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O B E FACTORS

Monthly Survey No. 39

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ATD Report 69-59-50-9

CBE FACTORS

Monthly Survey No. 39

ATD Work Assignment No. 50

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FOREWORD

This report is the thirty-ninth in a series of monthly surveys covering the following areas:

- I. CHEMICAL FACTORS
 - Pesticides
 - Herbicides
 - Fertilizers
 - Psychotomimetics
 - Other Chemicals
- II. BIOLOGICAL FACTORS
 - Pathogens
- III. ENVIRONMENTAL FACTORS
 - Aerosols
 - Ecology
 - Micrometeorology
 - Soil Science
- IV. GENERAL

Titles of publications cited in Sections I—IV are listed alphabetically in Appendix I. An author index is included as Appendix II. There is no bibliography.

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I. CHEMICAL FACTORS

ACC NR: AP9000139

SOURCE CODE: UR/007^o/68/0.8/011/2588/2589

AUTHOR: Abramov, V. S.

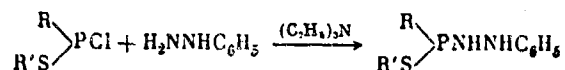
ORG: none

TITLE: Preparation and properties of phenylhydrazides of alkylthio-phosphonous acids

SOURCE: Zhurnal obshchey khimii, v. 38, no. 11, 1968, 2588-2589

TOPIC TAGS: hydrazine compound, organic phosphorus compound, organic sulfur compound, thiophosphonous acid derivative

ABSTRACT: The title hydrazides were obtained by the reaction:



which takes place in diethyl ether at temperatures ranging from zero to -5°C . The yield and physical constants of the new hydrazides are

Card 1/2

UDC: 547.26'118

ACC NR: AP9000139

Table 1



No	R	R'	% Yield	Bp, °C (mm)	d_4^{20}	n_D^{20}
1	C ₂ H ₅	C ₂ H ₅	87	130° (0.5)	1.0904	1.5915
2	C ₂ H ₅	iso-C ₃ H ₇	89	135 (0.5)	1.0634	1.5780
3	CH ₃	C ₄ H ₉	90	140 (0.5)	1.0767	1.5810

given in the table. Their structure was confirmed by IR spectra.

[WA-50; CBE No. 39] [PS]

SUB CODE: 07/ SUBM DATE: 11Apr68/ ORIG REF: 001/ OTH REF: 001

Card 2/2

ACC NR: AP8037855

SOURCE CODE: UR/0409/68/000/005/0853/0856

AUTHOR: Aristov, L. I.; Shamshurin, A. A.

CRG: Institute of Chemistry, Academy of Sciences MoldSSR, Kishinev
(Institut khimii Akademii nauk MoldSSR)

TITLE: Synthesis of quinoline derivatives. III. Bromination of
5-alkoxy(aroxy)methyl-8-hydroxyquinolinols

SOURCE: Khimiya getserotsiklicheskikh soyedineniy, no. 5, 1968, 853-856

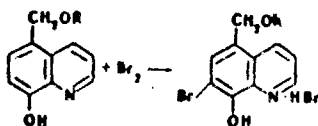
TOPIC TAGS: bactericide, quinoline, quinoline derivative

ABSTRACT: A series of biologically active bromo-substituted
5-alkoxy(aroxy)methyl-8-hydroxyquinolinols was synthesized to study
the relationship between their structure and their bactericidal activity.
The bromination of 5-alkoxy(aroxy)methyl-8-hydroxyquinolinols with an
equimolar amount of Br in CCl₄ gave the hydrobromides of the mono-
brominated 5-alkoxy(aroxy)methyl-8-hydroxyquinolinols:

Card 1/3

UDC: 547.831.4.7.07:542.944.1

ACC NR: AP8037855



which are characterized in the table. The structure of the new compounds

Table 1. Ether of 5-hydroxymethyl-7-
bromo-8-hydroxyquinolinol

R	Mp, °C	% Yield
CH ₃	145-146	90
C ₂ H ₅	127-128	90
C ₃ H ₇	95	90
C ₄ H ₉	95	85
-C ₆ H ₅	88-89	85
C ₇ H ₇ (Cl)	103	80
CH ₂ C≡CH	95-96	80
Cyclohexyl	110-112	80
Benzyl	114-115	80

Card 2/3

ACC NR: AP8037855

was confirmed by IR spectra. Bactericidal properties of the new compound are being studied. Orig. art. has: 3 tables.

[WA-50; CBE No. 39][PS]

SUB CODE: 07/ SUBM DATE: 20Apr66/ ORIG REF: 003/ OTH REF: 001

Card 3/3

ACC NR: AP8037852

SOURCE CODE: UR/0409/68/000/005/0832 0835

AUTHOR: Azerbayev, I. N.; Sarbayev, T. G.; Basymbekov, M. B.

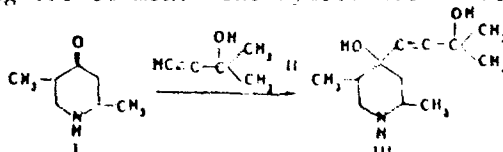
ORG: Institute of Chemical Sciences, Academy of Sciences KazSSR, Alma-Ata (Institut khimicheskikh nauk Akademii nauk KazSSR)

TITLE: Synthesis and transformations of 2,5-dimethyl-4-(3-methyl-3-hydroxy-1-butynyl)-4-piperidol

SOURCE: Khimiya geterotsiklicheskikh soyedineniy, no. 5, 1968, 833-835

TOPIC TAGS: cyclic alcohol, heterocyclic oxygen compound, piperidine, physiologically active compound

ABSTRACT: Some esters of 2,5-dimethyl-4-ethynyl(vinyl and ethyl)-4-piperidols display pronounced physiological activity. 2,5-Dimethyl-4-(3-methyl-3-hydroxy-1-butynyl)-4-piperidol (III) (62% yield, bp. 166—167°C, mp 50—51°C) was prepared by stirring 2,5-dimethyl-4-piperidone (I) and dimethylethynylcarbinol (II) in KOH and ether at -4°C for 20 hr, adding water, and stirring for 30 min. The hydrochloride of III (mp 175—176°C)

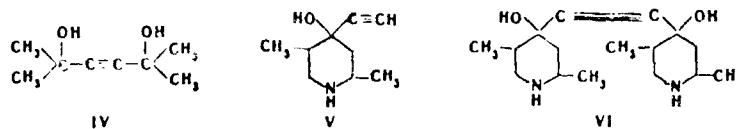


Card 1/3

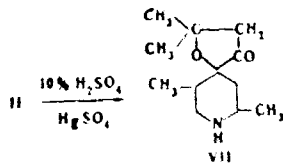
UNC: 547.824 722.3.07:542.934.941:543.42.14

ACC NR: AP8037852

was obtained in 92% yield. Tetramethylbutynediol (IV) (4% yield, mp 91—92°C, bp₂ 70—75°C), 2,5-dimethyl-4-ethynyl-piperidol (V) (3% yield, mp 93—94°C, bp₂ 115—118°C), and symmetric piperidine acetylene glycol (VI) (0.9 g, mp 275°C) were recovered from the reaction mixture of I and



II. Compounds I (65% yield) and V (11% yield, bp₂ 114—116°C) were recovered when III was heated with KOH. 2,2,6,9-Tetramethyl-1,8-oxaspiro[4,5]-decan-4-one (VII) (71% yield, bp₂ 134—135°C, n_D²⁰ 1.4840) was prepared by heating III, 10% H₂SO₄, and HgSO₄ at 100°C for 6 hr. 8-Acetyl-2,2,6,9-

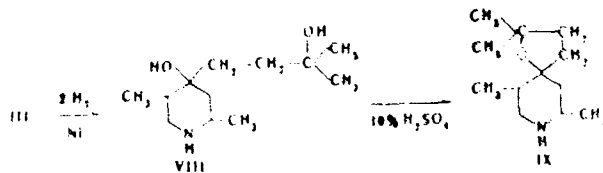


-tetramethyl-1,8-oxaspiro[4,5]decan-4-one (90% yield, mp 30—31°C) was

Card 2/3

ACC NR: AP8037852

obtained by stirring VII and Ac₂O and adding dilute NaOH. 2,5-Dimethyl-4-(3-methyl-3-hydroxy-1-butyl)-4-piperidol (VIII) (90% yield, bp₄ 159—160°C, n_D²⁰ 1.4880) was prepared by hydrogenating III at 30°C in the presence of Ni in EtOH. 2,2,6,9-Tetramethyl-1,8-oxaspiro[4,5]decane (IX) (82% yield, bp₂ 98—99°C, n_D²⁰ 1.4790) was obtained by heating VIII and 10% H₂SO₄ for 3 hr at 100°C. 8-Acetyl-2,2,6,9-tetramethyl-1,8-oxa-



zasp[ro[4,5]decane (mp 27—28°C) was obtained in 89% yield from IX and Ac₂O. Compound III is of potential interest in preparing physiologically active compounds. [WA-50; CBE No. 39] [FT]

SUB CODE: 07/ SUBM DATE: 18Jul66 ORIG REF: 0137 OTH REF: 002

Card 3/3

ACC NR: AP9001073

SOURCE CODE: UR/0450/68/002/011/0016/0019

AUTHOR: Azimov, V. A.; Britskaya, M. Ya.; Yakhontov, L. N.

ORG: All-Union Scientific Research Chemical and Pharmaceutical Institute im. S. Ordzhonikidze, Moscow (Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut)

TITLE: Azaindole derivatives. XXXIII. Synthesis of racemic α -amino acids of the 4- and 7-azaindole series

SOURCE: Khimiko-farmatsevticheskiy zhurnal, v. 2, no. 11, 1968, 16-19

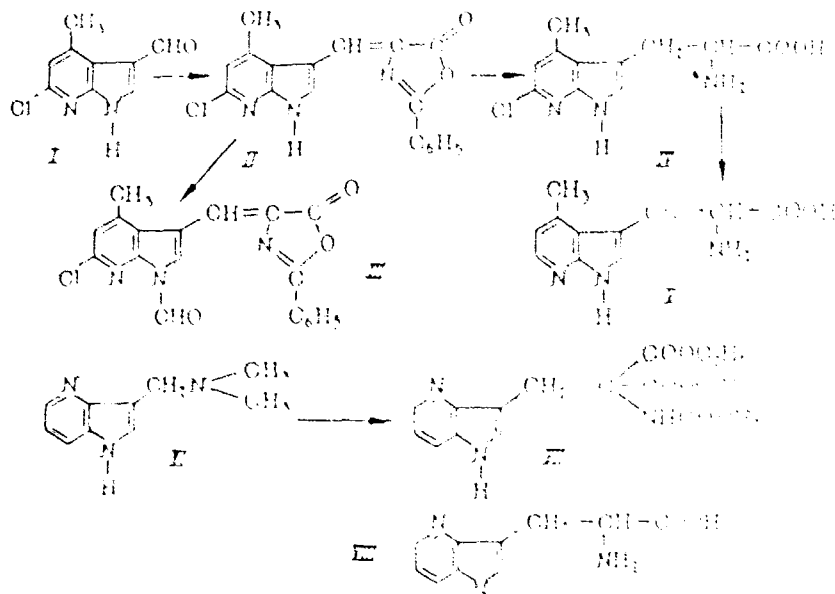
TOPIC TAGS: tryptophan, indole derivative, amino acid synthesis

ABSTRACT: 7-Azatryptophan inhibits the assimilation of tryptophan by *Tetrahymena pyriformis* and replaces tryptophan in the reaction of tryptophan with proteins of *Escherichia coli* and T-2 bacteriophage, blocking the formation of carbamyl-transferase and D-serine-deaminase. According to a private report by Willett (USA), 5-methyl-7-azatryptophan also displays interesting biological properties. 2-Phenyl-4-(4-methyl-6-chloro-7-aza-5-indolylmethylene)-1,3-oxazol-5-one (II) (56% yield, mp 256°C) was prepared by boiling 3-formyl-4-methyl-6-chloro-7-azaindole (I), hippuric acid, and NaOAc for 6 hr with Ac_2O .

Card 1/3

UDC: 615.31:547.757].012.1

ACC NR: AP9001073



Card 2/3

ACC NR: AP9001073

2-Phenyl-4-(1-formyl-4-methyl-6-chloro-7-aza-3-indolylmethyl-ene)-1,3-oxazol-5-one (III) (mp 272°C) was obtained by boiling II with HCON(CH₃)₂ for 3 min. 4-Methyl-6-chloro-7-azatryptophan (IV) (55.5% yield, mp 285°C) was prepared by adding HI to II, red P, and Ac₂O and boiling for 6 hr. 4-Methyl-7-azatryptophan (V) (52.5% yield, mp 262°C) was obtained by stirring IV and NH₄OH for 10 min, adding Na, stirring for 2 hr, adding NH₄OH, and stirring for 2 hr. 3-(β,β-Dicarbethoxy-β-acetylaminoethyl)-4-azaindole (VII) (79.4% yield, mp 142--143°C) was prepared by boiling 4-azaglutamine (VI), acetaminomalonic ester, NaOH, and xylene for 10 hr. 4-Azatryptophan (VIII) (94.3% yield, mp 272--274°C, decomposes) was obtained by boiling VII and concentrated HCl for 7 hr.
[WA-50; CBE No. 39] [FT]

SUB CODE: 06, 07/ SUBM DATE: 09Jul67/ ORIG REF: 092/ OTH REF: 004

Card 3/3

ACC NR: AP803808

SOURCE CODE: GE/0076/68/000/004/0142/0142

AUTHOR: Parnikow, G.; Gebrio, T.

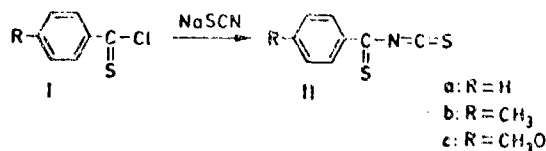
ORG: Chemistry Institute, Humboldt University, Berlin (Chemisches Institut der Humboldt-Universität)

TITLE: Thioacyl halides and thioaroyl isothiocyanates

SOURCE: Zeitschrift fur Chemie, no. 4, 1968, 142

TOPIC TAGS: thiocyanate, aromatic sulfur compound, acyl halide

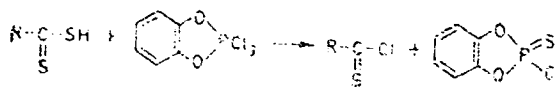
ABSTRACT. Reddish brown, rapidly polymerizing, oily thioacyl isothiocyanates (IIa--IIc) were synthesized by allowing Ia--Ic to react with NaSCN in EtOAc. Unstable thioacetyl chloride (10% yield) was synthesized by allowing pyrocatechylphosphorus trichloride to react with



Card 1/2

ACC NR: AP8038108

MeC(S)SH in ether. Colorless lamellar thiobenzoyl bromide (38% yield,



mp 22-34°C, bp_{0.05} 78-80°C) was synthesized from pyrocatechylphosphorus tribromide and PhC(S)SH. Orig. art. has: 1 table.

[WA-50; CBE No. 39][FT]

SUB CODE: 07/ SUBM DATE: 08Sep67/ ORIG REF: 005/ OTH REF: 002

Card 2/2

ACC NR: AP8038110

SOURCE CODE: GE/0076/58/000/004/0143/0143

AUTHOR: Barnikow, G.; Gabrio, T.

ORG: Chemistry Institute, Humboldt University, Berlin (Chemisches Institut der Humboldt-Universität)

TITLE: Pyrocatechylphosphoryl isothiocyanates

SOURCE: Zeitschrift für Chemie, no. 4, 1968, 143

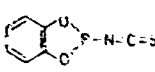
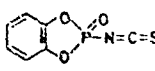
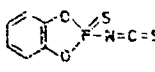
TOPIC TAGS: pyrocatechol, thiocyanate, thiourea, aromatic phosphorus compound

ABSTRACT: Pyrocatechylphosphoryl isothiocyanates (I-III) were synthesized by allowing pyrocatechylphosphorus halides to react with KSCN in MeCN. White prismatic N-(pyrocatechylthiophosphoryl)-N-phenylthiourea

Card 1/2

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Table 1

Compound	No.	Bp	% Yield	NCS Absorp- tion
	I	Bp 0.005 70°C	52	1070 cm ⁻¹
	II	Bp 0.5 100°C	67	1685 cm ⁻¹ 2130 .. (sh)
	III	Bp 0.01 90-93°C	72	1655 cm ⁻¹ 2000 .. (sh) 2100 ..

(84% yield, mp 138—140°C from HPh) was synthesized by allowing III to react with PhNH₂ in HPh. Pyrocatechylphosphorylthioureas decompose in water and can be used to obtain thioureas with alkali-sensitive substituents. Orig. art. has: 1 table. [WA-50; CRE No. 39] [FT]

SUB CODE: 07/ SUBM DATE: 29Jan68/ ORIG REF: 005/ OTH REF: 001

Card 2/2

ACC NR: AP9003125

SOURCE CODE: UR/0366/68/004/012/2136/2140

AUTHOR: Baskakov, Yu. A.; Rozhkova, N. G.; Vasil'yev, A. F.

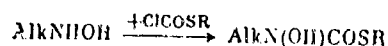
ORG: All-Union Scientific-Research Institute of Chemicals for Plant Protection (Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh sredstv zashchity rasteniy)

TITLE: Herbicidal derivatives of hydroxylamine. XIX. Carbothioalkylation of alkylhydroxylamines

SOURCE: Zhurnal organicheskoy khimii, v. 4, no. 12, 1968, 2136-2140

TOPIC TAGS: weed killer, hydroxylamine derivative, aliphatic sulfur compound, hydroxylamine, carbonic acid

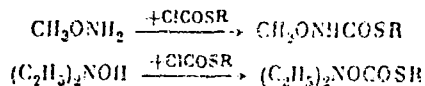
ABSTRACT: A series of new N-carbothioalkyl-N-alkylhydroxylamines was synthesized by the reaction of thiolchlorocarbonic acid with N-alkylhydroxylamine, alkoxyamines, and diethylhydroxylamines:



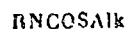
Card 1/3

UDC: 547.238+547.555

ACC NR: AP9003125



In all cases the reaction takes place at 30—50°C in an aqueous organic solvent (dichloroethane or dioxane) in the presence of sodium bicarbonate, sodium carbonate, or NaOH. The structure of the new compounds was



R	Alk	% Yield	Bp (mm) or Mp, °C	d_4^{20}	n_D^{20}
CH ₃	C ₂ H ₅	66	85° (0.03)	1.1570	1.5027
	C ₃ H ₇	57	94 (0.035)	1.1286	1.5010
	iso-C ₃ H ₇	61	51	—	—
	C ₄ H ₉	81	101—102 (0.17)	1.0932	1.4960
	iso-C ₄ H ₉	72	92—94 (0.08)	1.0940	1.4958
	test-C ₄ H ₉	72	79—80	—	—
	C ₆ H ₁₁	60	96 (0.015)	1.0700	1.4950

Card 2/3

ACC NR: AP9003125

(Cont.)

C ₂ H ₅	iso-C ₃ H ₇	63	82 (0.035)	1.092	1.4940
	C ₄ H ₉	73	92 (0.045)	1.0684	1.4959
	test-C ₄ H ₉	74	75	—	—
iso-C ₃ H ₇	iso-C ₃ H ₇	42	89	—	—
	C ₄ H ₉	53	46.5	—	—
	test-C ₄ H ₉	62	110—111	—	—
CF ₃ CH ₂	C ₄ H ₉	46	41	—	—
	iso-C ₃ H ₇	73	68	—	—
C ₆ H ₁₁ ⁴	C ₄ H ₉	56	94	—	—

confirmed by IR spectra. With alkali metal the new hydroxylamine derivatives form thermostable salts which do not hydrolyze with atmospheric moisture. They are characterized in the table.

[WA-50; CBE No. 39][PS]

SUB CODE: 07/ SUBM DATE: 10Nov67/ ORIG REF: 003/

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Card 3/3

ACC NR: AP8038132

SOURCE CODE: GE/0076/68/000/003/0105/0105

AUTHOR: Becker, H.; Pauli, G.; Timpe, H.-J.; Steinleitner, H.-D.

ORG: Institute of Organic Chemistry, "Carl Schorlemmer" Technical Hochschule of Chemistry, Leuna Merseburg (Institut für Organische Chemie der Technischen Hochschule für Chemie "Carl Schorlemmer")

TITLE: Relais syntheses of heterocyclic compounds. III. A new synthesis of 1,2,4-triazine derivatives

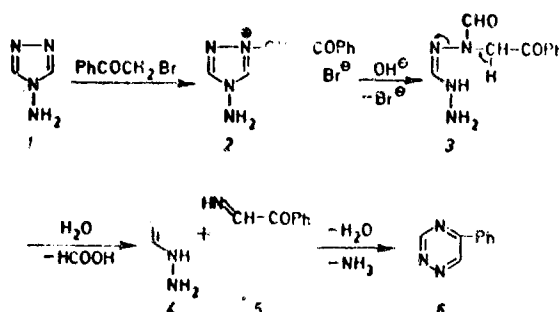
SOURCE: Zeitschrift für Chemie, no. 3, 1968, 105

TOPIC TAGS: organic azine compound, heterocyclic sulfur compound, phenol derivative, triazine derivative

ABSTRACT: 5-Phenyl-1,2,4-triazine (60% yield, mp 102°C), 5-(p-bromophenyl)-1,2,4-triazine (mp 136—137°C), and 5-(2-thienyl)-1,2,4-triazine (mp 116—118°C) were obtained by the general reaction shown.

Card 1/2

ACC NR: AP8038132



The formation of 3 from 2 proceeds in dilute NaOH.

[WA-50; CBE No. 39] [FT]

SUB CODE: 07/ SUBM DATE: 22Dec67/ ORIG REF: 005

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Card 2/2

ACC NR: AP9003132

SOURCE CODE: UR/0366/68/004/012/2255/2259

AUTHOR: Bekhli, A. F.; Mikhaylitsyn, F. S.; Persianova, I. V.

ORG: Institute of Medical Parasitology and Tropical Medicine im. Ye. I. Martynovskiy (Institut meditsinskoy parazitologii i tropicheskoy meditsiny); All-Union Scientific Research Chemicals and Pharmaceuticals Institute im. S. Ordzhonikidze (Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut)

TITLE: Derivatives of quinoline-7-carboxylic acid. I. 1,2,3,4-Tetrahydro-4-oxoquinoline-7-carboxylic acid and some derivatives of it

SOURCE: Zhurnal organicheskoy khimii, v. 4, no. 12, 1968, 2255-2259

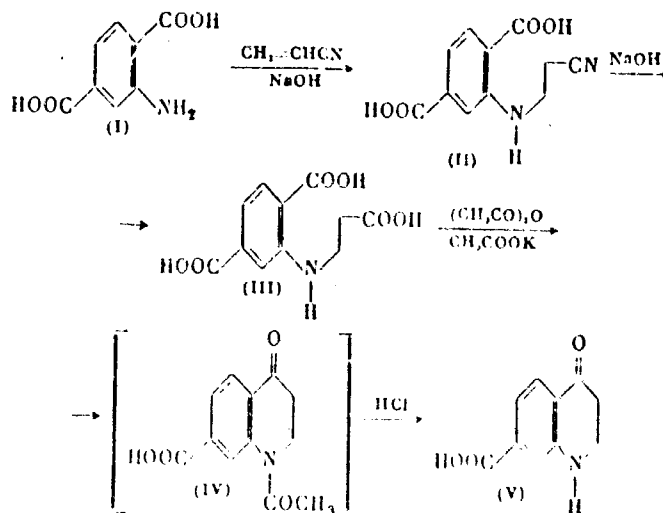
TOPIC TAGS: quinoline, ketone, carboxylic acid, fungicide, bactericide

ABSTRACT: Among the rather limited number of synthesized derivatives of quinoline-7-carboxylic acid, substances have been found which display antitubercular, antibacterial, and fungicidal activity. Recently, it was found that amides, substituted amides, and hydrazides of other isomeric quinolinecarboxylic acids are inhibitors of monoaminooxidase. Yellow-green N-2,5-dicarboxyphenyl-β-alanine nitrile (II) (94% yield, mp 263—264°C) was prepared by heating aminoterephthalic acid (I), NaOH, H₂O, and CH₂:CHCN at pH 8.5—9 at 100°C for 10—12 hr. Greenish

Card 1/3

UDC: 547.831.9

ACC NR: AP9003132



N-2,5-dicarboxyphenyl-β-alanine (III) (92% yield, mp 276—277°C) was obtained by boiling II and NaOH in H₂O for about 10 hr. Compound III (88% yield) was also obtained by adding NaOH to the reaction mixture from the synthesis of II and boiling. Compound IV was not isolated. Orange-yellow 1,2,3,4-tetrahydro-4-oxoquinoline-7-carboxylic acid (V) (55% yield,

Card 2/3

ACC NR. AP9003132

mp 370°C) was prepared by heating III, KOAc, and Ac₂O to 100°C for 2—2.5 hr and allowing the acidulated filtrate to stand for 1 hr at 90°C. Bright yellow ethyl 1,2,3,4-tetrahydro-4-oxoquinoline-7-carboxylate (VI) (71.5% yield, mp 110—111°C) was obtained by boiling V, H₂SO₄ (d 1.84), and EtOH for 1.5 hr. The bright yellow oxime of VI (VII) (85% yield, mp 170—172°C) was obtained by allowing VI and NH₂OH·HCl to stand for 3 hr in pyridine at 100°C. Yellowish ethyl N-acetyl-1,2,3,4-tetrahydro-4-oxoquinoline-7-carboxylate (VIII) (73.3% yield, mp 117.5—118.5°C) was obtained by refluxing VI in Ac₂O for 1.5 hr. The oxime of VIII (mp 185—186°C) was obtained like VII. Colorless ethyl N-benzoyl-1,2,3,4-tetrahydro-4-oxoquinoline-7-carboxylate (IX) (0.48 g from 0.55 g VI, mp 167 to 167.5°C) was prepared by adding BzCl to VI in pyridine and heating for 2 hr at 100°C. The oxime of IX (mp 165—167°C) was obtained like VII. White 1,2,3,4-tetrahydroquinoline-7-carboxylic acid (X) (57% yield, mp 188—189°C) was obtained by adding V and H₂NNH₂·H₂O to NaOH in (CH₂OH)₂ and heating for 3 hr at 180°C. The authors thank Ye. M. Peresleni for photographing the IR spectra of V and X. Orig. art. has: 2 figures.
[WA-50; CBE No. 39] [FT]

SUB CODE: 07/ SUZM DATE: 28Aug67/ ORIG REF: 006/ OTH REF: 013

Card 3/3

ACC NR: AP9001144

SOURCE CODE: UR/0076/68/042/011/2926/2929

AUTHOR: Bel'skiy, V. Ye.; Yefremova, M. V.

ORG: Institute of Organic and Physical Chemistry im. A. Ye. Arbuzov, Academy of Sciences SSSR, Kazan' (Institut organicheskoy i fizicheskoy khimii Akademii nauk SSSR)

TITLE: Kinetics of the acid hydrolysis of phenyl bis(chloromethyl)phosphate

SOURCE: Zhurnal fizicheskoy khimii, v. 42, no. 11, 1968, 2926-2929

TOPIC TAGS: kinetic chemical reaction rate, phosphinic acid, aromatic ester

ABSTRACT: The kinetics of the acid-catalyzed hydrolysis of phenyl bis(chloromethyl)phosphate in solutions of H₂SO₄ was studied by spectrophotometry. The reaction rate constants, which were determined in the region of 0—70% H₂SO₄ at 60—90°C, increase as the content of H₂SO₄ reaches 20% and then decrease. The relation of the observed rate

Card 1/5

UDC: 541.124/128

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Table 1.

