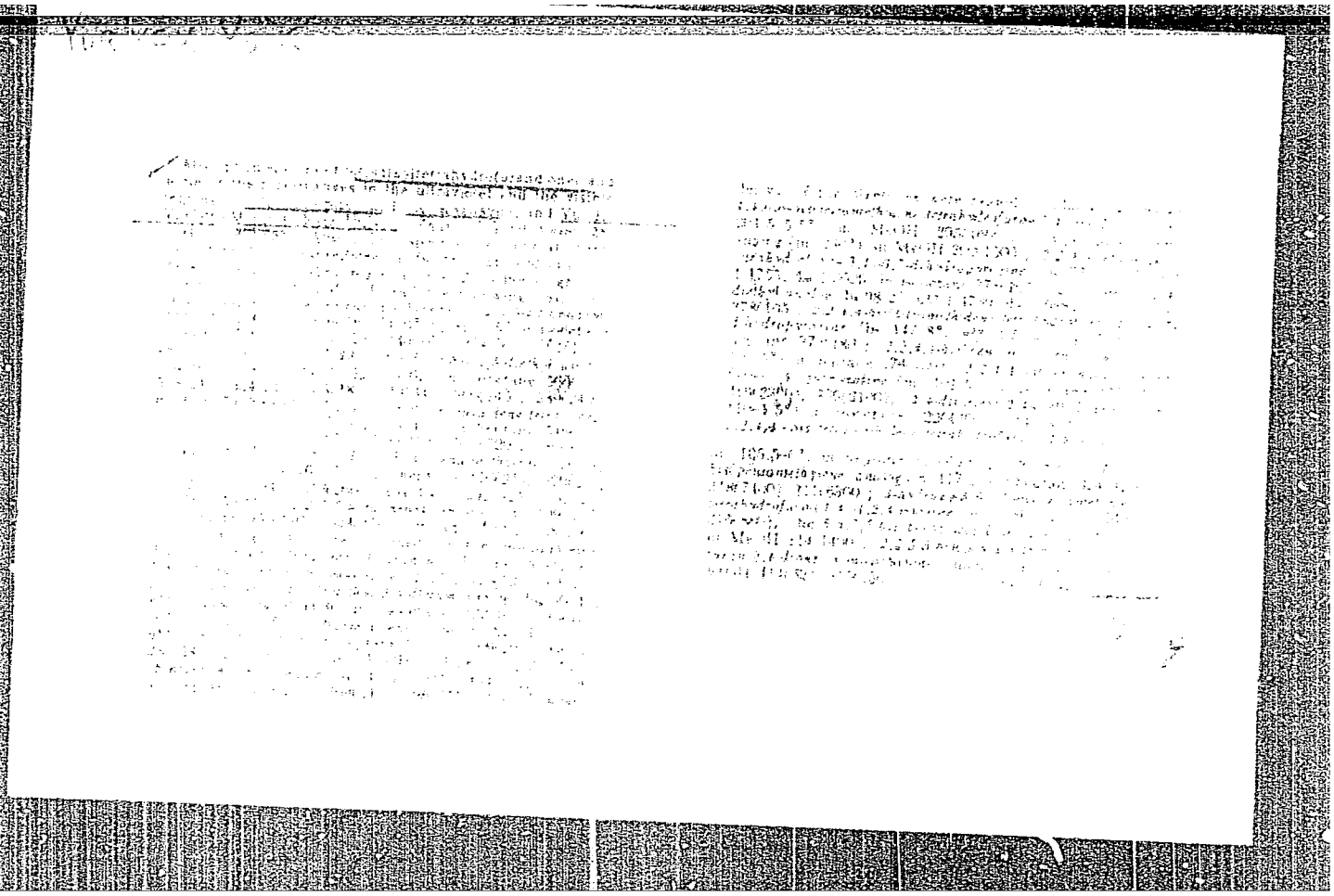
KOROBITSYNA, I.K.; YUR'YEV, Yu.K.; LUKINA, Ye.M.

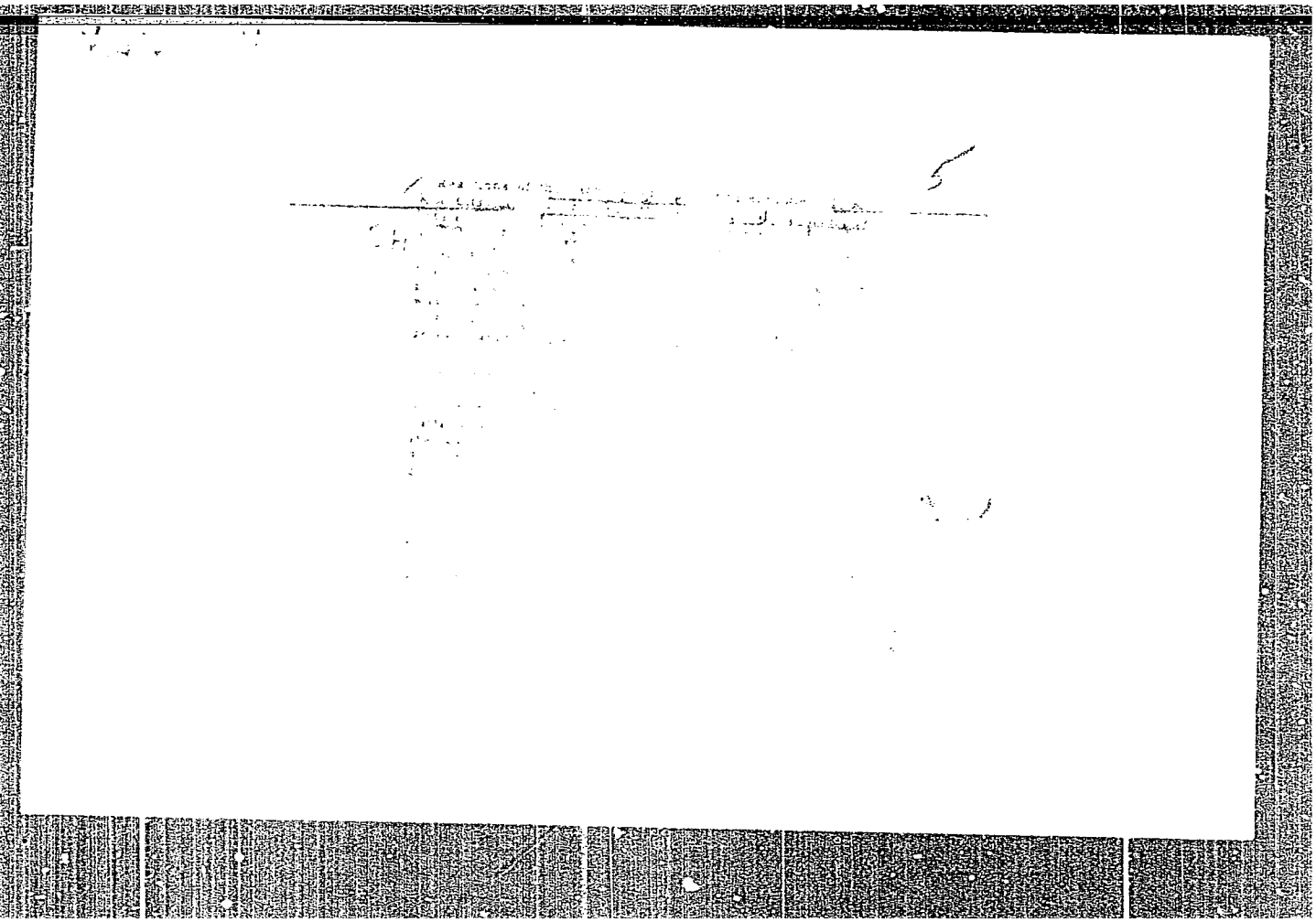
β-aminofuranidine and diglycolic acid from β-furanidone. (MLRA 8:7)
Zhur.ob.khim. 25 no.3:563-565 Mr '55.

