"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

[illegible]GOVIK, M.Y.; [illegible], [illegible].

Study of synthetic dyes. Part [illegible]: Condensation of phenyl-β-naphthylamine to isomeric N-aryl quinaldinium salts and their transformations. Zhur. ob. khim. [illegible], no.10:[illegible]-3330 [illegible].

[illegible]

1. [illegible] Gosudarstvennyy universitet.

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CHERNYUK, I.N.; [illegible]; [illegible], A.I.; [illegible], [illegible].Y.

Study of synthetic dyes. [illegible] dinium salts and cyanine dyes prepared from them. [illegible] 34 no.10:3330-3333 [illegible]. [illegible]

.. Chernovitskiy gosudarstvennyy universitet.

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PILYUGIN, G.T.; PETRENKO, [illegible]; [illegible]

Study of synthetic dyes. Part [illegible]: [illegible] perchlorate and its transformations. Zh. [illegible] 3333-3336 [illegible]

Study of synthetic dyes. Part [illegible]: 1-[illegible]-hydroxyphenylbenzopiranadinium perchlorates and their transformation to [illegible] cyanine dyes. Ibid.: 3337-3341 [illegible]

1. Chernovitskiy gosudarstvennyy universitet.

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[illegible]

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[illegible] gosudarstvennyy universitet.

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[illegible]

"[illegible]". [illegible]
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[illegible] in [illegible]scow in 1[illegible]. [illegible]

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545 (771.534.2)

Phenyl Substituted Quinocyanines. G. T. Pilyugin and Z. Ya Krainer. *Dokl. Akad. Nauk S.S.S.R.*, 1951, 81, 609-612; *Chem. Abs.*, 1953, 47, 2070.—1-Phenylquinaldinium perchlorate has been prepared by the reaction of diphenylamine hydrochloride with paraldehyde in dioxane solution and subsequent treatment with potassium chlorate. The compound undergoes the usual cyanine dye formation, *e.g.* condensation with ethyl orthoformate in pyridine gives *bis*-(1-phenyl-2-quinoline)-trimethincyanine perchlorate, and with 2-(2-acetanilinovinyl)-3-ethylbenzthiazolium iodide gives (1-phenyl-2-quinoline)-(3-ethyl-2-benzthiazole)-trimethincyanine perchlorate. A.J.A.

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PILYUGIN, G. T.

USSR (600)

Quinoline Derivatives

Study of quinoline derivatives. Part I. N-tetraaryl salts of quinoline derivatives. Izv. AN SSSR Otd. khim nauk no , 195'.

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

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

Cyanine dyes I N-Arylquinocyanines with symmetric structure G. I. Pyrogin (Kharkov State Univ.) Izvest. Akad. Nauk S.S.S.R., Otdel. Khim. Nauk 1952, 512-10. Ph and C$_6$H$_5$ groups at the N heterocyclic atom of quinocyanines give a bathochromic shift as compared to R derivs. by 10-12 mμ and 14-18 mμ resp. The Me group in meso position of polymethine chromophore of N-aryl-quinocyanines causes a slight hypsochromic shift. Aryl groups at N heterocyclic atom of quinolinium quaternary salts activate the α-Me group. Heating 1 g. N-phenylquinaldine and 1 g. HC(OEt)$_3$ in 1.5 ml. pyridine 20 min., heating with 4 ml. EtOH, and dilu. with 4 ml. hot H$_2$O gave 25% bis(1-phenyl-2-quinolino)trimethinocyanine perchlorate, green needles, decomp. 276° (from EtOH), absorption max. 614 mμ. I or of MeC(OEt)$_3$ gave after 3 hrs. reflux and isolation by ppta. with EtOH, 18% blue bis(1-phenyl-2-quinolino-6-methyl)trimethinocyanine perchlorate decomp. 231° (from EtOH), absorption max. 610 mμ. Similarly 1-phenyl-6-methylquinaldine perchlorate and HC(OEt)$_3$ gave 38.4% bis(1-phenyl-6-methyl-2-quinolino)trimethinocyanine perchlorate blue m. 270° (from EtOH), absorption max. 630 mμ. 1-o-Tolyl-6-methylquinaldine perchlorate and HC(OEt)$_3$ gave 30.1% green bis(1-o-tolyl-6-methyl-2-quinolino)trimethinocyanine perchlorate m. 302°, absorption max. 622 mμ. I or of MeC(OEt)$_3$ gave 30% bis(1-o-tolyl-6-methyl-2-quinolino-6-methyl)trimethinocyanine perchlorate decomp. 210° (from dil. EtOH), absorption max. 618 mμ. 1-Naphthylquinaldine perchlorate and HC(OEt)$_3$ gave 25.1% bis(1-naphthyl-2-quinolino)trimethinocyanine perchlorate blue m. 235° (from dil. EtOH), absorption max. 618 mμ. Similarly was obtained 46% blue bis(1-1-naphthyl-6-methyl-2-quinolino)trimethinocyanine perchlorate decomp. 238° (from dil. EtOH), absorption max. 625 mμ, and 48% bis(1-(1-naphthyl)-6-methyl-2-quinolino-6-methyl)trimethinocyanine perchlorate, blue, decomp. 210°, absorption max. 630 mμ. 1-Phenyl-5,6-benzoquinaldine perchlorate similarly gave 41% bis(1-phenyl-5,6-benzo-2-quinolino)trimethinocyanine perchlorate, green, decomp. 267°, absorption max. 645 mμ. 1-o-Tolyl-7,8-benzoquinaldine perchlorate gave 37% bis(1-o-tolyl-7,8-benzo-2-quinolino)trimethinocyanine perchlorate, green, decomp. 267°, absorption max. 642 mμ. Similarly was obtained 22% bis(1-o-tolyl-5,6-benzo-2-quinolino)trimethinocyanine perchlorate green decomp. 287°, absorption max. 644 mμ. 1-Naphthyl-5,6-benzoquinaldine iodide gave 21% bis(1-(1-naphthyl)-5,6-benzo-2-quinolino)trimethinocyanine perchlorate green decomp. 278°, absorption max. 651 mμ.

II Carbocyanines of unsymmetric structure from deriva-

over

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tives of N-arylquinaldine and benzothiazole Ibid. 330 5. cf. P. ibid. 353. The compds. in the present series show that Ph or C6H5 groups at the betero N atom, in place of Et groups, cause a weak bathochromic shift. The absorption max. of the products are additive in respect to the corresponding symmetric mols., but intensity of absorption is less than that of the symmetric analogs. 2(2-Acetylanilinovinyl)benzothiazole-EtI (0.82 g.), 0.35 g. phenylquinaldine perchlorate, and 2 ml. pyridine refluxed 10 min. and ppd. with dil. EtOH gave 45.54% blue (1-phenyl-2-quinaldine)(3-ethyl-2-benzothiazole)trimethinecyanine perchlorate, decomp. 250°, λmax. 560 mμ. 1-Phenyl-6-methylquinaldine perchlorate and 2-methylbenzothiazole heated in pyridine with a trace of Ac2O 40 min. gave 34.6% (1-phenyl-6-methyl-2-quinaldine)(3-ethyl-2-benzothiazole)trimethinecyanine perchlorate, blue, decomp. 270°, absorption max. 587 mμ. Similarly was obtained (1-p-tolyl-6-methyl-2-quinaldine)(3-ethyl-2-benzothiazole)trimethinecyanine perchlorate, 35% decomp. 232.4°, absorption max. 588 mμ. 1-α-(1-naphthyl)-6-methylquinaldine iodide gave blue-violet (1-α-1-naphthyl-6-methyl-2-quinaldine)(3-ethyl-2-benzothiazole)trimethinecyanine iodide, 30% decomp. 233°, absorption max. 581 mμ, while 1-phenyl-5,6-benzoquinaldine perchlorate similarly gave 32% (1-phenyl-5,6-benzo-2-quinaldine)(3-ethyl-2-benzothiazole)trimethinecyanine perchlorate, decomp. 230°, absorption max. 588 mμ. 1-p-Tolyl-7,8-benzoquinaldine perchlorate similarly gave 22% blue-lilac (1-p-tolyl-7,8-benzo-2-quinaldine)(3-ethyl-2-benzothiazole)trimethinecyanine perchlorate, decomp. 227°, absorption max. 587 mμ. 1-Naphthylquinaldine perchlorate similarly gave 32.2% blue-violet (1-α-1-naphthyl-2-quinaldine)(3-ethyl-2-benzothiazole)trimethinecyanine perchlorate, decomp. 229°, absorption max. 586 mμ. Similarly were obtained (1-α-tolyl-5,6-benzo-2-quinaldine)(3-ethyl-2-benzothiazole)trimethinecyanine perchlorate, 31.4% violet decomp. 215°, absorption max. 584 mμ, and (1-α-naphthyl-5,6-benzo-2-quinaldine)(3-ethyl-2-benzothiazole)trimethinecyanine iodide, 40.7%, decomp. 230°, absorption max. 588 mμ. G. M. Kosolapoff

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PI[illegible], [illegible] T.

Dye[illegible] nd Dyeing

Cyanine dyes. P[illegible]t [illegible]. Izv. [illegible] nauk. [illegible] 3. [illegible]

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

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PILYUGIN, G. T.