H ₂ SO ₄ wt %	t, °C	10 ² k _{eff} min ⁻¹	H ₂ SO ₄ wt %	t, °C	10 ² k _{eff} min ⁻¹
0	80	0,0165	25,8	80	3,00
1,00	80	0,380	28,4	90	5,75
1,95	80	0,656	28,4	80	2,85
3,93	80	1,01	28,4	70	1,40
4,16	90	2,07	28,4	60	0,665
4,16	80	1,18	31,3	80	2,76
4,16	70	0,564	36,3	80	2,44
4,16	60	0,260	38,3	90	4,69
7,69	80	1,73	38,3	80	2,18
12,9	90	4,83	38,3	70	1,10
12,9	80	2,50	38,3	60	0,484
12,9	70	1,22	44,0	80	1,69
12,9	60	0,725	45,9	80	1,52
18,3	80	3,00	52,6	80	0,845
18,9	90	5,53	57,7	90	1,26
18,9	80	3,07	57,7	80	0,544
18,9	70	1,37	57,7	70	0,229
18,9	60	0,715	57,7	60	0,0878
19,7	80	3,04	61,1	80	0,334
21,7	80	3,04	70,3	80	0,0537

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ACC NR: AP9001144

constants (k_{eff}) to the acidity of the medium (h_0) and activity of the water ($a_{\text{H}_2\text{O}}$) agrees with the hypothesis of the participation of two molecules of water in the activated complex. The experimental data satisfy equation (1) for $K_3 \gg 1$ and give a value of $\text{p}K_1 = 0.28$ ($K_1 = 0.19$).

$$\frac{k_{\text{eff}}}{a_{\text{H}_2\text{O}}^2} + \frac{k_{\text{eff}}K_1}{h_0 a_{\text{H}_2\text{O}}^2} = \text{const.} \quad (1)$$

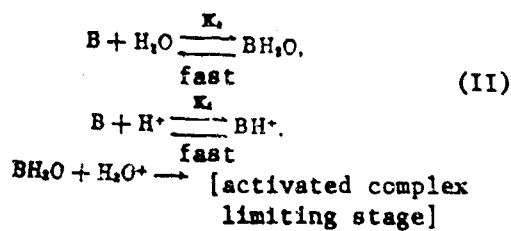
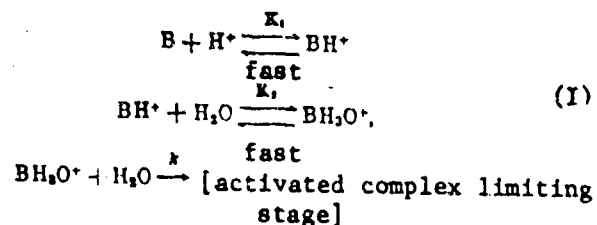
The data satisfy equation (2) when $K_3 \ll 1$. The obtained results agree

$$\frac{k_{\text{eff}}}{a_{\text{H}_2\text{O}}^2} + \frac{K_1}{K_3} \frac{k_{\text{eff}}}{h_0 a_{\text{H}_2\text{O}}} = \text{const.} \quad (2)$$

with two possible reaction mechanisms. For small concentrations of

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ACC NR: AP9001144



Card 4/5

ACC NR: AP9001144

H_2SO_4 , where partial protonation of the substrate is possible and the concentrations of B and BH_2O may be commensurable, the activity of the water is almost constant, and equations (1) and (2) for any K_3 practically reduce to the form of equation (3), where K is practically constant. Thus, although the available data agree with the hypothesis of the participation of solvates in the limiting stage, it is presently impossible to determine their role in the detailed mechanism of the process. However, by using less basic substrates, equations (1) and (2) may be verified for $a_{H_2O} \neq \text{const}$ when $h_0 < K_1$. Then equation (3) does not apply and more information may be obtained. Orig. art. has: 2 figures and 3 tables. [WA-50; CBE No. 39][FT]

SUB CODE: 07/ SUBM DATE: 01Apr67/ ORIG REF: 009/ OTH REF: 006

Card 5/5

AUTHOR: Binte, H. -J.; Bauer, W.; Kohnke, K.; Henseke, G.

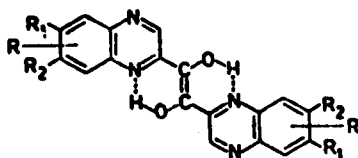
ORG: Institute of Organic Chemistry, Berg Academy, Freiberg (Institut für Organische Chemie der Bergakademie)

TITLE: Ethene-1,2-diols of quinoxaline and 1-phenylpyrazolo[3,4-b]quinoxaline

SOURCE: Zeitschrift für Chemie, no. 3, 1968, 104-105

TOPIC TAGS: alcohol, quinoxaline derivative, organic azole compound, pyrazole derivative

ABSTRACT: Yellow quinoxalil (II) (mp 248°C) was formed when quinoxaloin (Ia) was aerated in HCONMe₂. Quinoxaline-2-carboxylic acid (mp 212°C)



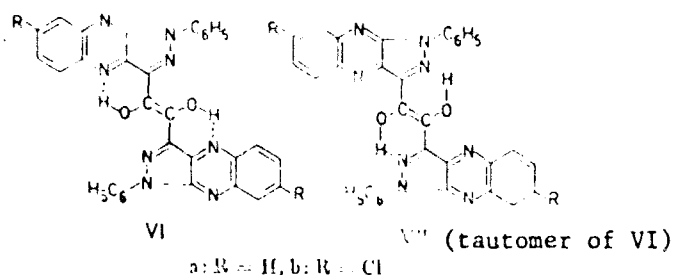
- Ia: R₁ = R₂ = H
 b: R = NO₂
 c: R = Cl
 d: R₁ = Cl, R₂ = H
 e: R₁ = H, R₂ = Cl

Card 1/3

ACC NR: AP8038131

was formed by oxidation of Ia with HNO₃. 2,3-Di-(2-quinoxalyl)quinoxaline (mp 231°C) was formed by the condensation of II with o-phenylenediamine in CHCl₃. Red-brown crystalline Ib (mp 297°C), Ic (mp 290—292°C), Id (mp 295°C), and Ie (mp 292°C) were obtained by allowing 6(7)-nitro-2-quinoxaline aldehyde (III) (mp 160°C), 6(7)-chloro-2-quinoxaline aldehyde (IV) (mp 196°C), and the 2,6- and 2,7-isomers of IV to react with KCN in 60% EtOH. Compounds III and IV were obtained by periodate cleavage of 6(7)-nitro-6(7)-chloro-2-(D-arabinotetrahydroxybutyl)quinoxaline (V). Yellow 6(7)-6'(7')-dichloroquinoxalil (mp 321—323°C) was obtained by aeration of Ic in HCONMe₂, and 6(7)-chloroquinoxaline-2-carboxylic acid (mp 241°C) was obtained by oxidation of Ic with HNO₃. 7-Chloro-1-phenylpyrazolo[3,4-b]quinoxaline 3-aldehyde (mp 242°C) was obtained by periodate cleavage of 7(6)-chloro-1-phenyl-3-(D-erythrotrihydroxypropyl)pyrazolo[3,4-b]quinoxaline (mp 195°C) (obtained from V). Yellow acicular 1,1'-diphenylflavazil (VIIIa) (mp 300°C) and yellow 7,7'-dichloro-1,1'-diphenylflavazil (VIIIb) (mp 334°C) were obtained by aeration or HNO₃ oxidation of 1,1-diphenylflavazoin (VIa) and 7,7'-dichloro-1,1'-diphenylflavazoin (VIb). The violet bis(phenylhydrazone) (mp 160°C) of VIa was formed from VIa and excess phenylhydrazine in HOAc. The dark

ACC NR: AP8038131



red mono(phenylhydrazone) (mp 195—198°C) of VIIIa was obtained from VIIIa and phenylhydrazine in dilute HOAc. Yellow lamellar 2,3-bis(1-phenyl-3-pyrazolo[3,4-b]quinoxalyl)quinoxaline (mp 283°C) was obtained from *o*-phenylenediamine and VIIIa in dioxane. [WA-50; CBE No. 39][FT]

SUB CODE: 07/ SUBM DATE: 15Jan68/ ORIG REF: 005/ OTH REF: 001

Card 3/3

ACC NR: AP8038119

SOURCE CODE: GE/0076/68/000/006/0226/0227

AUTHOR: Brehme, R.; Nikolajewski, E.

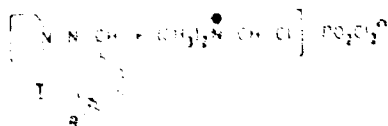
ORG: Research Division, VEB Berlin-Chemistry (Forschungsabteilung des VEB Berlin-Chemie); Institute of Chemistry, Agriculture-Horticulture Faculty, Humboldt University, Berlin (Institut für Chemie an der Landwirtschaftlichen-Gartnerischen Fakultät der Humboldt-Universität)

TITLE: Aza-eneamines. I. Vilsmeier formylation of aldehyde hydrazones

SOURCE: Zeitschrift für Chemie, no. 6, 1968, 226-227

TOPIC TAGS: aromatic aldehyde, nitrogen compound, hydrazone

ABSTRACT: Phenylglyoxal *N,N*-tetramethylenehydrazone (IIa) was obtained by allowing *N,N*-tetramethylenephnylhydrazone (Ia) and HCONMe₂ to



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ACC NR: AP8038119

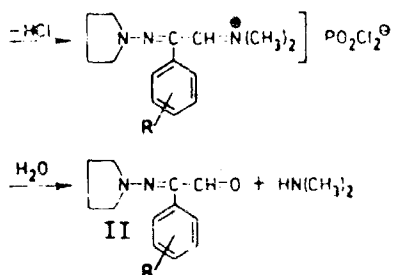


Table 1

No.	R	% Yield	Mp, °C
IIa	H	—	90—92 (MeOH)
IIb	p-OMe	82	81.5—82.5 (PrOH)
IIc	p-NO ₂	81	118—120 (Me ₂ CO)
IIId	m-NO ₂	57	117—120 (MeOH)

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ACC NR: AP8038119

react with the Vilsmeier reagent (POCl₃ and HCONMe₂) for 5 min at 20—50°C.
Compounds IIb—IIId were similarly prepared. Orig. art. has: 1 table.
[WA-50; CBE No. 39] [ET]

SUB CODE: 07/ SUBM DATE: 01apr68/ ORIG REF: 001/ OTH REF: 001

Card 2/3

ACC NR: AP8038111

SOURCE CODE: GE/0076/68/000/004/0143/0144

AUTHOR: Brock, J.

ORG: Institute of Physiological Chemistry, University of Rostock
(Institut für Physiologische Chemie der Universität Rostock)

TITLE: Preparation of 6-amino-2-benzyl-4-chloropyrimidine

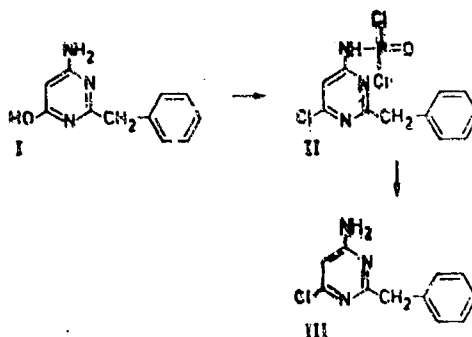
SOURCE: Zeitschrift für Chemie, no. 4, 1968, 143-144

TOPIC TAGS: aromatic amine, chlorinated aromatic compound, pyrimidine derivative

ABSTRACT: 6-Amino-2-benzyl-4-hydroxypyrimidine (I) (57% yield, mp 253—255°C from EtOH) was synthesized by boiling phenylacetamide hydrochloride and ethyl cyanoacetate with excess NaOEt in EtOH for 8 hr. 6-Amino-2-benzyl-4-chloropyrimidine (III) (39% yield, mp 166—170°C

Card 1/2

ACC NR: AP8038111



from EtOH and H₂O) was synthesized by heating I with POCl₃ for 5 hr and boiling with 0.1 N HCl for 1 hr. Compound II could not be isolated.
[WA-50; CBE No. 39] [FT]

SUB CODE: 07/ SUBM DATE: 27Dec67/ ORIG REF: 002/ OTH REF: 003

Card 2/2

ACC NR: AP90C1070

SOURCE CODE: UR/0450/68/002/011/0006/0009

AUTHOR: Bulatova, N. N.; Trubitsyna, T. K.; Suvorov, N. N.;
Mashkovskiy, M. D.

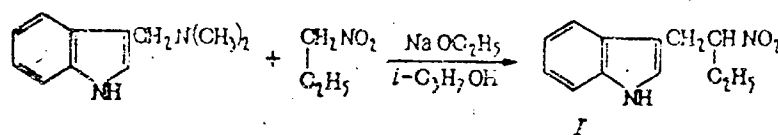
ORG: Moscow Chemical Technology Institute im. D. I. Mendeleev
(Moskovskiy khimiko-tekhnologicheskii institut)

TITLE: Indole derivatives. XLVIII. Synthesis and pharmacological
properties of N-L- α' -glutamyl- α -ethyl-tryptamine

SOURCE: Khimiko-farmatseviticheskii zhurnal, v. 2, no. 11, 1968, 6-9

TOPIC TAGS: indole derivative, glutamic acid, central nervous system
stimulant, drug dosage response

ABSTRACT: N-L- α' -Glutamyl- α -ethyltryptamine (V) was synthesized to study
its pharmacological properties. Pale yellow 3-(2-nitrobutyl)indole (I)
(91% yield, mp 90-92°C) was prepared by adding dimethyl sulfate in
iso-PrOH to NaOEt, iso-PrOH, PrNO₂, and 3-(dimethylaminomethyl)-indole
for 25 min below 35°C. Pink α -ethyltryptamine (II) (95% yield,

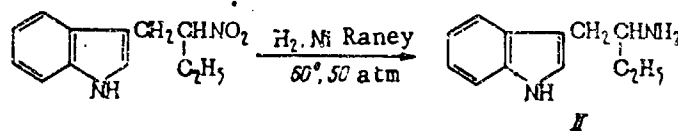


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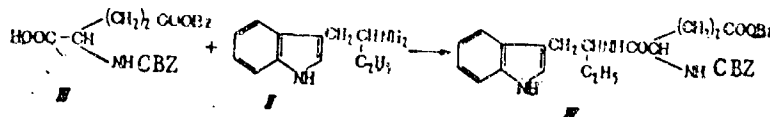
UDC: 611.433.356-003.5

ACC NR: AP9001070

mp 104-105°C) was obtained by hydrogenating I in the presence of Raney
Ni in EtOH at 60°C and 50 atm for 3-4 hr. Carbobenzoxy-L- α' -glut-
amyl- α -ethyltryptamine γ -benzyl ester (IV) (73% yield, mp 155-157°C)



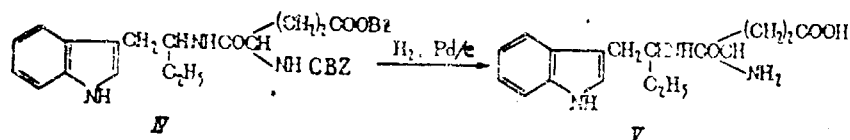
was prepared by adding Et₃N to γ -benzyl carbobenzoxy-L-glutamate (III)
in tetrahydrofuran at -8 to -10°C, stirring for 10-15 min, adding
isobutyl chlorocarbonate, stirring for 15 min at -10°C, adding II in
tetrahydrofuran, and stirring for 1 hr at -10°C and 1.5 hr at 20°C.



White V (82.5% yield, mp 175-176°C) was obtained by hydrogenating IV
in CH₃OH over 10% Pd/C at 50°C and 40 atm for 4-5 hr. A pharmacological

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ACC NR: AP9001070



study of V was performed in comparison with N-L- α '-glutamyl- α -methyl-tryptamine, which is a CNS stimulant, but with less pronounced stimulating effect on the organism's adrenoactive system. Unlike VI, V is poorly soluble in water. A 1% or 2% suspension of the preparations was used in the study. The CNS activity of V and VI was evaluated by antagonism with the inhibiting effects of reserpine, the change in the general condition of the animals, and their motor activity (experiments in albino mice). The indices of the effect on the adrenoactive systems were the changes in the arterial pressure and tone of the third eyelid during intravenous administration to narcotized cats and the changes in the vascular lumina of isolated rabbit ears during perfusion of the solutions. The toxicity was compared in administration to albino mice. Like VI, V stimulates the central nervous system: increases motor activity and reflex excitability and causes stereotypy in mice. Group toxicity was observed. The weaker stimulating activity of V was confirmed in a study of individual and group toxicity and in an actometric study of the motor activity of albino mice. LD₅₀ of V was found to be 460 mg/kg for single

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ACC NR: AP9001070

mice and 145 mg/kg for group ones, i. e., the index is 3.1. LD₅₀ of VI was found to be 202.5 mg/kg and 52.5 mg/kg, respectively, with an index of 3.85. Compound V is less effective than VI in inhibiting the onset of ptosis and hypothermia during administration of reserpine. Unlike VI, V does not stimulate the peripheral adrenoactive systems of the organism: it does not produce an increase in arterial pressure, constriction of the peripheral vessels, or contraction of the third eyelid.

[WA-50; CBE No. 39] [FT]

SUB CODE: 06, 07/ SUBM DATE: 12May68/ ORIG REF: 002/ OTH REF: 008

Card 4/4

ACC NR: AP8037869

SOURCE CODE: UR/0409/63/000/005/0927/0929

AUTHOR: Cherkasov, V. M.; Kurilenko, L. K.

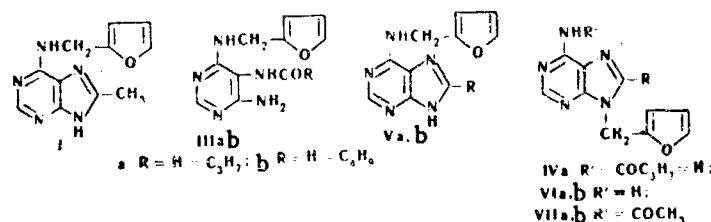
ORG: Institute of Organic Chemistry, Academy of Sciences UkrSSR, Kiev
(Institut organicheskoy khimii, Akademiya nauk UkrSSR)

TITLE: Cyclization of 4-amino-5-acylamino-6-furfurylamino-pyrimidines

SOURCE: Khimiya geterotsiklicheskih soyedineniy, no. 5, 1968, 927-929

TOPIC TAGS: cyclization, heterocyclic nitrogen compound, furan compound, pyrimidine derivative

ABSTRACT: Analogs of the known compound I, acyl derivatives of 4,5-diamino-6-furfurylamino-pyrimidine (III-VII):



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UDC: 547.857.7'722

ACC NR: AP8037869

are of interest as potentially physiologically active compounds. Compounds IIIa (mp 201—202°C) and IIIb (mp 180—182°C) were obtained in a 80% yield by the reaction of 4,5-diamino-6-furfurylamino-pyrimidine (II) with anhydrides of butyric and valeric acids, respectively, in benzene solution with boiling for 2 hr. Compound IVa (mp 126—128°C) was obtained (54%) by the reaction of IIIa with butyric anhydride at 200°C. Heating of compound (96%) IVa with NaOH solution to the boiling point gave compound VIa (mp 170—171°C). Compound VIa was also obtained by the cyclization of IIIa on boiling with NaOH solution in aqueous ethanol. The alkali filtrate after the precipitation was neutralized with HCl to form (19%) compound V (mp 182—183°C). Cyclization of IIIb by heating with alkali solution in aqueous ethanol gave (76%) compound VIb (mp 144—145°C). The reactions of acetic anhydride with VIa and VIb gave compounds VIIa (mp 158—160°C) and VIIb (mp. 106—107°C).

[WA-50; CBE No. 39] [PS]

SUB CODE: 07/ SUBM DATE: 13Sep66/ ORIG REF: 002/ OTH REF: 007

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Card 2/2

AUTHOR: Chernokal'skiy, B. D.; Bayramov, R. B.; Zalyatov, R. Z.;
Kamay, Gil'm

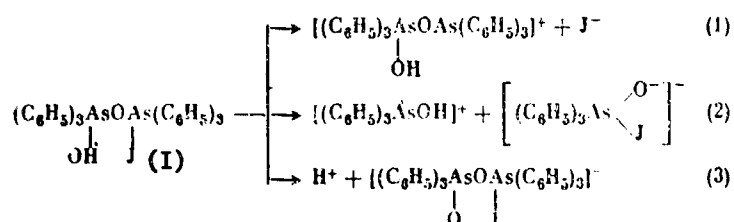
ORG: Kazan' Chemical Technology Institute im. S. M. Kirov (Kazanskiy
khimiko-tekhnologicheskii institut)

TITLE: Electroconductivity of triphenyl(triphenylhydroxyarsoxy)arsonium
iodide in acetone and nitrobenzene in the presence of triphenylarsine

SOURCE: Zhurnal obshchey khimii, v. 38, no. 11, 1968, 2565-2570

TOPIC TAGS: organic arsenic compound, arsine, ionization phenomenon

ABSTRACT: The title study was performed to choose the most likely
mechanism of the ionization of triphenyl(triphenylhydroxyarsoxy)-arso-
nium iodide (I). Ethyltriphenylarsonium iodide (II) was used as a



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UDC: 547.26'119+547.242

ACC NR: AP9000135

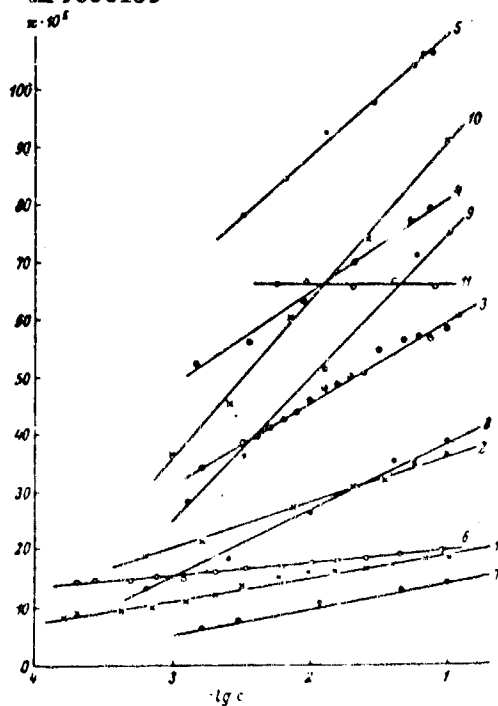
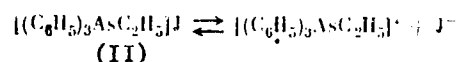


Fig. 1. Relations of the change of specific electroconductivity to concentration of triphenylarsine oxide of solutions with various concentrations (c') of I at 40°C (1-6), at 55°C (7-10), and II at 40°C in acetone (11).

Card 2/3

ACC NR: AP9000135



model salt. Compound I (56% yield, mp 164°C) was obtained by boiling triphenylarsine oxide and BuI in acetone for 6 hr. Compound II was prepared by the Michaelis method. The electroconductivity of solutions of I in acetone and PhNO₂ increases in proportion to the logarithm of the concentration of added triphenylarsine oxide. These results are shown in Figure 1, where the concentration $c' \times 10^3$ g-moles/l is: 1—1.56, 2—3.52, 3—6.08, 4—10.03, 5—14.08, 6—6.28 (PhNO₂), 7—0.941, 8 to 3.19, 9—6.99, 10—9.18, and 11—5.85. The ionization of I obeys reaction (3). The authors thank V. P. Barabanov for advice and for participating in discussing the results. Orig. art. has: 3 figures and 2 tables. [WA-50; CBE No. 39] [FT]

SUB CODE: 07/ SUBM DATE: 06Dec67/ ORIG REF: 005/ OTH REF: 002

Card 3/3

ACC NR: AP8036730

SOURCE CODE: UR/0251/68/051/003/0727/0728

AUTHOR: Dolidze, G. V.

ORG: none

TITLE: Relationship between toxicity persistence of pesticides

SOURCE: AN GruzSSR. Soobshcheniya, v. 51, no. 3, 1968, 727-728

TOPIC TAGS: pest control agent, pesticide application, poison effect

ABSTRACT: The toxicity and persistence of 80% chlorophos, 50% trichlorometaphos-3, 35% fozalon, 50% cidial, 40% phosphamide, 85% Sevin, 30% DDT and 5.5% DDT against the European grape moth was determined. The persistence (P_{50} — $P_{99.99}$) was the maximum time that the compound could produce 50—99% kills. The order of toxicity of the compounds is as follows: a) by compound: Fozalon > phosphamide > cidial > trichlorometaphos-3 > DDT > chlorophos > Sevin; and b) by classes: organophosphorus > chlorinated > carbamates. Differences between the toxicities of fozalon and phosphamide are minimal. The persistence index of the tested compound is: 5.5% DDT > 30% DDT > Sevin > fozalon > chlorophos phosphamide—chlorinated organic > carbamates > organophosphorus. [WA-50; CBE No. 39] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 002/ OTH REF: 003

Card 1/1

ACC NR: AP8038117

SOURCE CODE: GE/G076/68/000/006/0218/0219

AUTHOR: Dorn, H; Zubek, A.

ORG: Institute of Organic Chemistry, German Academy of Sciences, Berlin (Institut für Organische Chemie der Deutschen Akademie der Wissenschaften zu Berlin)

TITLE: Synthesis of 1-methyl-5-pyrazolidone from N'-acylated 3-pyrazolidone

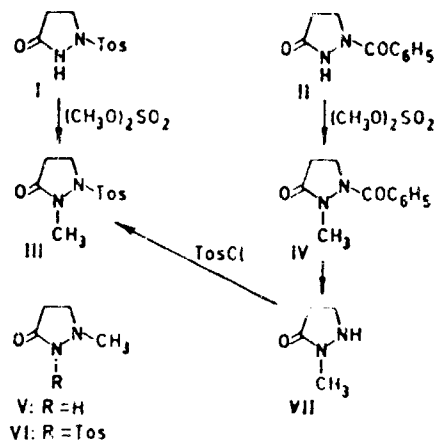
SOURCE: Zeitschrift für Chemie, no. 6, 1968, 218-219

TOPIC TAGS: ketone, organic azole compound, pyrazole derivative

ABSTRACT: Colorless 1-(p-toluenesulfonyl)-3-pyrazolidone (I) (87.5% yield, mp 167—168°C) was prepared by adding pyridine to 3-pyrazolidone hydrochloride and p-toluenesulfonyl chloride in CH₂Cl₂ and stirring for 23 hr at 20°C. Colorless lamellar 1-benzoyl-3-pyrazolidone (II) (82.7% yield, mp 176.5—177.5°C) was prepared by adding BzCl to 3-pyrazolidone hydrochloride and NaOH in H₂O at 20°C. 1-Methyl-2-(p-toluenesulfonyl)-5-pyrazolidone (III) (52—73.3% yield, mp 128—129°C) was obtained by adding Me₂SO₄ and 2 N NaOH to I in water at 20°C. Colorless

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ACC NR: AP8038117



1-methyl-2-benzoyl-5-pyrazolidone (IV) (98% yield, mp 105—106°C) was obtained by adding Me_2SO_4 to II in 2 N NaOH and stirring for 2 hr at 20°C and shaking with CH_2Cl_2 . Colorless 1-methyl-2-(p-toluenesulfonyl)-3-pyrazolidone (VI) (50.2% yield, mp 111—112°C) was prepared from 1-methyl-3-pyrazolidone (V) and Et_3N in CH_2Cl_2 . 1-Methyl-5-pyrazolidone hydrochloride (VII) (66% yield, mp 103—105°C) was synthesized by re-

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ACC NR: AP8038117

fluxing IV in 2 N HCl for 1 hr. Compound III was also obtained in 71.6% yield by adding Et_3N to VII, p-toluenesulfonyl chloride, and CH_2Cl_2 and stirring for 20 hr at 20°C. [WA-50; CBE No. 39] [FT]

SUB CODE: 07/ SUBM DATE: 15Apr68/ ORIG REF: 005

Card 3/3

ACC NR: AP9000132

SOURCE CODE: UR/0079/68/038/011/2553/2555

AUTHOR: Feshchenko, N. G.; Irodionova, L. F.; Mazepa, I. K.; Kirsanov, A. V.