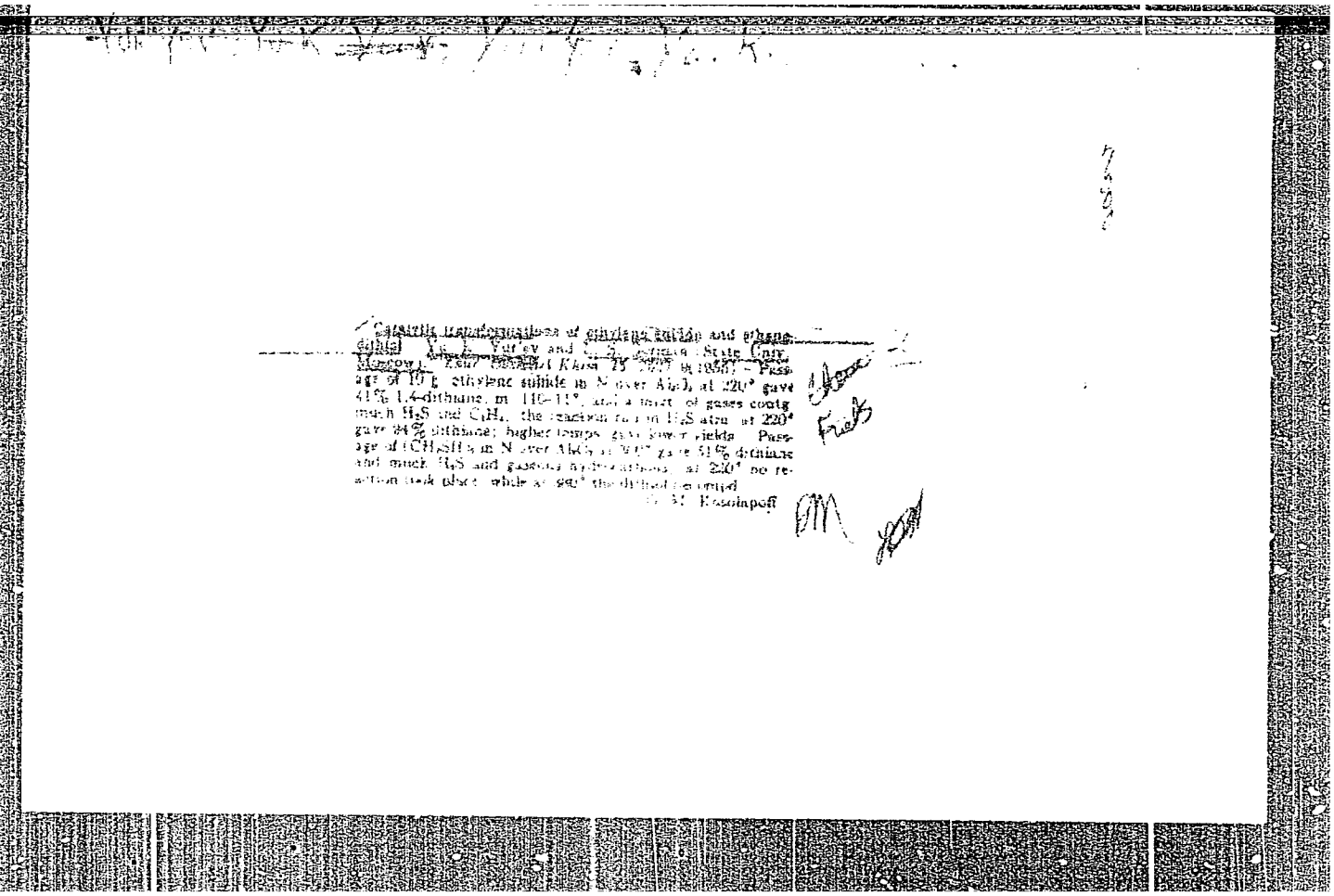
1. Moskovskiy Gosudarstvenny universitet.
(Furan) (Diglycolic acid)











Catalytic transformations of ethylene sulfide and phenylethylene sulfide over Al$_2$O$_3$ and Cr$_2$O$_3$/Al$_2$O$_3$. Survey and [illegible] Scientific Chem. Technol. Inst., Moscow, USSR. *Zh. Prikl. Khim.* (Leningrad) 1987, 60(5), 1098-1103 (Russ). Passage of 10% ethylene sulfide in N over Al$_2$O$_3$ at 220° gave 41% 1,4-dithiane, m. 110-11°, and a mixt. of gases contg. much H$_2$S and C$_2$H$_4$; the reaction of 10% H$_2$S atm. at 220° gave 84% dithiane; higher temps. gave lower yields. Passage of CH$_3$SH in N over Al$_2$O$_3$ at 220° gave 31% dithiane and much H$_2$S and gaseous hydrocarbons; at 220° no reaction took place while at 360° the dithiane decomp. [illegible] Kasimpoff

AID P - 3582

Subject : USSR/Chemistry

Card 1/1 Pub. 152 - 19/20

Authors : Yur'yev, Yu. K., A. V. Arbatskiy, I. K. Korobitsyna, and V. M. Andreyev

Title : Preparation of N-phenylpyrrolidine from 1,4-butanediol and aniline in the presence of aluminosilicate

Periodical : Zhur. prikl. khim., 28, 7, 781-782, 1955

Abstract : Under optimum reaction conditions, the yield of N-phenypyrrolidine obtained was 68.1%. The preparation is described in detail. One table, 5 references, all Russian (1937-1950).

Institution : None

Submitted : Je 30, 1954

USSR/ Chemistry - Organic chemistry

Card 1 : Pub. 22 - 28/43

Authors : Arbuzov, Yu. K.; Belyaev, [illegible] and Belyakova, Z. V.