Journal of Appli[illegible] Chemistry
May 1954
Industrial Orga[illegible] Chemistry

[illegible]anine dyes. III. Unsymmetrical carbocyanines from deriv-[illegible]ives of N-arylquinaldines and indolenine. G. T. Pilyugin [illegible] Zhurnal 1952, No. 4, 736—742) — Interaction of the appropriate N-arylquinoline quaternary perchlorate with 2-2'-anilinovinyl-3,3-dimethylindolenine methiodide in C_5H_5N in presence of Ac_2O gives the cyanines named in the title. Thus are prepared [1-*phenylquinol-2-yl*]-[illegible] $C_{28}H_{27}O_4N_2Cl$ (43%), m.p. 180° (decomp.), absorption max 572 mμ; [1-*phenyl-6-methylquinol-2-yl*]-[illegible] $C_{29}H_{29}O_4N_2Cl$ (44%), m.p. 215°, absorption max 578 mμ; [1-p-[illegible]*tolyl-6-methylquinol-2-yl*]-[illegible] $C_{31}H_{31}O_4N_2Cl$ (27%), m.p. 215–218° (decomp.), absorption max 580 mμ; [1-1'-*naphthyl-6-methylquinol-2-yl*]-[illegible] $C_{34}H_{31}O_4N_2Cl$ (43%), m.p. 252° (decomp.), absorption max 580 mμ; [1-*phenyl-5,6-benzquinol-2-yl*]-[illegible] $C_{33}H_{29}O_4N_2Cl$ (24%), m.p. 239° (decomp.), absorption max 580 mμ; [1-m-[illegible]*tolyl-7-[illegible]-2-yl*]-[illegible] $C_{32}H_{31}O_4N_2Cl$ [illegible] 225° (decomp.), absorption [illegible] 1-1'-*naphth*[illegible] $C_{[illegible]}H_{[illegible]}O_4N_2Cl$ [illegible] 574 [illegible] and [illegible]-*tolyl-5*[illegible]-2-yl*]-[illegible]-trimethylindolenine]trimethincyanine perchlorate, $C_{32}H_{31}O_4N_2Cl$ (26.8%), m.p. 235° (decomp.), absorption max 580 mμ, and [1-2'-*naphthyl-5,6-benzquinol-2-yl*][2-1,3,3-*trimethylindolenine*]*trimethincyanine iodide* $C_{37}H_{31}N_2I$ (22%), m.p. 248–250°, absorption max 585 mμ. The absorption max which are in EtOH, differ considerably from the means of the positions of the corresponding [illegible] dyes.

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PILYUGIN, G.T.

Synthesis of β-naphthoquinaldine phenjodide and some of its transformations. G. T. Pilyugin and E. P. Opanasenko (*Ukr. khim. Zhur.*, 1952, 18, 625–629).—β-Naphthoquinaldine (2-methyl-5 : 6-benzquinoline) phenjodide, synthesised by condensing phenyl-2-naphthylamine with paraldehyde in presence of HCl, and interaction of the product with KI, has m.p. 195–196°. Five cyanine dyes are obtained from it: (**2-1-phenyl-5 : 6-benznaphthoquinoline**)-[2-1 : 3 : 3-*trimethylindolenine*] *trimethincyanine perchlorate*, m.p. 258° (decomp.) (absorption max. at 580 mμ. in EtOH), -[2-3-*ethylbenzthiazole*] *monomethincyanine iodide*, m.p. 276 and 228° (absorption max. at 506 and 590 mμ. in EtOH, respectively), -p-*dimethylaminostyryl iodide*, m.p. 186° (decomp.) (absorption max. at 552 mμ. in EtOH) and bis-[2-1-phenyl-5 : 6-benzquinoline]trimethincyanine iodide m.p. 350° (decomp.) (absorption max. in EtOH at 645 mμ.).

R. C. Murray

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PILYUGIN, G.T.

Chemical Abstracts
May 25, 1954
Photography

Cyanine dyes. IV. Synthesis of 1-p-tolyl-5,6-benzo-quinaldinium iodide and some of its transformations. [illegible] T. Pilyugin (Inst. Org. Chem. Acad. Sci. [illegible] 1953, [illegible] 47 [illegible] A [illegible] hetero N atom of benzoquinaldine instead of [illegible] causes a bathochromic effect on abs. max. [illegible] tolyl-2-naphthylamine 3 ml. C_6H_6, 1.5 ml. [illegible] 2 ml. paraldehyde in a sealed tube 9-10 hrs. at [illegible] followed by treatment of the product with Et_2O [illegible] in EtOH, and treatment with KI gave [illegible] *benzoquinaldinium iodide* (I), yellow, m. [illegible] and 0.45 g. $HC(OEt)_3$ refluxed 0.5 hr. in 3 ml. pyridine [illegible] 42.1% green *bis(1-p-tolyl-5,6-benzo-2-quinoline)trimethinecyanine iodide*, abs. max. 644 mμ. EtOH. I with 2-(2-acetylanilinovinyl)-3,3-dimethylindolenine MeI heated in pyridine 20 min. at 120-30° gave 29% violet *(1-p-tolyl-5,6-benzo-2-quinoline)(1,3,3-trimethyl-2-indolenine)trimethinecyanine iodide*, dec. 245°, abs. max. 576 mμ. EtOH. Use of 2-(2-acetylanilinovinyl)benzothiazole-EtI similarly gave 35.4% violet *(1-p-tolyl-5,6-benzo-2-quinoline)(3-ethyl-2-benzothiazole)trimethinecyanine iodide*, dec. 269-73°, abs. max. 590 mμ. I and quinoline-MeI heated in EtOH-EtONa 15 min. gave 39.8% red *(1-p-tolyl-5,6-benzo-2-quinoline)(1-methyl-2-quinoline)monomethinecyanine iodide*, dec. 204-5°, abs. max. 578 mμ. I heated with 2-(methylthio)benzothiazole-EtI in EtOH-NaOAc 15 min. gave 54.37% yellow *(1-p-tolyl-5,6-benzo-2-quinoline)(3-ethyl-2-benzothiazole)-monomethinecyanine iodide*, dec. 221-4°, abs. max. 495 mμ. I and p-$Me_2NC_6H_4CHO$ in pyridine gave after 30-40 min. at 130-40° 45% red *2-(p-dimethylaminostyryl)-1-p-tolyl-5,6-benzoquinolinium iodide*, dec. 289-91°, abs. max. 543 mμ.

G. M. Kosolapoff

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PILYUGIN, G.T.; KRAYNER, Z.Ya.

Cyanine dyes. I. Quino-, quinoido- and quinothiacarbocyanines. Zhur. Obshchey Khim. 23, 634-43 '53. (MLRA 6:5)
(CA 47 no.20:10385 '53)

1. Chernovitsy State Univ.

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PILYUGIN, G.T.

USSR.

Cyanine dyes. I. Quino-, quinoids-, and quinothiacarbocyanines. G. T. Pilyugin and Z. Ya. Kraiuer. *J. Gen. Chem. U.S.S.R.* [illegible] 1953) (Engl. translation).—See *C.A.* 47, 10885c. IV. Synthesis of 1-*p*-tolyl-5,6-benzoquinaldinium iodide and some of its transformations. G. T. Pilyugin. *Bull. Acad. Sci. U.S.S.R., Div. Chem. Sci.* 1953, 949-54 (Engl. translation).—See *C.A.* 48, 5090i.

H. L. H.

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PILYUGIN, G. T.

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Cyanine Dyes. III. Unsymmetrical carbocyanines from derivatives of N-arylquinolines and indolenine. G. T. Pilyugin (Izvestia, 1952, No. 4, 726—742).—Interaction of [illegible] N-arylquinoline quaternary perchlorate with 2-2'-anilinovinyl-3 : 3-dimethylindolenine methiodide in C_5H_5N in presence of Ac_2O gives the cyanines named in the title. Thus are prepared: [1-phenylquinol-2-yl]-, $C_{29}H_{27}O_4N_2Cl$ (43%), m.p. 180° (decomp.), absorption max. 572 mμ.; [1-phenyl-6-methylquinol-2-yl]-, $C_{30}H_{29}O_4N_2Cl$ (44%), m.p. 215°, absorption max. 578 mμ.; [1-p-tolyl-6-methylquinol-2-yl]-, $C_{31}H_{31}O_4N_2Cl$ (27%), m.p. 215—218° (decomp.), absorption max. 580 mμ.; [1-1'-naphthyl-6-methylquinol-2-yl]-, $C_{34}H_{33}O_4N_2Cl$ (43%), m.p. 232° (decomp.), absorption max. 580 mμ.; [1-phenyl-5 : 6-benzquinol-2-yl]-, $C_{33}H_{31}O_4N_2Cl$ (29%), m.p. 230° (decomp.), absorption max. 580 mμ.; [1-m-tolyl-7 : 8-benzquinol-2-yl]-, $C_{33}H_{31}O_4N_2Cl$, m.p. 225° (decomp.), absorption max. 585 mμ.; [1-1'-naphthylquinol-2-yl]-, $C_{33}H_{31}O_4N_2Cl$ (30%), m.p. 260° (decomp.), absorption max. 574 mμ.; and [1-o-tolyl-5 : 6-benzquinol-2-yl]-[2-1 : 3 : 3-trimethylindolenine]trimethincyanine perchlorate, $C_{33}H_{31}O_4N_2Cl$ (26·8%), m.p. 235° (decomp.), absorption max. 580 mμ.; and [1-2'-naphthyl-5 : 6-benzquinol-2-yl][2-1 : 3 : 3-trimethylindolenine]trimethincyanine iodide, $C_{37}H_{34}N_2I$ (22%), m.p. 248—250°, absorption max. 585 mμ. The absorption max., which are in EtOH, differ considerably from the means of the positions of the corresponding [illegible] of symmetrical dyes.

R. C. Murray.

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Pilyugin, G.T.

USSR

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Cyanine Dyes. IV. Synthesis of 3-Methyl-4-p-Tolylbenzo[f]Quinolinium Iodide and Some of its Derivatives. G. T. PILYUGIN. *Izvestiya Akad. Nauk S.S.S.R., Otdel. Khim. Nauk*, 1953, 1068-1073.—Acid condensation of paraldehyde with N-p-tolyl-2-naphthylamine yields the previously unknown 3-methyl-4-p-tolylbenzo[f]quinolinium iodide, which is converted by well-known methods into the following dyes (wavelengths are those of absorption maxima in alcoholic solutions): bis(4-p-tolyl-3-benzo[f]quinoline)trimethincyanine iodide (644 mμ.), (4-p-tolyl-3-benzo[f]quinoline) (1 : 3 : 3-trimethyl-2-paraldoindole) trimethincyanine iodide (576 mμ.), (4-p-tolyl-3-benzo[f]quinoline) (3-ethyl-2-benzothiazole) trimethincyanine iodide (596 mμ.), (4-p-tolyl-3-benzo[f]quinoline) (1-methyl-4-quinoline) monomethincyanine iodide (578 mμ.), (4-p-tolyl-3-benzo[f]quinoline) (3-ethyl-2-benzothiazole) monomethincyanine iodide (495 mμ.), and 3-p-dimethylaminostyryl-4-p-tolylbenzo[f]quinolinium iodide (543 mμ.). With respect to the corresponding dyes having ethyl in place of p-tolyl there is a bathochromic shift of the absorption maximum of about 10 mμ.