ORG: Institute of Organic Chemistry, Academy of Sciences UkrSSR
(Institut organicheskoy khimii Akademii nauk UkrSSR)

TITLE: Derivatives of higher alkylphosphonic acids

SOURCE: Zhurnal obshchey khimii, v. 38, no. 11, 1968, 2553-2555

TOPIC TAGS: aliphatic phosphorus compound, phosphonic acid, phosphonate ester, phosphine oxide derivative, phosphonic acid derivative

ABSTRACT: A series of diesters of alkylphosphonic acids was synthesized by the reaction of dichlorides of alkylphosphonic acids with alcohols, phenols, and butanediol in benzene solution in the presence of pyridine or triethylamine with heating on a water bath. A series of diphenylalkylphosphine oxides was prepared by the reaction of

Card 1/3

UDC: 547.241

ACC NR: AP9000132

Table 1
AlkPO(OR)₂

Alk	R	X Yield	Mp, °C	Bp, °C (mm)	d ₄ ²⁰	n _D ²⁰
n-C ₈ H ₁₇	C ₈ H ₁₇	90	—	205-206° (0.4)	1.0854	1.5247
	o-C ₈ H ₁₅ NO ₂	70	63-65°	Decomp	—	—
	m-C ₈ H ₁₅ NO ₂	75	75-76	Decomp	—	—
	Cyclo-C ₈ H ₁₅	80	—	140-142 (0.02)	1.0061	1.4735
	CH(CH ₂) ₂ N(CH ₂) ₂ CH ₂	70	—	134-135 (0.04)	0.9448	1.4560
	-(CH ₂) ₄ -	74	—	103-106 (0.03)	1.0491	1.4650
n-C ₉ H ₁₉	C ₉ H ₁₉	97	—	139-140 (0.009)	1.0750	1.5230
	o-C ₉ H ₁₇ NO ₂	73	57-58	Decomp	—	—
	m-C ₉ H ₁₇ NO ₂	70	63-64	Decomp	—	—
	Cyclo-C ₉ H ₁₇	52	—	125-126 (0.015)	0.9915	1.4730
	CH(CH ₂) ₂ N(CH ₂) ₂ CH ₂	67	—	137-139 (0.02)	0.9390	1.4580
	-(CH ₂) ₄ -	80	—	118-119 (0.05)	1.0307	1.4650
n-C ₁₀ H ₂₁	C ₁₀ H ₂₁	70	—	165-166 (0.03)	1.0480	1.5100
	o-C ₁₀ H ₁₉ NO ₂	71	39-40	Decomp	—	—
	m-C ₁₀ H ₁₉ NO ₂	79	69.5-70.5	Decomp	—	—
	Cyclo-C ₁₀ H ₁₉	54	—	126-127 (0.015)	0.7728	1.4670
	CH(CH ₂) ₂ N(CH ₂) ₂ CH ₂	68	—	161-162 (0.05)	0.9390	1.4580
	-(CH ₂) ₄ -	81	27-28	133-134 (0.05)	—	—

Card 2/3

ACC NR: AP9000132

phenylmagnesium bromide with alkylphosphonic dichlorides in ether at 20°C.
The new compounds are characterized in the table.

[WA-50; CBE No. 39] [PS]

SUB CODE: 07/ SUBM DATE: 02Dec67/ ORIG REF: 001

Card 3/3

ACC NR: AP9000126

SOURCE CODE: UR/0079/68/038/011/2528/2532

AUTHOR: Fursenko, I. V.; Bakhvalov, G. T.; Nifant'yev, E. Ye.

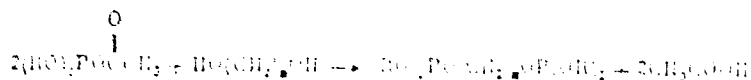
ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Phosphorylation of polyatomic alcohols with acetyl phosphites

SOURCE: Zhurnal obshchey khimii, v. 38, no. 11, 1968, 2528-2532

TOPIC TAGS: alkyl phosphite, aryl phosphite, pyrocatechol

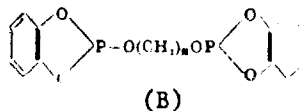
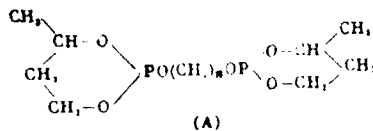
ABSTRACT: Bis-1,2-(1,3-butylene) ethylene phosphite (2:1 reagent molar ratio) (66% yield) was synthesized by adding 1,3-butylene acetyl phosphite to ethylene glycol in ether in an atmosphere of A at 5°C for 30 min. Similarly prepared compounds are shown in Table 1. 2-Hydroxyphenyl ethylene phosphite (I) (1:1 reagent molar ratio) (30.4% yield, bp₁ 91-93°C, n_D²⁰ 1.5325) was prepared by adding pyrocatechyl acetyl



Card 1/5

UDC: 547.26'118

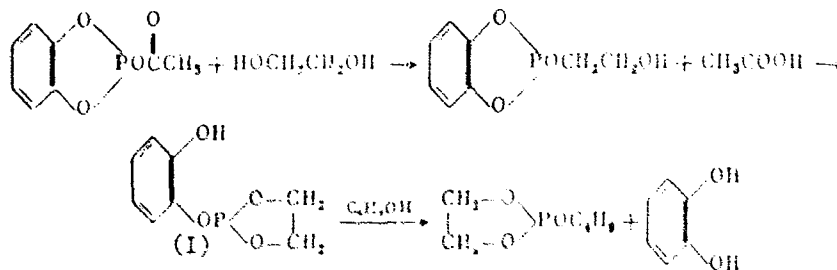
Table 1



Compd type	n	% Yield	Bp (p in mm)	d ₄ ²⁰	n _D ²⁰
A	2	66	148-150° (3)	1.1360	1.4778
A	2	57	184-185 (9)	1.1800	1.4726
A	5	53	182-183 (3)	1.1360	1.4740
B	2	78	173-175 (2) Mp 48-49°	—	—
B	5	56	188-190 (2)	1.3040	1.5693

Card 2/5

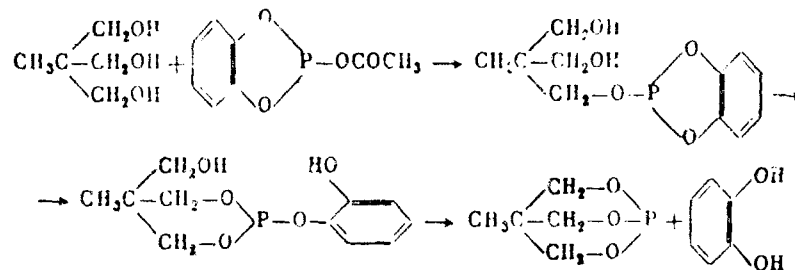
phosphite to ethylene glycol in ether at 10°C for 40 min. Butyl ethylene phosphite (40% yield, bp₁₅ 92-93°C) was obtained by treating 1 with BuOH at 25°C for 20 min. Neopentatriyl phosphite (1:1 reagent



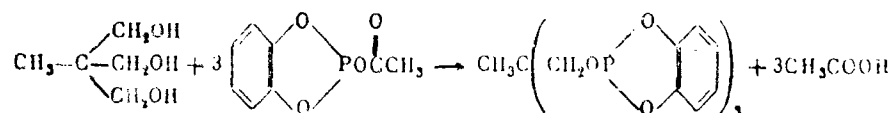
molar ratio) (85% yield, mp 88-90°C) was prepared by adding pyrocatechyl acetyl phosphite to HOAc-activated meritol and stirring for 20 min at 20°C. Neopentatriyl tris(pyrocatechyl phosphite) (3:1 reagent

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ACC NR: AP9000126



molar ratio) was similarly prepared. Neopentetetrayl tetrakis(pyrocatechyl phosphite) (4:1 reagent molar ratio) was prepared by adding,



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ACC NR: AP9000126

HOAc and pyrocatechyl acetyl phosphite to pentaerythritol and stirring for 3 hr at 30°C. Such phosphites may be good inhibitors of polymer aging. Orig. art. has: 1 table. [WA-50; CBE No. 39][F1]

SUB CODE: 07/ SUBM DATE: 01Dec67/ ORIG REF: 006

Card 5/5

ACC NR: AP9003124

SOURCE CODE: UR/0366/68/004/012/2123/2126

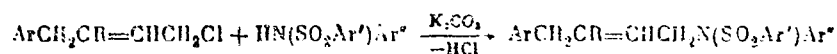
AUTHOR: Ganushchak, N. I.; Zolotukhina, K. G.; Bodnarchuk, V. Yu.;
Domarovskiy, A. V.ORG: Chernovtsy State University (Chernovitskiy gosudarstvennyy
universitet)

TITLE: Synthesis of some N-arylbutenylarylsulfanilides

SOURCE: Zhurnal organicheskoy khimii, v. 4, no. 12, 1968, 2123-2126

TOPIC TAGS: bacteriostasis, bactericide, sulfa drug, bromine compound

ABSTRACT: Many aromatic sulfanilides and their N-derivatives display definite bactericidal and bacteriostatic activity. N-(4-Aryl-2-buten-1-yl) arylsulfanilides (I-XXV) were prepared by heating chloroarylbutene, arylsulfanilide, and potash in acetone for 12-15 hr. N-(Aryldibromo-butyl)arylsulfanilides (XXVI-XXXV) were prepared by adding Br to



Card 1/3

UDC. 547.521

ACC NR: AP9003124

Table 1

No.	R	R'	R''	R'''	% Yield	Mp, °C	
$\text{RC}_6\text{H}_4\text{CH}_2\text{CR}=\text{CHCH}_2\text{N}(\text{SO}_2\text{C}_6\text{H}_4\text{R}')\text{C}_6\text{H}_4\text{R}''$							
I	H	H	H	H	58	75-76°	
II			p-CH ₃		51	53-54	
III			p-CH ₃ O		40	86-87	
IV	o-CH ₃	H	p-CH ₃	CH ₃	41	96-97	
V			p-Cl		52	85-86	
VI			o-NO ₂		p-CH ₃	45	66-67
VII			p-Br		H	47	92-93
VIII			H		p-CH ₃	40	48-49
IX			NH ₂ SO ₂		NH ₂ SO ₂	42	241-242
X			H		H	H	CH ₃
XI	p-CH ₃	45		40-41			
XII	p-CH ₃	H	H	CH ₃	48	84-85	
XIII			p-Br		41	103-104	
XIV			p-Cl		52	79-80	
XV			p-C ₆ H ₅ COO		50	94-95	
XVI			p-(NaO) ₂ AsO		43	56-57	
XVII	H	p-CH ₃	H	H	80	64-66	
XVIII		o-CH ₃			49	74-75	
XIX	H	p-CH ₃	p-CH ₃ O	H	60	81-82	
XX		p-CH ₃	p-CH ₃		40	106-107	
XXI		p-CH ₃	H		CH ₃	57	89-90

Card 2/3

ACC NR: AP9003124

Table 1. (Cont.)

XXII	-C ₆ H ₄ CH ₂ CH=CHCH ₂ N(SO ₂ C ₆ H ₅) ₂			37	77-78	
XXIII	-C ₆ H ₄ CH ₂ C(CH ₃)=CHCH ₂ N(SO ₂ C ₆ H ₅) ₂			43	80-81	
XXIV	-C ₆ H ₄ CH ₂ C(CH ₃)=CHCH ₂ N(SO ₂ C ₆ H ₅) ₂			55	73-74	
XXV	-(CH ₂ C ₆ H ₄ CH ₂ CH ₂)=CHCH ₂ N(SO ₂ C ₆ H ₅) ₂			42	180 (dec)	
RC ₆ H ₄ CH ₂ C(R')BrCHBrCH ₂ N(SO ₂ C ₆ H ₄ R'')C ₆ H ₄ R''						
XXVI	H	H	H	86	117-118	
XXVII	o-NO ₂	H	p-CH ₃ O	H	85	83-84
XXVIII			p-CH ₃		82	118-119
XXIX	p-Cl	H	H	H	74	92-93
XXX					p-Br	78
XXXI	H	p-CH ₃	H	H	85	130-131
XXXII					o-CH ₃	90
XXXIII	H	p-CH ₃	p-CH ₃ O	H	87	56
XXXIV			p-CH ₃		86	95-96
XXXV	H	p-CH ₃	H	CH ₃	85	102-103

I, II, V-VII, and XVII-XXI in CHCl₃ at 0°C. Orig. art. has: 1 table.
[WA-50; CBE No. 39] [FT]

SUB CODE: 06, 07/ SUBM DATE: 21Nov67/ ORIG REF: 004

Card 3/3

ACC NR: AP9000134

SOURCE CODE: UR/0079/68/038/011/2561/2565

AUTHOR: Gatilov, Yu. F.; Ionov, L. P.

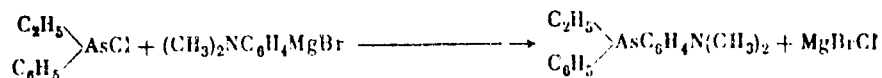
ORG: Kazan' Pedagogical Institute (Kazanskiy pedagogicheskiy institut)

TITLE: Separation of some new non-heterocyclic tertiary arsines into optically active antipodes

SOURCE: Zhurnal obshchey khimii, v. 38, no. 11, 1968, 2561-2565

TOPIC TAGS: arsine, optic activity, chemical complex compound

ABSTRACT: Phenyl-β-naphthyl-o-tolylarsine (I) (80.4% yield) was prepared by adding phenyl-β-naphthylchloroarsine in ether to o-bromotoluene and Mg in ether, heating for 4 hr, and treating with saturated NH₄Cl. Ethylphenyl-p-dimethylaminophenylarsine (II) (46% yield, bp₃ 186-187°C, n_D²⁰ 1.6296, d₄²⁰ 1.2473) was obtained by adding ethylphenylchloroarsine to Mg and p-dimethylaminobromobenzene in tetrahydrofuran, heating for 6 hr at 70°C, and treating with NH₄Cl.



Card 1/4

UDC: 541.632+546.19

- 31 -

ACC NR: AP9000134

Ethyl- α -naphthyl-p-tolylarsine (III) (49.4% yield, bp₂ 203--204°C, n_D²⁰ 1.6575, d₄²⁰ 1.2464) was prepared by adding ethyl-p-tolylchloroarsine to α -bromonaphthalene and Mg in ether, heating for 2 hr on a water bath, and treating with NH₄Cl. (\pm)-Phenyl- β -naphthyl-o-carboxyphenylarsine (IV) was obtained by adding I to aqueous KMnO₄, heating for 30 hr at 90°C, treating with HCl, and treating the filtered solution with Na₂SO₃ and KI.

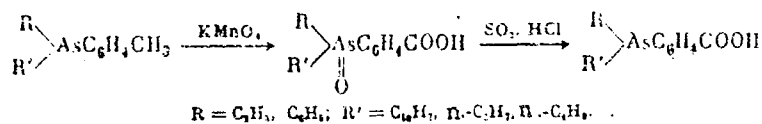
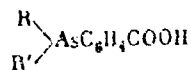


Table 1



No.	R	R'	% Yield	Mp, °C
IV	C ₆ H ₅	β -C ₁₀ H ₇	64.3	129--130°
V	C ₂ H ₅	n-C ₈ H ₉	91.5	59
VI	C ₂ H ₅	n-C ₁₀ H ₉	79	36--37

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ACC NR: AP9000134

Table 2. Complexes

No.	Compound	Mp, °C	[α] _D ²⁰
VII	C ₆ H ₅ (β -C ₁₀ H ₇)AsC ₆ H ₄ COOH-o-quinine	214--217°	-126.38°
VIII	C ₆ H ₅ (n-C ₈ H ₉)AsC ₆ H ₄ COOH-p-quinine	190--193	-108.18
IX	C ₆ H ₅ (n-C ₈ H ₉)AsC ₆ H ₄ COOH-p-PhEA*	122--134	+5.56
X	C ₆ H ₅ (n-C ₈ H ₉)AsC ₆ H ₄ COOH-p-quinine	164--165	-113.1

* α - α -phenylethylamine

Table 3. Enantiomers

No.	Compound	[α] _D ²⁰	Mp, °C
XI	C ₆ H ₅ (o-C ₁₀ H ₇)AsC ₆ H ₄ COOH-o	+6.01°	131.4°
XII	C ₆ H ₅ (β -C ₁₀ H ₇)AsC ₆ H ₄ COOH-o	-4.93	126--127
XIII	C ₆ H ₅ (n-C ₈ H ₉)AsC ₆ H ₄ COOH-p	+3.01	59.3
XIV	C ₆ H ₅ (n-C ₈ H ₉)AsC ₆ H ₄ COOH-p	-3.04	57
XV	C ₆ H ₅ (n-C ₈ H ₉)AsC ₆ H ₄ COOH-p	-3.96	36.4

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ACC NR: AP9000134

(±)-Ethyl-n.-butyl-p-carboxyphenylarsine (VI) was prepared by adding ethyl-n.-butyl-p-tolylarsine to aqueous KMnO_4 heating for 20 hr at 50°C , and treating with HCl , alcoholic iodine, and SO_2 . Ethyl-n.-propyl-p-carboxyphenylarsine (V) was similarly prepared. Complexes VII, VIII, and X were obtained by allowing IV—VI to stand with quinine. Complex IX was similarly prepared. Enantiomers XI—XV were prepared by treating VII—X with excess 0.1 N H_2SO_4 or 3% HCl . Compounds XI—XV are optically stable. Orig. art. has: 3 tables. [WA-50; CBE No. 39] [FT]

SUB CODE: 07/ SUBM DATE: 08Dec67/ ORIG REF: 002/ OTH REF: 001

Card 4/4

ACC NR: AP8038118

SOURCE CODE: GE/0076/68/000/006/0221/0221

AUTHOR: Gehlen, H.; Demin, P.

ORG: Chemistry Institute, Pedagogical Hochschule, Potsdam (Chemisches Institut der Padagogischen Hochschule)

TITLE: Preparation and hydrazinolysis of 2,4-disubstituted 1,3,4-oxadiazol-5-ones

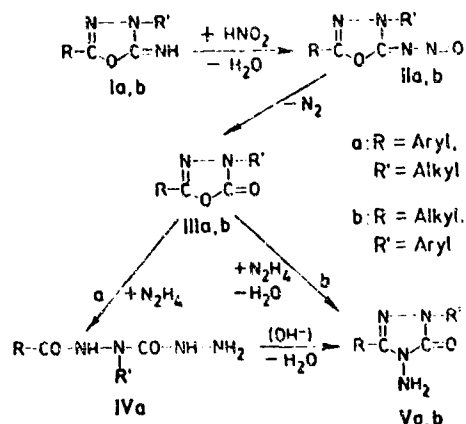
SOURCE: Zeitschrift fur Chemie, no. 6, 1968, 221

TOPIC TAGS: ketone, heterocyclic oxygen compound, organic azole compound, hydrazine compound

ABSTRACT: 2-Alkyl(Aryl)-4-alkyl(aryl)-5-nitroso-1,3,4-oxadiazolines (IIa and IIb) were prepared by allowing 2-alkyl(aryl)-4-alkyl(aryl)-5-imino-1,3,4-oxadiazolines (Ia and Ib) to react with HNO_2 . Oxadiazolones (IIIa and IIIb) were obtained by heating IIa and IIb in lower alcohols or water. 1-Aroyl 2-alkylcarbohydrazides (IVa) were obtained by boiling IIIa with an equimolar quantity of hydrazine hydrate.

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ACC NR: AP8038118



4-Amino-1,2,4-triazol-5-ones (Va) were obtained by alkaline cyclization of IVa. Compounds Vb were similarly prepared. Aryl hydrazides (ArCONHNH₂) were obtained from IIIa and excess hydrazine hydrate. 1-Acyl 2-alkyl-5-aryl(alkyl)aminocarbonyl(thiocarbonyl) carbonylhydrazides were obtained by allowing IVa to react with isocyanates and isothiocyanates. Crystalline benzylidene compounds were obtained from IVa and aldehydes. A detailed report will be published separately. [WA-50; CBE No. 39] [FT]

Card 2/2

ACC NR: AP8038109

SOURCE CODE: GE/0076/68/000/004/0142/0143

AUTHOR: Gehlen, H.; Simon, B.

ORG: Institute of Inorganic and Physical Chemistry, Pedagogical Hochschule, Potsdam (Institut für anorganische und physikalische Chemie der Pädagogischen Hochschule)

TITLE: Formation and reactions of 1,3,4-c adiazolo[3,2-a]pyrimidines

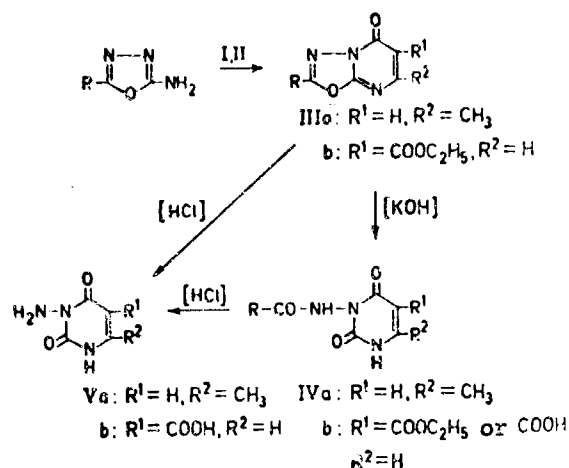
SOURCE: Zeitschrift für Chemie, no. 4, 1968, 142-143

TOPIC TAGS: heterocyclic oxygen compound, ketone, pyrimidine derivative, organic azole compound

ABSTRACT: 2-Substituted 5-oxo-7-methyl-1,3,4-oxadiazolo[3,2-a]pyrimidines (IIIa) and 2-substituted 5-oxo-6-carbethoxy-1,3,4-oxadiazolo[3,2-a]pyrimidines (IIIb) were prepared by allowing 5-substituted 2-amino-1,3,4-oxadiazoles to react with AcCH₂CO₂Et (I) and diethyl ethoxymethylenemalonate (II), respectively. 1-Acylaminouracils

Card 1/3

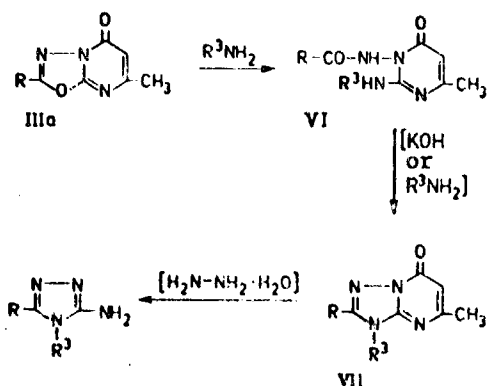
ACC NR: AP8038109



(IVa and IVb) were obtained by briefly boiling IIIa and IIIb with KOH. N-Aminouracils (Va and Vb) were obtained by treating III or IV with HCl. 1-Acylamino-2-arylamino-4-methyl-6-pyrimidones (VI) were obtained by amination of IIIa. 2,3-Diaryl(alkyl)-5-methyl-7-oxo-1,2,4-triazolo-[1,5-a]pyrimidines (VII) were obtained by treating VI with KOH or

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ACC NR: AP8038109



arylamines. The structure of VII was confirmed by the reaction with hydrazine hydrate. Further studies will be published separately.

[WA-50; CBE No. 39][FT]

SUE CODE: 07/ SUBM DATE: 26Jan68/ ORIG REF: 004/ OTH REF: 001

Card 3/3

ACC NR: AP9000123

SOURCE CODE: UR/0079/68/038/011/2513/2517

AUTHOR: Genkina, G. K.; Gilyarov, V. A.; Kabachnik, M. I.

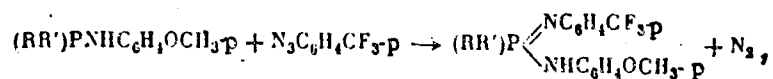
ORG: none

TITLE: N-p-trifluoromethylphenyl-N'-anisylphosphamidines

SOURCE: Zhurnal obshchey khimii, v. 38, no. 11, 1968, 2513-2517

TOPIC TAGS: fluorinated organic compound, organic nitrogen compound, organic phosphorus compound, phosphine derivative, phosphite ester

ABSTRACT: The series of N-p-trifluoromethylphenyl-N'-anisylphosphamidines synthesized by the reaction of p-anisylamides of trivalent phosphorus acids with p-trifluoromethylphenylazide in benzene solution 55-60°C



are characterized in Table 1. Some of the intermediates which are formed during the preparation of the phosphamidines were also isolated and are characterized (compounds 1-9 in Table 2). Anisylamidophosphites and

Card 1/4

UDC: 547.298.5:547.551:546.16

ACC NR: AP9000123

Table 1
 $(RR')P \begin{matrix} \diagup NC_6H_4CF_3p \\ \diagdown NHC_6H_4OCH_3p \end{matrix}$

No	R	R'	% Yield	Mp, °C
1	C ₆ H ₅	C ₆ H ₅	70	156.5-158°
2	C ₆ H ₇	C ₆ H ₇	80	129-131
3	C ₆ H ₇ iso	C ₆ H ₇ iso	60	141-143
4	C ₆ H ₅ O	C ₆ H ₅	56	94-95
5	C ₆ H ₇ O iso	C ₆ H ₅	58	100-102
6	C ₆ H ₅ O	C ₆ H ₇ O	30	81.5-82.5
7	C ₆ H ₅	C ₆ H ₅	88	121-122
8	C ₆ H ₅ O	C ₆ H ₅ O	60	175-177
9	C ₆ H ₅	C ₆ H ₅ O	56	103-104
10		C ₆ H ₄ O ₂	30	188-190

Card 2/4

ACC NR: AP9000123

Table 2
(RR')PNHC₆H₄OCH₂-n

No	R	R'	Method of synthesis	% Yield	Bp, °C (mm)	[d] _D ²⁰	n _D ²⁰
1	C ₆ H ₅	C ₆ H ₅	B	40	115-117° (2)	1.0436	1.5615
2	C ₆ H ₇	C ₆ H ₇	B	32	112-114 (5.5·10 ⁻³)	1.0131	1.5480
3	C ₆ H ₇ -iso	C ₆ H ₇ -iso	B	35	90-100 (3·10 ⁻²)	0.9881	1.5335
4	C ₆ H ₅	C ₆ H ₅ O	A	47	122-125 (2)	1.072	1.5413
5	C ₆ H ₅	C ₆ H ₇ -iso	A	50	124-126 (2)	1.0468	1.5332
6	C ₆ H ₇ O	C ₆ H ₇ O	A	55	117-120 (3.5·10 ⁻²)	1.5188	1.0657
7	C ₆ H ₅	C ₆ H ₅	A	57	Mp 85-87°	—	—

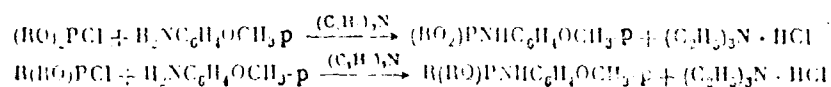
Card 3/4

ACC NR: AP9000123

Table 2. (Cont.)

8	C ₆ H ₅ O	C ₆ H ₅ O	A	45	Mp. 50-51°	—	—
9	C ₆ H ₅	C ₆ H ₅ O	A	20	143-146 (2·10 ⁻⁴)	1.1434	1.5950

phosphinites were synthesized by the reaction of anisidine with the appropriate chlorophosphines and chlorophosphinites (method A):



p-Anisylamidophosphonites (with the exception of compounds with two phenyl groups at the P atom) were also obtained by the reaction (method B):



their yield and constants are given in Table 2. Orig. art. has: 2 tables. [WA-50; CBE No. 39] [PS]

SUB CODE: 07/ SUBM DATE: 06Dec67/ ORIG REF: 007/ OTH REF: 005

Card 4/4

ACC NR: AP8037860

SOURCE CODE: UR/0409/68/000/005/0887/0891

AUTHOR: Grandberg, I. I.; Kost, A. N.; Morozova, L. F.

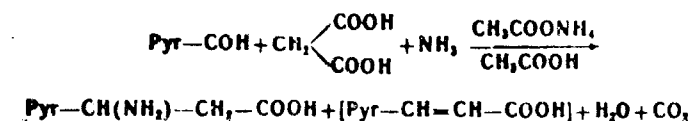
ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet); Agricultural Academy im. K. A. Timiryazev, Moscow (Sel'skokhozyaystvennaya akademiya)

TITLE: Pyrazoles. LIX. Synthesis of β -(pyrazolyl)- β -alanines

SOURCE: Khimiya geterotsiklicheskih soyedineniy, no. 5, 1968, 887-891

TOPIC TAGS: amino acid derivative, amino acid, alanine, pyrazole derivative

ABSTRACT: A series of biologically active substituted pyrazole derivatives of β -alanine was synthesized by the Rodionov reaction:



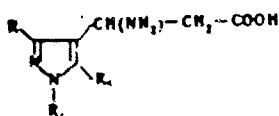
Card 1/4

UDC: 547.772+547.466+547.391.1:543.544.545+543.422.6

ACC NR: AP8037860

The new amino acids are characterized in Table 1. They were isolated

Table 1



R ₁	R ₂	R ₃	Mp, °C	R ₄		Yield %
				I sys-tem	II sys-tem	
C ₆ H ₅	H	H	234-235	0.66	0.29	71.4
C ₆ H ₅	CH ₃	C ₆ H ₅	245-246	0.80	0.45	38.2
C ₆ H ₅	CH ₃	CH ₃	206-207	0.72	0.42	34.7

Card 2/4

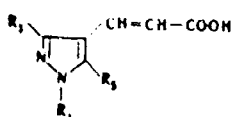
ACC NR: AP8037860

Table 1. (Cont.)