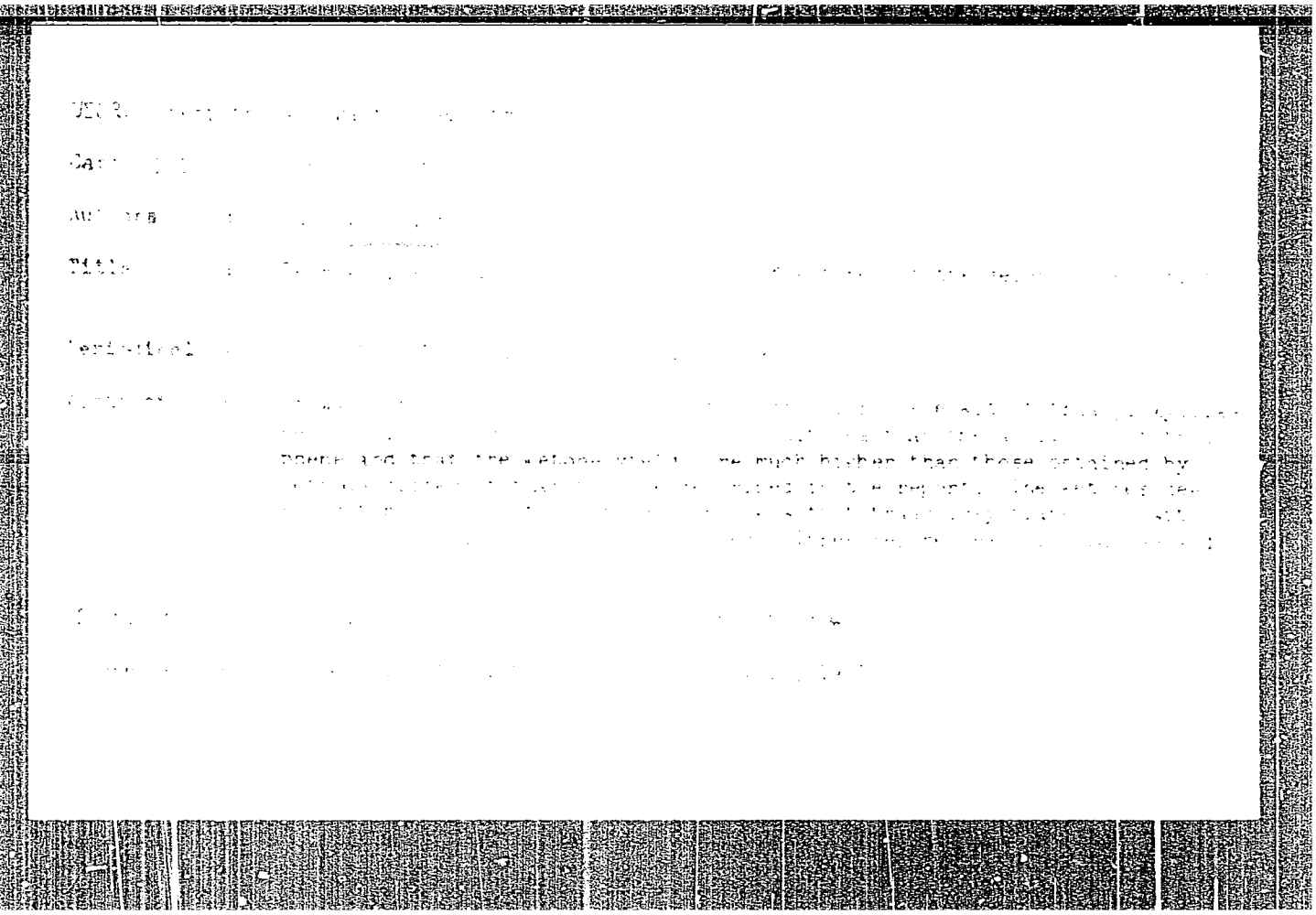
Title : [illegible] of the synthesis of natural acids of the thiophene series

Periodical : Dok. AN SSSR 102, 2, 283-286, May 1, 1955

Abstract : [illegible] that by acting with polyoxybutanes from diacetylene on the anhydrides of bromeric acid by conducting the reaction in nitrobenzene in the presence of anhydrous aluminum chloride one can easily obtain acids of natural acid of the thiophene series. The names of the products obtained by the method described above are listed. The publication is [illegible] from the presence of starch chloride and [illegible] Seven references: [illegible].

Institution : [illegible]

Submitted : [illegible]



YUR'YEV, Yu.K., prof.; NESMEYANOV, A.N., akademik, otv.red.

[Laboratory work in organic chemistry; program for the Chemistry Faculty] Programma praktikuma po organicheskoi khimii (dlia khimicheskogo fakul'teta). 1956. 14 p. (MIRA 11:3)

1. Moscow. Universitet.
(Chemistry, Organic--Study and teaching)

Yur'yev, Yu. K.

USSR/Physical Chemistry - Molecule, Chemical Bond. B-4

Abs Jour: Referat. Zhurnal Khimiya, No 2, 1958, 3575.

Author : P.A. Akishin, N.G. Rambidi, Yu. K. Yur'yev.
Inst : Moscow University.
Title : Raman Spectra of Heterocyclic Compounds. III.

Orig Pub: Vestn. Mosk. un-ta, 1956, 61-67.

Abstract: Raman spectra of ten sulphur containing heterocyclic compounds - trimethylenesulfide, thiophene, 2- and 3-methyltetrahydrothiophenes, 2,2-, 3,3-, 2,5-, 3,4- and 2,4-dimethyltetrahydrothiophenes and tetrahydrothiopyrine were obtained. The line intensities were measured photometrically using one and the same objective scale. The characteristic of the differential band intensity of the C-S link valence vibrations is shown. An exception is the intensity of the frequencies ν (C-S) in the 3,3-dimethyltetrahydroihiophene spectrum, which surpasses the others by 20%. This fact is explained by a possible interaction of ν (C-S) fre-

Card : 1/2

Abs Jour: Referat. Zhurnal Khimiya, No 2, 1958, 3575.

quencies with holosymmetrical vibrations of the group containing the quaternary C atom. The intensity decrease of (C-S)ν bands in compounds having conjugate C-S and C=C links, for example, in Δ^2-dihydrothiopyran and thiophene, is noted. See part II in RZhKhim, 1956, 53677.

YUR'YEV, Yu.K.; GERMAN, L.S.

Synthesis of N-(β-mercaptoethyl)-arylamines and N-(β-mercaptoethyl)-pyrrolidine. Vest.Mosk.un. Ser.mat.,mekh.,astron.,fiz.,khim. 11 no.1:197-199 '56. (MIRA 10:12)

1. Kafedra organicheskoy khimii Moskovskogo universiteta.
(Amines) (Pyrrolidine)

YUR'YEV, Yu.K.

YUR'YEV, Yu.K.; YELYAKOV, G.B.; ELYAKOVA, Z.V.