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Pilyugin, G.T.

CA Cyanine dyes. V. Synthesis of N-arylquinaldinium quaternary salts and their transformations. G. T. Pilyugin. J. Gen. Chem. U.S.S.R. 23, 701-7(1953). See C.A. 49, 10108e. H. L. H.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

Cyanine dyes. V. Synthesis of *N*-arylquinaldinium [illegible] and their transformations. G. T. Pilyugin (State Univ., Chernovitsi). *Zhur. Obshchei Khimii* [illegible] 191-202(1955); cf. *C.A.* 49, 4427g.—Heating 5 g. 1-C_6H_5-NHC_6H_4-3, 2 ml. concd. HCl, 5 ml. C_6H_6, 0.5 ml. $PhNO_2$, and 2.5 ml. paraldehyde in a sealed tube 9–10 hrs. at 100° gave, after washing with Et_2O and extn. with EtOH, followed by addn. of KI, 26.6% *N-(2-naphthyl)-7,8-benzoquinaldinium iodide*, decomp. 230° (from dil. EtOH). This (1 g.), 0.2 g. $HC(OEt)_3$, and 3 ml. pyridine refluxed 3 hrs. gave 19% blue *bis(N-2-naphthyl-7,8-benzo-2-quinaline)trimethinecyanine iodide*, decomp. 270°, abs. max. 648 mμ (EtOH). Similarly, 3 g. *p*-HOC_6H_4NHPh, 3 ml. C_6H_6, 1.5 ml. concd. HCl, 0.5 ml. $PhNO_2$, and 2.5 ml. paraldehyde gave in 0.7 hrs. 13.7% orange *N-phenyl-6-hydroxyquinaldinium iodide*, decomp. 178–80°; this with $HC(OEt)_3$ in pyridine 0.5 hr. gave 12.5% *bis(N-phenyl-6-hydroxy-2-quinaline)trimethinecyanine iodide*, abs. max. 626 mμ (EtOH). Similar reaction of $(o\text{-}MeC_6H_4)_2NH$ with paraldehyde, C_6H_6, and $PhNO_2$ in the presence of $HClO_4$ gave in 8–10 hrs. at 100° 18.6% orange *N-(o-tolyl)-6-methylquinaldinium perchlorate*, decomp. 180–1°; this with $HC(OEt)_3$ in pyridine gave 24.5% green *bis(1-o-tolyl-6-methyl-2-quinoline)trimethinecyanine perchlorate*, decomp. 262°, abs. max. 623 mμ (EtOH). Similar condensations with $C(OEt)_4$ gave, resp.: 12% *bis(N-phenyl-6-hydroxy-2-quinoline)-8-methyltrimethinecyanine iodide*, decomp. 231–2°, abs. max. 630 mμ (EtOH); 13.7% violet *bis(1-o-tolyl-6-methyl-2-quinoline)-8-methyltrimethinecyanine per-*

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

G. T. Pilyugin

chlorate, decomp. 196–8°, abs. max. 617 mμ (EtOH). Heating 0.54 g. *N*-(2-naphthyl)-7,8-benzoquinaldinium iodide, 0.5 g. 2-[2-(acetylanilino)vinyl]benzothiazole-EtI, and 3 ml. pyridine 40 min. gave 27% violet (*N-2-naphthyl-7,8-benzo-2-quinoline*)(*3-ethyl-2-benzothiazole*)*trimethinecyanine iodide*, decomp. 235°, abs. max. 500 mμ (EtOH). Similarly was prepd. 19% violet (*1-o-tolyl-8-methyl-2-quinoline*)(*3-ethyl-2-benzothiazole*)*trimethinecyanine perchlorate*, decomp. 227–8°, abs. max. 584 mμ (EtOH). The condensation of the quinaldinium salts with 2-[2-(acetylanilino)vinyl]-3,3-dimethylindolenine-MeI in pyridine similarly gave: 22.4% (*N-2-naphthyl-7,8-benzo-2-quinoline*)(*1,3,3-trimethylindolenine-2*)*trimethinecyanine iodide*, decomp. 261°, abs. max. 584.5 mμ (EtOH), and 32.7% (*1-o-tolyl-8-methyl-2-quinoline*) (*1,3,3-trimethylindolenine-2*)*trimethinecyanine perchlorate*, decomp. 208–9°, abs. max. 565 mμ (EtOH). Condensation of the quaternary quinaldinium salts with *p*-$Me_2NC_6H_4CHO$ in pyridine with a little Ac_2O gave in 20–40 min.: 20.8% violet *2-(p-dimethylamino-*

styryl)-N-2-naphthyl-7,8-benzoquinolinium iodide, decomp. 253°, abs. max. 550 mμ (EtOH); 32% violet *2-(p-dimethylaminostyryl)-N-phenyl-6-hydroxy-2-quinolinium iodide*, decomp. 208–9°, abs. max. 542 mμ (EtOH); 27% red-brown *2-(p-dimethylaminostyryl)-N-o-tolyl-8-methyl-2-quinolinium perchlorate*, decomp. 215°, abs. max. 546 mμ. G. M. K.

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PILYUGIN, G.T.; CHERNYUK, I.N.

Synthetic dyes. Part 34: Synthesis of 1-α-naphthyl-6-chloroquinaldinium and its transformation into cyanine dyes. Zhur.ob.khim. 34 no.1:201-204 Ja 64. (MIRA 17:3)

1. Chernovitskiy gosudarstvennyy universitet.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4"

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E-2

USSR/ Organic Chemistry - Synthetic organic chemistry

Abs Jour : Referat Zhur - Khimiya, No 4, 1957, 11746

Author : Pilyugin G.T., Krayner Z.Ya

Title : Investigations of Cyanin Dyestuffs VI N-m-Nitrophenyl Quinaldinium Perchlorate and Its Conversions

Orig Pub : Zh. obshch. khimii, 1955, 25, No 12, 2271-2274

Abstract : On condensation of m-nitrodiphenylamine with paraldehyde there has been synthesized the perchlorate of N-(m-nitrophenyl)-quinaldinium (I). A proof of the structure of I is provided by the posotion of the maximum of absorption of the derived therefrom carbocyanin, which is close to the absorption maximum of the analogous dyestuff having a phenyl radical at the N-atom. Condensation of I with orthoformic ester, methyl iodide of 2-β-acetanilidovinyl-3,3-dimethylindolenin, ethyl iodide of 2-β-acetanilidovinyl benzothiazole or ethyl iodide of quinoline, there have been prepared symmetrical and unsymmetrical cyanin dyes. In a sealed tube are heated 4 g m-nitrodiphenylamine, 4 ml paraldehyde, 2 ml concentrated HCl and 6 ml of dioxane, for 25 minutes at 100°; after treating with ether, by dissolution in alcohol and addition of an

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BILYUGIN, G.T.; LEBEDEVA, S.V.

Synthetic dyes. Part 42: Condensation of N-aryl quinaldinium salts with acetanilinomethylenerhodanine. Zhur. obshch. khim. 35 no.4:647-649 Ap '65. (MIRA 18:5)

1. Chernovitskiy gosudarstvennyy universitet.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

PILYUGIN, O. T.

2

Quaternary salts of *N*-arylquinaldine. O. T. Pilyugin. U.S.S.R. 105,287, Apr. 25, 1957. The quaternary salts of the title compd. are obtained from secondary aromatic amines. $Ph_2NH.HCl$ or $(4\text{-}MeC_6H_4)_2NH.HCl$ is condensed, by heating with vinyl butyrate in C_6H_6. From the product, *N*-arylquinaldine quaternary salts are sepd. by the usual methods. M. Hosch

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

PETRENKO, O.Ye.; PILYUGIN, G.I. [illegible] Ye.I.

Synthetic dyes. Part 42. Styryl dyes from derivatives N-aryl quinaldinium salts. Zhur. org. khim. [illegible] 1486 Ag '65.

1. Chernovitskiy gosudarstvennyy [illegible]

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

[illegible], G.I.; [illegible] K. [illegible]; [illegible]

[illegible]ynthetl dye[illegible]. [illegible] derivatives. [illegible]hur. org. [illegible]. [illegible] (MIRA [illegible])

[illegible]. Chernovitskiy gosudarstvennyy [illegible]. [illegible]ubmitted [illegible]ugust 8, [illegible].

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

CHERNYUK, I.N.; PILYUGIN, G.T.; ZLOCHEVSKAYA, A.V.

Synthetic dyes. Part 65: N-2,5-dichlorophenyl-5,6-benzoquinaldinium salts and cyanine dyes obtained from them. Zhur. org. khim. 1 no.6:1129-1132 Je '65. (MIRA 18:7)

1. Chernovitskiy gosudarstvennyy universitet.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

PILYUGIN, G.T.; PETRENKO, O.Ye.

Synthetic dyes. Part 50. Synthesis of N-o-nitrophenyl-5,6-benzoquinaldinium perchlorate and its transformations. Zhur. org. khim. 1 no.6:1143-1147 Je '65. (MIRA 18:7)

1. Chernovitskiy gosudarstvennyy universitet.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

PILYUGIN, G.T.; GUTSULYAK, B.M.; GORICHOK, Ya.O.

Synthetic dyes. Part 3: Condensation of 1-aryl lepidinium salts with Michler ketone and auramine. Zhur. ob. khim. 34 no.7:2421-2426 Jl '64 (MIRA 17:8)

1. Chernovitskiy gosudarstvennyy universitet.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

[illegible], G. [illegible]; [illegible], B. M.; [illegible]

Synthet[illegible]. Part 3[illegible] Synth[illegible]
1,2-diaryl lepidinium salts. [illegible]
[illegible]
1. [illegible]

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

PILYUGIN, G.T.; SHINKORENKO, S.V.