C ₆ H ₅	CH ₃	Cl	213—214	0.77	0.50	48.3
CH ₂ C ₆ H ₅	CH ₃	CH ₃	210—212	0.73	0.49	15
CH ₃	CH ₃	CH ₃	283—285	0.38	0.20	15

by paper chromatography and their structure was confirmed UV spectra and electrophoresis. The acrylic acids which are formed in the above reaction as by-products are characterized in Table 2. The biological

Table 2



R ₁	R ₃	R ₅	Mp, °C	% Yield
C ₆ H ₅	H	H	187 ¹⁴	—
C ₆ H ₅	CH ₃	C ₆ H ₅	245—246 ¹⁴	32.5
C ₆ H ₅	CH ₃	CH ₃	163—164 ¹⁴	31.0
C ₆ H ₅	CH ₃	Cl	201—203	46.0

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ACC NR: AP8037860

Table 2. (Cont.)

CH ₂ C ₆ H ₅	CH ₃	CH ₃	229—230	28.0
CH ₃	CH ₃	CH ₃	201—202	~20

activity of the acids synthesized will be subject of an other article.
Orig. art. has: 2 tables. [WA-50; CBE No. 39][PS]

SUB CODE: 07/ SUBM DATE: 11Jul66/ ORIG REF: 007/ OTH REF: 010

Card 4/4

ACC NR: AP8037857

SOURCE CODE UR/0409/68/000/005/0875/0877

AUTHOR: Grandberg, I. I.; Zuyanova, T. I.

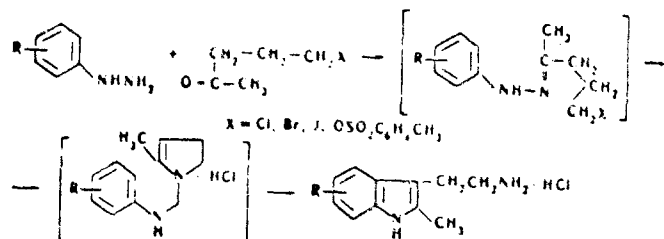
ORG: Timiryazev Agricultural Academy, Moscow (Timiryazevskaya sel'sko-khozyaystvennaya akademiya)

TITLE: Indoles. I. A new method of the synthesis of 2-substituted tryptamines

SOURCE: Khimiya geterotsiklicheskih soyedineniy, no. 5, 1968, 875-877

TOPIC TAGS: indole derivative, heterocyclic nitrogen compound, organic nitrogen compound, tryptamine

ABSTRACT: A new method of the synthesis of the title compound involves the following reactions:

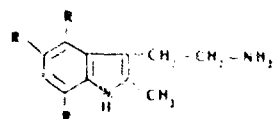


Card 1/3

UDC: 547.754.07:542.953.4

ACC NR: AP8037857

Table 1



R	R	X	Yield, %	Bp, °C (mm)	mp, °C
H	H	H	82	207-208 (10)	107
H	H	OCH ₃	64	191-194 (0.5)	110-111
H	H	CH ₃	76	209-211 (7)	160-162
OCH ₃	H	Br	29	—	115-117
H	OCH ₃	H	65	210-214 (5)	83-84
H	CH ₃	H	74	210-212 (8)	100-101
H	C ₆ H ₅ CHO	H	87***	—	—

*** Isolated as hydrochloride with mp 102-103°C

Card 2/3

ACC NR: AP8037857

The cyclization proceeds on boiling the reaction mixture for 20 hr in methanol solution. After removal of the solvent, the reaction product is treated with warm aqueous 0.5% HCL. After filtration and evaporation, the mixture is treated with NaOH and the tryptamine is extracted with benzene. Some characteristics of the tryptamines synthesized by the new method are given in the table. [WA-50; CBE No. 39] [PS]

SUB CODE: 07/ SUBM DATE: 15Aug66/ ORIG REF: 003/ OTH REF: 006

Card 3/3

ACC NR: AP8037864

SOURCE CODE: UR/0409/68/000/005/0909/0911

AUTHOR: Gryazev, V. F.; Pushkareva, Z. V.; Noskova, I. N.

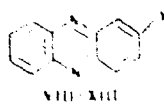
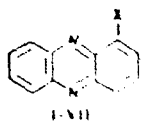
ORG: Urals Polytechnic Institute im. S. M. Kirov, Sverdlovsk (Uralskiy politekhnicheskiy institut)

TITLE: Synthesis and investigation of heterocyclic derivatives with biological activity. X. Study of the dependence of the formation of semiquinones in the phenazine series on the nature of the substituents

SOURCE: Khimiya geterotsiklicheskiy sovedineniy, no. 5, 1968, 909-911

TOPIC TAGS: kinetic chemical reaction rate, quinone, phenazine

ABSTRACT: The kinetics of the formation of semiquinones was studied spectrophotometrically for I—XVI to obtain data concerning the effect of electron-donor and electron-acceptor groups and the place of entry of the substituent. The values of the reduction rate constants for



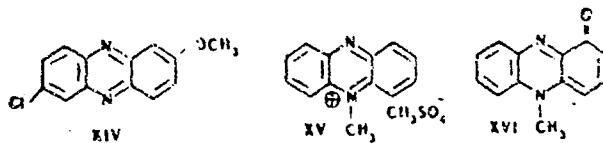
I, X, R, H, VIII, X, CH₃
II, IX, OCH₃, IV, XX, OH
V, XII, NO₂, XI, XIV, Cl
VII, XIII, X, COOH

Card 1/4

UDC: 547.864.2.0.5.02:541.127'69

- 41 -

ACC NR: AP8037864



I—XVI are shown in Table 1. The relation of the reduction rate con-

Table 1.

N	$k \cdot 10^3, \text{sec}^{-1}$	N	$k \cdot 10^3, \text{sec}^{-1}$
II	0,253	VIII	0,562
III	0,449	IX	0,408
IV	2,846	X	—
V	34,350	XI	23,780
VI	0,458	XII	0,141
VII	4,394	XIII	1,085
XV	13,200	XVI	83,100
I	0,650	XIV	0,290

Card 2/4

ACC NR: AP8037864

stants of phenazine derivatives in an acidic medium to the σ_p^+ constants of the substituents is shown in Fig. 1. The high value of k

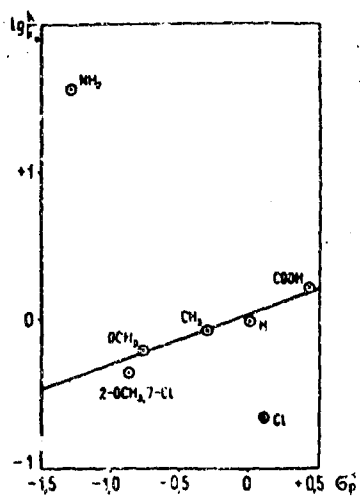


Fig. 1. Relation of rate constants of reduction of phenazine derivatives of σ_p^+ constants of substituents

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ACC NR: AP8037864

for antihypoxic XV is due to the considerable uncompensated positive charge in the phenazine system from the formation of the quaternary salt, and for antibacterially active XVI (pyocyanine) it is due to the disturbance of the stable aromatic system and the formation of a labile σ -quinoid structure. The biological activity of phenazine derivatives which act as electron transfer agents is directly proportional to the value of k . The authors thank Yu. S. Rozum for supplying some of the compounds. Orig. art. has: 1 table and 1 figure. [WA-50; CBE No. 39] []

SUB CODE: 07/ SUBM DATE: 27Sep67/ ORIG REF: 005/ OTH REF: 001

Card 4/4

ACC NR: AP9000138

SOURCE CODE: UR/0079/68/038/011/2587/2588

AUTHOR: Gubaydullin, M. G.

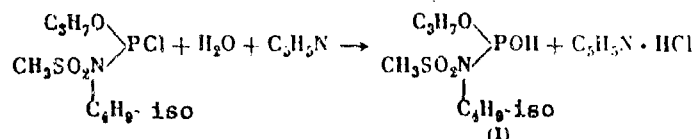
ORG: none

TITLE: Preparation of N-alkyl-N-alkylsulfonylamidoalkylphosphorous acids

SOURCE: Zhurnal obshchey khimii, v. 38, no. 11, 1968, 2587-2588

TOPIC TAGS: phosphorous acid, amido acid, chlorinated organic compound, hydrolysis, phosphorous amide

ABSTRACT: N-isobutyl-N-methylsulfonylamidopropoxyphosphorous acid (I), bp 111—112°C (1 mm), d_4^{20} 1.0865, n_D^{20} 1.4451 was obtained in a 65%



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UDC: 547.26'118

- 43 -

ACC NR: AP9000138

yield by the hydrolysis of propyl-N-isobutyl-N-methylsulfonylamino-chlorophosphite in the presence of aniline. [WA-50; CBE No. 39][PS]

SUB CODE: 07/ SUBM DATE: 19Mar68/ ORIG REF: 001/ OTH REF: 002

Card 2/2

ACC NR: AP9000131

SOURCE CODE: UR/0079/68/038/011/2550/2553

AUTHOR: Gupalo, A. P.; Zemlyanskiy, N. I.

ORG: L'vov State University im. Ivan Franko (L'vovskiy gosudarstvennyy universitet)

TITLE: Amino esters of thiophosphoric acids. III. Reaction of heterocyclic amino alcohols with phosphorus pentasulfide. Transesterification of K salts of amino esters of trithiophosphoric acids

SOURCE: Zhurnal obshchey khimii, v. 38, no. 11, 1968, 2550-2553

TOPIC TAGS: organic phosphate, heterocyclic oxygen compound, amine derivative, dithiophosphate ester

ABSTRACT: Dipotassium O-(N- β -ethylpiperidino)trithiophosphate (I) and K O,O-bis(N- β -ethylpiperidino)dithiophosphate (II) were prepared by adding P₂S₅ to N- β -hydroxyethylpiperidine and heating at 96--100°C. Dipotassium O-(N- β -ethylmorpholino)trithiophosphate (III) and K O,O-bis(N- β -ethylmorpholino)dithiophosphate (IV) were similarly prepared.

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UDC: 547.185

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Table 1. Potassium salts

No.	% Yield	Mp, °C
I	64	190° *
II	31	166—67.5
III	71	175° *
IV	10	175—76.5
V	21	165° *
VI	45	40—41

*Decomposes

Dipotassium O-(2-β-ethylpyridyl)trithiophosphate (V) and K O,O-bis(2-β-ethylpyridyl)dithiophosphate (VI) were obtained by adding P₂S₅ to 2-β-hydroxyethylpyridine in HPh and boiling for 1 hr. Trimethyl trithiophosphate (IX) and ethyl dimethyl trithiophosphate (X) were prepared by adding EtOH and CH₃OH to dipotassium O-(dimethylaminoethyl)trithiophosphate (VII), boiling for 40—60 hr, and boiling the residue with

Card 2/4

CH₃I for 2 hr. Compounds IX and X were similarly prepared from

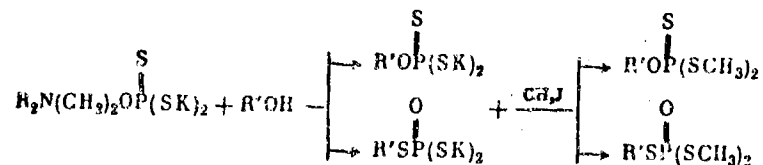
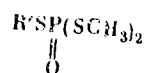


Table 2



Initial salt	R'	% Yield	n _D ²⁰	d ₄ ²⁰
VII	CH ₃	62	1.6068	1.2717
	C ₂ H ₅	47	1.5758	1.2146
VIII	CH ₃	53	1.6062	1.2712
	C ₂ H ₅	40	1.5765	1.2150

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ACC NR: AP9000131

Table 2. (Cont.)

I	CH ₃	59	1.5995	1.2744
	C ₂ H ₅	49	1.5762	1.2149

dipotassium O-(diethylaminoethyl)trithiophosphate (VIII) and I. The salts of amino esters of dithiophosphoric acids do not undergo transesterification in the presence of lower alcohols. Orig. art. has: 2 tables. [WA-50; CBE No. 39][FT]

SUB CODE: 07/ SUBM DATE: 10Nov67/ ORIG REF: 004

Card 4/4

ACC NR: AP8038142

SOURCE CODE: GE/0076/68/000/008/0302/0303

AUTHOR: Henning, H. -G. (Member of chemistry section); Petzold, G. (Member of chemistry section); Busse, G. (Member of chemistry section)

ORG: Chemistry Section, Humboldt University, Berlin (Sektion Chemie der Humboldt-Universität)

TITLE: Preparation of 4-phosphinylpyrazoles

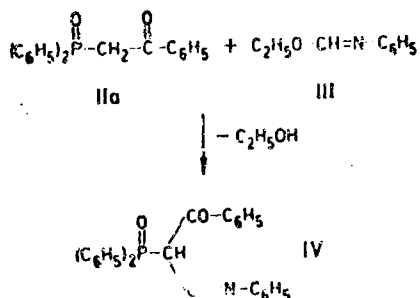
SOURCE: Zeitschrift für Chemie, no. 8, 1968, 302-303

TOPIC TAGS: organic azole compound, pyrazole derivative, phosphinic acid, phosphine oxide derivative

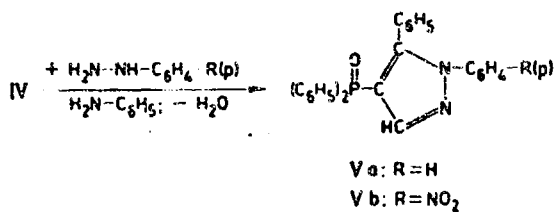
ABSTRACT: Colorless acicular diphenyl-[α -benzoyl- α -(N-phenyl)formimino]methylphosphine oxide (IV) (72.5% yield, mp 72°C with subsequent solidification and remelting at 140°C) was synthesized by refluxing diphenyl- β -phenyl- β -oxoethylphosphine oxide and ethyl N-phenylformimide at 190°C for 35 min. Colorless acicular 2,3-diphenyl-4-diphenylphosphinylpyrazole (Va) (56% yield mp 226-227°C) was prepared by

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ACC NR: AP8038142



refluxing IV and phenylhydrazine in EtOH for 2 hr. Bright-yellow



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ACC NR: AP8038142

acicular 2-p-nitrophenyl-3-phenyl-4-diphenylphosphinylpyrazole (Vb)
(55% yield, mp 256°C) was similarly prepared. [WA-50; CBE No. 39][FT]

SUB CODE: 07/ SUM DATE: 31May68/ ORIG REF: 004/ OTH REF: 002

Card 3/3

AUTHOR: Issleib, K.; Walther, B.; Fluck, E.

ORG Institute of Inorganic Chemistry, Martin Luther University, Halle (Institut für Anorganische Chemie der Martin-Luther-Universität); Inorganic Chemistry Institute, University of Heidelberg (Anorganisch-Chemisches Institut der Universität Heidelberg)

TITLE: Studies of the nuclear magnetic resonance of phosphorus compounds. XIX³¹P-nuclear resonance spectra of alkali-metal phosphinites

SOURCE: Zeitschrift für Chemie, no. 2, 1968, 67

TOPIC TAGS: nuclear resonance, aromatic phosphorus compound, phosphinite ester, phosphine oxide derivative

ABSTRACT: The chemical shifts of concentrated solutions of alkali-metal derivatives of phosphinous acids or secondary phosphine oxides in dioxane and diglym, i.e., (MeOC₂H₄)₂O, were studied to explain whether these metallation products should be given the structural formulas II-IV or

Card 1/3

ACC NR: AP8038128

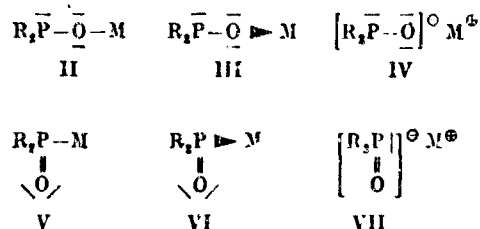


Table 1

M	(n-C ₄ H ₉) ₂ P(O)M		(C ₆ H ₅) ₂ P(O)M	
	Dioxan	Diglym	Dioxan	Diglym
Li	-	-	-	-88.9 ± 0.5
Na	-	-	-90.5 ± 1.0	-82.3 ± 1.0
K	91.2 ± 1.0	-92.2 ± 1.0	-86.8 ± 0.5	-82.3 ± 0.5
Rb	91.8 ± 1.5	-93.9 ± 1.0	-88.4 ± 1.5	-82.3 ± 0.5
Cs	91.7 ± 1.0	-91.1 ± 0.5	-81.6 ± 1.5	-82.3 ± 0.5

V-VII. The obtained data (δ in ppm, 85% aqueous orthophosphoric acid as standard) are shown in Table 1. Formulas II-IV are favored by the high negative shifts and the small differences between shifts. The shifts indicate that free ions do not appear in solutions of dibutylphosphinites, but they may possibly be formed in diglym solutions of diphenylphosphinites. The shift of the resonance signal of Li diphenylphosphinite in diglym to lower field strengths is probably due to

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ACC NR: AP8038128

autocomplexation. The reason for the relatively high negative shifts of Rb phosphinites cannot be explained at present. Orig. art. has: 1 table and 1 figure. [WA-50; CBE No. 39] [FT]

SUB CODE: 07/ SUBM DATE: 19Dec67/ ORIG REF: 007

Card 3/3

ACC NR: AP9000133

SOURCE CODE: UR/0079/68/038/011/2556/2561

AUTHOR: Itskova, A. L.; Soyfer, R. S.; Mandel'baum, Ya. A.; Mel'nikov, N. N.

ORG: All-Union Scientific Research Institute of Chemicals for Plant Protection (Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh sredstv zashchity rasteniy)

TITLE: Alkylation of salts of dialkyl dithiophosphoric acid

SOURCE: Zhurnal obshchey khimii, v. 38, no. 11, 1968, 2556-2561

TOPIC TAGS: pesticide, phosphate ester, dithiophosphate ester

ABSTRACT: The title alkylation was performed to obtain new pesticides. O,O-Diethyl S-(N-ethyl-N-methylsulfonylcarbamoylmethyl)dithiophosphate (IV) was prepared by boiling K O,O-diethyl dithiophosphate and mono-chloroacetic acid N-ethyl-N-methylsulfonylamide in benzene for 5 hr. Compounds I-III, V, and VI were similarly prepared. O,O-Dimethyl

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UDC: 547.185

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ACC NR: AP9000133

Table 1. Dialkyl S-(N-carbamoylmethyl) dithiophosphates

No.	Compound	Yield %	d_4^{20}	n_D^{20}
I	$(C_2H_5O)_2P(S)SCH_2CONSO_2CH_3$	72.4	1.3261	1.5315
II	$(C_2H_5C)_2P(S)SCH_2CONHSO_2C_2H_5$ $\begin{array}{c} \\ CH_3 \end{array}$	61.16	—	*
III	$(C_2H_5O)_2P(S)SCH_2COC_9H_{10}N$	69.8	1.2424	1.5835
IV	$(C_2H_5O)_2P(S)SCH_2CONSO_2CH_3$	65.4	1.2710	1.5170
V	$(C_2H_5O)_2P(S)SCH_2CONSO_2C_2H_5$ $\begin{array}{c} \\ C_2H_5 \end{array}$	75.1	1.19265	1.5050
VI	$(C_2H_5O)_2P(S)SCH_2CONHSO_2C_2H_5Cl_{3,4}$ $\begin{array}{c} \\ C_2H_5 \end{array}$	72.43	—	**
VII	$(CH_3O)_2P(S)SCH_2COC_9H_{10}N$	45.5	1.2965	1.5980
VIII	$(CH_3O)(CH_2S)P(O)SCH_2COC_9H_{10}N$	22.1	1.2763	1.5860

Card 2/5

ACC NR: AP9000133

Table 1. (Cont.)

IX	$(CH_3O)_2P(S)SCH_2CONSO_2CH_3$	44.7	1.3521	1.5340
X	$(CH_3O)(CH_2S)P(O)SCH_2CONSO_2CH_3$ $\begin{array}{c} \\ C_2H_5 \end{array}$	19.4	1.3654	1.5385

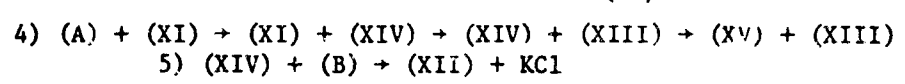
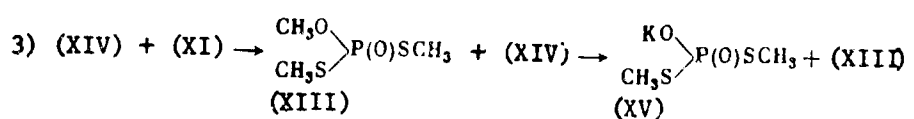
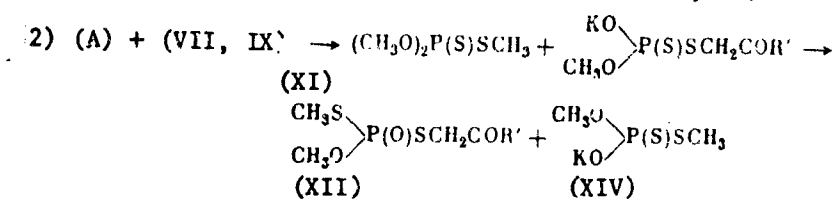
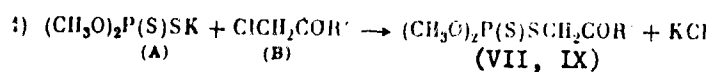
* Mp 55—57°C.

** Mp 53—54°C.

S-(tetrahydroquinolylcar'onylmethyl) dithiophosphate (VII) was similarly obtained in acetone, and VIII—X were similarly prepared. Side reactions which occurred in preparing VII and IX are shown in the reaction sequence.

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ACC NR: AP9000133



O,S,S-Trimethyl dithiophosphate (XIII) (24.3% yield, bp_{0.05} 60—62°C, d₄²⁰ 1.2506, n_D²⁰ 1.5340) was obtained by boiling K O,S-dimethyl dithiophosphate (XIV) and O,O,S-trimethyl dithiophosphate (XI) in acetone for 12 hr. White crystalline XIV (94.6% yield, mp 110—112°C) was obtained by adding XI in acetone to K O,O-dimethyl dithiophosphate and boiling

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ACC NR: AP9000133

for 4 hr. Potassium S,S-dimethyl dithiophosphate (XV) (21.8% yield, mp <250°) was prepared by adding XI in acetone to XIV and boiling for 20 hr. Orig. art. has: 2 tables and 2 figures.

[WA-50; CBE No. 39][FT]

SUB CODE: 07/ SUBM DATE: 30Nov67/ ORIG REF: 002/ OTH REF: 004

Card 5/5

ACC NR: AP8037965

SOURCE CODE: UR/0436/68/000/006/0024/0025

AUTHOR: Ivashchenko, Ya. N.; Moshchinskaya, S. D.; Karabanov, Yu. V.;
Bozhukha, V. I.

ORG: Institute of Organic Chemistry, AN UkrSSR (Institut organicheskoy
khimii AN UkrSSR)

TITLE: Physiological activity of some chlorine-substituted pyridine
derivatives

SOURCE: Khimicheskaya promyshlennost' Ukrainy, no. 6, 1968, 24-25

TOPIC TAGS: plant development, chlorinated aromatic compound, weed
killer, pyridine derivative

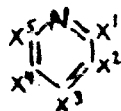
ABSTRACT: A comparative evaluation of the phytophysiological activity
of I—XVI was made to investigate their herbicidal activity. Compound
VIII was synthesized by allowing α, α' -aminopicoline to react with
 H_2O_2 in HCl. Compound III was obtained by diazotization of VIII in
 H_2SO_4 , and IV was similarly prepared in HCl. The majority of I—XVI

Card 1/3

UDC: 632.954-547.821

ACC NR: AP8037965

Table 1

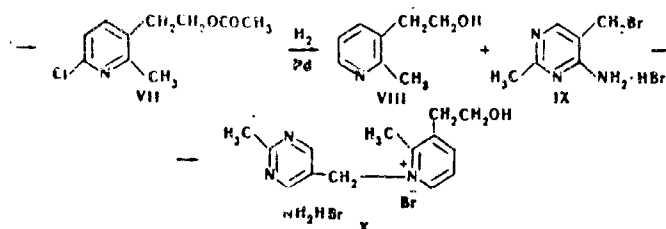


No.	X ¹	X ²	X ³	X ⁴	X ⁵	No.	X ¹	X ²	X ³	X ⁴	X ⁵
I	OH	H	H	Cl	H	IX	NH ₂	Cl	H	Cl	Me
II	OH	Cl	H	Cl	H	X	NH ₂	Cl	H	Cl	Me
III	OH	Cl	H	Cl	Me	XI	Ac ₂ N	Cl	H	Cl	Me
IV	Me	Cl	H	Cl	Cl	XII	AcNH	Cl	H	Cl	Me
V	NH ₂	H	H	Cl	H	XIII	Cl ₃ C	Cl	Cl	Cl	H
VI	NH ₂	Cl	H	Cl	H	XIV	Cl ₃ C	Cl	NH ₂	Cl	Cl
VII	H	Cl	NH ₂	Cl	H	XV	Cl	Cl	Cl	Cl	Cl
VIII	NH ₂	Cl	H	Cl	Me	XVI	COOH	Cl	Cl	Cl	H

inhibit the growth of lettuce roots, but XIII and XVI stimulate the
growth of lettuce and oat roots. Compounds I—IV stimulate the under-
ground development of monocotyledonous plants. Compounds V, VI, VIII,
and IX are stronger inhibitors than I—III, and VII and XIV are stronger

Card 2/3

ACC NR: AP8037853



(mp 170—171°C) was obtained by heating 5% Pd and IV in m-xylene for 24 hr. 2-Methyl-3-(8-chloroethyl)-6-chloropyridine (VI) (77% yield, bp₄ 113—114°C, n_D²⁰ 1.5530) was prepared by heating acidulated V with POCl₃ at 180—190°C for 6 hr. 2-Methyl-2-(8-acetoxyethyl)-6-chloropyridine (VII) (bp₅ 145—146°C) was prepared by heating VI and KOAc in HOAc at 140°C for 6 hr. Colorless crystalline 2-methyl-3-(8-hydroxyethyl)pyridine (VIII) (95% yield, mp 62—63°C) was prepared by adding PdCl₂ in boiling 17% HCl to VII in EtOH and hydrogenating at 20°C for 2 hr. Compound X (73% yield, mp 207—210°C) was obtained by dissolving 2-methyl-5-bromomethyl-6-amino-pyrimidine hydrobromide (IX) and VIII in iso-PrOH. An aqueous 1 x 10⁻⁷% solution of X inhibited the growth of plant seedlings. [WA-50; CBE No. 39] [FT]

SUB CODE: 02, 07/ SUBM DATE: 11Ju166/ ORIG REF: 004/ OTH REF: 001

Card 2/2

ACC NR: AT8038140

SOURCE CODE: UR/9000/67/000/000/0017/0032

AUTHOR: Kalinin, F. L.

ORG: Institute of Plant Physiology, AN UkrSSR (Institut fiziologii rasteniy AN UkrSSR)

TITLE: Mechanisms of activation and inhibition of the growth of plants

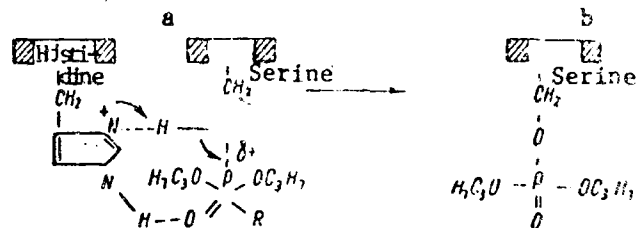
SOURCE: AN UkrSSR. Rost i ustoychivost' rasteniy (Growth and resistance of plants), No. 3. Kiev, "Naukova dumka", 1967, 17-32

TOPIC TAGS: plant chemistry, urea compound, organic azine compound, serine, acetylcholinesterase, histidine

ABSTRACT: Some characteristic chemical processes in the activation and inhibition of plant growth are discussed. Chemical agents discussed are traumatic acid, thiamine, uracil, urea compounds, triazines, organophosphorus compounds, cycloserine, and gibberellins. It is generally considered that the OH of serine is one of the reaction centers of esterases, including acetylcholinesterase (AcChE), which bring about nucleophilic reactions with the substrate at its polarized COOH. The reaction of AcChE with organophosphorus compounds also proceeds through serine (see a). The "modified serine" found in the active center of the

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ACC NR: AT8038140



enzyme is apparently modified by the imidazole ring of histidine. In this process, the O of the serine OH is activated by a H bond with the adjacent imidazole ring. Because of the decreased influence of the positive H, the O becomes somewhat more electronegative and therefore is more easily acted on by the positive P. The serine of the ChE center is phosphorylated by a mechanism which is like AcCh acetylation in the organism (see b). The difference is that the reverse reaction, i.e., the removal of the P group, proceeds very slowly. As a result, the enzyme is irreversibly inhibited. Organophosphorus compounds react by electrophilic attack, attracting P to the atom with a higher electron density. The reaction, in essence, consists in the attack of OH^- or of OH^- by P. If the substituents at P promote an increase in the alkaline hydrolysis rate of the organophosphorus compound, then the

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ACC NR: AT8038140

inactivation rate of the enzyme is increased. This may occur because the groups attached to P make it more electrophilic, i.e., more electropositive, and increase its anti-AcChE activity. Thus, the more electrophilic the substituents, the higher the anti-AcChE activity. In $(RO)_2P(O)OX$ compounds, the anti-AcChE activity decreases as follows: $Me > Et > Pr > Bu$, etc. Replacing RO by R will increase the anti-ChE activity. Triazine compounds block photoreductase of NADP and cytochrome c; urea compounds concurrently inhibit flavin mononucleotide and block the deoxidation of OH in photosynthesis; cycloserine blocks the cationic group of phosphopyridoxal and inhibits transamination. The interpretation of such processes on the physico-chemical level is an urgent task of study. [WA-50; CBE No. 39] [FT]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 003/ OTH REF: 004

Card 3/3

ACC No: AP9001072

SOURCE CODE: UR/0450/68/C02/011/0011/0013

AUTHOR: Kalnberg, R. Yu.; Giller, S. A.; Lidak, M. Yu.; Alekseyeva, L. N.; Kruzmetra, L. V.; Brizga, B. A.; Zile, A. Ya.; Petersone, I. O.