Cyanoethylation of isopropyl-2-thienyl ketone. Vest.Mosk.un. Ser.mat.,mekh.,astron.,fiz.,khim.11 no.1:201-203 '56. (MIRA 10:12)

1. Kafedra organicheskoy khimii Moskovskogo universiteta.
(Thienyl ketone) (Ethylation)

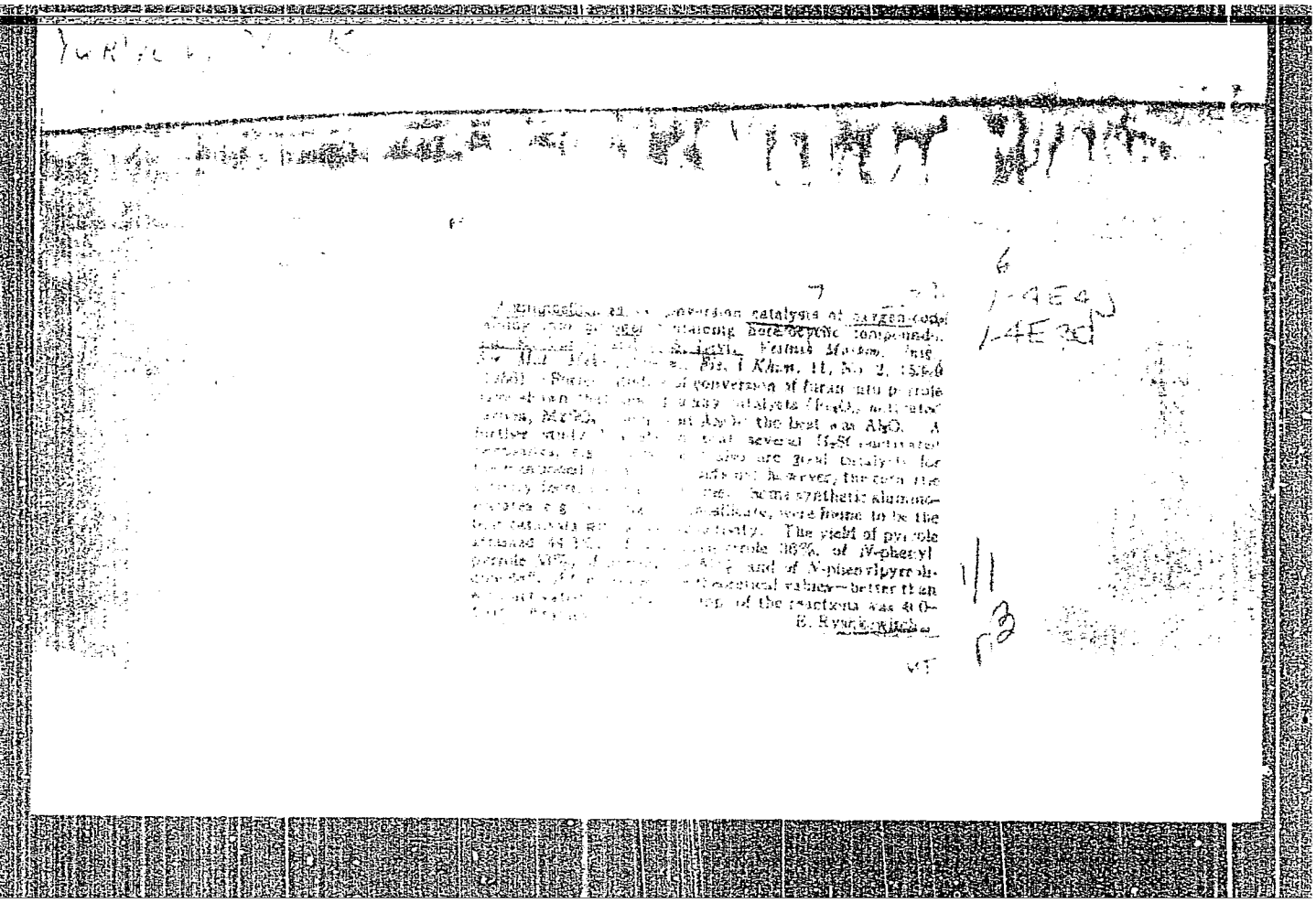
YUR'YEV, Yu.K.

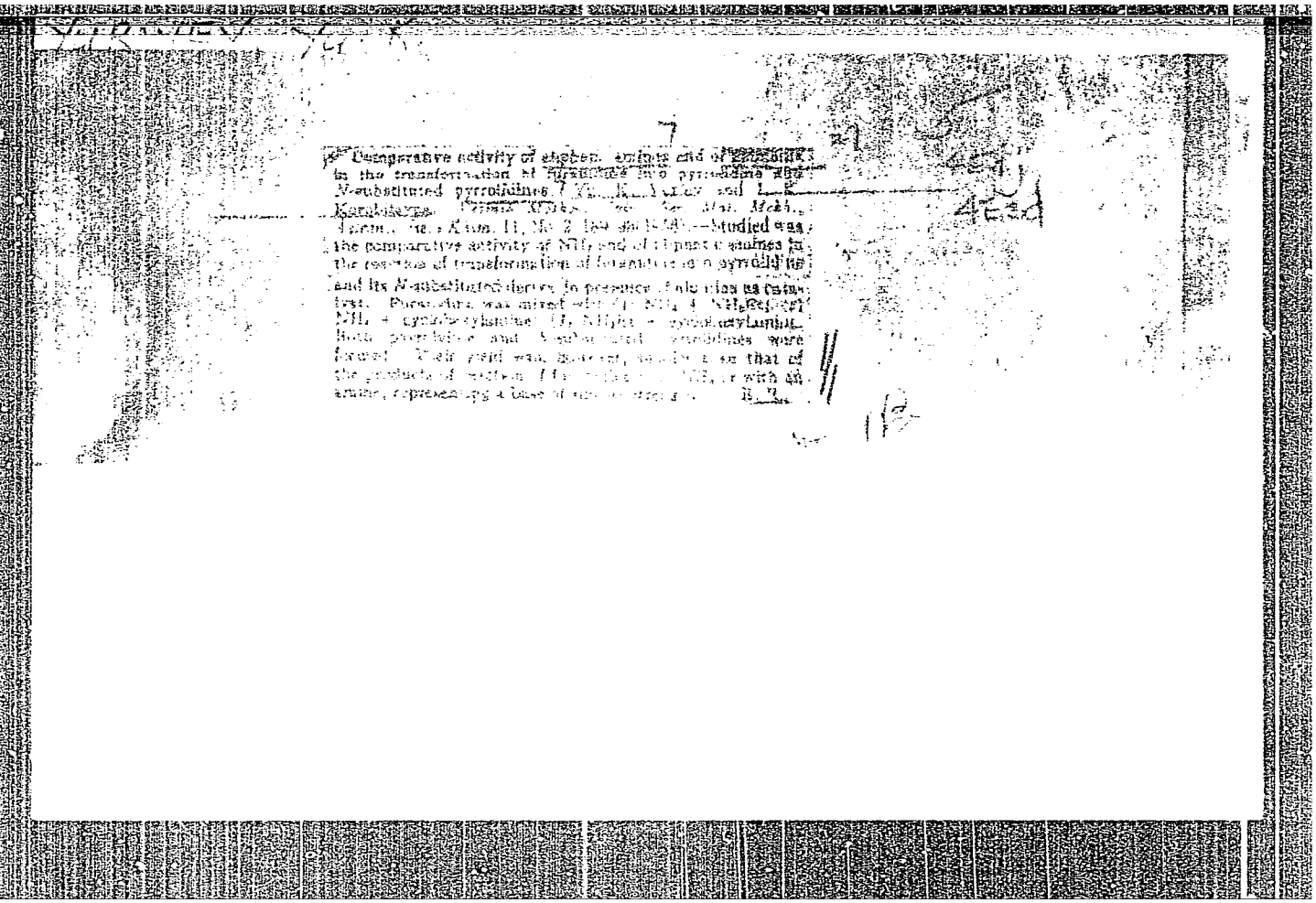
LEVINA, R.Ya.; YUR'YEV, Yu.K.