Synthetic dyes. Part 32: Condensation of N-aryl quinaldinium salts with aromatic nitro compounds. Zhur.ob.khim. 33 no.10: 3223-3228 O '63. (MIRA 16:11)

1. Chernovitskiy gosudarstvennyy universitet.

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

PILYUGIN, G.T.; OPANASENKO, Ye.P.; P[illegible], [illegible].Ye.

Synthetic dyes. Part 33: Synthesis of 1-o-methoxyphenyl-7, 8-benzoquinaldinium perchlorate and its transformations. Zhur.ob.khim. 33 no.10:3228-3231 O '63. (MIRA 16:11)

1. Chernovitskiy gosudarstvennyy universitet.

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

PILYUGIN, G.T.; GUTSULYAK, B.M.

Advances in the field of synthesis, studies, and uses of quinolinium compounds. Usp.khim. 32 no.4:389-432 Ap '63. (MIRA 16:5)

1. Chernovitskiy gosudarstvennyy universitet, kafedra organicheskoy khimii.

(Quinolinium compounds)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

PILYUGIN, G.T.; OPANASENKO, Ye.P.; ISAK, A.M.

Synthetic dyes. Part 25: Synthesis of isomeric N-arylquinaldinium salts and their transformation to cyanine dyes. Zhur.ob.khim. 32 no.5:1398-1403 My '62. (MIRA 15:5)

1. Chernovitskiy gosudarstvennyy universitet.
(Quinaldinium compounds) (Cyanine dyes)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

PILYUGIN, G.T.; CHERNYUK, I.N.

Synthetic dyes. Part 26: Synthesis of 1-p-chlorophenyl-5,6-benzoquinaldinium salts and their transformation to cyanine dyes. Zhur.ob.khim. 32 no.5:1404-1408 My '62. (MIRA 15:5)

1. Chernovitskiy gosudarstvennyy universitet.
(Quinaldinium compounds) (Cyanine dyes)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

PILYUGIN, G.T.; SHINKORENKO, S.V.

Synthetic dyes. Part 27: Synthesis of azomethines by the condensation of N-arylquinaldinium slats with nitroso compounds. Zhur.ob.khim. 32 no.5:1408-1411 My '62. (MIRA 15:5)

1. Chernovitskiy gosudarstvennyy universitet.
(Azo dyes) (Quinaldinium compounds) (Nitroso compounds)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

PILYUGIN, G.T.; DOMBROVSKIY, A.V.; GUTSULYAK, B.M.; GANUSHCHAK, N.I.

Synthetic dyes. Part 28: Synthesis of quinocyanine dyes with a complex unsaturated radical at a nitrogen heteroatom. Zhur.ob. khim. 32 no.5:1411-1415 My '62. (MIRA 15:5)

1. Chernovitskiy gosudarstvennyy universitet.
(Cyanine dyes)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

PILYUGIN, G.T., SHINKOMENKO, S.V.

Synthetic dyes. Part 29. Synthesis of [illegible]-tolyl[illegible]-benzoquinaldinium salts and their conversions to azo- and azomethine dyes. Zhur. [illegible] Khim. 32 no.7 [illegible] 1962. (MIRA 15:[illegible])

1. Chernovitskiy gosudarstvennyy universitet.
(Quinaldinium compounds) (Methyleneimine) (Dyes and dyeing)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

PILYUGIN, G.T., GUTSULYAK, B.M., ZLOCHEVSKAYA, A.V

Synthetic dyes. Part [illegible] Synthesis of asymmetric carbocyanines bases on some aryllepidine salts. Zhur.ob.khim. 32 no.7:[illegible]-2205 Jl '6[illegible]. (MIRA 1[illegible]:7)

1. Chernovitskiy gosudarstvennyy universitet.
(Cyanine dyes) (Lepidine)

APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

PILYUGIN, G.T., CHERNYUK, I.N., KORNUTA, P.P.

Synthetic dyes. Part 31. Styryl dyes from N-arylquinaldinium salts. Zhur ob.khim. 32 no.7 2205-2207 Jl 62. (MIRA [illegible])

1. Chernovitskiy gosudarstvennyy universitet.
(Dyes and dyeing) (Quinaldinium compounds)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

PILYUGIN, G.T.; GUTSULYAK, B.M.

Synthetic dyes. Part 23: Synthesis of N-(p-hydroxyphenyl)-6-hydroxylepidinium iodide and its derivatives. Zhur.ob.khim. 32 no.4:1050-1055 Ap '62. (MIRA 15:4)

(Lepidinium compounds)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

PILYUGIN, G.T.; CHERNYUK, I.N.

Synthetic dyes. Part 24: Styryl dyes from derivatives of 1-arylquinaldinium salts. Zhur.ob.khim. 32 no.4:1055-1057 Ap '62. (MIRA 15:4)

1. Chernovitskiy gosudarstvennyy universitet.
(Dyes and dyeing) (Quinaldinium compounds)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

PILYUGIN, G.T.; OPANASENKO, Ye. P.

Synthetic dyes. Part 18: Synthesis of isomeric N-arylquinaldinum salts and their conversions. Zhur. ob. khim. 31 no.4:1233-1240 Ap '61. (MIRA 14:4)

1. Chernovitskiy gosudarstvennyy universitet.
(Quinaldinium compounds)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

PILYUGIN, G.T.; CHERNYUK, I.N.

Synthetic dyes. Part 21: Styryls form derivatives of quaternary N-arylquinaldinium salts. Zhur. ob. khim. 31 no.4:1240-1244 Ap '61. (MIRA 14:4)

1. Chernovitskiy gosudarstvennyy universitet.
(Quinaldinium compounds)

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PILYUGIN, G.T.; CHERNYUK, I.N.

Synthetic dyes. Part 22: Styryl dyes from the derivatives of N-arylquinaldinium salts. Zhur.ob.khim. 31 no.5:1585-1587 My '61. (MIRA 14:5)

1. Chernovitskiy gosudarstvennyy universitet.
(Dyes and dyeing) (Quinaldinum compounds)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

PILYUGIN, G.T.; CHERNYUK, I.N.

Synthetic dyes. Part 19: Styryls from the derivatives of N-arylquinaldinium quaternary salts. Zhur. ob. khim. 30 no.12:4038-4041 D '60. (MIRA 13:12)

1. Chernovitskiy gosudarstvennyy universitet.
(Quinaldinium compounds) (Benzaldehyde)
(Dyes and dyeing)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

PILYUGIN, G.T.; GUTSULYAK, B.M.

Synthetic dyes. Part 20: Cyclization of p,p'-ditolylamine to a quaternary lepidinium salt and some of its conversions. Zhur. ob. khim. 31 no. 2:623-626 F '61. (MIRA 14:2)

1. Chernovitskiy gosudarstvennyy universitet.
(Ditolylamine) (Lepidinium compounds)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

S/079/60/030/05/55/074
B005/B125

AUTHORS: Pilyugin, G. T., Shinkorenko, S. V.

TITLE: Investigations in the Field of Synthetic Dyes. XVII. The Synthesis of Azomethins by the Condensation of Quaternary N-Aryl Quinaldinium Salts With α-Nitroso-β-naphthol

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 5, pp. 1656-1660

TEXT: In their researches on azomethin compounds the authors of the present report investigated the reactions of several quaternary N-aryl quinaldinium salts, synthesized for the first time, with α-nitroso-β-naphthol. These reactions led to the formation of interionic azomethin dyes. The scheme of the reaction is given. The reactions of the N-aryl quinaldinium salts were studied with the following aryl residues: Ar = C_6H_5; p-CH_3-C_6H_4; α-$C_{10}H_7$; β-$C_{10}H_7$. The anion of the salts was I^- or ClO_4^-. The structure of the dyes which formed was determined by chemical analysis and by spectrophotometric studies. The deep coloration of the synthesized color bases brightens strongly with the acidifying of the

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

Investigations in the Field of Synthetic Dyes. XVII. The Synthesis of Azomethins by the Condensation of Quaternary N-Aryl Quinaldinium Salts With α-Nitroso-β-naphthol

S/079/60/030/05/55/074
B005/B125

alcohol solutions, as corresponds to the transformation of the bases in the salts. Interionic dyes assume different colorations in various solvents (Ref. 5). Likewise the azomethin dyes obtained by the authors show solvatochromism. A table shows the absorption maxima of the synthesized dyes in the visible range of the spectrum in seven different solvents (ethanol, methanol, chloroform, benzene, acetone, dioxane, carbon tetrachloride). From this table it can be seen that all the dyes which contain the quinoline grouping give two absorption maxima in chloroform, benzene, acetone, and dioxane, the first of which is close to the absorption maxima in the other solvents, while the second is shifted from 20-40 mμ in the region of longer waves. Substitutes in the quinoline nucleus and at the nitrogen atom of the quinoline ring hardly influence the coloration. In contrast to ethanol solutions a hypsochromic shift of the absorption maximum of about 13-17 mμ occurs in methanol solutions. This phenomenon is discussed in the paper. Fig. 1 shows the absorption spectra of one of the synthesized dyes in the seven solvents mentioned above; Fig. 2 shows the corresponding seven absorption spectra of an azomethin dye which

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

Investigations in the Field of Synthetic Dyes S/079/60/030/05/55/074
XVII. The Synthesis of Azomethins by the Conden- B005/B125
sation of Quaternary N-Aryl Quinaldinium Salts
With α-Nitroso-β-naphthol

contains a benzoquinoline ring as perichromic grouping. The dyes of this type show a bathochromic shift of the absorption maximum in all the solvents investigated with the exception of the two alcohols; this is in contrast to the absorption maxima of the dyes with the quinoline ring as perichromic grouping. Besides, these dyes show only one absorption maximum in chloroform and acetone. All of the synthesized azomethin dyes are very sensitive to light. Their solutions fade entirely within 10-15 hours. The solutions in carbon tetrachloride are especially light-sensitive; they fade in 30 minutes. All of the syntheses carried out are thoroughly described in the experimental section. The absorption curves were taken on a self-recording spectrophotometer of the type SF-2M. There are 2 figures, 1 table, and 6 references, 5 of which are Soviet.