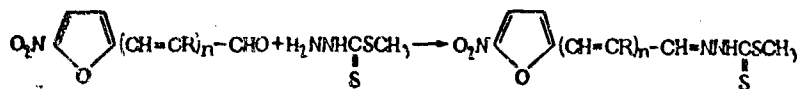
ORG: Institute of Organic Synthesis, AN LatSSR, Riga (Institut organichesko sinteza, AN LatSSR)

TITLE: Synthesis and biological activity of methylthiocarbazonates of unsaturated aldehydes of the 5-nitrofurane series

SOURCE: Khimiko-farmatsevticheskiy zhurnal, v. 2, no. 11, 1968, 11-13

TOPIC TAGS: furan compound, organic sulfur compound, organic nitrogen compound, bactericide, fungicide

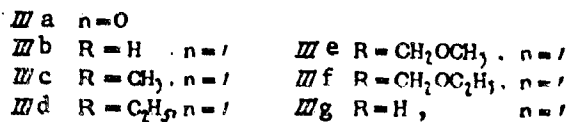
ABSTRACT: In a search for new bactericides and fungicides and to study their toxicity, a series of dithiocarbazonates of 5-nitrofurane series was synthesized for the first time by the reaction:



Card 1/5

UDC: 612.433.544.121:454.321.112

ACC NR: AP9001072



Compounds IIIa, IIIb, and IIIg were obtained by the reaction of the appropriate compounds I and II at room temperature in ethanol with subsequent cooling to 5-10°C and removal of final product by filtration. Compound IIIc is formed when a mixture of sulfuric acid and propanol is heated to 70°C and then treated with α -methyl[β -(5-nitro-furyl)]acrolein diacetate at 75-79°C. After cooling to 50°C, the reaction mixture is treated with methyl ester of dithiocarbamic acid in isopropanol. Compounds IIId, IIIe, and IIIf were obtained by a similar procedure. The new compounds are characterized in Table 1.

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ACC NR: AP9001072

Table 2. (Cont.)

Candida albicans	67/846	83,3	83,3	83,3	83,3	83,3
Epidermophyton Kaufman—Wolf	41	83,3	83,3	83,3	83,3	83,3
Trichophyton gypseum	43	83,3	83,3	83,3	83,3	83,3

unbranched chain dithiocarbazonates are more toxic than those with alkyl and alkoxy radicals in the α -position. The following LD₅₀ values for IIIa, IIIb, IIIg, and IIIe were obtained 223, 116, 510, and 1870 mg/kg, respectively. Compounds IIIc and IIId were nontoxic even in doses of 6000 mg/kg. Orig. art. has: 2 tables.

[WA-50; CBE No. 39][PS]

SUB CODE: 06, 07/ SUBM DATE: 30Apr68/ ORIG REF: 002/ OTH REF: 004

Card 5/5

ACC NR: AP9000046

SOURCE CODE: UR/0426/68/021/007/0588/0593

AUTHOR: Kazaryan, L. Z.; Tagmazyan, K. Ts.; Vardanyan, Ts. Kh.

ORG: Yerevan Polytechnic Institute im. K. Marks (Yerevanskiy politekhnicheskiy institut)

TITLE: Synthesis of N,N-dialkylaminoacetaldehyde dialkylacetals

SOURCE: Armyanskiy khimicheskiy zhurnal, v. 21, no. 7, 1968, 588-593

TOPIC TAGS: acetal, acetaldehyde, aliphatic amine, physiologically active compound

ABSTRACT: The title compounds were synthesized for a study of the kinetics of the synthesis of polyvinyl aminoacetals. The title compounds are of interest from the standpoint of their physiological activity. Their analogs display anthelmintic properties and are intermediates of a series of patented preparations. Hexamethylenediamine acetaldehyde dimethylacetal (I) and hexamethylenediamine acetaldehyde bis(dimethylacetal) (II) were synthesized by stirring hexamethylenediamine, MeOH, and bromoacetaldehyde dimethylacetal at 50—60°C for 18 hr. Compounds III—VII were similarly prepared. Morpholine

Card 1/5

UDC: 542.951.2

ACC NR: AP9000046

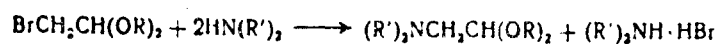


Table 1







No.	R	R'	% Yield	Bp, °C/mm	n _D ²⁰	d ₄ ²⁰
I	H	CH ₃	50	125-127/5.5	1.4568	0.9544
II	CH ₂ CH() ₂	CH ₃	4	175-185/4	1.4595	0.9935
III	H	C ₂ H ₅	52	130-135/1.5	1.4523	0.9350
IV	H	C ₃ H ₇	64	160-162/4	1.4528	0.9167
V	CH ₂ CH(OC ₂ H ₅) ₂	C ₂ H ₅	5	235-237/6	1.4523	0.9280
VI	H	C ₄ H ₉	43	168-169/1.5	1.4540	0.9040
VII	CH ₂ CH(OC ₄ H ₉) ₂	C ₄ H ₉	7	240-242/1.0	1.4538	0.9156

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ACC NR: AP9000046

acetaldehyde dimethylacetal (VIII) was synthesized by stirring morpholine









Table 2. Aminoacetals

	Compounds	% Yield	Bp, °C/mm	n _D ²⁰	d ₄ ²⁰
VIII	 NCH ₂ CH(OCH ₃) ₂	63	62-63/2.5	1.4543	0.9421
IX	 NCH ₂ CH(OCH ₃) ₂	61	57-58/5	1.4445	0.9698
X	 NCH ₂ CH(OCH ₃) ₂	63	64-65/4	1.4531	0.9650
XI	(CH ₂ CH(CH ₃)CH ₃) ₂ NCH ₂ CH(OCH ₃) ₂	33	86-87/2.5	1.4294	0.8661
XII	(HOCH ₂ CH ₂) ₂ NCH ₂ CH(OCH ₃) ₂	43	155-156/6	1.4671	1.0971
XIII	 NCH ₂ CH(OC ₂ H ₅) ₂	79	78-79/12	1.4468	0.9855

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ACC NR: AP9000046

Table 2. (Cont.)

XIV		56	68-70/4	1,4493	0,9441
XV		68	78-80/3	1,4491	0,9309
XVI	$(\text{CH}_3)_2\text{NCH}_2\text{CH}(\text{OC}_2\text{H}_5)_2$	64	49-50/2	1,4221	0,8642
XVII		75	126/10	1,4506	0,9692
XVIII		63	92-92,5/5	1,4460	0,9161
XIX		68	82-84/1	1,4509	0,9157
XX	$(\text{CH}_3)_2\text{NCH}_2\text{CH}(\text{OC}_4\text{H}_9)_2$	62	81-83/1,5	1,4278	0,8673
XXI	$(\text{C}_2\text{H}_5)_2\text{NCH}_2\text{CH}(\text{OC}_4\text{H}_9)_2$	20	105-106/4	1,4325	0,8624
XXII		69	123-124/2	1,4511	0,9510
XXIII		72	113-114/2	1,4511	0,9077
XXIV		53	105/2	1,4484	0,9095

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ACC NR: AP9000046

and bromoacetaldehyde dimethylacetal at 65-70°C for 6 hr. Compounds IX-XXIV were similarly prepared. Orig. art. has: 2 tables.

[WA-50; CBE No. 39][FT]

SUB CODE: 07/ SUBM DATE: 22May67/ ORIG REF: 001/ OTH REF: 005

Card 5/5

ACC NR: AT8038141

SOURCE CODE: UR/0000/67/000/000/004/0069

AUTHOR: Kolobova, M. L.; Martynenko, V. I.; Mel'nichuk, A. S.; Ushakova, L. T.

ORG: Ukrainian Scientific Research Institute of Agriculture (Ukrainskiy nauchno-issledovatel'skiy institut zemledeliya)

TITLE: Effect of 2,4-D herbicide on some indices of the quality of winter wheat grain

SOURCE: AN UkrSSR. Rost i ustoychivost' rasteniy (Growth and resistance of plants), no. 3. Kiev, "Naukova dumka", 1967, 64-69

TOPIC TAGS: wheat, carbohydrate metabolism, herbicide

ABSTRACT: Winter wheat plants were treated with butyl (2,4-dichlorophenoxy)acetate (0.3 kg per hectare, gray podzol-like soil) in the bushing phase. Two-year biochemical studies revealed an intensification of the carbohydrate metabolism. The accumulation of stored carbohydrates in the grain caused a reduction in the formation and accumulation of proteins in the grain. The content of carbohydrates in winter wheat grain in the phase of lactic-wax maturity (in % of air-dried substance) is shown in Table 1. The content of nitrogen in

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ACC NR: AT8038141

Table 1. Content of carbohydrates (in % of air-dry substance) in winter wheat grain in 1965

Variant	Forms of carbohydrates				Total
	Mono-Saccharose	Di-Saccharose	Starch and hemi-celluloses	Cellulose	
Chemical weeding	2.62	3.46	41.17	1.94	49.20
Hand weeding	3.07	2.49	37.80	1.87	45.23

winter wheat grain with respect to the method of weeding (in % of absolutely dry substance in the phase of lactic-wax maturity) is shown in Table 2. It is possible that 2,4-D affects the deamination

Table 2. Content of N (in % of air-dry substance) in winter wheat grain

Variant	1964		1965	
	Total	Protein	Total	Protein
Chemical weeding	2.26	1.70	1.67	1.45
Hand weeding	2.36	1.89	1.89	1.76

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ACC NR: AT8038141

of amino acids and the secondary processes of the synthesis of carbohydrates. The index of the protein content of winter wheat grain is a basic factor in its quality and its decrease is a cause for concern. Orig. art. has: 3 figures and 3 tables. [WA-50; CBE No. 39][FT]

SUB CODE: 02/ SUBM DATE: none/ ORIG REF: 003

Card 3/3

ACC NR: AP9000141

SOURCE CODE: UR/0079/66/08/011/2590/2591

AUTHOR: Kondrat'yev, Yu. A.; Tarasov, V. V.; Ivakina, N. M.; Ivin, S. Z.; Pastushkov, V. N.

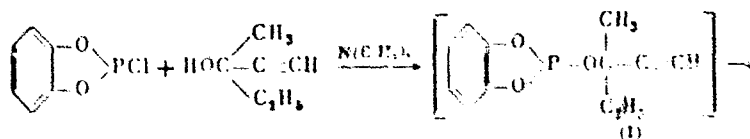
ORG: none

TITLE: 1,2-Benzenediol ester of γ -methyl- γ -ethylallene phosphonic acid

SOURCE: Zhurnal obshchey khimii, v. 38, no. 11, 1968, 2590-2591

TOPIC TAGS: phosphonic acid, phosphonate ester, phosphonic acid derivative, organic phosphorus compound

ABSTRACT: The 1,2-benzenediol ester of γ -methyl- γ -ethylallene phosphonic acid (II), mp 65--66°C was synthesized by the reaction:

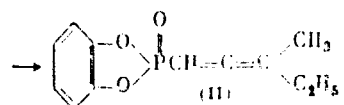


Card 1/2

UDC: 547.341

- 62 -

ACC NR: AP9000141



which takes place at -50°C in ether in the presence of triethylamine. Compound I could not be isolated. After removal of the solvent, compound I undergoes a rapid rearrangement into II. The structure of the latter compound was established by IR spectra. [WA-50; CBE No. 39][PS]

SUB CODE: 07/ SUBM DATE: 11Apr68/ ORIG REF: 002/ OTH REF: 003

Card 2/2

ACC NR: AP9000140

SOURCE CODE: UR/0079/68/038/011/2589/2589

AUTHOR: Kondrat'yev, Yu. A.; Vdovina, E. S.; Arbisman, Ya. S.; Tarasov, V. V.; Strukov, O. G.; Dubov, S. S.; Ivin, S. Z.

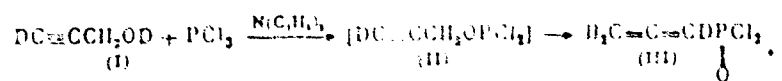
ORG: none

TITLE: α -Deuteroallenephosphonic dichloride

SOURCE: Zhurnal obshchey khimii, v. 38, no. 11, 1968, 2589

TOPIC TAGS: chlorinated organic compound, phosphonic acid derivative, organic phosphorus compound, deuterium compound

ABSTRACT: α -Deuteroallenephosphonic dichloride (III), bp $63-65^{\circ}\text{C}$ (1.5 mm), d_4^{20} 1.4101 was obtained by the reaction of the alcohol I with phosphorus trichloride in the presence of triethylamine at -30°C :



The isomerization of the intermediate compound II was affected in benzene with heating for 12 hr at $60-70^{\circ}\text{C}$. [WA-50; CBF No. 39][PS]

SUB CODE: 07/ SUBM DATE: 16Apr68/ ORIG REF: 004 OTH REF: 001

Card 1/1

UDC: 547.341

- 63 -

ACC NR: AT9003202

SOURCE CODE: UR/3445/68/000/004/0137/0139

AUTHOR: Kondratyuk, V. I.

ORG: Kiev Scientific Research Institute of Pharmacology and Toxicology,
(Kiyevskiy nauchno-issledovatel'skiy institut farmakologii i toksikologii)

TITLE: Effect of some derivatives of phosphorus acids on the activity
of serum cholinesterase

SOURCE: Kiyev. Nauchno-issledovatel'skiy institut farmakologii i
toksikologii. Farmakologiya i toksikologiya, no. 4, 1968, 137-139

TOPIC TAGS: cholinesterase inhibitor, aliphatic phosphorus compound,
aliphatic ester, organic amide, thiophosphonate

ABSTRACT: The anticholinesterase activity of isopropyl methylfluoro-
thiophosphonate (I), methylphosphonyl isothiocyanate (II), isopropyl
-isopropylamidophosphonate (III), p-chlorophenyl ethylurethanmethyl-
phosphonate (IV), and dimethyl N-methylisopropylurethanphosphate (V)
was studied in vitro (horse serum cholinesterase) and in vivo (on rats).
The cholinesterase activity of compounds I-V was characterized by the
index I_{50} which is the molar concentration of the inhibitor needed to
decrease the activity of cholinesterase by 50%. The experimental
results are given in the table. The anticholinesterase activity of

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UDC: 615-092.259

ACC NR: AT9003202

Table 1. Anticholinesterase activity of
some derivatives of phosphorus acids

Compound	LD ₅₀ (rats, hypodermic)		I ₅₀	
	mg/kg	μM/kg	in vitro	in vivo
I	0,48 (0,76 ÷ 0,3)	3,1	9,3 · 10 ⁻⁹	3,1 · 10 ⁻⁶
II	12 (14,6 ÷ 10)	72	6,8 · 10 ⁻⁸	6,5 · 10 ⁻⁵
III	3,6 (5,7 ÷ 2,2)	24,3	9,6 · 10 ⁻⁵	3 · 10 ⁻⁵
IV	13 (16,9 ÷ 10)	52	2,1 · 10 ⁻⁴	7 · 10 ⁻⁵
V	950 (1178 ÷ 104)	4,2 M/kg	3 · 10 ⁻³	—

the above compounds differs, depending on their structure and composition. Compounds I and II inhibit the activity of cholinesterase in both experiments in vitro and in vivo. Compounds III and IV are more active cholinesterase inhibitors in vivo than in vitro. Compound V has the

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ACC NR: AT9003202

lowest anticholinesterase activity; in experiments in vivo the inhibiting activity of V was so low that it could not be determined.

[WA-50; CBE No. 39] [PS]

SUB CODE: 06, 07/ SUBM DATE: none

Card 3/3

ACC NR: AP9000189

SOURCE CODE: UR/0366/68/004/011/1928/1932

AUTHOR: Konstantinova, N. V.; Shvindlerman, G. S.; Baskakov, Yu. A.

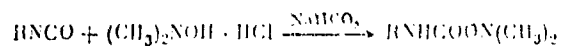
ORG: All-Union Scientific Research Institute of Chemicals for Plant Protection, Moscow (Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh sredstv zashchity rasteniy)

TITLE: Herbicidal derivatives of hydroxylamine. XXI. O-Carbamoyl-N,N-dialkylhydroxylamines

SOURCE: Zhurnal organicheskoy khimii, v. 4, no. 11, 1968, 1928-1932

TOPIC TAGS: hydroxylamine, carbamic acid, urea compound, carbamate

ABSTRACT: The title compounds are of interest as possible herbicides. O-Arylcarbamoyl-N,N-dimethylhydroxylamines (I-V) were synthesized by adding saturated aqueous NaHCO_3 to RNCO and $\text{HON}(\text{CH}_3)_2$ in HPh and heating to $60-70^\circ\text{C}$ for 2 hr. O-Arylcarbamoyl-N,N-dialkylhydroxylamines (VI-XVIII) were prepared by adding HONAlk_2 in HPh to RNCO in HPh and



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UDC: 547.298.7+632.954

- 65 -

Table 1

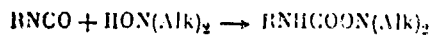
No.	R	Alk	% Yield	Bp (p in mm)* or mp
I	m-ClC ₆ H ₄	CII ₅	54.5	60-61°
II	p-ClC ₆ H ₄		58.3	64-64.5
III	3,4-Cl ₂ C ₆ H ₃		48.2	88-89
IV	C ₆ H ₅		42.8	48-48.5
V	p-O ₂ NC ₆ H ₄		55.0	95-96
VI	o-ClC ₆ H ₄	C ₂ H ₅	55.2	116-117 (0.15)
VII	m-ClC ₆ H ₄		64.6	50-51
VIII	p-ClC ₆ H ₄		59.8	72-73
IX	3,4-Cl ₂ C ₆ H ₃		56.0	65-66
X	p-O ₂ NC ₆ H ₄		50.0	78-79
XI	CH ₃		80.5	40-41
XII	C ₂ H ₅		70.8	82-83 (0.05)
XIII	iso-C ₂ H ₅		64.0	70-72 (0.04)
XIV	tert-C ₄ H ₉	85.0	44-45	
XV	o-ClC ₆ H ₄	C ₂ H ₇	55.9	116-120 (0.15)
XVI	m-ClC ₆ H ₄		44.5	120 (0.4, (Dec))
XVII	p-ClC ₆ H ₄		74.5	78-80
XVIII	3,4-Cl ₂ C ₆ H ₃		54.8	60-62

* n_D²⁰: 1.5325 (VI), 1.4427 (XII), 1.4368 (XIII), 1.5288 (XV), 1.5466 (XV).

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ACC NR: AP9000189

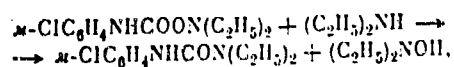
stirring for 1-2 hr. Compounds XI-XIV were obtained by boiling.



Methyl m-chlorophenylcarbamate (45.5% yield, mp 82.5-83.5°C) was prepared by boiling VII, NaOH, and MeOH for 6 hr. N-m-Chlorophenyl-N',N'-diethylurea (79.5% yield, mp 88-89°C) was prepared by boiling VII,



Et₂NH, and HPh for 18 hr. O-Carbamoyl-N,N-dialkylhydroxylamines display



noticeably less herbicidal activity than O-carbamoyl ketoximes. Compound VII (3 kg per hectare) caused 50% inhibition of the growth of roots and sprouts of monocotyledonous and dicotyledonous plants without displaying selectivity. The authors thank A. F. Vasil'ev for help in discussing the IR spectra. Orig. art. has: 1 figure and 1 table.

[WA-50; CBE No. 39][FT]

SUB CODE: 02, 07/ SUBM DATE: 20Nov67/ ORIG REF: 002/ OTH REF: 005

Card 3/3

ACC NR: AP8037863

SOURCE CODE: UR/0409/68/000/065/0905/0908

AUTHOR: Kornilov, M. Yu.; Bayadyusha, G. G. ; Babichev, F. S.

ORG: Kiev State University im. T. G. Shevchenko (Kiyevskiy gosudarstvennyy universitet)

TITLE: Isoelectron analogs of indolycine. VII. Protonation of pyrrolo [1,2-a]benzimidazoles

SOURCE: Khimiya geterotsiklicheskikh soedineniy, no. 5, 1968, 905-908

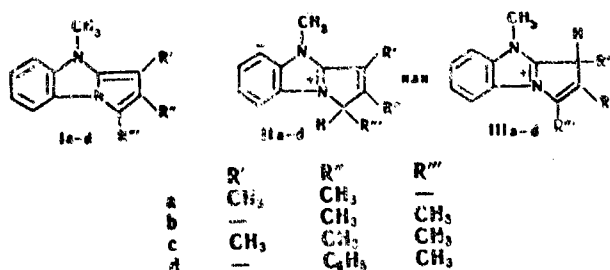
TOPIC TAGS: organicazole compound, electron density, benzimidazole derivative

ABSTRACT: The structure of the perchlorates of ,2,3,4-trimethylpyrrolo [1,2-a]benzimidazole (Ia), 1,2,4-trimethylpyrrolo[1,2-a]benzimidazole (Ib), 1,2,3,4-tetramethylpyrrolo[1,2-a]benzimidazole (Ic), and 1,4-dimethyl-2-phenylpyrrolo[1,2-a]benzimidazole (Id) in trifluoroacetic acid was studied by PMR spectroscopy. Crystalline Ic (mp 165--166°C) was

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UDC: 547.759'785.5:541.67

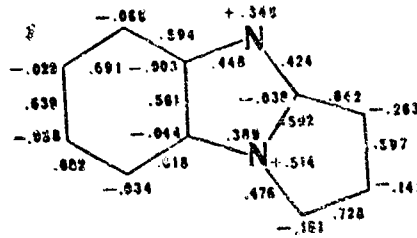
ACC NR: AP8037863



obtained by heating 1-methyl-2-ethyl-3-(methylacetylmethine)benzimidazolium bromide with Na₂CO₃. Protonation of Ia—Id proceeds in the 1-position. Thus, colorless Ic (mp 194--195°C) was obtained by treating Ic with HClO₄. Nevertheless, the electron density in the 3-position is greater than in the 1-position. Irreversible reactions with strong

Card 2/3

ACC NR: AP8037853



Electrophiles may result in addition or substitution in the 3-position.
The authors thank Yu. A. Ustynyuk for photographing the PMR spectra.
Orig. art. has: 1 table and 1 figure. [WA-50; CBE No. 39] [FT]

SUB CODE: 07/ SUBM DATE: 29Aug66/ ORIG REF: 002/ OTH REF: 008

Card 3/3

ACC NR: AP9000130

SOURCE CODE: UR/0079/68/038/011/2548/2550

AUTHOR: Korshunov, M. A.; Kuzovleva, R. G.

ORG: Scientific Research Institute of Monomers for Synthetic Rubber
(Nauchno-issledovatel'skiy institut monomerov dlya sinteticheskogo
kauchuka)

TITLE: Esters of α,β -unsaturated acids with functional groups in the
alkoxy radical. V. Reactions of aminoalkyl acrylates and meth-
acrylates with dialkylphosphorous acids

SOURCE: Zhurnal obshchey khimii, v. 38, no. 11, 1968, 2548-2550

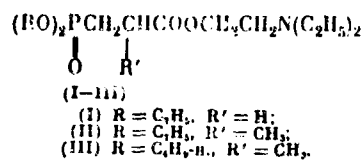
TOPIC TAGS: phosphorous acid, phosphorous acid derivative, aliphatic
phosphorous compound, aliphatic ester, acrylate ester

ABSTRACT: In the presence of sodium ethoxide as a catalyst, dialkyl-
phosphorous acids add to amino esters of acrylic and methacrylic acids
to form the addition products I—XII:

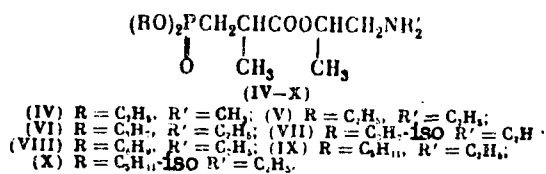
Card 1/3

UDC: 547.294'26'233.3'18.
07+547.293'26'233.3'18.07

ACC NR: AP9000130



The exothermic reaction proceeds with self-heating from room temperature to 100–145°C. The structure of the new compounds was confirmed



Card 2/3

ACC NR: AP9000130

Table 1. Yields and physical constants

Compd	% Yield	Bp, °C (mm)	d ₄ ²⁰	n _D ²⁰	MR _D	
					Found	Calcd
I	57	159° (3)	1.0533	1.4470	78.36	78.69
II	40	158–159 (2)	1.0368	1.4470	83.24	83.31
III	53	183–185 (1)	1.0041	1.4483	101.58	101.10
IV	84	148 (2)	1.0389	1.4403	78.43	78.69
V	75	152–153 (1)	1.0202	1.4441	87.74	87.89
VI	78	159–161 (1)	1.0025	1.4442	96.92	97.17
VII	70	152–153 (1)	0.9963	1.4412	96.73	97.17
VIII	68	177 (1)	0.9892	1.4460	105.90	106.40
IX	80	195 (1.5)	0.9774	1.4478	115.55	115.64
X	75	173 (1)	0.9735	1.4460	115.31	115.64
XI	43	195–198 (1)	0.9709	1.4501	120.20	120.26
XII	43	183–184 (2)	1.0742	1.4618	85.54	85.73

by IR absorption spectra. The yield and physical constants of the addition products are given in Table 1. [WA-50; CBE No. 39][PS]

SUB CODE: 07/ SUBM DATE: 28Aug67/ ORIG REF: 003

Card 3/3

ACC NR: AP9003921

SOURCE CODE: UR/0419/68/000/005/0104/0106

AUTHOR: Kozlov, N. S.; Kozlova, T. Ye.