Academician S.S. Nametkin's studies in the field of chemistry of alicyclic hydrocarbons and their derivatives; on the occasion of the 80th anniversary of his birth. Vest. Mosk. un. Ser. mat. mekh., astron., fiz., khim. 11 no.2:121-133 '56. (MIRA 10:12)

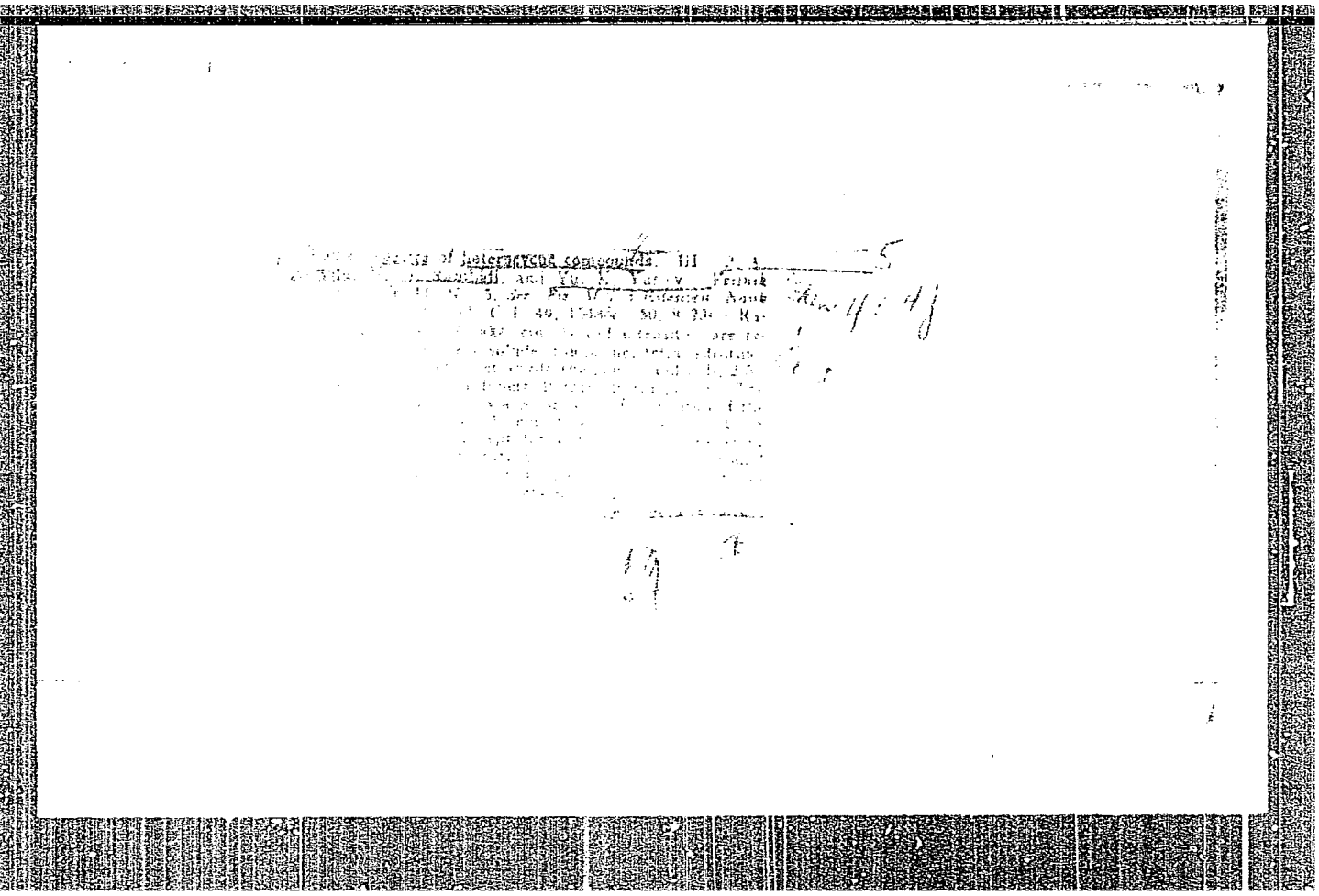
1. Kafedra organicheskoy khimii Moskovskogo gosudarstvennogo universiteta.

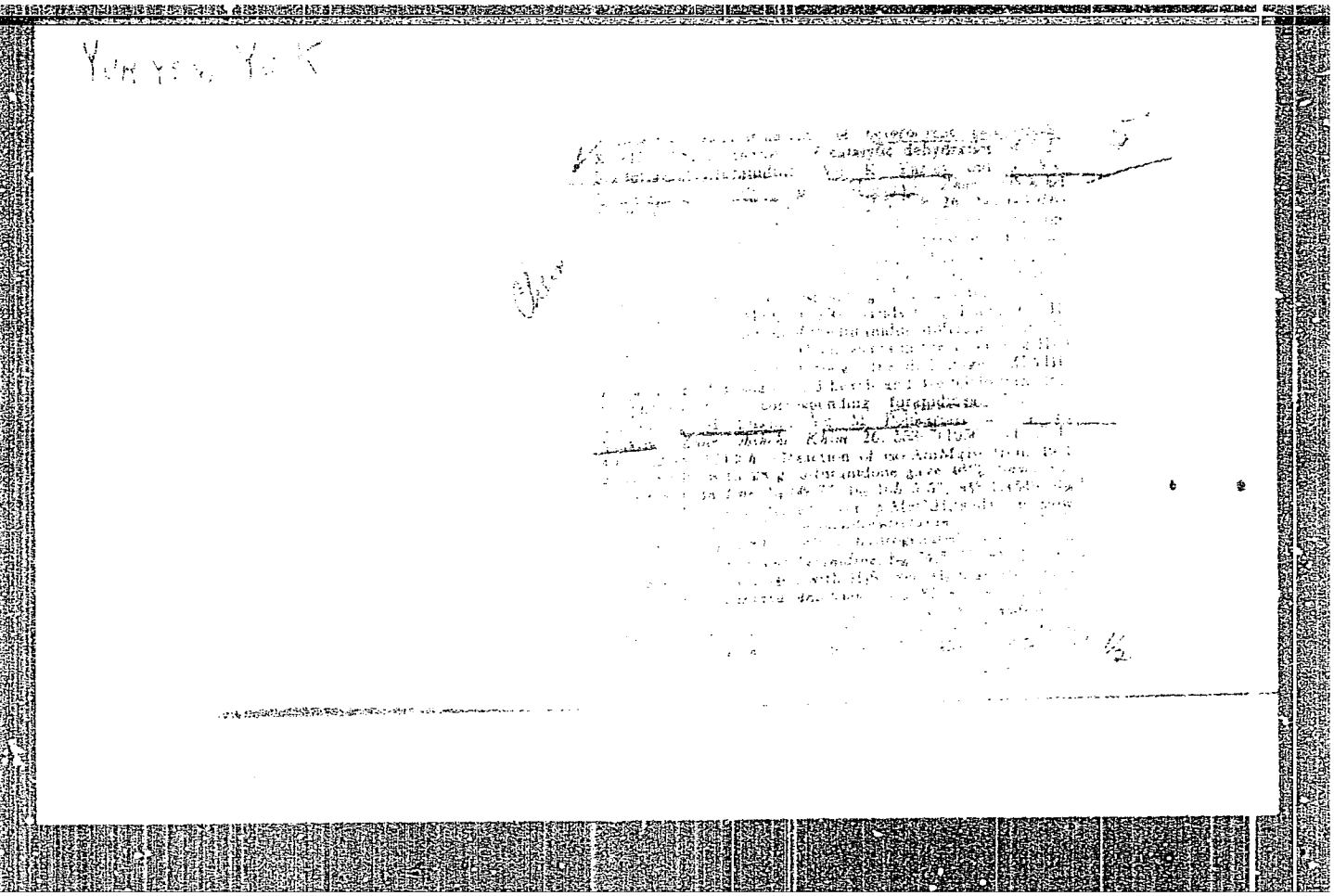
(Nametkin, Sergei Semenovich, 1876-)
(Alicyclic compounds)