ASSOCIATION: Chernovitskiy gosudarstvennyy universitet (Chernovtsy State University)

SUBMITTED: April 15, 1959

Card 3/3

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

PHASE I [illegible]

Sovremennye problemy khimii, tekhnologii i primeneniya piridina i khinolina. Riga, [illegible]

Khimiya, tekhnologiya i primeneniye [illegible] piridina i khinolina. materialy soveshchaniya. Chemistry, Technology and Utilization of Pyridine and Quinoline Derivatives. Materials of the Conference. Riga. Izd-vo AN Latviyskoy SSR, 1960. 299 p. Errata slip inserted. [illegible] copies printed.

Sponsoring Agencies: Akademiya nauk Latviyskoy SSR. Institut khimii. Vsesoyuznoye khimicheskoye obshchestvo.

Ed. S. Barbanova, Tech. Ed. A. Kiyavinya. Editorial Board: Yu. A. Bankovskiy, Candidate of Chemistry, E. V. Vanaga, Candidate of Chemistry, Resp. Ed. [illegible] L. P. Zalukayev, Doctor of Chemistry, and M. M. Kainyn.

PURPOSE: This book is intended for organic chemists and chemical engineers.

COVERAGE: The collection contains [illegible] articles on methods of synthesizing or producing pyridine, quinoline and their derivatives from natural [illegible]. No personalities are mentioned. Figures, tables, and references accompany the articles.

Zhuravlev, L. P., [illegible] and [illegible] Kalnyn'sh [illegible] (Riga State Institute for Chemical Technology [illegible]). Merkaptoyev]. Some Reactions of 3-Hydroxy[illegible] Tetrahydroquinolines [illegible]

Pilyugin, Ye. T. [Chernovitskiy gosudarstvennyy universitet (Chernovtsy State University)]. The Interaction of N-aryl quinaldine Quaternary Salts with Diazo Compounds [illegible]

Vaynshteyn, M. S., L. I. Lukashina, and S. [illegible] Dvylyve [All-Union Scientific Research Institute for Semifinished Products and Dyes, Ministry of the Chemical Industry, USSR]. Cyanoacetal and Cyanomethyl Derivatives of Some Nitrogen Containing Heterocyclic Compounds [illegible]

IV. THE USE OF DERIVATIVES OF THE QUINOLINE SERIES IN ANALYTICAL CHEMISTRY

Tinovskaya, Ye. S. [Kostromskoy sel'skokhozyaystvennyy institut (Kostroma Agricultural Institute)]. The Use of 8-Hydroxyquinoline in Chemical Analysis [illegible]

Bankovskiy, Yu. A., A. P. Lyevinshan, and V. I. Kuznetsov [Chemical Institute of the Academy of Sciences Latviyskaya SSR]. 8-Mercaptoquinoline (Thioöxine) as an Analytical Reagent 271

Mikhaylov, O. I. [All-Union Scientific Research Institute for Chemical Reagents]. Studies in the Synthesis of 1,10-Phenanthroline 283

Babko, A. K., and M. M. Tananayko [Kiyevskiy gosudarstvennyy universitet imeni T. G. Shevchenko (Kiyev State University imeni T. G. Shevchenko)]. Study of Complex Formation in the System: Metal Ion - Rhodanide (Iodide) - Organic Base 289

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

PILYUGIN, G.T.; SHINKORENKO, S.V.

Synthetic dyes. Part 17: Synthesis of azomethines via the condensation of quaternary N-arylquinaldinium salts with α-nitroso-β-naphthol. Zhur.ob.khim. 30 no.5:1656-1660 My '60. (MIRA 13:5)

1. Chernovitskiy gosudarstvennyy universitet.
(Methylenimine) (Quinaldinium compounds)
(Naphthol)

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

S/079/60/030/04/57/000
B001/B011

AUTHORS: Pilyugin, G. T., Gutsulyak, B. M.

TITLE: Investigations in the Field of Synthetic Dyes. XV. Synthesis of N-p-Tolyl 6-methyl Lepidinium Iodide and Its Conversions

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 4, pp. [illegible]

TEXT: The authors had shown previously (Ref. 1) that an ortho ring formation of the secondary aromatic amines of symmetrical and asymmetrical structure with paraldehyde, acetaldehyde, formaldehyde, paraformaldehyde, acetone, and vinyl ethers is possible; N-aryl quinolinium-, quinolinium-, and lepidinium derivatives are formed in this connection. The reaction with p,p'-ditolyl amine was carried out by using the Beyer reaction with the aromatic amine (Ref. 2), and the quaternary salt was obtained according to Scheme 1. The synthesized quaternary salt 1-p-tolyl-6-methyl lepidinium iodide (I) was used for the synthesis of the cyanine dyes (Table). The dyes:

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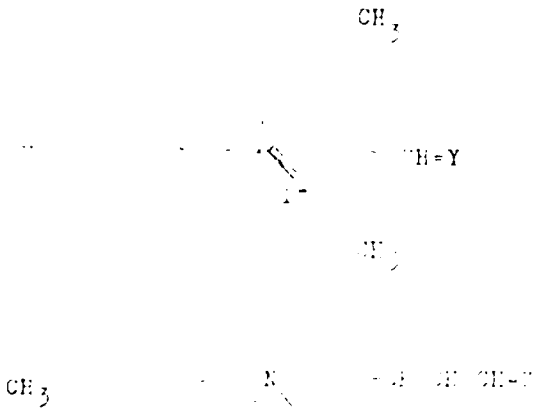
Investigations in the Field of Synthetic Dyes. XV. Synthesis of N-p-Tolyl-6-methyl Lepidinium Iodide and Its Conversions

S/C[illegible] BOC[illegible]/BC[illegible]



In the table, the Y- and Z-components, the absorption maxima [illegible]

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Investigations in the Field of Synthetic Dye [illegible]
XV. Synthesis of N-p-Tolyl-[illegible] [illegible]
Iodide and Its Conversions

[illegible] ined, are compared with the [illegible]
N phenyl lepidinium iodide. The absorption [illegible]
[illegible] details in the experimental part [illegible]
[illegible] refer [illegible] of which is Soviet.

ASSOCIATION: Chernovitskiy [illegible]
University

SUBMITTED: February [illegible], [illegible]

Card 3/3

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S/07[illegible]/60/030/04 [illegible]
B001/B011

AUTHORS: Pilyugin, G. T., Opanasenko, Ye. P.

TITLE: Investigations in the Field of Synthetic Dyes. XVI [illegible] of Oxy- and Alkoxy substituted Quaternary N Ary[illegible] Salts and Their Conversions

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 4, [illegible]

TEXT: In continuation of their investigations (Refs. 1 [illegible] secondary aromatic amines of a symmetrical and asymmetr[illegible] aldehydes, vinyl ethers, and acetone (with resulting [illegible] dinium, and lepidinium salts, which, in turn, were converted [illegible] [illegible] methoxy phenyl o-naphthyl amine, o-methoxy phenyl [illegible] [illegible] and vinyl n-butyl ether in [illegible] be seen from this scheme that salts of an [illegible] structure [illegible] the condensation of asymmetrical amines. The following salts [illegible] and examined as a result of this investigation: (I), (II), (IV) [illegible] products were found in this connection. Their structure [illegible]

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Investigations in the Field of Synthetic Dyes. S/[illegible]
XVI. Synthesis of Oxy and Alkoxy-substituted BOO[illegible], BO[illegible]
Quaternary N-Arylquinaldinium Salts and Their Conversions

analytical way and by the absorption spectra of the symmetrical [illegible] obtained from them. Thus, the following hitherto undescribed [illegible] were synthesized: 1-p oxyphenyl [illegible] oxyquinaldinium [illegible] naphthyl 6 methoxyquinaldinium iodide and 1 [illegible] methoxy [illegible] quinaldinium perchlorate. Carbocyanines with a symmetrical [illegible] synthesized from these salts, and their absorption curves were [illegible] the visible spectrum region. Dyes (VI), (VII), (VIII), (IX), (X) were [illegible] tained by condensation of quaternary salts with orth[illegible] diagram shows the absorption curves of these dyes. The [illegible] the dyes confirm the well known principle that the [illegible] influence on the color and that the shifts of the maxima [illegible] [illegible] of the spectrometric determinations. There are [illegible]

[illegible] University)

SUBMITTED: February 2[illegible], 19[illegible]

Card 2/2

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

S/079/60/030/05/55/074
B005/B125

AUTHORS: Pilyugin, G. T., Shinkorenko, S. V.

TITLE: Investigations in the Field of Synthetic Dyes. XVII. The Synthesis of Azomethins by the Condensation of Quaternary N-Aryl Quinaldinium Salts With α-Nitroso-β-naphthol

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 5, pp. 1656-1660.

TEXT: In their researches on azomethin compounds the authors of the present report investigated the reactions of several quaternary N-aryl quinaldinium salts, synthesized for the first time, with α-nitroso-β-naphthol. These reactions led to the formation of interionic azomethin dyes. The scheme of the reaction is given. The reactions of the N-aryl quinaldinium salts were studied with the following aryl residues: Ar = C_6H_5; p-CH_3-C_6H_4; α-$C_{10}H_7$; β-$C_{10}H_7$. The anion of the salts was I^- or ClO_4^-. The structure of the dyes which formed was determined by chemical analysis and by spectrophotometric studies. The deep coloration of the synthesized color bases brightens strongly with the acidifying of the

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Investigations in the Field of Synthetic Dyes XVII. The Synthesis of Azomethins by the Condensation of Quaternary N-Aryl Quinaldinium Salts With α-Nitroso-β-naphthol

S/079/60/030/05/55/074
B005/B125

alcohol solutions, as corresponds to the transformation of the bases in the salts. Interionic dyes assume different colorations in various solvents (Ref. 5). Likewise the azomethin dyes obtained by the authors show solvatochromism. A table shows the absorption maxima of the synthesized dyes in the visible range of the spectrum in seven different solvents (ethanol, methanol, chloroform, benzene, acetone, dioxane, carbon tetrachloride). From this table it can be seen that all the dyes which contain the quinoline grouping give two absorption maxima in chloroform, benzene, acetone, and dioxane, the first of which is close to the absorption maxima in the other solvents, while the second is shifted from 20-40 mμ in the region of longer waves. Substitutes in the quinoline nucleus and at the nitrogen atom of the quinoline ring hardly influence the coloration. In contrast to ethanol solutions a hypsochromic shift of the absorption maximum of about 13-17 mμ occurs in methanol solutions. This phenomenon is discussed in the paper. Fig. 1 shows the absorption spectra of one of the synthesized dyes in the seven solvents mentioned above; Fig. 2 shows the corresponding seven absorption spectra of an azomethin dye which

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Investigations in the Field of Synthetic Dyes S/079/60/030/05/55/074
XVII. The Synthesis of Azomethins by the Condensation of Quaternary N-Aryl Quinaldinium Salts With α-Nitroso-β-naphthol B005/B125

contains a benzoquinoline ring as perichromic grouping. The dyes of this type show a bathochromic shift of the absorption maximum in all the solvents investigated with the exception of the two alcohols; this is in contrast to the absorption maxima of the dyes with the quinoline ring as perichromic grouping. Besides, these dyes show only one absorption maximum in chloroform and acetone. All of the synthesized azomethin dyes are very sensitive to light. Their solutions fade entirely within 10-15 hours. The solutions in carbon tetrachloride are especially light-sensitive; they fade in 30 minutes. All of the syntheses carried out are thoroughly described in the experimental section. The absorption curves were taken on a self-recording spectrophotometer of the type SF-2M. There are 2 figures, 1 table, and 6 references, 5 of which are Soviet.