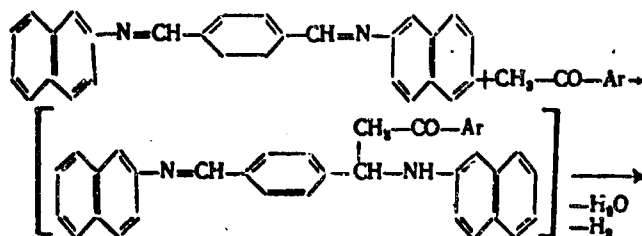
ORG: Institute of Physical and Organic Chemistry, AN BSSR (Institut fiziko-organicheskoy khimii AN BSSR)

TITLE: Catalytic synthesis of new derivatives of 5,6-benzoquinoline

SOURCE: AN BSSR. Vestsi. Seryva khimichnykh navuk, no. 5, 1968, 104-106

TOPIC TAGS: pesticide, organic imine compound, imine compound, quinoline derivative

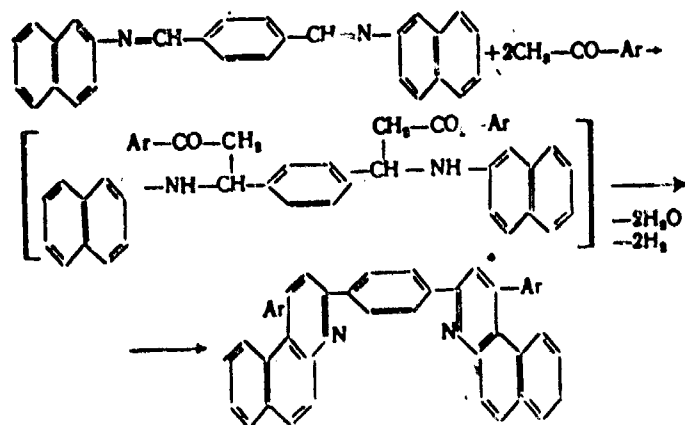
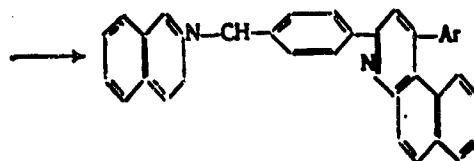
ABSTRACT: In a search for new drugs and pesticides, a series of new derivatives of 5,6-benzoquinoline was synthesized by the condensation reactions:



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UDC: 547.651:547.832

ACC NR: AP9003921



Card 2/4

ACC NR: AP9003921

The condensation products are characterized in Tables 1 and 2, respectively:

Table 1. 5,6-Benzoquinoline derivatives

Ar	% Yield	Mp, °C
C ₆ H ₅ -	36	310-312
p-CH ₃ C ₆ H ₄ -	38	303-305
p-ClC ₆ H ₄ -	40	296-298
p-BrC ₆ H ₄ -	53	332-334
p-CH ₂ OC ₆ H ₄ -	43	282-283
p-NO ₂ C ₆ H ₄ -	47	338-340

Table 2. Diquinoline compounds

Ar	% Yield	Mp, °C	Formula
C ₆ H ₅ -	41	330-332	C ₄₄ H ₃₀ N ₂
p-CH ₃ C ₆ H ₄ -	45	310-312	C ₄₄ H ₃₀ N ₂
p-FC ₆ H ₄ -	48	299-300	C ₄₄ H ₂₈ N ₂ F ₂
p-ClC ₆ H ₄ -	50	302-310	C ₄₄ H ₂₈ N ₂ Cl ₂
p-BrC ₆ H ₄ -	52	335-336	C ₄₄ H ₂₈ N ₂ Br ₂
p-IC ₆ H ₄ -	54	376-378	C ₄₄ H ₂₈ N ₂ I ₂
p-CH ₂ OC ₆ H ₄ -	38	283-285	C ₄₄ H ₃₂ N ₂ O ₂
p-C ₆ H ₄ OC ₆ H ₄ -	46	294-295	C ₄₄ H ₃₀ N ₂ O ₂
p-NO ₂ C ₆ H ₄ -	46	390-391	C ₄₄ H ₂₈ N ₂ O ₄
p-xenyl	40	352-354	C ₄₈ H ₃₀ N ₂

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ACC NR: AP9003921

Both reactions proceed in sealed ampules at 120°C in alcohol solution in the presence of catalytic amounts of concentrated hydrochloric acid and nitrobenzene. The structure of the compounds synthesized was established by IR spectra. [WA-50; CBE No. 39] [PS]

SUB CODE: 07/ SUBM DATE: 16Mar68/ ORIG REF: 012/ GTH REF: 002

Card 4/4

ACC NR: AP8037856

SOURCE CODE: UR/0409/68/000/005/0863/0865

AUTHOR: Kozlov, N. S.; Misenzhnikov, V. V.; Kozlova, T. Ye.;
Misenzhnikova, N. B.

ORG: Perm' Pedagogical Institute (Permskiy pedagogicheskiy institut)

TITLE: Substituted 4-styryl derivatives of 5,6-benzoquinoline

SOURCE: Khimiya geterotsiklicheskiykh soyedineniy, no. 5, 1968, 863-865

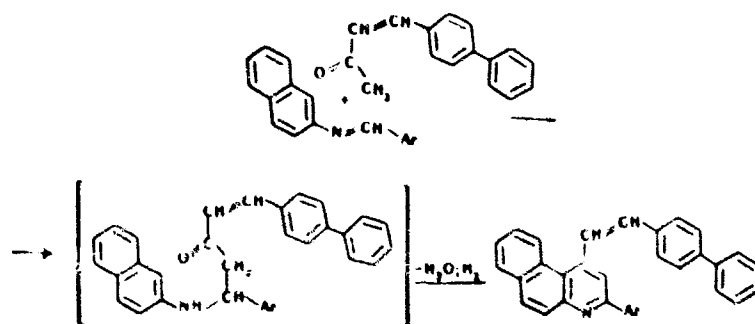
TOPIC TAGS. Bactericide, heterocyclic nitrogen compound, brominated organic compound, chlorinated organic compound

ABSTRACT: Styryl derivatives of heterocyclic nitrogen compounds have a wide spectrum of biological activity including bactericidal and trypanocidal activity. A series of new styryl derivatives of 5,6-benzoquinoline was synthesized by the catalytic condensation of arylidene-2-naphthylamines with p-phenylbenzylideneacetone and p-bromobenzylideneacetone in the presence of HCl (as the catalyst) and nitrobenzene in alcohol in a sealed tube at 100°C:

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UDC: 547.832.5'538.141'621:542.953

ACC NR: AP8037856



The new compounds are characterized in the table. The structure of
Substituted 4-styryl-2-aryl-5,6-benzoquinolines

No.	Compound (X = 5,6-benzoquinoline)	Mp, °C	X Yield
1	2-Phenyl-4-(4''-phenylstyryl)-X	209—210	35.6
2	2-Methoxyphenyl-4-(4''-phenylstyryl)-X	194—196	33.2
3	2-(4'-Chlorophenyl)-4-(4''-phenylstyryl)-X	192—193	45.8
4	2-(4'-Bromophenyl)-4-(4''-phenylstyryl)-X	209—210	32.7

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ACC NR: AP8037356

5	2-(4'-Nitrophenyl)-4-(4''-phenylstyryl)-X	220—222	55.5
6	2-(3'-Nitrophenyl)-4-(4''-phenylstyryl)-X	180—181	61.1
7	2-(3',4'-Dimethoxyphenyl)-4-(4''-phenylstyryl)-X	184—185	41.0
8	2-(3',4'-Methylenedioxyphenyl)-4-(4''-phenylstyryl)-X	204	27.7
9	2-(4'-Xylyl)-4-(4''-phenylstyryl)-X	204—205	28.5
10	2-(4'-Ethoxyphenyl)-4-(4''-phenylstyryl)-X	204—205	37.6
11	2-(4'-Fluorophenyl)-4-(4''-phenylstyryl)-X	169—170	35.9
12	2-(3'-Oxyphenyl)-4-(4''-phenylstyryl)-X	221—222	48.3
13	2-Phenyl-4-(4''-phenylstyryl)-X	151—152	57.2
14	2-(4'-Chlorophenyl)-4-(4''-bromostyryl)-X	192—193	60.0
15	2-(3'-Chlorophenyl)-4-(4''-bromostyryl)-X	187—188	65.2
16	2-(4'-Fluorophenyl)-4-(4''-bromostyryl)-X	181—182	45.3
17	2-(3'-Fluorophenyl)-4-(4''-bromophenyl)-X	175—176	51.0

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ACC NR: AP8037856

18	2-(4'-Bromophenyl)-4-(4''-bromostyryl)-X	206—207	55.2
19	2-(4'-Nitrophenyl)-4-(4''-bromostyryl)-X	257—259	34.5
20	2-(3'-Nitrophenyl)-4-(4''-bromostyryl)-X	253—254	41.0
21	2-(2'-Oxyphenyl)-4-(4''-bromostyryl)-X	204—205	58.4
22	2-(4'-Methoxyphenyl)-4-(4''-bromostyryl)-X	211—212	35.1
23	2-(3',4'-Dimethoxyphenyl)-4-(4''-bromostyryl)-X	132—133	44.0
24	2-(4'-Ethoxyphenyl)-4-(4''-bromostyryl)-X	191—192	31.4

the new compounds was confirmed by IR spectra. [WA-50; CBE No. 39][PS]

SUB CODE: 07/ SUBM DATE: 16Jul66/ ORIG REF: 002/ OTH REF: 001

Card 4/4

ACC NR: AT9003200

SOURCE CODE: UR/3445/68/000/004/0103/0107

AUTHOR: Levchuk, G. A.; Bogdanovich, V. S.; Shovkoplyas, N. P.

ORG: Kiev Scientific Research Institute of Pharmacology and Toxicology
(Kiyevskiy nauchno-issledovatel'skiy institut farmakologii i toksikologii)

TITLE: Effect of cholinesterase reactivators on some indices of the oxygen metabolism of the organism

SOURCE: Kiyev. Nauchno-issledovatel'skiy institut farmakologii i toksikologii. Farmakologiya i toksikologiya, no. 4, 1968, 103-107

TOPIC TAGS: cholinesterase, oxygen metabolism, cholinesterase reactivator, organic oxime compound

ABSTRACT: In addition to their effect on cholinesterase, the therapeutic action of oximes in organophosphorus poisonings may also be due to easing and, possibly, prevention of disturbances in the oxygen metabolism of the organism. The title study was performed to learn how Isonitrosine and Dipiroksim [i.e., TMB-4] affect the oxygen metabolism in the healthy organism. The study was conducted on 12 healthy dogs after intramuscular administration of Isonitrosine (20.0 mg/kg) and Dipiroksim (2.5 and 5.0 mg/kg). An investigation was performed of the

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UDC: 615-092.259

ACC NR: AT9003200

following indices: gas metabolism in the lungs, respiratory function of the blood, oxygen tension in the muscular tissue, incompletely oxidized products of the urine and blood, and some indices of hemodynamics. The results showed that Isonitrosine and Dipiroksim are able to cause a rapid change in the oxygen metabolism of the organism. This is mainly apparent in the increase in the intensity of the oxidative processes in the tissues and the improvement in the supply of oxygen to them, especially in the case of Isonitrosine. The favorable effect of cholinesterase reactivators on the course of organophosphorus poisonings is probably due not only to the reactivation of the enzyme, but also to the ability of the reactivators to eliminate and compensate for a number of phenomena of the hypoxia which occurs in intoxications by such poisons.

[WA-50; CBE No. 39] [FT]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AT9003198

SOURCE CODE: UR/3445/68/000/004/0092/0094

AUTHOR: Levchuk, G. A.; Maksimov, Yu. N.; Arkad'yev, V. G.

ORG: Kiev Scientific Research Institute of Pharmacology and Toxicology
(Kiyevskiy nauchno-issledovatel'skiy institut farmakologii i toksikologii)

TITLE: Effect of TMB-4 [Dipiroksim] on some indices of organism reactivity

SOURCE: Kiyev, Nauchno-issledovatel'skiy institut farmakologii i toksikologii. Farmakologiya i toksikologiya, no. 4, 1968, 92-94

TOPIC TAGS: cholinesterase, cholinesterase reactivator, cholinesterase inhibitor, phagocytosis

ABSTRACT: The wide use of organophosphorus anticholinesterase compounds in the national economy has served as the basis for a search for preparations which reactivate inhibited cholinesterase (ChE). In 1951—1954, Wilson first established that a number of nucleophilic substances are able to reactivate ChE inhibited by organophosphorus compounds. Wilson's data initiated a whole series of studies to find new, more active ChE reactivators, primarily from among oximes, and to study the mechanism of

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UDC: 615-092.259

ACC NR: AT9003198

their action. One of such oximes is TMB-4, i.e., 1,1-trimethylenebis-(4-formylpyridyloxime)dibromide [Dipiroksim]. Many aspects of its mechanism of action have been studied fairly well. Thus, Poziomek, et al (1958), Hobbiger and Sadler (1959), S. N. Golikov and V. I. Rozengert (1960), and others have shown that TMB-4 displays pronounced antidotal action against poisoning from various organophosphorus compounds and promotes the reactivation of blood ChE. TMB-4 lessens and, in some cases, completely eliminates smooth muscle spasm (S. N. Golikov and coauthors, 1966) and eliminates neuro-muscular block (Holms and Rubins, 1955; Ederi, 1959; R. S. Rybolovlev, 1963, and others) caused by anti-ChE compounds. Moreover, the restoration of neuro-muscular conductivity is pronounced, even without enzyme reactivation (S. N. Golikov and coauthors, 1966). TMB-4, according to the data of many Soviet and non-Soviet authors, is a low-toxicity preparation. In addition to ChE reactivation, gangliotic and spasmolytic effects play an important role in the mechanism of the antidotal action of TMB-4. Because of these properties, TMB-4 is being used more and more in poisoning from various organophosphorus compounds. This dictates the need for further comprehensive study of its effect on the organism. The purpose of the present study was to investigate the effect of TMB-4 on some indices of animal organism reactivity. The experiments were performed on 11 dogs and 38 rabbits. TMB-4 was

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ACC NR: AT9003198

administered intramuscularly (5 mg/kg, the therapeutic dose). The general condition and weight of the animals were recorded. Also studied were hematological indices, pseudocholinesterase according to Khestrin, the content of total protein and protein fractions of blood serum (electrophoresis on paper), the complementary activity of the blood, and the adsorptive capability of neutrophils on the basis of the following criteria for evaluating phagocytosis: phagocyte index, percentage of active neutrophils, phagocyte number, and absolute index of absorption (O. G. Alekseyeva and A. P. Volkova, 1966). A comparison of these indices made it possible to evaluate the state of some aspects of organism reactivity. The investigations showed that TMB-4 (5 mg/kg) did not produce noticeable changes in the behavior and weight of the animals. This indicates the low toxicity of the preparation. However, definite shifts were, nevertheless, noted in most of the indices studied. Thus, in an hour after the administration of TMB-4, a brief reduction occurred in the complementary activity of rabbit blood, and by the third to fifth day, the activity returned to its initial values. In studying the adsorptive capability of blood neutrophils, it was found that in an hour after the administration of the preparation an increase occurred in the phagocyte number because of an increase in both the percentage of active neutrophils and the phagocyte index. These changes persisted for the first two days. At the same time, an increase also occurred in the absolute index of absorption because of the increase in the phagocyte

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ACC NR: AT9003198

index and some increase in the absolute number of neutrophils. By the third day of observation, these indices returned to their initial values and subsequently underwent no noticeable fluctuations. Thus, the administration of TMB-4 in a full therapeutic dose exerts a brief stimulatory effect on the phagocyte function of neutrophils of intact animals. Study of the protein composition of rabbit and dog blood serum showed that after the administration of TMB-4, the concentration of total protein decreased by the third and fifth day ($P < 0.05$) because of the statistically reliable drop in the albumin level. The content of globulins was essentially constant, except for the first day, when the levels of α - and β -fractions increased somewhat. In studying the morphological composition of the peripheral blood, and insignificant decrease was observed in the number of leukocytes and the content of hemoglobin by the first and third days after the injection of TMB-4. Of particular interest are the data concerning the change in the activity of ChE which are shown in Figure 1. From Fig. 1, it is evident that in an hour after the administration of TMB-4 a decrease is noted in ChE activity ($P < 0.01$). By the first and third days, the enzymic activity remains low, and only by the fifth day does the ChE activity reach the initial values, with some increase by the tenth day. Thus, while being able to reactivate ChE inhibited by organophosphorus

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ACC NR: AT9003198

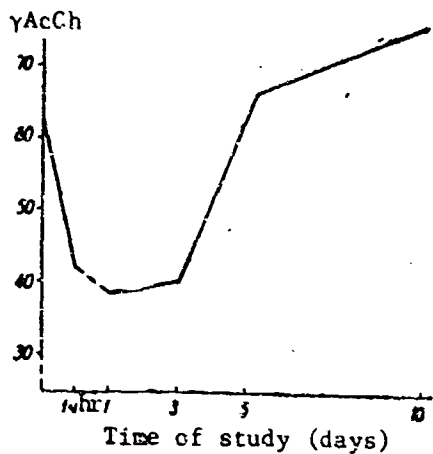


Fig. 1. Activity of rabbit blood serum cholinesterase after administration of TMB-4

compounds, TMB-4 which is given to healthy animals may inhibit the enzyme during the first days. The mechanism of such action of TMB-4 in intact animals is presently difficult to explain, but, in the authors' opinion, it is not associated with a disruption of ChE synthesis. This effect is possibly the result of direct binding of TMB-4 with the enzyme. Thus, the investigations showed that TMB-4, while displaying a

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ACC NR: AT9003198

many-sided effect, does not significantly change the reactive capabilities of the organism. This is a favorable aspect. Nevertheless, the experiments indicate that TMB-4 should be used only in the presence of appropriate indications, the most important of which is the decrease in ChE activity. Orig. art. has: 1 figure. [WA-50; CBE No. 39] [FT]

SUB CODE: 06/ SUBM DATE: none

Card 6/6

ACC NR: AT9003199

SOURCE CODE: UR/3445/68/0000/004/0094/0097

AUTHOR: Lipkan, G. N.

ORG: Kiyev Scientific Research Institute of Pharmacology and Toxicology
(Kiyevskiy nauchno-issledovatel'skiy institut farmakologii i toksikologii)

TITLE: Cholinesterase activity of myosin-like proteins and its significance in studying the action of anticholinesterase substances

SOURCE: Kiyev, Nauchno-issledovatel'skiy institut farmakologii i toksikologii. Farmakologiya i toksikologiya, no. 4, 1968, 94-97

TOPIC TAGS: cholinesterase, anticholinesterase, muscle physiology

ABSTRACT: A number of studies have recently appeared which indicate that myosin possesses both adenosinetriphosphatase (ATPase) activity and cholinesterase (ChEase) properties. Recently, myosin-like proteins (MLP) were isolated from various organs and tissues (brain, liver, kidney, thyroid, erythrocyte membrane, etc.). These proteins display ATPase activity and the ability to interact with actin. The title study was performed to explain whether MLP and myosin possess both ATPase activity and ChEase activity. A study was made of the ChEase activity of brain MLP (BMLP) and liver MLP (LMLP) of dogs, rabbits, and rats; kidney MLP (KMLP) of dogs and rabbits; and spleen MLP (SMLP) of dogs. It was found

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UDC: 615-092.21

ACC NR: AT9003199

that even for 30 min incubation, MLP substances display considerable ChEase activity, surpassing several fold the activity of myosin-ChEase. When the incubation time was increased to 2 hr, the data shown in Table 1 were obtained. In view of the wide distribution of MLP substances in the

Table 1. ChEase activity of MLP from organs of various animals
(ChEase activity in γ AcCh per mg of protein)

Expt. No.	Dogs				Rabbits			Rats	
	BMLP	LMLP	KMLP	SMLP	BMLP	LMLP	KMLP	BMLP	LMLP
1	1022	298	242	184	1064	320	205	1365	300
2	899	305	186	126	1489	343	186	785	265
3	865	346	254	234	1689	368	198	856	331
4	649	246	280	164	1295	344	198	1080	590
5	602	242	305	175	599	362	205	1062	346
6	899	264	264	128	1465	384	186	859	268
7	1245	332	186	198	1498	262	182	802	286
8	1002	360	198	198	1245	268	186	1465	298
9	904	342	198	264	989	284	242	1259	304
10	846	293	286	255	1022	284	205	1645	346
11	842	305	264	243	865	302	198	1458	360
12	543	293	264	198	689	298	186	1602	298
Mean	860	303	229	185	936	298	110	1186	340
$\pm m$	32.0	20.5	22.2	13.0	10.4	10.3	15.2	20.0	12.5

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ACC NR: AT9003199

organism and the significant role which they play in cell membrane permeability phenomena, especially important is an explanation of the functional role of their ChEase activity. This is especially so in toxicological experiments, in particular, during the action of anti-ChE substances which, while selectively acting on ChEase-active proteins, may become bound with MLP and in some manner affect the permeability and contractile function of the latter. With respect to myosin for example, it is known that when ChEase inhibitors become bound with the basic contractile protein, they affect its properties. As a result of this, a significant paralysis occurs in the ability of muscle fiber to relax (M. B. Kalamkarova, 1966). Thus, it is necessary to emphasize the need for further study of the action of anti-ChE substances on the ChEase activity of myosin-like proteins and their properties. Orig. art.
has: 1 table. [WA-50; CBE No. 39] [FT]

SUB CODE: 06/ SUBM DATE: none

Card 3/3

ACC NR: AP8038125

SOURCE CODE: GE/0076/68/000/001/0023/0024

AUTHOR: Lipke, B.

ORG: Institute of Chemistry, Agriculture-Horticulture Faculty,
Humboldt University, Berlin (Institut für Chemie, Landwirtschaft-
lich-gärtnerische Fakultät der Humboldt-Universität)

TITLE: N-(Halophenyl)pyridinium salts

SOURCE: Zeitschrift für Chemie, no. 1, 1968, 23-24

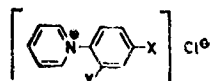
TOPIC TAGS: mixed halogenated organic compound, chlorination,
pyridine derivative

ABSTRACT: N-(Halophenyl)pyridinium salts (I-III) were prepared from pyridine, BrCN, and the corresponding aniline by way of glutacanaldehyde dianils. Pale green iodosochlorides (IV-X) were prepared by

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ACC NR: AP8038125

Table 1. N-(Halophenyl)pyridinium salts



No.	X	Y	Mp, °C	% Yield
I	Br	H	137—138	60
II	Cl	J	260	62
III	Br	J	263—266	60

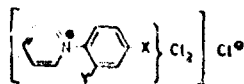
passing Cl₂ into I-III in CHCl₃ at 0°C for 90 min. The nature of the halogen bond in IV—X is still under study. Compounds IV—X can be used as chlorinating agents since they can be easily separated from the chlorinated products as ether-insoluble salts. Orig. art. has: 2 tables.

[WA-50; CBE No. 39] [FT]

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ACC NR: AP8038125

Table 2. Cl adducts



No.	X	Y	Mp, °C	X Yield	Cl, moles
IV	J	H	146—148	95	1
V	3-J	H	112—142	95	1
VI	H	J	160	95	1
VII	Br	H	110—120	55	1/2
VIII	Cl	H	101—104	27	1/4
IX	Br	J	263—265	95	1
X	Cl	J	235—256	95	1

SUB CODE: 07/ SURM DATE: 07Aug67/ ORIG REF: 004

Card 3/3

ACC NR: AP8037874

SOURCE CODE: UR/0409/68/000/005/0949/0951

AUTHOR: Lukevits, E.; Pestunovich, A. Ye.; Voronkov, M. G.

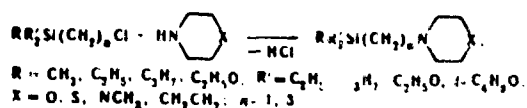
ORG: Institute of Organic Synthesis, Academy of Sciences LatSSR, Riga
(Institut organicheskogo sinteza, Akademiya nauk LatSSR)

TITLE: Nitrogen-containing organosilicon compounds. XIV. N-morpho-
linyl-N-thiamorpholinyl-, N-methylpiperazinyl-, and N-perhydroazepinyl-
alkylsilane

SOURCE: Khimiya geterotsiklicheskikh soyedineniy, no. 5, 1968, 949-951

TOPIC TAGS: organic nitrogen compound, organosilicon compound, organic
imine compound

ABSTRACT: A series of physiologically active N-containing organosilicon
compounds was synthesized by the reaction of trialkyl-, and alkyl-
dialkoxy(chloroalkyl)silanes with morpholine, triamorpholine, N-methyl-
piperazine, and hexamethylenimine in toluene solution in the presence
of triethylamine with heating for 15-20 hr:

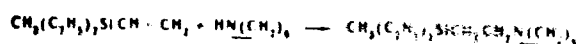


Card 1/3

UDC: 547.861.3'867.4'869.2'79'128

ACC NR: AP8037874

The addition of hexamethylenimine to methyldiethylvinylsilane proceeds
in the presence of Li:



The yield and physical constants of the new compounds are given in the
table. Data on the pharmacological activity of the compounds synthesized

Table 1

Compound	Bp, °C (mm)	n_D^{20}	d_4^{20}	% Yield
CH ₃ (C ₂ H ₅) ₂ SiCH ₂ NC ₄ H ₈ O	79-81.5 (3)	1.4673	0.9667	65
CH ₃ (C ₂ H ₅ O) ₂ SiCH ₂ NC ₄ H ₈ O	101-108 (2)	1.4402	0.9421	41.9
(C ₂ H ₅) ₃ SiCH ₂ NC ₄ H ₈ O	96.5-98 (4)	1.4680	0.9169	62
(C ₂ H ₅) ₂ Si(CH ₂) ₂ NC ₄ H ₈ O	123 (4)	1.4621	0.8817	40
(C ₂ H ₅ O) ₃ SiCH ₂ NC ₄ H ₈ O	127.5-129 (15)	1.4339	1.0021	65.2
CH ₃ (C ₂ H ₅) ₂ Si(CH ₂) ₂ NC ₄ H ₈ O	111-117 (6)	1.4619	0.8999	51
CH ₃ (C ₂ H ₅ O) ₂ Si(CH ₂) ₂ NC ₄ H ₈ O	98-105 (5)	1.4480	0.8999	51

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ACC NR: AP8037874

Table 1. (Cont.)

$\text{CH}_3(\text{C}_2\text{H}_5\text{O})_2\text{Si}(\text{CH}_2)_3\text{NC}_4\text{H}_9\text{S}$	125-128 (1,5)	1.4741	0.9970	40
$\text{CH}_3(\text{C}_2\text{H}_5)_2\text{SiCH}_2\text{NC}_4\text{H}_9\text{NCH}_3$	110-114 (15)	1.4660	0.8722	37
$\text{CH}_3(\text{C}_2\text{H}_5)_2\text{Si}(\text{CH}_2)_3\text{NC}_4\text{H}_9\text{NCH}_3$	115,5-118 (3)	1.4663	0.8712	38
$\text{CH}_3(\text{C}_2\text{H}_5\text{O})_2\text{Si}(\text{CH}_2)_3\text{NC}_4\text{H}_9\text{NCH}_3$	124-126 (3)	1.4513	0.9327	32
$\text{CH}_3(\text{C}_2\text{H}_5)_2\text{SiCH}_2\text{NC}_4\text{H}_9$	93-94 (4)	1.4675	0.8662	42
$\text{CH}_3(\text{C}_2\text{H}_5)_2\text{Si}(\text{CH}_2)_2\text{NC}_4\text{H}_9$	113 (4)	1.4713	0.8680	30
$\text{CH}_3(\text{C}_2\text{H}_5)_2\text{Si}(\text{CH}_2)_3\text{NC}_4\text{H}_9$	113-117 (3)	1.4698	0.8663	33

were reported earlier (E. Lukevits, M. G. Voronkov, A. Ye. Pestunovich, A. A. Kimenis, S. Z. Gutberga, Z. A. Atare. Izv. AN LatSSR, 1968, 93).
[WA-50; CBE No. 39] [PS]

SUB CODE: 07/ SUBM DATE: 31Oct67/ ORIG REF: 009/ OTH REF: 009

Card 3/3

ACC NR: AP9002979

SOURCE CODE: UR/0318/68/000/11-/(031/0033

AUTHOR: Lutsenko, V. A.; Koren'kova, O. P.; Panich, R. M.; Borisogleb-
skaya, A. V.