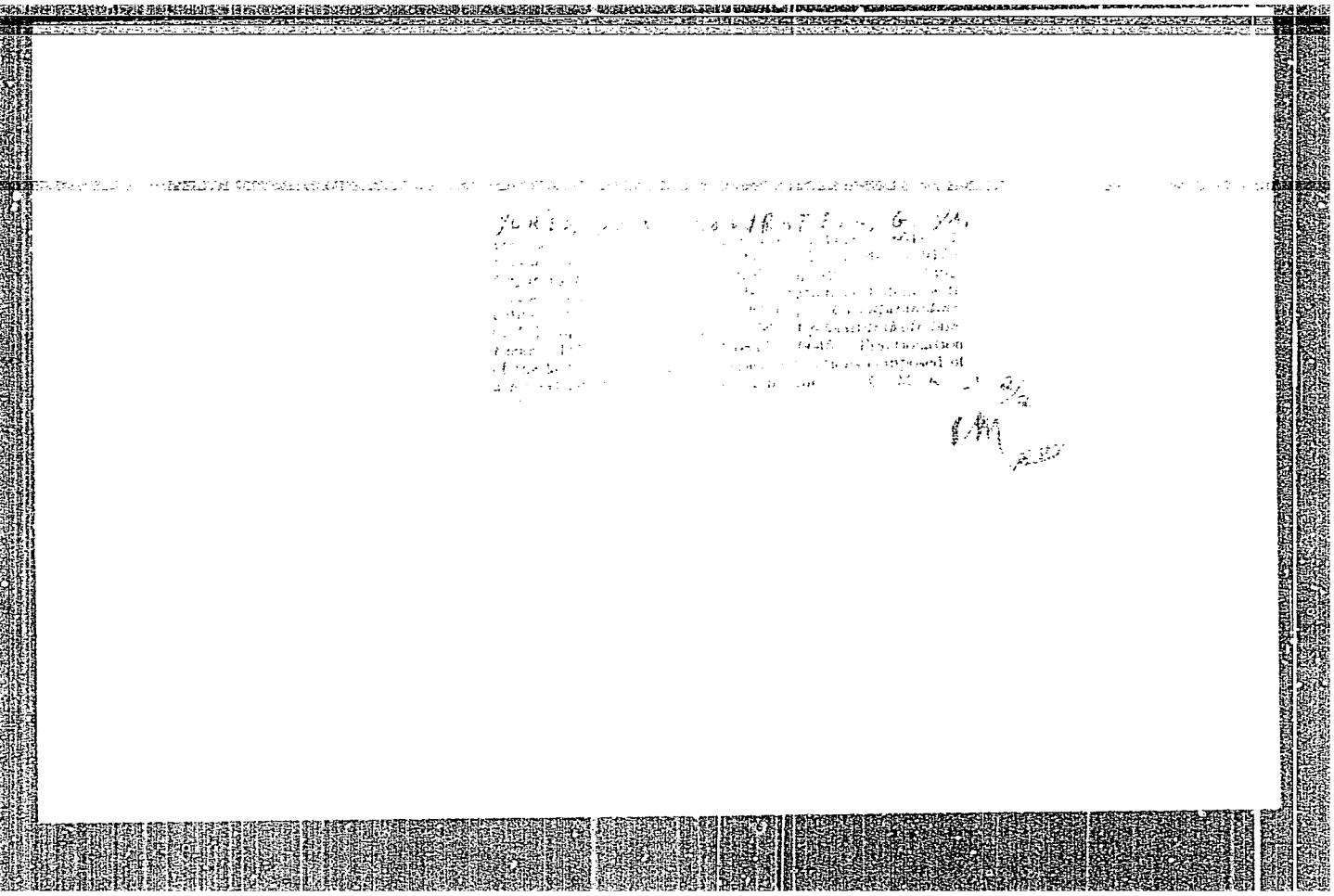




Comparative activity of eighteen amines and of [illegible] in the transformation of hydroxides into pyrrolidine and N-substituted pyrrolidines / [illegible] and [illegible] Karabatsos [illegible] Mich., [illegible] Chem. Rev. Data, 11, No. 2, 166-80(1959).—Studied was the comparative activity of NH_3 and of eighteen amines in the reaction of transformation of [illegible] into pyrrolidine and its N-substituted derivs. in presence of [illegible] as catalyst. Procedure was mixt. of [illegible] NH_3 + cyclohexylamine, NH_3 + [illegible] + cyclohexylamine, [illegible] pyrrolidine and N-substituted pyrrolidines were formed. The yield was quant., similar to that of the products of reaction [illegible] with an amine, representing a case of [illegible]







YUR'YEV, Yu.K.; GERMAN, L.S.

Synthesis of 3-aryl- and 2,3-diarylthiazolidines. Zhur.ob.khim. 26 no.2:550-553 F '56. (MLRA 9:8)

1. Moskovskiy gosudarstvennyy universitet.
(Thiazolidine)

YUR'YEV, Yu.K.; LUKINA, Ye.M.; POLIKARPOV, Yu.M.; VOLKOV, V.P.

Catalytic conversions of heterocyclic compounds. Part 48. Preparation of 3-isoamyl- , 3-hexyl- , and 3-β-tolyltetrahydrothiophenes from corresponding furanidines. Zhur.ob.khim. 26 no.2: 553-557 F '56. (MLRA 9:8)

1. Moskovskiy gosudarstvennyy universitet.
(Thiophene) (Furan)

Catalytic transformations of heterocyclic compounds. XLVIII. Preparation of 3-isoamyl-, 3-benzyl-, and 3-p-tolyltetrahydrothiophenes from corresponding furanidines.