ASSOCIATION: Chernovitskiy gosudarstvennyy universitet (Chernovtsy State University)

SUBMITTED: April 15, 1959

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

AUTHOR: Filyagin, G. T., Shinkorenko, S. V.

TITLE: Investigations in the Field of Synthetic Dyes XII. Synthesis of Azoazoderivatives of the Salts of N-Arylquinaldinium

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 8, pp 2760 - 2763 (USSR)

ABSTRACT: With reference to the papers mentioned in references [illegible] A. Ye Porray-Koshits and co-workers) the authors pointed out (Ref 9) that the quaternary salts of N-arylquinaldinium may rather easily be condensed with diazonium salts while azo [illegible] are formed. Special attention was paid to the reaction of these quaternary salts with stable diazo compounds, diazo[illegible] benzene and sodium-n-nitrophenyldiazotate. The reaction [illegible] place according to scheme A and B. In the reaction of the [illegible] nary salts of quinaldinium with diazobenzene the latter [illegible] under splitting off the weakly basic aniline. This leads [illegible] the saline dye (A). In the condensation of the salts with [illegible] dium-n-nitrophenyldiazotate a protonization of the [illegible] takes place while the strongly basic dye (B) is [illegible]

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Investigations in the Field of Synthetic Dyes. XII. SOV/79-29-8-7-
Synthesis of Monoazoderivatives of the Salts of N-Arylquinaldinium

condensation of quaternary salts with n-nitrodiazoamin[illegible] failed. By comparing the absorption spectra of the dyes [illegible] tained (Figure) it may be seen that compounds with a [illegible] nucleus (A) have an absorption with only one maximum [illegible] with benzoquinoline as color-producing component have [illegible] absorption maxima. If the dye solutions are acidified, a [illegible] hypsochrome deposition connected with a change of the [illegible] color into yellow one takes place. Thus, 6 monoazo dyes [illegible] synthesized, 3 as salts and 3 as bases. There are 1 figure and 11 references, 7 of which are Soviet.

ASSOCIATION: Chernovitskiy gosudarstvennyy universitet (Chernovtsy [illegible] University)

SUBMITTED: April 2, 1958

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

5(3)

AUTHORS: Pilyugin, G. T., Opanasenko, Ye. P. SOV/7[illegible]/76

TITLE: Investigations in the Field of Artificial [illegible] XIII. [illegible] methine Quinothiacyanines of Unsymmetrical Structure

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr [illegible], pp [illegible] (USSR)

ABSTRACT: In continuation of the papers of references 1-4 concerning the spectroscopic investigations of the cyanine dyestuffs the authors synthesized monomethine cyanine of unsymmetrical structure with aromatic and alkyl radicals at the hetero-rings of the molecules as well as dyestuffs containing [illegible] radicals. Similar compounds have hitherto been unknown (Refs 5-8). In the present paper cyanines were synthesized by the reaction of quaternary salts of heterocyclic bases with thiacyclic imines, mercapto derivatives or quinolones in statu nascendi. In the first case the imine was melted with the salts in vacuum (Ref [illegible]). Several monomethine cyanines were obtained, in which the [illegible]ing of the methine group took place in the 2,2- and 2,4-positions (Schemes 1,2,3). In the reaction with thiazolin[illegible] imine the quaternary salts of N-aryl benzoquinaldinium form only quinothiacyanines when melted according to the scheme,

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Investigations in the Field of Artificial Dyestuffs. XIII. Monomethine Quinothiacyanines of Unsymmetrical Structure

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whereas in the melting of the salts of N-aryl quinaldinium derivatives the reaction takes place to a slight degree in another direction under the formation of dyestuffs of different structure (isocyanines). Their formation was determined spectroscopically on the basis of the absorption curves of a mixture of the dyes and the pure compounds (Figs 1-4). These dyestuffs were separated by chromatographing on aluminum oxide and identified with the isocyanines which were synthesized from the corresponding quaternary salts and quinolines in alcoholic alkaline medium (Ref 10). 21 monomethine cyanines of unsymmetrical structure were synthesized (Table). The absorption maxima of the monomethine cyanines with aryl radicals at the hetero nitrogen atoms exhibit a shift to the range of longer waves, as compared to the compounds with alkyl radicals. The isomeric compounds with a phenylene group in different positions differ by their color, as may be seen from their absorption maxima. This applies both to the isocyanines and to the quinothiapseudocyanines. There are 4 figures, 1 table, and 12 references, 4 of which are Soviet.

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Investigations in the Field of Artificial Dyestuffs. XIII. Monomethine Quinothiacyanines of Unsymmetrical Structure SOV/79-29-9-57/76

ASSOCIATION: Chernovitskiy gosudarstvennyy universitet (Chernovtsy State University)

SUBMITTED: July 25, 1958

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5(3)

SOV/79-29-9-18/76

AUTHORS: Pilyugin, G. T., Gutsulyak, B. M.

TITLE: Investigations in the Field of Artificial Dyes. XIV. Synthesis of N-Phenyl Lepidinium Perchlorate and Some of Its Transformations

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 9, pp 3076-3079 (USSR)

ABSTRACT: Compared with the quinoline and quinaloline derivatives the lepidine derivatives are less investigated; this may be easily explained by their lower reactivity and the lack of good syntheses. K. Beyer (Ref 1) improved the Doebner-Miller reaction and was the first to synthesize lepidinium in low yields by cyclizing aniline with acetone and formaldehyde in the presence of hydrochloric acid. B. I. Ardashev and B. A. Tertov increased the yields of lepidines by using acylated amines (Ref 2). By papers in references 3-7 the synthesis of the N-aryl quaternary salts of quinoline, quinaldine and lepidine was made possible by cyclizing secondary aromatic amines with aldehydes, ketones, and vinyl ethers in acid medium. Proceeding from diphenyl amine the authors synthesized the onium

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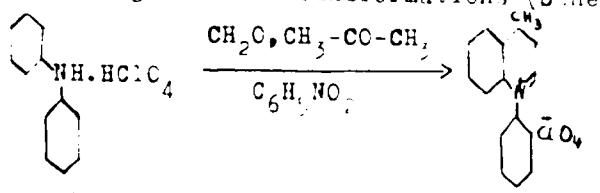
SOV/79-29-9-5[illegible]/76

Investigations in the Field of Artificial Dyes. XIV. Synthesis of N-Phenyl Lepidinium Perchlorate and Some of Its Transformations

salt according to K. Beyer, N-phenyl lepidinium perchlorate (I) and investigated its transformations (Scheme I)



I)

The quaternary salt obtained was condensed and formed cyanine dyes. On heating the salt (I) with an ortho-formic ester in pyridine the dyestuff (II) with symmetrical structure was obtained (Scheme 2) with an absorption maximum at 716 mμ. It may be concluded therefrom that the phenyl derivative compared to the ethyl derivative (710mμ) absorbs in a spectral range of longer waves: by the condensation of phenyl lepidinium perchlorate with N-ethyl quinolinium iodide in the presence of alcoholic alkali lye the monomethine dyestuff (III) (Scheme 3) resulted with an absorption maximum at 592 mμ (Scheme 3). The reaction of the salt with p-dimethyl amino benzaldehyde yielded

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SOV/79-29-8-58/76

Investigations in the Field of Artificial Dyes. XIV. Synthesis of N-Phenyl Lepidinium Perchlorate and Some of Its Transformations

the styryl derivative (IV) on heating in acetic anhydride, with the maximum at 578 mμ. The absorption curves were taken with the recording spectrophotometer of the type SF-2M. There are 11 references, 6 of which are Soviet.