ORG: Moscow Institute of Fine Chemical Technology im. M. V. Lomonosov
(Moskovskiy institut tonkoy khimicheskoy tekhnologii)

TITLE: Synthesis and surface active properties of some alkoxyethyl-
pyridinium chlorides on the basis of aliphatic alcohols

SOURCE: Neftepererabotka i neftekhimiya, no. 11-12, 1968, 31-33

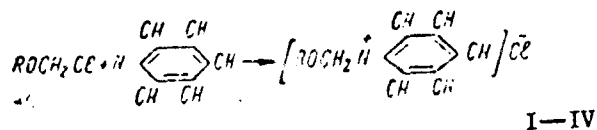
TOPIC TAGS: surfactant, bacteriostasis, amine salt, pyridine
derivative

ABSTRACT: Cationic surfactants are being widely used in medicine and
other areas of the economy. Therefore, it is of interest to synthesize
them from readily available raw materials. Tetra- and pentadecyloxy-
methylpyridinium chlorides (I), penta- and hexadecyloxymethylpyridinium
chlorides (II), nonadecyloxy- and eicosyloxymethylpyridinium chlorides (III),
and hexa-, hepta-, and octadecyloxymethylpyridinium chlorides (IV) were
obtained by allowing pyridine to react with the corresponding alkyl
chloromethyl ethers. Tetra- and pentadecyl chloromethyl ethers (V),

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UDC: 661.185.4

ACC NR: AP9002979



penta- and hexadecyl chloromethyl ethers (VI), nonadecyl and eicosyl chloromethyl ethers (VII), and hexa-, hepta-, and octadecyl chloromethyl ethers (VIII) were prepared by passing HCl at 15—20°C through a cooled mixture of formalin and a HPh-solution of the alcohol (1.1:1 molar ratio of CH₂O to alcohol) to complete saturation of the reaction mixture. The alcohols for V—VII were obtained from converted CH₄ at VNIINP and the alcohols for VIII were from cetaceum. Compounds I—IV are recommended



Table 1. Chloromethyl ethers

No.	d, g/cm ³	n _D ²⁰	% Yield
V	0.8848	1.4489	87.6
VI	0.9074	1.4540	79.3
VII	0.9125	1.4612	91
VIII	0.9002	1.4588	86

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ACC NR: AP9002979

as surfactants. The results of tests of the bacteriostatic activity of II—V are shown in Table 2. The authors thank S. N. Milovanova,

Table 2. Bacteriostatic action of II—IV (Concentration of preparation *in vitro* which arrests growth of microorganisms)

Organism	II	IV	III
<i>Staphylococcus aureus</i>	1:2,000	1:30,000	1:2,000
<i>Streptococcus hemolyticus</i>	1:2,000	1:16,000	1:2,000
<i>Escherichia coli</i>	1:2,000	1:30,000	1:8,000
<i>Salmonella typhi</i>	1:2,000	1:8,000	1:16,000
<i>Shigella dysenteriae</i>	1:2,000	1:16,000	1:8,000
<i>Shigella flexneri</i>	1:2,000	1:16,000	1:8,000
<i>Corynebacterium diphtheriae</i>	1:16,000	1:2,000	1:4,000
<i>Proteus vulgaris</i>	1:2,000	1:2,000	1:2,000
Anthrax spores	1:2,000	1:4,000	1:2,000
<i>Mycobacterium tuberculosis</i>	1:250,000	1:60,000	1:30,000
Avian tubercle bacillus	1:250,000	1:120,000	1:316,000
Acid-fast B ₅ saprophyte	1:60,000	1:30,000	1:16,000
Microspores	1:500,000	1:250,000	1:120,000
Trichophyton	1:120,000	1:120,000	1:120,000
Asherson	1:250,000	1:250,000	1:16,000
Actinomyces	1:16,000	1:120,000	1:8,000

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ACC NR: AP9002979

Chief of the Department of Chemotherapy, VNIKhFl im. S. Ordzhonikidze, for tests of the antimicrobial properties of I—IV performed in the laboratory of the Institute. Orig. art. has: 3 figures and 4 tables.
[WA-50, CBE No. 39] [FT]

SUB CODE: 06,07/ SURM DATE: none/ ORIG REF: 006/ OTH REF: 002

Card 4/4

ACC NR: AP9003577

SOURCE CODE: UR/0062/68/000/012/2842/2843

AUTHOR: Mastryukova, T. A.; Baranov, G. M.; Perekalin, V. V.; Kabachnik, M. I.

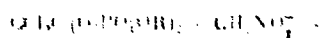
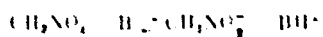
ORG: Institute of Heteroorganic Compounds, Academy of Sciences SSSR (Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR)

TITLE: Rearrangement in the condensation of dialkyl trichloroacetylphosphonates with nitromethane

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 12, 1968, 2842-2843

TOPIC TAGS: phosphate ester, aliphatic nitro compound

ABSTRACT: Dimethyl 1-nitromethyl-2,2-dichlorovinyl phosphate (I) (35% yield, bp_{0.0045} 103—104°C, n_D²⁰ 1.4782, d₄²⁰ 1.5060) was prepared by allowing dimethyl trichloroacetylphosphonate to react with CH₃NO₂ in

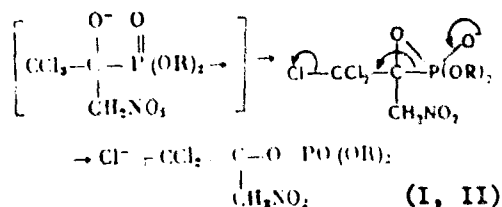


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UDC: 541.542.953+661.718.1

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ACC NR: AP9003577



the presence of an amine. Diethyl 1-nitromethyl-2,2-dichlorovinyl phosphate (II) (44% yield, bp_{0.001} 100–101°C, n_D²⁰ 1.4678, d₄²⁰ 1.3791) was similarly prepared. [WA-50; CBE No. 39][FT]

SUB CODE: 07/ SUBM DATE: 22Aug68/ ORIG REF: 002/ OTH REF: 001

Card 2/2

ACC NR: AP9000047

SOURCE CODE: UR/0426/68/021/007/0603/0614

AUTHOR: Mndzhoyan, A. L.; Afrikyan, V. G.; Grigoryan, M. T.; Sheynker, Yu. N.; Aleksanyan, R. A.; Vasil'yan, S. S.; Kaldrikyan, A. A.; Dzhagatspanyan, I. A.

ORG: Institute of Fine Organic Chemistry, AN ArmSSR (Institut tonkoy organicheskoy khimii AN ArmSSR)

TITLE: Studies in the synthesis of benzodioxane derivatives. II. Some alkyl-, benzyl-, and p-alkoxybenzyl-piperazylamides and amines of the benzodioxane series

SOURCE: Armyanskiy khimicheskii zhurnal, v. 21, no. 7, 1968, 603-614

TOPIC TAGS: dioxane, benzene derivative, substituted amide, piperazine, tertiary amine, adrenolytic drug, anticonvulsant drug

ABSTRACT: The title compounds were synthesized to study their biological properties. 1,4-Benzodioxane-2-carboxylic acid 1-methylpiperazylamide (I) was synthesized by boiling methyl 1,4-benzodioxane-2-carboxylate and 1-methylpiperazine in MeOH for 8–10 hr. Compounds II–XIII were similarly prepared. 2-(N-Methylpiperazyl)-1,4-benzodioxane (XIV) was synthesized by boiling LiAlH₄ and I in ether for

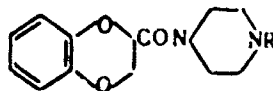
Card 1/5

UDC: 541.69

- 85 -

ACC NR: AP9000047

Table 1



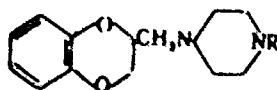
No.	R	% Yield	Mp, °C	Mp of salts, °C		
				HCl	MeI	EtI
I	CH ₃	70.0	96-97	283-284	154-155	199-200
II	C ₂ H ₅	64.3	84-85	241-242	198-199	217-218
III	C ₃ H ₇	75.0	—	216-217	—	—
IV	iso-C ₃ H ₇	68.0	80-81	239-241	204-206	190-191
V	C ₄ H ₉	66.0	37-89	230-232	155-156	171-172
VI	iso-C ₄ H ₉	70.0	121-122	257-258	201-202	—
VII	C ₆ H ₅ CH ₃	71.0	160-161	236-237	263-264	—
VIII	p-CH ₃ OC ₆ H ₄ CH ₃	73.5	168-169	—	—	—
IX	p-C ₂ H ₅ OC ₆ H ₄ CH ₃	69.8	173-174	—	—	—
X	p-C ₃ H ₇ OC ₆ H ₄ CH ₃	65.8	175-176	—	—	—
XI	p-iso-C ₃ H ₇ OC ₆ H ₄ CH ₃	65.1	170-171	—	—	—
XII	p-C ₆ H ₄ C ₆ H ₅ CH ₃	70.5	159-160	—	—	—
XIII	p-iso-C ₆ H ₄ OC ₆ H ₄ CH ₃	72.3	165-167	—	—	—

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ACC NR: AP9000047

10-12 hr. Compounds XV-XXVI were similarly prepared. The pharmacological properties of the soluble salts of I-XXVI were studied on the

Table 2



No.	R	% Yield	Sp. °C/mm	Mp, °C	Mp of salts, °C		
					HCl	MeI	EtI
XIV	CH ₃	69.7	156-160/2	—	262-263	163-184	—
XV	C ₂ H ₅	67.4	172-173/3	—	256-258	138-139	196-197
XVI	C ₃ H ₇	68.0	183-184/2	—	263-264	190-191	131-132
XVII	iso-C ₃ H ₇	57.4	179-180/2	—	270-271	182-183	158-159
XVIII	C ₄ H ₉	61.9	185-187/2	—	258-259	177-178	157-158
XIX	iso-C ₄ H ₉	61.0	180-182/2	—	262-263	185-186	—
XX	C ₆ H ₅ CH ₃	68.7	224-225/2	—	259-260	173-174	118-119
XXI	p-CH ₃ OC ₆ H ₄ CH ₃	67.0	240-242/2	83-84	260-261	140-150	—

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ACC NR: AP9000047

Table 2. (Cont.)

XXII	$\text{p-C}_6\text{H}_4\text{OC}_6\text{H}_4\text{CH}_3$	67.0	261-262/2	54-56	250-251	122-123	-
XXIII	$\text{p-C}_6\text{H}_4\text{OC}_6\text{H}_4\text{CH}_3$	54.0	266-267/2	-	237-238	118-119	-
XXIV	$\text{p-iso-C}_6\text{H}_4\text{OC}_6\text{H}_4\text{CH}_3$	59.5	257-258/2	46-47	245-246	158-159	-
XXV	$\text{p-C}_6\text{H}_4\text{OC}_6\text{H}_4\text{C}_6\text{H}_5$	58.5	275-276/2	41-42	248-249	185-186	-
XXVI	$\text{p-iso-C}_6\text{H}_4\text{OC}_6\text{H}_4\text{CH}_3$	59.0	270-271/2	-	152-153	184-185	-

blood pressure and respiration of narcotized cats. A brief decrease in blood pressure of 20-70 mm Hg and some quickening of respiration were noted (doses of 1-20 mg/kg body weight). The alkiodides of XIV-XXVI displayed stronger hypotensive action than the alkiodides of I, II, and IV-VII. Most alkiodides of I, II, and IV-VII displayed adrenolytic action, reducing the reaction of the third eyelid by 40-60%. The ethiodide of IV completely eliminated the third eyelid contraction caused by intravenous administration of adrenalin. Some of the alkiodides of I, II, and IV-VII displayed weak sympatholytic action, reducing the contraction of third eyelid caused by stimulation of the postganglionic fiber of the sympathetic nerve by 24-26%. Alkiodides of XIV-XXVI and some hydrochlorides of XIV-XXVI, which eliminated third eyelid contractions by up to 40%, displayed similar sympatholytic activity. The methiodides of XVI and XVII acted in the

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ACC NR: AP9000047

range of 62-67%. Their adrenolytic properties were also more strongly displayed. Methiodides and hydrochlorides of XVI, XVII, XXIII, and XXIV completely eliminated the effect of adrenalin for two or more hours. Compounds XIV-XXVI display no coronary dilating properties. The ethiodide of III (3 mg/kg) increased the coronary blood stream by 23% for 45 min. Compounds I-XXVI display basically no anticonvulsant properties. Compounds IV, VI, XVII, and XIX (25 mg/kg) display some anticonvulsant activity, removing the extension phase and weakening the clonic spasms which set in after electrical stimulation. Orig. art. has: 4 tables. [WA-50; CBE No. 39][FT]

SUB CODE: 06, 07/ SUBM DATE: 12Jul67/ ORIG REF: 002/ OTH REF: 006

Card 5/5

ACC NR: AP9000137

SOURCE CODE: UR/0079/68/038/011/2587/2587

AUTHOR: Moskva, V. V.; Ismailov, V. M.; Razumov, A. I.

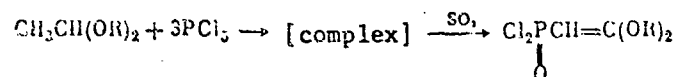
ORG: Kazan' Chemical Technology Institute im. S. M. Kirov (Kazanskiy khimiko-tekhnologicheskii institut)

TITLE: β,β -Dialkoxyvinylphosphonic dichlorides

SOURCE: Zhurnal obshchey khimii, v. 38, no. 11, 1968, 2587

TOPIC TAGS: chlorinated organic compound, aliphatic ester, phosphonate, phosphonate ester

ABSTRACT: β,β -Dimethoxyvinylphosphonic dichloride (bp 115°C/13 mm) and β,β -diethoxyvinylphosphonic dichloride (bp 121—122°C/12 mm) were obtained in yield of 80 and 55%, respectively, by the reaction of



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UDC: 547.341+546.185.131+547.281.2

ACC NR: AP9000137

phosphorus pentachloride with the appropriate acetals in benzene solution at 10—36°C and subsequent decomposition of the complex with SO₂ at 0—10°C. [WA-50; CBE No. 39][PS]

SUB CODE: 07/ SUBM DATE: 19Apr68/ ORIG REF: 002

Card 2/2

ACC NR: AP9000136

SOURCE CODE: UR/0079/68/038/011/2586/2586

AUTHOR: Moskva, V. V.; Maykova, A. I.; Razumov, A. I.

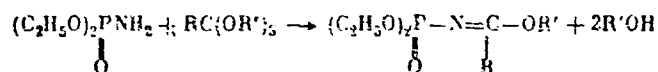
ORG: Kazan Chemical Technology Institute im. S. M. Kirov (Kazanskiy khimiko-tehnologicheskii institut)

TITLE: Reactions of esters of orthocarboxylic acids with diethyl amidophosphate

SOURCE: Zhurnal obshchey khimii, v. 38, no. 11, 1968, 2586

TOPIC TAGS: aliphatic phosphorus compound, organic amide, organic phosphate, phosphate ester

ABSTRACT: A series of esters of orthocarboxylic acids with diethyl amidophosphate was synthesized by the reaction:



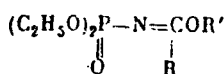
which takes place on heating the reaction mixture for 2—3 hr at 140—150°C in CO₂ atmosphere. The new esters are characterized in

Card 1/2

UDC: 547.29'26+546.185+547.298.2

ACC NR: AP9000136

Table 1



No.	R	R'	% Yield	Bp (mm)	n _D ²⁰	d ₄ ²⁰	MR _D	
							Found	Calcd
1	H	C ₂ H ₅	82.8	68—69° (0.04)	1.4348	1.1012	49.51	49.52
2	CH ₃	CH ₃	84.6	65—67 (0.05)	1.4387	1.1127	49.38	49.52
3	CH ₃	C ₂ H ₅	90.0	66—68 (0.035)	1.4375	1.0800	54.15	54.13
4	CH ₃	C ₃ H ₇	71.4	93—95 (0.035)	1.4330	1.0490	58.73	58.75
5	C ₂ H ₅	C ₂ H ₅	87.9	89—90 (0.07)	1.4350	1.0527	58.74	58.75

Table 1. The structure of the new esters was established by IR spectra. [WA-50; CBE No. 39][PS]

SUB CODE: 07/ SUEM DATE: 19Apr68/ ORIG REF: 002

Card 2/2

AUTHOR: Nabiyev, M. N.; Semenova, L. N.

ORG: Institute of Chemistry, AN UzSSR (Institut khimii AN UzSSR)

TITLE: Combining fertilizers with various pesticides

SOURCE: Uzbekskiy khimicheskiy zhurnal, no. 6, 1968, 18-22

TOPIC TAGS: organic phosphorous insecticide, liquid fertilizer, mineral fertilizer, nitrogen fertilizer, naphthalene derivative, carbamate

ABSTRACT: The possibility was studied of combining certain promising organic phosphorus insecticides with various fertilizers. The insecticides were to be used on cotton plants. Binary mixtures were studied in which one component was a fertilizer, i.e., urea (I), NH_4NO_3 (II), $\text{Ca}(\text{NO}_3)_2$ (III), ammonia water (IV), a complex N-P liquid fertilizer (SUM-5zh) (V), ordinary ammoniated superphosphate (VI), or non-ammoniated superphosphate (VII), and the other was an insecticide, i.e., 40% $\text{H}_3\text{CNHC}(\text{O})\text{CH}_2\text{SP}(\text{S})(\text{OCH}_3)_2$ (Rogor) (VIII), 30% $\text{EtS}(\text{CH}_2)_2\text{OP}(\text{S})(\text{OCH}_3)_2$ (Metilmerkaptos) (IX), 50% $\text{EtS}(\text{CH}_2)_2\text{SP}(\text{S})(\text{OCH}_3)_2$ (Intration) (X), or 1-naphthyl N-ethylcarbamate (Sevin) (XI), in a 1:100 ratio and in a 1:150 ratio in the case of V. On the basis of thin-layer chromatography and chemical analyses of I-VII and VIII-XI, it was shown

Card 1/2

UDC: 631.893.12

ACC NR: AP9002894

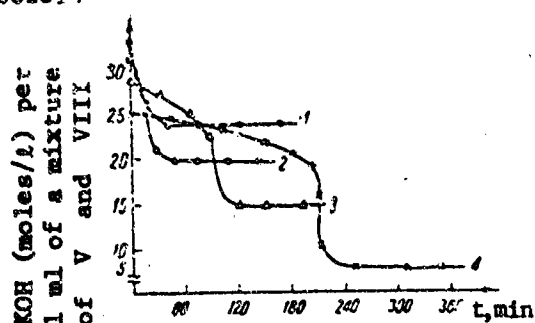


Fig. 1. The change of the acidity of a mixture of V and VIII in relation to concentration. Concentration of VIII: 0.082 M (1); 0.168 M (2); 0.347 M (3); 0.700 M (4).

that mixtures containing II, III, VI, VII, VIII, and XI may be used in agriculture since no chemical reaction occurs and the insecticide and fertilizer remain unchanged. Compound V is incompatible with VIII, IX, and X, causing them to decompose. The change of the acidity of a mixture of V and VIII with respect to time is shown in Figure 1. Compound XI decomposes into 1-naphthol, CO_2 , and NH_2CH_3 in the presence of IV. Orig. art. has: 3 figures and 1 table. [WA-50; CBE No. 39] [FT]

SUB CODE: 02/ SUBM DATE: 04Jul68/ ORIG REF: 003/ OTH REF: 002

Card 2/2

ACC NR: AP8038129

SOURCE CODE: GE/0075/68/000/003/0096/0103

AUTHOR: Nase, B.

ORG: Scientific Technical Center "Plant Protectants and Pesticides,"
Magdeburg (Wissenschaftlich-technisches Zentrum "Pflanzenschutz- und
Schadlingsbekämpfungsmittel")

TITLE: Fungicides based on carbonic acid and thiocarbonic acid
derivatives

SOURCE: Zeitschrift fur Chemie, no. 3, 1968, 96-103

TOPIC TAGS: carbonate, carbamic acid, thiocarbamate, trithiocarbonate
ester, fungicide

ABSTRACT: This article reviews the most important fungicides which are
derivatives of carbonic and thiocarbonic acids: carbonate esters, mono-
thiocarbonates, dithiocarbonates, trithiocarbonates, carbamates, mono-
thiocarbamates, dithiocarbamates, and thiuram disulfides. Dithiocar-
bamates and thiuram disulfides are of greatest interest in practical
plant protection. [WA-50; CBE No. 39] [FT]

SUB CODE: 02/ SUBM DATE: 14Feb67/ ORIG REF: 003/ OTH REF: 086/
SOV REF: 001

Card 1/1

ACC NR: AP9000128

SOURCE CODE: UR/0079/68/038/011/2538/2542

AUTHOR: Nifant'yev, E. Ye.; Zavalishina, A. I.; Nasonovskiy, I. S.;
Komlev, I. V.

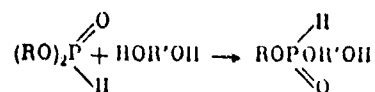
ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gos-
darstvennyy universitet)

TITLE: Synthesis and chemical properties of alkyl hydroxyalkyl phos-
phites

SOURCE: Zhurnal obshchey khimii, v. 38, no. 11, 1968, 2538-2542

TOPIC TAGS: phosphorous acid, phosphite, aliphatic ester,
organic imine compound

ABSTRACT: Under mild conditions, dialkyl phosphites reacted with
equimolar amounts of glycols to form alkyl hydroxyalkyl phosphites:



The formation of alkyl hydroxyalkyl phosphites in the above reaction

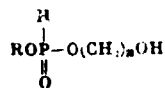
Card 1/4

UDC: 547.26'118

- 91 -

ACC NR: AP9000128

was confirmed by IR and NMR spectra and elemental and chromatographic analysis. The alkyl hydroxyalkyl phosphites are difficult to isolate in pure state. As technical products they are characterized in the table. The alkyl hydroxyalkyl phosphites are unstable. On heating or



R	n	Conditions of the synthesis		% Yield	d ₄ ²⁰	n _D ²⁰
		Temperature	Reaction time, (hr)			
C ₂ H ₅	2	140-150°	3.5	Close to quantitative	1.2120	1.4380
CH ₃	2	118-120	2.5	The same	1.2856	1.4382
CH ₃	3	120-135	2.5	" "	1.2204	1.4436
C ₂ H ₅	5	135-145	3.0	" "	1.153	1.4585

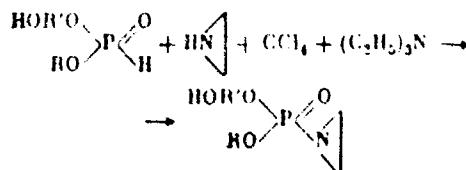
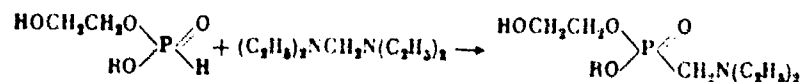
Card 2/4

ACC NR: AP9000128

(Cont.)

$\begin{array}{c} \text{H} \\ \\ \text{CH}_3 \text{O} \text{P} \text{O} (\text{CH}_2)_2 \text{O} (\text{CH}_2)_2 \text{OH} \\ \\ \text{O} \end{array}$	130-140	2.5	96.5	1.2896	1.4590
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during distillation in a vacuum they undergo transformations to form alcohols and cyclic and oligomeric products. Chemical properties of



alkyl hydroxyalkyl phosphites are similar to other incomplete phosphite

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ACC NR: AP9000128

esters, they readily react with amino and imino compounds to form the
corresponding derivatives. [WA-50; CBE No. 39][PS]

SUB CODE: 07/ SUBM DATE: 01Dec67/ ORIG REF: 005/ OTH REF: 2

Card 4/4

ACC NR: AP9003573

SOURCE CODE: UR/0062/68/000/012/2831/2833

AUTHOR: Nuretdinov, I. A.; Grechkin, N. P.

ORG: Institute of Organic and Physical Chemistry im. A. Ye. Arbuzov,
Academy of Sciences SSSR (Institut organicheskoy i fizicheskoy Akademii
nauk SSSR)

TITLE: Properties of trialkyl selenophosphates

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 12, 1968, 2831-
2833

TOPIC TAGS: aliphatic phosphorus compound, phosphate ester, aliphatic
ester, selenium compound, selenophosphate

ABSTRACT: A series of trialkyl selenophosphates was synthesized by the
addition of elemental selenium to trialkyl phosphites with subsequent
isolation of the addition products by distillation in a vacuum. The
structure, particularly the presence of a P = Se bond, in the newly

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UDC: 661.718.1

ACC NR:

(RO)₃P=Se

R	% Yield	Bp, °C (mm Hg)	d_4^{20}	n_D^{20}
CH ₃ *	81.0	73-74 (11)	1.5112	1.4867
C ₂ H ₅ **	79.4	85 (9)	1.3040	1.4730
C ₆ H ₅	83.6	67-68 (0.09)	1.1958	1.4680
i-C ₃ H ₇	74.4	63 (0.2)	1.1615	1.4557
C ₂ H ₅	79.8	83-84 (0.04)	1.1363	1.4663
i-C ₄ H ₉	84.3	77-78 (0.01)	1.1227	1.4620

* Literature data: d_4^{20} (20 mm); d_4^{20} 1.5387.

** Literature data: d_4^{20} (20 mm); d_4^{20} 1.3189.

synthesized and in some earlier synthesized trialkyl selenophosphates was established by IR absorption spectra. The yield and physical constants of the trialkyl selenophosphates are given in the table.

[WA-50; CBE No. 39][PS]

SUB CODE: 07/ SUBM DATE: 24Apr68/ ORIG REF: 004/ OTH REF: 001

Card 2/2

ACC NR: AP8037873

SOURCE CODE: UR/0409/68/000/005/0946/0947

AUTHOR: Nuridzhanyan, K. A.; Bulanova, N. F.

ORG: All-Union Scientific Research Institute of Chemicals for Plant Protection, Moscow (Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh sredstv zashchity rasteniy)

TITLE: Synthesis of N-acyl(aryl)-2-oxazolidinones

SOURCE: Khimiya geterotsiklicheskikh soyedineniy, no. 5, 1968, 946-947

TOPIC TAGS: ketone, heterocyclic nitrogen compound, chlorinated organic compound

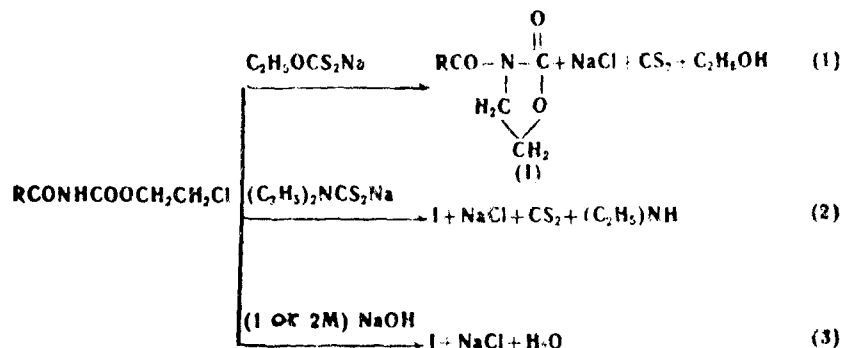
ABSTRACT: A new method for the synthesis of the title compounds is described. It involves the following reactions:

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UDC: 547.787.2

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ACC NR: AP8037873



These reactions occur when mixtures of equimolar amounts of the starting compounds in dry alcohol are boiled on a water bath for 1.5—2 hr. Reaction 3 may be conducted in an aqueous alcohol (70%) solution of an

N-(p-chlorobenzoyl)-2-oxazolidinone (Ia)	99	170—171
N-benzoyl-2-oxazolidinone (Ib)	96	173—174
N-(phenoxyacetyl)-2-oxazolidinone	90	95.5—96.5
N-(tolylloxyacetyl)-2-oxazolidinone	95	167—168
N-(2,4-dichlorophenoxyacetyl)-2-oxazolidinone	65	171—173

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ACC NR: AP8037873

alkali. The structure of the compounds synthesized was confirmed by IR and UV spectra. The yield and melting points of the compounds synthesized by the new method are given in the table.

[WA-50; CBE No. 39][PS]

SUB CODE: 07/ SUBM DATE: 01Dec67/ OTH REF: 001

Card 3/3

ACC NR: AP9000124

SOURCE CODE: UR/0079/68/038/011/2517/2522

AUTHOR: Nurtdinov, S. Kh.; Tsivunin, V. S.; Zykova, T. V.; Kamay, G. Kh.

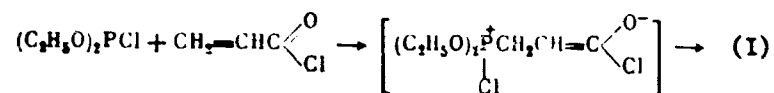
ORG: none

TITLE: Reaction of secondary chlorophosphines with chlorides of α,β -unsaturated acids

SOURCE: Zhurnal obshchey khimii, v. 38, no. 11, 1958, 2517-2522

TOPIC TAGS: heterocyclic oxygen compound, phosphorus compound, heterocyclic phosphorus compound

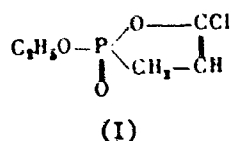
ABSTRACT: 2-Oxo-2-ethoxy-5-chloro-1-oxa-2-phosphal-4-ene (I) (55% yield, $bp_{0.04}$ 85-88°C, d_4^{20} 1.2980, n_D^{20} 1.4695) was prepared by adding $CH_2:CHCOCl$ to $(EtO)_2PCl$ in hexane at 15-20°C and stirring at 40-50°C for 6 hr. By analogy, 2,2-diethyl-5-chloro-1-oxa-2-phosphonal-4-ene



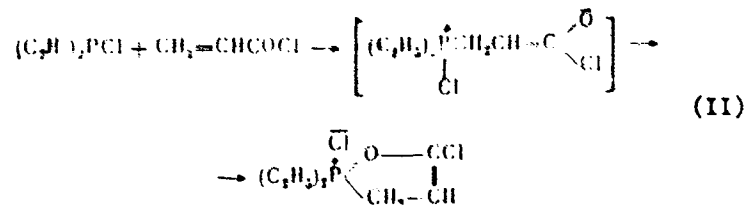
Card 1/2

UDC: 546.181.1+547.393.3:547.39

ACC NR: AP9000124



chloride (II) is assumed to be the resinified product of the reaction of Et_2PCl and $CH_2:CHCOCl$. Ethyl diethylphosphonopropionate (38% yield,



$bp_{0.07}$ 97-100°C, d_4^{20} 1.0960, n_D^{20} 1.4320) was obtained by treating I with EtOH. Orig. art. has: 2 figures. [WA-50; CBE No. 39][FT]

SUB CODE: 07/ SUBM DATE: 29Dec67/ ORIG REF: 010/ OTH REF: 003

Card 2/2

ACC NR: AP8037861

SOURCE CODE: UR/0409/68/000/005/0898/0901

AUTHOR: Ol'shevskaya, I. A.; Pochinok, V. Ya.; Avramenko, L. F.