YUR'YEV, Yu.K.; YELYAKOV, G.B.; VYSOKOSOV, A.N.

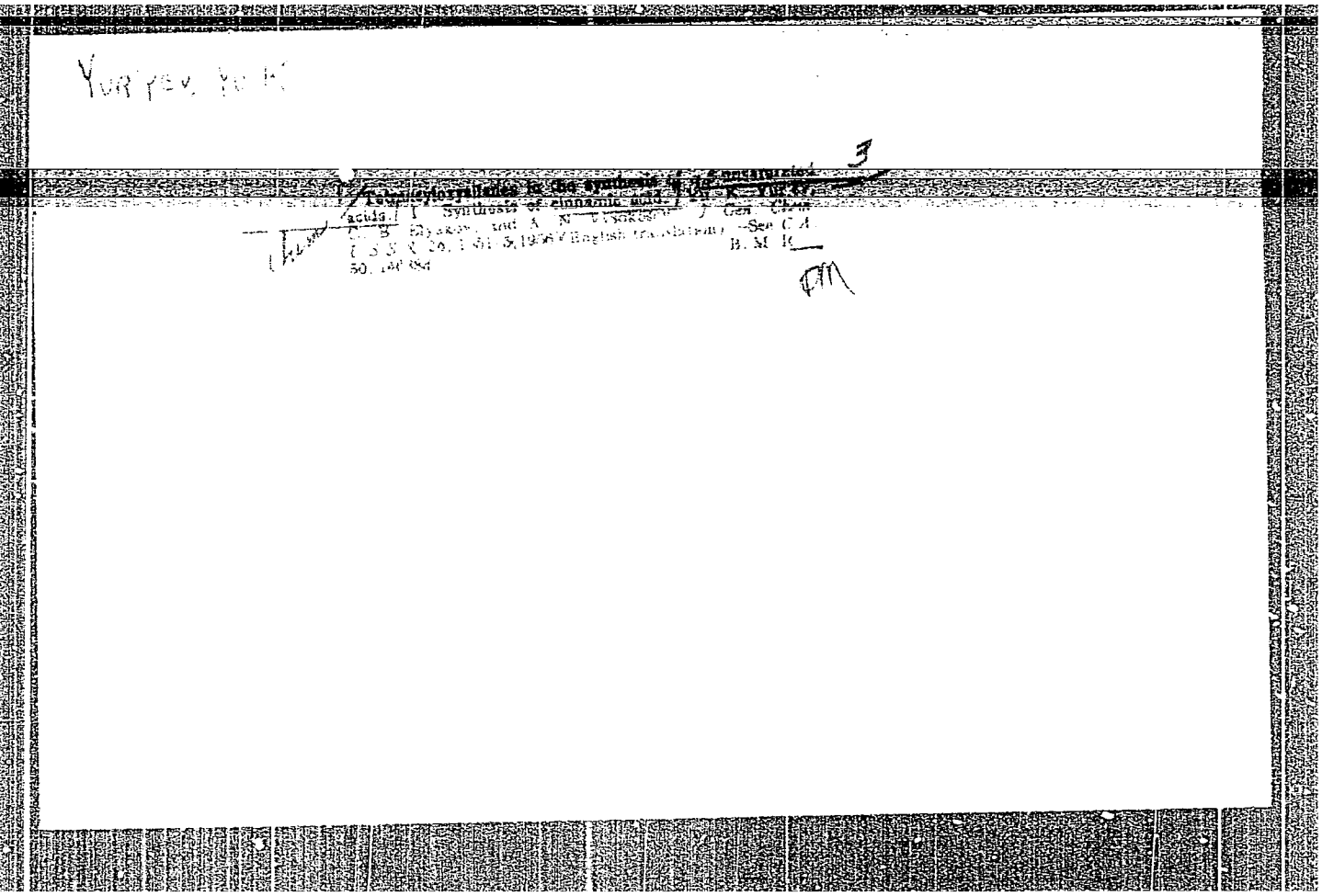
Tetraacyloxysilanes in the synthesis of α,β-unsaturated acids. Part 1. Synthesis of cinnamic acid. Zhur.ob.khim. 26 no.3:926-930 Mr '56. (MLRA 9:8)

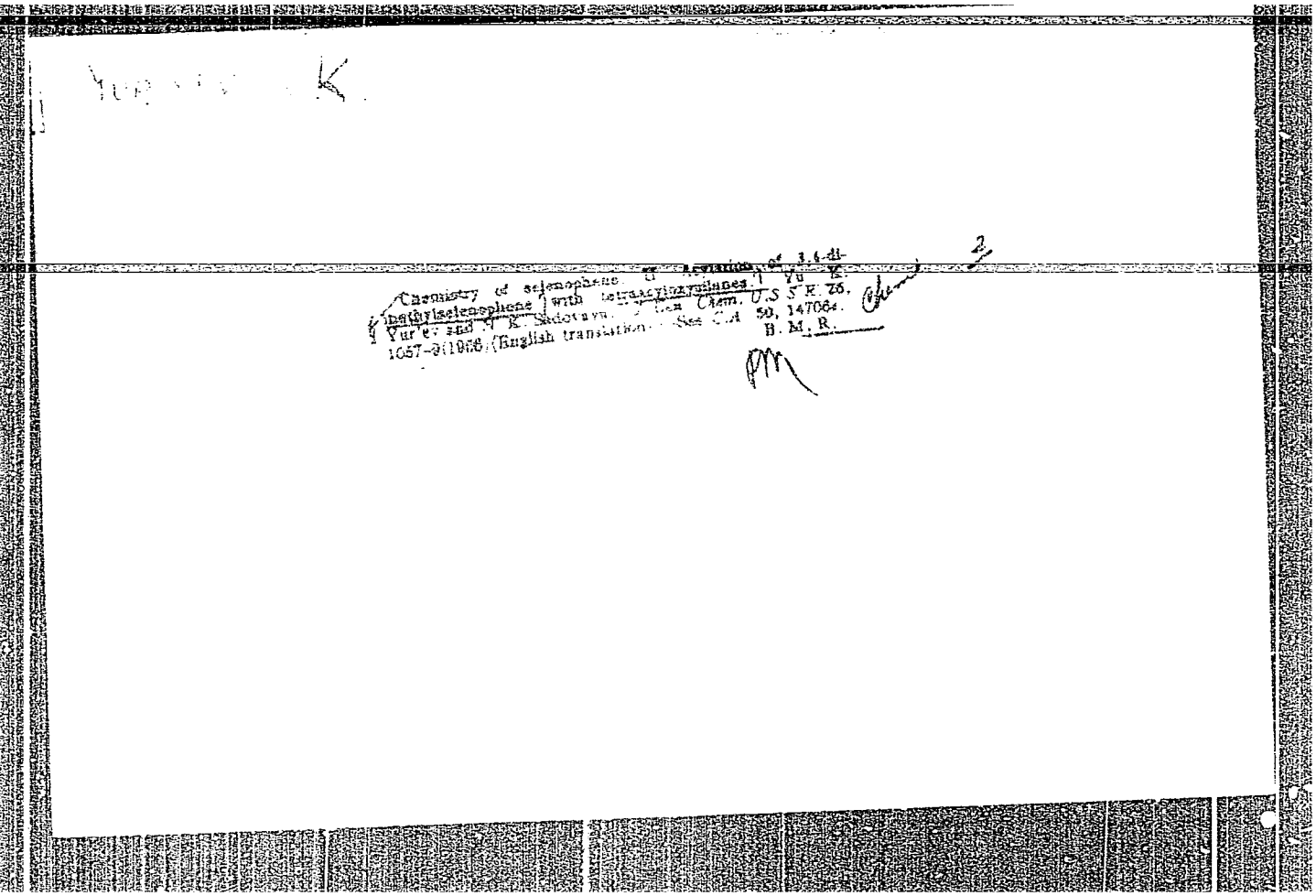
1. Moskovskiy gosudarstvennyy universitet.
(Cinnamic acid)

YUR'YEV, Yu.K.; SADOVAYA, N.K.