ASSOCIATION: Chernovitskiy gosudarstvennyy universitet (Chernovtsy State University)

SUBMITTED: July 29, 1958

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APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4"

"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

Name: PILYUGIN, Grigoriy Timofeyevich

Dissertation: Cyclization of secondary aromatic amines in derivatives of N-arylquinaldine and conversion of the latter into carbocyanines, monomethenecyanines, and styryl derivatives

Degree: Doc Chem Sci

Affiliation: Chernovtsy State U

Defense Date, Place: [illegible] 55, Council of the Inst of Organic Chemistry, Acad Sci USSR

Certification Date: 8 Jun 57

Source: VAK 16/57

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

AUTHORS: Pilyugin, G. T., Shinkorenko, S. V. 79-28-5-[illegible]

TITLE: Investigations in the Field of Synthetic Dyes (Issledovaniya v oblasti sinteticheskikh krasiteley) IX. Synthesis of Disazodyes by Condensation of the Diazocompounds with the Salts of N - Arylquinaldinium (Sintez bisazokrasiteley kondensatsiyey diazosoyedineniy s solyami - N - arilkhinal'diniya)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol 28, Nr 5, pp 1313-1316 (USSR)

ABSTRACT: Compounds of the quaternary salts of quinoline derivatives having aromatic radicals at the nitrogen heteroatom with diazocompounds have hitherto not been described. These salts which have an electrophil radical must enter comparatively easily into connection with diazohydrates, diazotates and diazonium salts with the formation of dyes of a new kind. In the present report the coupling of N-phenylquinaldiniumperchlorate with phenyldiazoniumchloride and p-nitrophenyldiazonium is mentioned. The azo coupling reactions could be carried out according to the

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Investigations in the Field of Synthetic Dyes. 79-28-5-44/63
IX. Synthesis of Disazodyes by Condensation of the Diazocompounds with the Salts of N - Arylquinaldinium

following schemes (see scheme 1). The investigation of the separated dyes showed, on the conditions fixed by the authors, that bis-(phenylazo)-N-phenyl-2-quinolinemethane perchlorate (I) and bis-(p-nitrophenylazo)-N-phenyl-2-quinolinemethane (II) had formed. In the coupling with p-nitrophenyldiazonium, a dye without anion resulted while in the coupling with phenyldiazonium a salt like dye was separated. It must be assumed that under the influence of the nitrogroups of the diazonium salt the basic character of the nitrogen heteroatom is strongly weakened and that therefore a salt formation is not made possible. On the addition of sulfuric acid to the crystals of the dye these show an intense color which has to be traced back to the increase of the electrophil character of the heteroatom as well as to the rearrangement of the electron density of the molecule as a whole (see scheme 2). The synthetized bisazodyes are not without practical importance: When a cotton strip is soaked with them and then further treated with ammonia or soda solution

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Investigations in the Field of Synthetic Dyes. [illegible]
IX. Synthesis of Disazodyes by Condensation of the
Diazocompounds With the Salts of N - Arylquinaldinium

a fixation of the applied dye on the fabric takes place. On the other hand these dyes form [illegible] with metals, which fact can also be put to practical use. There are 13 references, 7 of which are Soviet.

ASSOCIATION: Chernovitskiy gosudarstvennyy universitet (Chernovtsy State University)

SUBMITTED: July 2, 1957

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

AUTHORS: Pilyugin, G. T., Opanasenko, Ye. F., 79-28-5-45/73
Shinkorenko, S. V.

TITLE: Investigations in the Field of Synthetized Dyes (Issledovaniya v oblasti sinteticheskikh krasiteley) X. Synthesis of N-Aryl 2-β-Anilinovinylquinolinium Derivatives and Their Conversions (X. Sintez N-aril-2 β-anilinovinilkhinoliniyevykh proizvodnykh i ikh prevrashcheniya)

PERIODICAL: Zhurnal Obshchey Khimii, 1958, Vol. 28, Nr 5, pp. 1316-1320 (USSR)

ABSTRACT: For the synthesis of trimethinecyanine dyes of asymmetrical structure mainly products are used which were obtained from diphenylformamidine and quaternary salts of the heterocyclic compounds (references 1, 2). In the condensation of these products with other quaternary salts trimethinecyanines of asymmetrical structure form (references 3 - 7). In order to make possible further organic syntheses of this kind and to investigate in more

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Investigations in the Field of Synthetized Dyes 79-28 5-45 69
A. Synthesis of N-Aryl-2-β-Anilinevinylquinolinium
Derivatives and Their Conversions

detail the properties of the molecules of asymmetrical structure, the authors carried out the synthesis of similar intermediate products of quinoline derivatives having aryl radicals at the nitrogen heteroatom. In the present report results are given of the condensation of diphenylformamidine with N-phenylquinaldinium perchlorate and N-phenylbenzoquinaldiniumiodide (see schemes 1 and 2). The separated products: the N-phenyl-2-β-anilinevinylquinolinium perchlorate (formula I) and the N-phenyl-β-anilinevinyl-5,6-benzoquinolinium iodide (II) were condensed with the quaternary salts of quinaldine and 2-methylbenzothiazol with the formation of trimethinecyanines of asymmetrical structure (see scheme 3). Thus new products were synthetized: N-phenyl-2-β-anilinequinolinium perchlorate and N-phenyl-2-β-anilinevinyl-5,6-benzoquinolinium iodide. By condensation of these products with quaternary salts of heterocyclic compounds five new carbocyanines of asymmetrical structure were synthetized (N-phenyl-5,6-benzoquinolinium, N-phenyl

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Investigations in the Field of Synthetized Dyes. [illegible]
X. Synthesis of N-Aryl-2-β-Anilinovinylquinolinium
Derivatives and Their Conversions

-quinoline-2)-trimethinecyanineperchlorate; N-(p-tolyl-5,6-benzoquinoline-2)-N-phenylquinoline--2)-trimethinecyanineperchlorate; N-(p-tolyl-5,6--benzoquinoline-2)-(N-phenylquinoline-2)--trimethinecyanineperchlorate; (N-phenyl-5,6--benzoquinoline-2)-(α-naphthylquinoline-2)--trimethinecyanineiodide; /(N-phenyl-5,6-benzoquinoline--2)-(3-ethylbenzthiazol-2)-trimethinecyanineiodide. There are 1 table and 7 references, 5 of which are Soviet.

ASSOCIATION: Chernovitskiy gosudarstvennyy universitet (Chernovtsy State University)

SUBMITTED: April 18, 1957

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Salts With

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Salts With

[illegible] are in that range of the spectrum occupied by [illegible] [illegible] **This** [illegible] **nitroso** [illegible] **salts** takes [illegible] **a condensing** [illegible] **indicates the** [illegible]

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PILYUGIN, G.T.

15 6

Cyanine dyes. VII. Cyclization of secondary aromatic amines with vinyl ethers into derivatives of arylquinaldinium. G. T. Pilyugin and E. P. Opanasenko (State Univ., Chernovitsy). *Zhur. Obshchei Khim.* 27, 1015-18(1957); cf. *C.A.* 47, 3312e; 50, 11865c.—Secondary aromatic amines react with alkyl vinyl ethers in acid medium yielding *N*-arylquinaldinium salts. To 15 g. Ph_2NH in 30 ml. xylene was added 10 ml. concd. HCl yielding a ppt. of the HCl salt; the mixt. was treated gradually with 30 ml. $BuOCH:CH_2$ (exothermic), refluxed 2 hrs., and treated with hot H_2O, and $KClO_4$ added gave 30% *N-phenylquinaldinium perchlorate*, yellow needles, m. 158-9° (H_2O). Similarly, 2-$C_{10}H_7NHPh$ and $BuOCH:CH_2$, with final pptn. with KI, gave 34% *N-phenyl-5,6-benzoquinaldinium iodide*, m. 196-8° (H_2O), which condensed with $HC(OEt)_3$ to a *carbocyanine*, 644 mμ. Similar reaction with (*o*-MeC_6H_4)$NHC_{10}H_7$-2 gave 33.7% *N-o-tolyl-5,6-benzoquinaldinium iodide*, m. 208-10° (H_2O); use of *p*-$MeOC_6H_4NHC_{10}H_7$-2 gave 26% *N-p-methoxyphenyl-5,6-benzoquinaldinium iodide*, decomp. 255-6°, while *p*-$MeC_6H_4NHC_{10}H_7$-1 gave 35% *N-1-benzoquinaldinium iodide*, crystals (H_2O). The reaction of cyclization can be run in EtOH, BuOH, C_6H_6, or H_2O in presence of HCl. VIII. Synthesis of alkoxy derivatives of benzoquinaldinium quaternary salts and their transformations. G. T. Pilyugin, E. P. Opanasenko, and N. A. Tsyetkova. *Ibid.* 1018-21.—To 2.4 g. *p*-$MeOC_6H_4NHC_{10}H_7$-2 and 1 ml. concd. HCl in 10 ml. C_6H_6 was added with cooling 0.84 g. paraldehyde and

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PELYUGIN, G. T.; OPANASENKO, E. F.

the mixt. heated in ampul 3 hrs. at 160° gave, after washing with Et_2O, soln. in EtOH, and addn. of satd. KI, 28% *N-p-methoxyphenyl-5,6-benzoquinaldinium iodide* (I), m. 250-1°, which refluxed 40 min. with $HC(OEt)_3$, pyridine, and Ac_2O gave 31% *bis(1-p-methoxyphenyl-5,6-benzoquinoline-2-)(trimethinecyanine) iodide*, green, decomp. above 300°, λ 642 mμ. If the quaternary salt is heated in pyridine with ethiodide of 2-acetanilidovinylbenzothiazole and the product treated with $KClO_4$, there is formed *(1-p-methoxyphenyl-5,6-benzo-2-quinoline)(3-ethylbenzo-2-thiazole)trimethinecyanine perchlorate*, λ 593 mμ. The use of 2-acetanilidovinyldimethylindolenine methiodide in the above reaction gave 34% *(1-p-methoxyphenyl-5,6-benzo-2-quinoline)(3,3,3-trimethyl-2-indolenine)trimethinecyanine perchlorate*, m. 162-3°, λ 578 mμ. Heating I with quinaldine ethiodide in EtOH with NaOEt gave 35% *(1-p-methoxyphenyl-5,6-benzo-2-quinoline)(1-ethyl-4-quinoline)monomethinecyanine salts*, decomp. 225-7°, λ 575 mμ. Heating 2 g. *p*-$EtOC_6H_4NHC_6H_5$-1, 1.4 g. paraldehyde, 6 ml. concd. HCl, 8 ml. C_6H_6, and 0.2 g. PbNP 7 hrs. in ampul at 100° gave 26% *(1-p-methoxyphenyl-5,6-benzo-2-quinoline)* [illegible] 2/3

[illegible] with $HC(OEt)_3$ in pyridine [illegible] gave 19% *bis(1-p-methoxyphenyl-5,6-benzo-2-quinoline)trimethinecyanine perchlorate*, decomp. 281°, λ 640 mμ. II with 2-acetanilidovinylbenzothiazole ethiodide in pyridine with a little Ac_2O

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PILYUGIN, G. T.; DPANASENKO, E. P.

gave deep violet (*1-p-ethoxyphenyl-7,8-benzo-2-quinoline*) (*3-ethyl-2-benzothiazole*)*trimethinecyanine perchlorate*, decomp. 200°, λ 590 mμ; use of 2-acetanilidovinyldimethylindolenine methiodide similarly gave (*1-p-ethoxyphenyl-7,8-benzo-2-quinoline*) (*1,3,3-trimethyl-2-indolenine*)*trimethinecyanine perchlorate*, decomp. 208°, λ 584 mμ; II and *p*-Me_2N-C_6H_4CHO in pyridine gave (*1-p-ethoxyphenyl-7,8-benzo-2-quinoline*)-*p-dimethylaminostyryl perchlorate*, λ 546 mμ.

G. M. Kosolapoff

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"APPROVED FOR RELEASE: 06/15/2000 CIA-RDP86-00513R001340910009-4

KOMSHILOV, N.F.; PILYUGINA, L.G.; SELIVANOVA, T.A.

Organic acids of black liquors from the sulfate woodpulp production. Zhur.prik.khim. 38 no.6:1337-1339 Je '65. (MIRA 18:10)

1. Kareliskiy institut lesa.

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SOV [illegible]

AUTHOR [illegible] Chief and [illegible] Engineer

TITLE Experience in Automation of Intra-rayon Telephone [illegible] [illegible]

PERIODICAL [illegible]

ABSTRACT This art[illegible] [illegible] with automation [illegible] telephone communications (VRS) fa[illegible] [illegible] By way of introduction the authors state that [illegible] 1956 telephonization of all sovkhozes [illegible] stations [illegible] skiye [illegible] vety (rural [illegible]) [illegible] offices was completed. They then review recent achievements in automation of VRS facilities [illegible] VRS [illegible] telephone stations (ATS) and [illegible] UPTSs were [illegible] tion by the end of 1958 as a result of which [illegible] [illegible] of VRS stations were operating around the [illegible] the beginning of this year at present VRS [illegible] is fully automatic in [illegible] rayons, the Bronnitsy, Klin, [illegible] shire, Osery and Chekhov rayons, the level of VRS automation is high in the Dmitrov, Yegorievsk, Nar[illegible] Fomin[illegible] [illegible] Chekhovo Zuyevo and Stupin rayons [illegible]

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Experience in Automation of Intra-rayon Telephone Communications

replace all manual stations with automatic ones by the end of 1961. The economic advantages of this automation work are also cited. The balance of the article is devoted to the organization of work in automation of VRS facilities. Installation is done on the basis of a yearly plan drawn up by the direktsiya radiotranslyatsionnoy seti (Board of the Radio Broadcasting Relay Network) and approved by the heads of the communications administrations. The processes of planning, projecting, preparation and installation are outlined; standard designs developed by the "Giprosvyaz'" Institute, in somewhat modified form, are used. Before 1958 equipment assembly work in the VRS ATS's was done by the remontnaya-montazhnaya masterskaya (Maintenance and Assembly Office) of the communications administration; in 1958 this work was transferred to the SMUR; at present installation of VRS ATS equipment is done by workers of the SMUR and the rayon communications offices. The authors note the shortage of connecting circuits and the need for large scale [illegible] of multiplexing apparatus for steel connecting circuits

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Experience in Automation of Intra-rayon Telephone Communications

leading to VRS ATSs. Improvements in inter-connection of the VRS ATS and municipal ATS systems in the rayon centres is also considered. The following was proposed by V. V. Denisov, engineer at the DRTS, in this connection: a plan for inter-connection of the VRS ATS and ATS by-passing the operator, using the TsB-P switchboard, and RSL assemblies; a system for dialing VRS ATS numbers from manually operated stations (galvanic and inductive dialing systems) simpler than the LONIIS systems; a system for inter-connection of VRS ATSs, bypassing the rayon centre stations, and various systems for inter-connection of VRS ATSs with municipal ATSs on the "ten step" dialing system (ATS-47, etc.) with galvanic and dialing methods. RSL inductive connection assemblies for TsB switchboards are used in the system for connection of ATS-47s and VRS ATSs. Also mentioned are: a portable telephone apparatus for checking operation of VRS ATSs made up by A. P. Koshkin, technician of the Bronnitsyrayon communications office, and improvement in the design of an ATS with a capacity of 20 numbers, by N. I. Turkin.

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Experience in Automation of Intra rayon Telephone Communications

and P A Shcherbakov, technicians at the Voskresensk and Ruza rayon communications offices respectively. The author mentions courses for preparation and retraining of VRS technician by the communications administration and DRTS 4 VRS ATS technicians are named L V Golomazov (photo), N I Turkin, I I Ivanov, V I Morozov of the Podolsk Voskresensk Dmitrov and Segreyevsk communications offices. Service maintenance and checking of automatic stations is discussed and outlined. The author concludes with mention of a number of things which are holding up further and faster development of the VRS system in particular he notes the need for serial production of block stations with up to 4 numbers capacity necessary for the VRS network a system for automation of battery charging and stabilization of the line voltage used for this purpose is also lacking. They also mention defective equipment manufactured for VRS ATSs specifically the rotary switches in the charge discharge panels supplied with "ATS [illegible] equipment

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ASSOCIATION: [illegible] Moskovskoy oblasti [illegible]

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Pilyusin, G. T.

Quaternary salts of N-arylquinaldine. G. T. Pilyugin. U.S.S.R. 103,287, Apr. 25, 1937. The quaternary salts of the title compd. are obtained from secondary aromatic amines. $Ph_2NH.HCl$ or $(4\text{-}MeC_6H_4)_2NH.HCl$ is condensed, by heating with vinyl butyrate in C_6H_6. From the product, N-arylquinaldine quaternary salts are sepd. by the usual methods. M. Hosch

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PILYUGIN, G.T.; OPANASENKO, Ye.P.

Research in the field of cyanine dyes. Part 7: Cyclization of secondary aromatic amines with simple vinyl ethers into aryl quinaldinium derivatives. Zhur. ob. khim. 27 no.4:1015-1018 Ap '57. (MIRA 10:8)

1. Chernovitskiy gosudarstvennyy universitet.
(Quinaldinium compounds) (Dyes and dyeing)

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PILYUGIN, G.T.; OPANASENKO, Ye.P.; SVATKOVA, N.A.

Research in the field of cyanine dyes. Part [illegible] Synthesis of alkoxy derivatives of benzoquinaldinium quaternary salts and their conversion. Zhur. ob. khim. 27 no.4 1018-1[illegible] Ap '57. (MIRA 1[illegible]:8)

1. Chernovitskiy gosudarstvennyy universitet.
(Quinaldinium compounds) (Dyes and dyeing)

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PILYUGIN, L.

"Peculiarities of the Action of Atomic Explosion in Populated Areas" an article in the Publication Problems of the Usme of Atomic Energy. October, 1956, Moscow

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PHASE I BOOK EXPLOITATION 604

Glushko, Aleksey Petrovich, Colonel, Candidate of Technical Sciences, Docent; Markov, Leonid Kuz'mich, Lieutenant Colonel, Candidate of Technical Sciences, Docent; and Pilyugin, Lev Pavlovich, Lieutenant Colonel, Candidate of Technical Sciences, Docent

Atomnoye oruzhiye i protivoatomnaya zashchita (Atomic Weapons and Atomic Defense) Moscow, Voyen. izd-vo M-va obor. SSSR, 1958. 391 p. No. of copies printed not given.

Ed. (title page): Olisova, B. A.; Ed. (inside book): Kader, Ya. M.; Consultants of Publishing House: Sedov, A. I., Engineer-Lieutenant Colonel, Candidate of Technical Sciences, Mikhaylov, V. A., Engineer-Lieutenant Colonel, Candidate of Technical Sciences, Docent; Tech. Ed.: Mednikova, A. N.

PURPOSE: The book is intended for the personnel of Soviet armed forces and members of the DOSAAF.

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COVERAGE: The book is an outline of atomic warfare problems and of principles of anti-atomic defense. An introduction to nucleonics precedes the actual treatment. A rather thorough description of atomic and hydrogen bombs is given (with diagrams), but no reference is made as to their origin. Among other things the authors mention that Soviet-made hydrogen bombs contain a relatively small amount of nuclear matter to achieve the desired effect. Atomic damage to buildings is demonstrated on the example of Hiroshima and Nagasaki. Theory and data on luminous radiation and its effects are partially based on A. P. Arkhipov and A. V. Kozlova-Ye. I. Vorob'yev; other references in this chapter are English (or Russian translations from English). The table on linear coefficients of gamma attenuation is based on the books by K. K. Aglintsev and A. I. Ivanov. A number of building materials is analyzed with respect to thickness and their attenuation capacities are stated. The mathematical formulation of the process of attentuation is calculated for the energy ranges of 1.2 and 2.5 Mev. The subchapter on neutrons surveys the biological effects of neutrons and their dissipation and capture. Figures, however, are scarce. Reference is made to B. N. Turusov in discussing the radiobiological action of gamma rays, neutrons, etc. The enumeration of the most frequently occurring radiation injuries is taken from the study by A. . Kozlova-Ye. I. Vorob'yev. In this connection the authors mention also the Soviet report at the Geneva Conference in 1956. The subject of radiobiology is further expanded in the subchapter

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contamination effects and their dependence on the type of explosion. Here the authors refer to a collection of article (Sbornik deystviy izlucheniy), prepared on this subject in 1954. Data on fission products and their radioactivity are evidently foreign. Only the table on radiation of unreacted nuclei quotes I. P. Selinov as source. Figures and theory on induced radiation have V. P. Syrnev-N. P. Petrov as their source. General principles of area contamination are based on A. I. Ivanov's book. The authors analyze and partially evaluate several types of safety measures and precautions to be taken in the field and discuss a number of natural and manmade shelters. Diagrams and specifications of manmade shelters (trenches) are available and their resistivity discussed. Theoretical premises of their resistance capacities are based on the Kurs soprotivleniya materialov by Filonenko-Borodovich et al. (1956). Practical examples and field exercises accompany this chapter. The last two chapters deal with radioactivity measurement in the field. The authors describe and give diagrams of several dosimeters, radiation meters and roentgenometers. Practical (non-scientific) decontamination measures are discussed and first-aid principles reviewed. There are 109 figures, 16 tables and 27 references in the text 24 of which are Soviet including 7 translations from English or French, 2 English, and 1 French.

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