Chemistry of selenophene. Part 2. Acylation of 3,4-dimethylselenophene by tetraacyloxysilanes. Zhur.ob.khim. 26 no.3:930-933 Mr '56. (MLRA 9:8)

1. Moskovskiy gosudarstvennyy universitet.
(Selenophene) (Silane) (Acylation)





Yur'yev, Yu. K.

USSR/ Organic Chemistry - Synthetic organic chemistry E-2

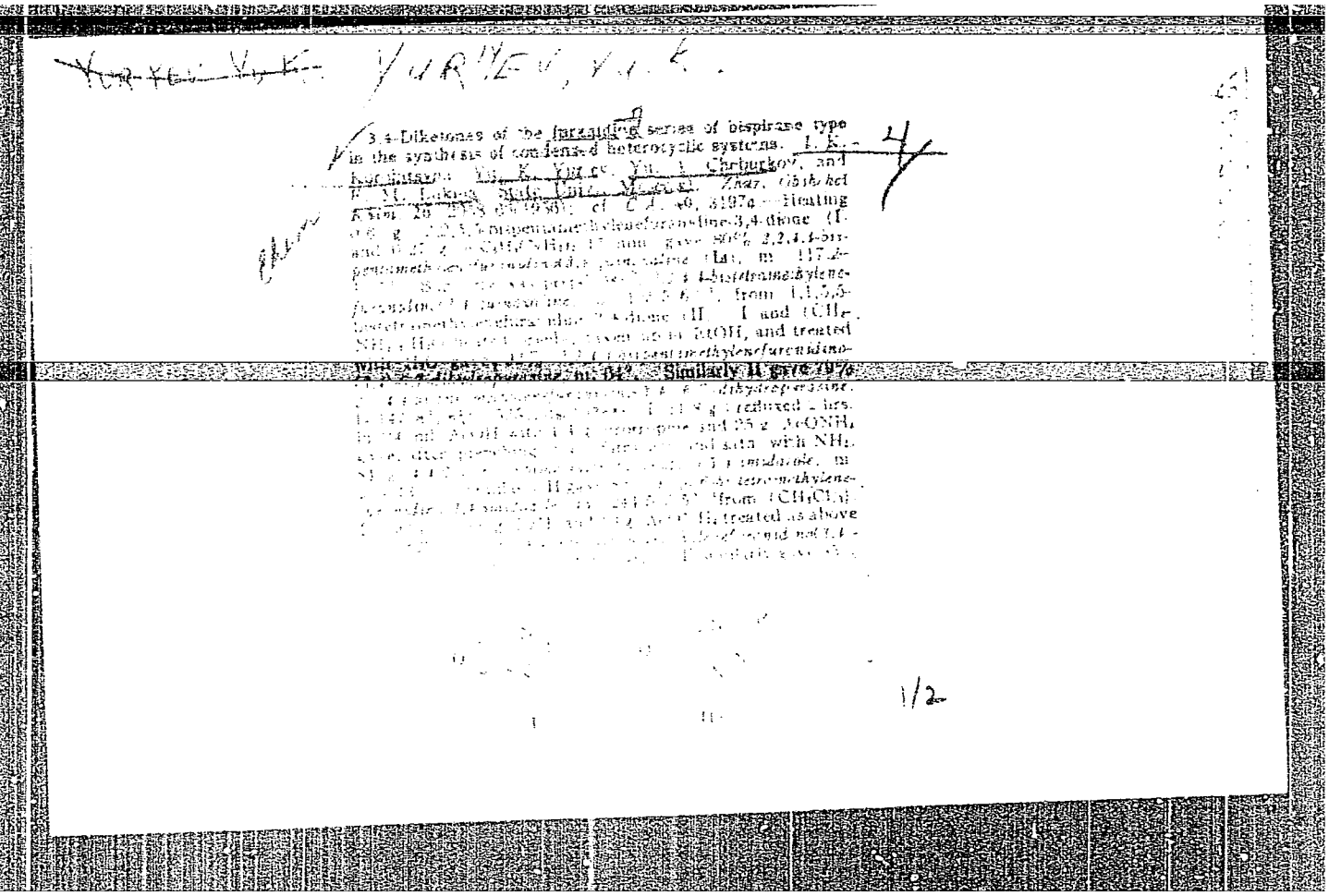
Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11649

Author : Korobitsyna I.K., Yur'yev Yu.K., Shvedova S.N.
Title : Synthesis of 1,4-Diaminobutanone-2.

Orig Pub : Zh. obshch. khimii, 1956, 26, No 6, 1660-1662

Abstract : 51 g of 1, 4-dichlorobutyne-2 are stirred for 8 hours with 2 liters of concentrated NH_4OH, acidified with concentrated HCl, evaporated 70 hours, extracted with ether; yield of 1,4-diaminobutyne-2 (I) 37%, BP 82-84°/ /6 mm, MP 41-43°. 5.4 g I in 360 ml 10% solution KOH are shaken for 3 hours with 18.4 g C_6H_5COCl to convert to N,N'-dibenzoyl-1, 4-diaminobutyne-2 (II), yield 90.3%, MP 210° (from alcohol); 15 g II; 900 ml 90% CH_3COOH and 6 g H_2SO_4 allowed to stand for 12 hours, heated 20 hours at 70-80°, filtered, solvent evaporated, added 300 ml water; yield of N,N'-dibenzoyl-1, 4-diaminobutanone-2 (III) 72%; 3 g III boiled 30 hours with 75 ml 98% CH_3COOH + 75 ml concentrated HCl (added four times 10 ml of HCl). Solution decolorized with charcoal, evaporated in vacuum, and extracted with ether. To almost dry residue added 35 ml alcohol; at 0° the hydrochloride of 1,4-diaminobutanone-2 separates out, yield 65%, MP 215-216° (decomposition).

Card 1/1



3,4-Diketones of the furazan series of bispirane type in the synthesis of condensed heterocyclic systems. I. K. Chirkunov, and

Similarly II gave 79%

Kocob, Kynay I.K, Yuzku, Yu. K. ...

2/2