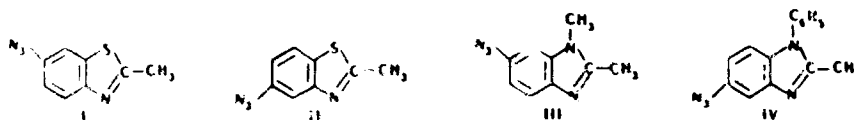
ORG: Kiev State University im. T. G. Shevchenko (Kiyevskiy gosudarstvennyy universitet)

TITLE: Synthesis and reactions of azides of heterocyclic compounds. I. Azides of benzothiazole and benzimidazole

SOURCE: Khimiya geterotsiklicheskikh soyedineniy, no. 5, 1968, 898-901

TOPIC TAGS: azide, thiazole compound, benzimidazole derivative

ABSTRACT: The isomeric title compounds were synthesized to study their properties. 6-Azido-2-methylbenzo[d]thiazole (I) was prepared by allowing NaN_3 to react with diazotized 6-amino-2-methylbenzo[d]thiazole.



5-Azido-2-methylbenzo[d]thiazole (II) (90% yield, mp 56°C), 6-azido-1,2-dimethylbenzo[d]imidazole (III) (82% yield, mp 66°C), and 5-azido-1-

Card 1/4

UDC: 547.785.5'789.6.07

ACC NR: AP8037861

-phenyl-2-methylbenzo[d]imidazole (IV) (88% yield, mp 108—110°C) were similarly prepared. 6-Azido-2-methylbenzo[d]thiazole methiodide (V) (63% yield, decomp 173—174°C), 5-azido-2-methylbenzo[d]thiazole methiodide (VI) (46% yield, decomp 152°C), and 6-azido-1,2-dimethylbenzo[d]imidazole methiodide (VII) (74% yield, decomp 172—173°C) were prepared by heating I—III and MeI at 60—70°C for 7 hr. 6-Azido-1,2-dimethylbenzo[d]imidazole ethiodide (VIII) (60% yield, decomp 167—168°C) and 5-azido-1-phenyl-2-methylbenzo[d]imidazole (IX) (53% yield, decomp 180—181°C) were prepared by heating III and IV with EtI at 100°C for 2 hr. Colorless acicular V—IX are freely soluble in H_2O and unstable in light. Compounds X and IX were synthesized by heating V and VI with p-dimethylaminobenzaldehyde in Ac_2O . Compounds XII and XIII were obtained by heating V and VI with $\text{CH}(\text{OEt})_3$ in Ac_2O . Compounds XIV and XV were prepared by heating V and VI with 3-methyl-2-formylmethylenebenzo[d]thiazoline in Ac_2O (see Table 1.). Compounds XII and

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ACC NR: AP8037861

Table 1

No.	Formula of dye	Decomp., °C	% yield
X		170-172	66.6
XI		199-201	71.4
XII		—	51
XIII		—	46.6
XIV		213-215	70
XV		208-210	68
XVI		270-272	51
XVII		204	68

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ACC NR: Ap8037861

XIII were obtained by heating V and VI with acetanilidomethylene-N-ethyl-rhodanine in EtOH or BuOH in the presence of Et₃N for 30 min. Orig. art. has: 1 figure and 2 tables. [WA-50; CBE No. 39] [FT]

SUB CODE: 07/ SUBM DATE: 25Jul66/ ORIG REF: 002/ OTH REF: 001

Card 4/4

ACC NR: AP8037865

SOURCE CODE: UR/0409/68/000/005/0912/0913

AUTHOR: Paegle, R. A.; Plata, M. G.; Lidak, M. Yu.; Shvachkin, Yu. P.

ORG: Institute of Organic Synthesis, Academy of Sciences LatSSR, Riga (Institut organicheskogo sinteza Akademii nauk LatSSR); Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: Synthesis and transformations of β -(5-halo-3-uracilyl)propionic acids

SOURCE: Khimiya geterotsiklicheskih soyedineniy, no. 5, 1968, 912-913

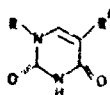
TOPIC TAGS: carboxylic acid, halogenated organic compound, substituted amide, uracil

ABSTRACT: β -(5-Bromo-3-uracilyl)propionic acid (I) (73.5% yield, mp 250°C) was prepared by adding Br to β -(3-uracilyl)propionic acid (III) in H₂O and boiling for 45 min. Colorless crystalline

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UDC: 547.854.07

ACC NR: AP8037865



- I R-CH₂CH₂CO₂H, R'-Br; III R-CH₂CH₂CO₂H, R'-H;
II R-CH₂CH₂CO₂H, R'-J; IV R-CH₂CH₂CO₂CH₃, R'-Br;
VI R-CH₂CH₂CO₂CH₃, R'-J;
VII R-CH₂CH₂CONH₂, R'-Br;
VIII R-CH₂CH₂CONH₂, R'-J.

β -(5-iodo-3-uracilyl)propionic acid (II) (80% yield, mp 180—181°C) was synthesized by stirring a mixture of III, HCONMe₂, and Hg(NO₃)₂ in H₂O for 1 hr at 100°C, adding iodine in dioxane at 70°C, and stirring for 1 hr at 20°C. Methyl β -(5-bromo-3-uracilyl)propionate (IV) (94% yield, mp 150—160°C) was obtained by boiling V, 98% H₂SO₄, and MeOH for 10 hr at 100°C. Methyl β -(5-iodo-3-uracilyl)propionic acid (V) (40% yield, mp 185—186°C) was similarly prepared. Colorless crystalline β -(5-bromo-3-uracilyl)propionic acid amide (VI) (91% yield, mp 281°C) was prepared by heating IV, 25% NH₄OH, and NH₄Cl at 40—50°C for 19 hr. β -(5-Iodo-3-uracilyl)propionic acid amide (VII) (85% yield, mp 230°C) was similarly prepared. [WA-50; CBE No. 39][FT]

SUB CODE: 07/ SUBM DATE: 13Sep66/ ORIG REF: 003

Card 2/2

- 99 -

ACC NR: AP9003130

SOURCE CODE: UR/0366/68/004/012/2241/2245

AUTHOR: Parfenov, E. A.; Serebrennikova, G. A.; Preobrazhenskiy, N. A.

ORG: Moscow Institute of Fine Chemical Technology im. M. V. Lomonosov (Moskovskiy institut tonkoy khimicheskoy tekhnologii); All-Union Scientific Research Vitamin Institute (Vsesoyuznyy nauchno-issledovatel'skiy vitaminnyy institut)

TITLE: Studies in the series of complex lipids. XXXIII. Condensation of palmitoyl bis(p-nitrobenzyl) phosphate with α -oxides

SOURCE: Zhurnal organicheskoy khimii, v. 4, no. 12, 1968, 2241-2245

TOPIC TAGS: phosphate ester, protein synthesis, lipid, plasmalogen

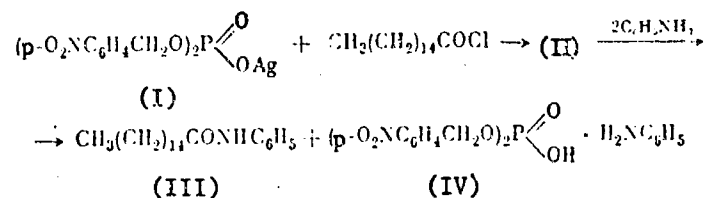
ABSTRACT: One of the variants of the synthesis of complex plasmalogens includes the stage of the condensation of 1-alkenyl 2,3-epoxypropyl ethers with halides of higher aliphatic acids. By using acyl phosphates instead of acyl chlorides, it becomes possible to introduce radicals of higher aliphatic acid and phosphate in the required positions in the glycerine radical. The synthesis of acyl phosphates is of independent interest. There are indications that such anhydrides and amino acids are intermediates in one of the stages of protein synthesis. Palmitoyl bis(p-nitrobenzyl) phosphate (II) (87.9% yield, mp 170—171°C) was

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UDC: 547.26'11+547.915.5

ACC NR: AP9003130

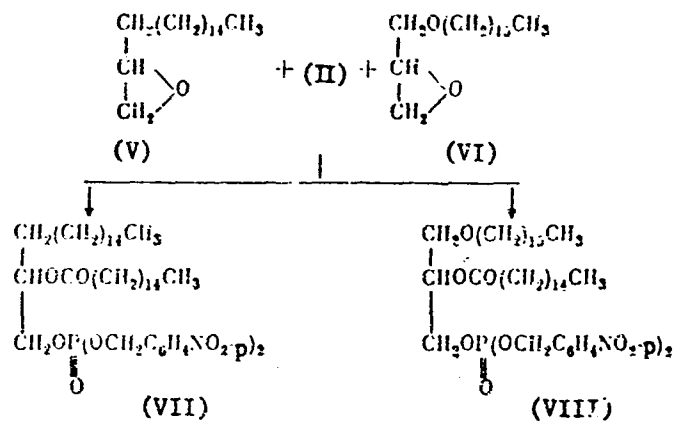
prepared by adding palmitoyl chloride in PhCH₃ to Ag bis(p-nitrobenzyl) phosphate (I) in PhCH₃ for 15 min at 0°C and stirring for 1 hr at 0°C and 6.5 hr at 20—22°C. Palmitic acid anilide (III) (97.0%, mp 89.5—90°C) and bis(p-nitrobenzyl) hydrogen phosphate anilide (IV) (98.60% yield, mp 158.5—159.5°C) were obtained by adding II in PhCH₃ to PhNH₂ in PhCH₃ at 20—22°C.



2-Palmitoyloctadecyl bis(p-nitrobenzyl) phosphate (VII) (32.1% yield, mp 55—57°C) was prepared by stirring 1,2-epoxyoctadecane (V) and II in PhCH₃ with a catalytic amount of BF₃ etherate and allowing the mixture to stand for 24 hr at 18—20°C. α -0-Hexadecyl- β -0-palmitoyl-glycerol bis(p-nitrobenzyl) phosphate (VIII) (36.3% yield, mp 54.5—55.5°C) was obtained by allowing II to react with hexadecyl glycidyl ether (VI).

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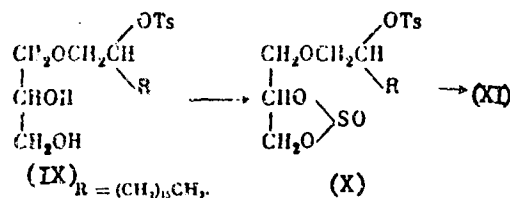
ACC NR: AP9003130



α -(2-Tosyloxy)octadecyl glyceryl ether sulfite (X) (77.2% yield, mp 43.5—44.5°C) was prepared by adding SOCl_2 in hexane to α -(2-tosyloxy)octadecyl glyceryl ether (IX) in hexane and pyridine at 0°C for 15 min and stirring for 30 min at 0°C and 1 hr at 18—20°C. 1-Octadecenyl 2,3-epoxypropyl ether (XI) (21.2% yield, mp 34.5—35.5°C) was

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ACC NR: AP9003130



obtained by adding K tert-butoxide to X in tert-BuOH for 30 min at 48—50°C and stirring for 30 min at 70—72°C. Orig. art. has: 1 figure. [WA-50; CBE No. 39] [FT]

SUB CODE: 07/ SUBM DATE: 19Dec67/ ORIG REF: 008/ OTH REF: 008

Card 4/4

ACC NR: AP9003129

SOURCE CODE: UR/0366/68/004/012/2235/2241

AUTHOR: Pavlova, L. A.; Samartseva, I. V.

ORG: Leningrad Technology Institute im. Lensovet (Leningradskiy tekhnologicheskii institut)

TITLE: Studies in the hydroxyisoindoline series. VIII. Synthesis and basic properties of 2,3,3-triphenyl-1-aryl-1-hydroxyisoindolines

SOURCE: Zhurnal organicheskoy khimii, v. 4, no. 12, 1968, 2235-2241

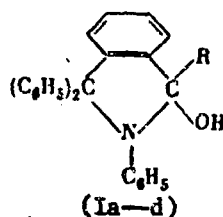
TOPIC TAGS: benzene derivative, indole derivative, acid base equilibrium

ABSTRACT: 1,2,3,3-Tetraphenyl-1-hydroxyisoindoline (Ia) (90% yield, mp 198—199°C), 2,3,3-triphenyl-1-p-tolyl-1-hydroxyisoindoline (Ib) (94% yield, mp 176—176.5°C), 2,3,3-triphenyl-1-p-methoxyphenyl-1-hydroxyisoindoline (Ic) (88% yield, mp 178—179°C), and 2,3,3-triphenyl-1-p-(dimethylamino)phenyl-1-hydroxyisoindoline (Id) (75% yield, mp 161—163°C) were prepared by adding 2,3,3-triphenylphthalimidine in hot HPh to Li and PhBr, p-bromotoluene, p-bromoanisole, and p-bromodimethylaniline, respectively, and boiling for 30 min in a stream of N. Yellow to

Card 1/4

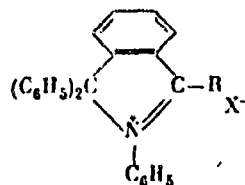
UDC: 547.759

ACC NR: AP9003129



R = C₆H₅, (a), p-CH₃C₆H₄, (b), p-CH₃OC₆H₄, (c), p-(CH₃)₂NC₆H₄, (d).

Table 1



r	x	% Yield	Mp, °C
C ₆ H ₅	ClO ₄	83	136--138°
	FeCl ₄	78	220--221
	SbCl ₆	82	213--214

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Table 1. (Cont.)

p-C ₆ H ₄ CH ₃	{	ClO ₄	87	248-249
		FeCl ₄	74	203-204
		SbCl ₆	75	227-227.5
p-C ₆ H ₄ OCH ₃	{	ClO ₄	87	235-237
		FeCl ₄	85	167-168
		SbCl ₆	76	208-210
p-C ₆ H ₄ N(CH ₃) ₂	{	ClO ₄	81	252-253
		FeCl ₄	77	201-202

Table 2. Equilibrium constants

No.	pH	pK _{R+}	pK _{R+} av
Ia	6.73	7.38	7.30 ± 0.06
	6.83	7.24	
	6.93	7.26	
	7.10	7.38	
	7.51	7.31	
	7.60	7.23	
Ib	7.31	7.54	7.66 ± 0.08
	7.44	7.59	
	7.51	7.60	
	7.63	7.70	
	7.80	7.76	
	7.89	7.78	

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Table 2. (Cont.)

Ic	7.83	8.09	8.20 ± 0.10
	7.90	8.13	
	7.95	8.08	
	8.37	8.26	
	8.43	8.29	
	8.60	8.36	
Id	8.62	9.42	9.30 ± 0.06
	8.69	9.35	
	8.80	9.29	
	9.18	9.23	
	9.38	9.24	
	9.61	9.27	

red-orange perchlorates of Ia—Id were obtained by adding 50% HClO₄ to Ia—Id in HOAc. Tetrachloroferrates and hexachloroantimonates were similarly prepared (see Table 1). Acid-base equilibrium constants for Ia—Id are shown in Table 2. The carbonium-immonium structure of the isoindolinium ions was confirmed by electron and IR spectra. Orig. art. has: 3 figures and 3 tables. [WA-50; CBE No. 39] [FT]

SUB CODE: 07/ SUBM DATE: 27Dec67/ ORIG REF: 007/ OTH RED: 001

Card 4/4

AUTHOR: Petrova, T. D.; Mamayev, V. P.; Yakobson, G. G.; Vorozhtsov, (Jr.) N. N.

ORG: Novosibirsk Institute of Organic Chemistry, Siberian Division, Academy of Sciences SSSR (Novosibirskiy institut organicheskoy khimii Sibirskogo otdeleniya Akademii nauk SSSR)

TITLE: Polyfluorinated heterocyclic compounds. II. Preparation of heterocyclic compounds based on α -benzamido- β -(pentafluorophenyl)acrylic acid

SOURCE: Khimiya geterotsiklicheskih soedineniy, no. 5, 1968, 771-776

TOPIC TAGS: heterocyclic oxygen compound, fluorinated aromatic compound, acrylic acid, indole derivative

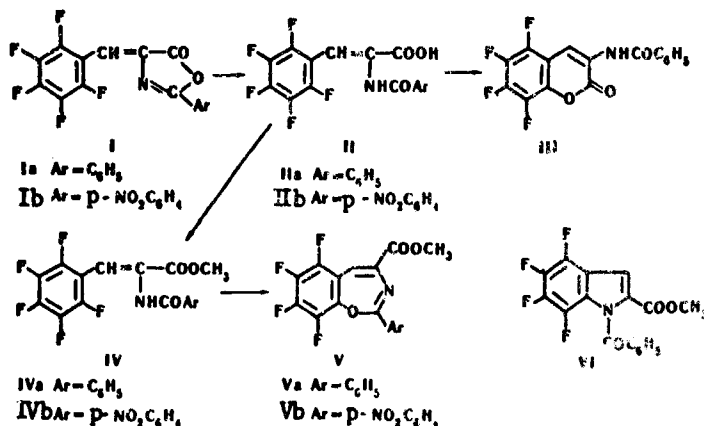
ABSTRACT: 2-Phenyl-4-(pentafluorobenzal)-5-oxazolone (Ia) (mp 171--172°C) was prepared from pentafluorobenzaldehyde, hippuric acid, and NaOAc. 2-(p-Nitrophenyl)-4-(pentafluorobenzal)-5-oxazolone (Ib) (33.5% yield, mp 153--155°C) was similarly prepared. α -Benzamido- β -(pentafluorophenyl)acrylic acid (IIa) (mp 231--232°C) and IIb (90% yield, mp 217--219°C) were prepared from Ia and Ib by a known

Card 1/4

UDC: 547.814.1'892.543.422.4

ACC NR: AP8037844

procedure. 3-Benzamido-5,6,7,8-tetrafluorocoumarin (III) (mp 229--231°C)



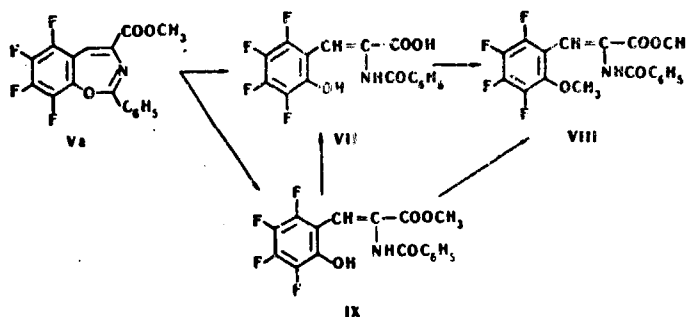
was obtained by stirring IIa, KF, and HCONMe₂ at 100°C for 5 hr. Methyl α -benzamido- β -(pentafluorophenyl)acrylate (IVa) (93% yield, mp 137.5--138.5°C) was prepared by treating IIa with diazomethane. Compound

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ACC NR: AP8037844

IVb (83% yield, mp 184—186°C) was similarly prepared and was also obtained in 58% yield from IIb and MeOH. 2-Phenyl-4-carbomethoxy-6,7,8,9-tetrafluoro-1,3-benzofloxazepine (Va) (88% yield, 119—120.5°C) was prepared by stirring IVa, KF, and HCONMe₂ at 100°C for 5 hr. Compound Vb (79% yield, mp 168—169°C) was similarly prepared. N-Benzoylindole (VI) (33% yield, mp 68—69°C) was obtained by stirring NaH and indole in monoglym, adding BzCl after 1 hr, and refluxing for 30 min. N-(p-Nitrobenzoyl)indole (79% yield, mp 156—157°C) was similarly prepared. α-Benzamido-β-(2-hydroxy-3,4,5,6-tetrafluorophenyl)acrylic acid (VII) (87% yield, mp 189°C) was obtained by stirring Va and 5% KOH at 60°C for 16 hr and was also prepared from methyl α-benzamido-β-(2-hydroxy-3,4,5,6-tetrafluorophenyl)acrylate (IX).



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ACC NR: AP8037844

Methyl α-benzamido-β-(2-methoxy-3,4,5,6-pentafluorophenyl)acrylate (VIII) (97% yield, mp 160—161.5°C) was obtained by treating VII with diazomethane and was similarly prepared in 82% yield (mp 158—161°C) from IX. Compound IX (77% yield, mp 169.5—171.5°C) was prepared by boiling Va, Me₂CO, and 3 drops HCl for 2 hr. Orig. art. has: 1 figure. [WA-50; CBE No. 39][FT]

SUB CODE: 07/ SUBM DATE: 14Jul66/ ORIG REF: 007/ OTH REF: 004

Card 4/4

ACC NR: AP8037845

SOURCE CODE: UR/0409/68/000/005/0777/0779

AUTHOR: Petrova, T. D.; Mamayev, V. P.; Yakobson, G. G.; Vorozhtsov, (Jr.) N. N.

ORG: Novosibirsk Institute of Organic Chemistry, Siberian Department, Academy of Sciences SSSR (Novosibirskiy institut organicheskoy khimii Sibirskogo otdeleniya Akademii nauk SSSR)

TITLE: Polyfluorinated heterocyclic compounds. III. 3-Substituted tetrafluorocoumarins

SOURCE: Khimiya geterotsiklicheskih soyedineniy, no. 5, 1968, 777-779

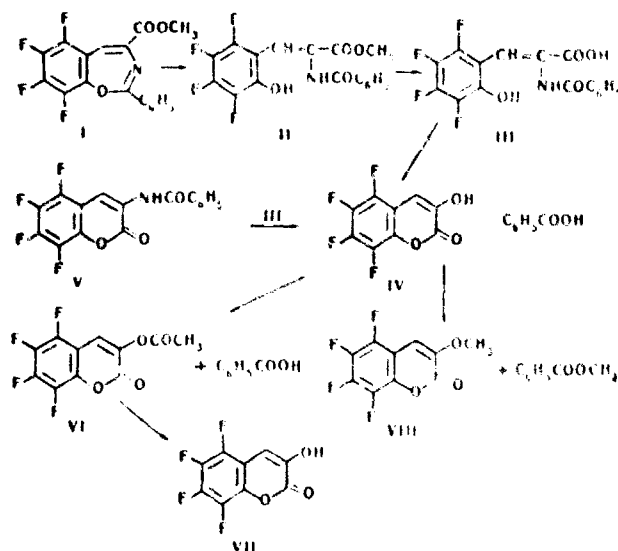
TOPIC TAGS: heterocyclic oxygen compound, fluorinated aromatic compound, bactericide

ABSTRACT: 3-Hydroxy-5,6,7,8-tetrafluorocoumarin benzoic acid (IV) (70% yield, mp 132.5—133.5°C) was prepared by boiling 2-phenyl-4-carbo-methoxy-6,7,8,9-tetrafluoro-1,3-benzo[f]oxazepine (I), HOAc, and HCl for 7 hr. Compound IV was similarly prepared from α -benzamido-8-(2-hydroxy-3,4,5,6-tetrafluorophenyl)acrylic acid (III) and 3-benzamido-5,6,7,8-tetrafluorocoumarin (V). Compound IV (mp 130.5—131.5°C) was

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UDC: 547.814:543.422.4

ACC NR: AP8037845



also obtained from 3-hydroxy-5,6,7,8-tetrafluorocoumarin (VII) and HOBz in MeOH. 3-Acetoxy-5,6,7,8-tetrafluorocoumarin (VI) (0.08 g from 0.14 g IV, mp 101.5—102°C) was prepared by allowing IV, HOAc, Ac_2O ,

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ACC NR: AP8037845

and 3 drops of HClO₄ to stand for 1.5 hr. Compound VII (75% yield, mp 152.5—153°C) was obtained by boiling VI, HCl, and HOAc for 4 hr. 3-Methoxy-5,6,7,8-tetrafluorocoumarin (VIII) (0.12 g from 0.15 g IV, mp 136.5—138°C) was prepared by treating IV with diazomethane. Compounds IV—VIII are of interest for the study of their physiological action since it is known that a series of coumarin derivatives display antibacterial activity. Orig. art. has: 1 figure.

[WA-50; CBE No. 39][FT]

SUB CODE: 07/ SUBM DATE: 14Jul66/ ORIG REF: 001/ OTH REF: 003

Card 3/3

ACC NR: AT8037880

SOURCE CODE: UR/3434/68/000/010/0172/0181

AUTHOR: Prokhorchik, R. A.; Mashtakov, S. M.

ORG: Plant Physiology and Biochemistry Section, Institute of Experimental Botany, AN BSSR (Sektziya fiziologii i biokhimii rasteniy pri Institute eksperimental'noy botaniki AN BSSR)

TITLE: Effect of simazine and atrazine on catalase and peroxidase activity in plants

SOURCE: Vsesoyuznoye botanicheskoye obshchestvo. Belorusskoye otdeleniye. Botanika; issledovaniya, no. 10, 1968, 172-181

TOPIC TAGS: herbicide, plant metabolism, plant growth, catalase, enzyme, plant respiration

ABSTRACT: This article appears in Biological Factors

Card 1/1

UDC: 632.954.(633.11+633.15)

ACC NR: AT9003205

SOURCE CODE: UR/3445/68/000/004/0153/0155

AUTHOR: Proklina-Kaminskaya, T. L.

ORG: Kiev Scientific Research Institute of Industrial Hygiene and Professional Diseases (Kiyevskiy nauchno-issledovatel'skiy institut gigiyeny truda i profzabolevaniy)

TITLE: Change of the activity of tissue respiration, cytochromoxidase, and succindehydrogenase in rat liver under the influence of carbamates

SOURCE: Kiyev. Nauchno-issledovatel'skiy institut farmakologii i toksikologii. Farmakologiya i toksikologiya, no. 4, 1968, 153-155

TOPIC TAGS: tissue physiology, biologic respiration, carbamate, enzymatic activity, white rat, liver, thiocarbamate

ABSTRACT: A study was made of the effect of Sevin (1-naphthyl methyl-carbamate), Tillam (a thiocarbamate), and TMTD (bis(dimethylthiocarbamyl) disulfide) on the oxidation-reduction processes in the organism of warm-blooded animals. An investigation was performed of the activity of endogenous tissue respiration and the activity of the two most important oxidative enzymes, i.e., succindehydrogenase and cytochromoxidase. The experiments were performed on male white rats of identical weight and

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UDC: 615-092.259

ACC NR: AT9003205

age. The animals were subjected to acute poisoning with the maximum tolerable doses of Sevin (400 mg/kg), Tillam (750 mg/kg), and TMTD (400 mg/kg) and subacute poisoning with subtoxic doses of the poisons. In the acute experiments, the investigation was performed 18 hr after the administration of the pesticide. In the subacute experiments, the poisons were given daily for one month *per os* in the form of aqueous

Table 1. Change of the activity of endogenous tissue respiration and the activity of cytochromoxidase and succindehydrogenase in rat liver

Pesticide	Endogenous respiration of liver tissue	Activity of cytochromoxidase	Activity of succindehydrogenase
Control			
	2.22±0.18	22.3±0.7	785±0.35
Acute poisoning			
Sevin	3.4±0.23	30.4±0.7	1105±29
Tillam	3.2±0.24	29.1±0.7	1061±32
TMTD	2.8±0.26	26.8±0.9	1018±34
Subacute poisoning			
Sevin	1.75±0.092	12.5±0.7	603±26
Tillam	2.05±0.12	15.3±0.8	645±18
TMTD	1.92±0.16	13.4±0.8	610±17

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ACC NR: AT9003205

emulsions. The study was performed on rat liver, in view of its high sensitivity to toxic substances. The results are shown in Table 1. The nature of the changes in the activity of tissue respiration and in the activity of succindehydrogenase and cytochromoxidase, which are components of mitochondrial oxidative cycles, suggests non-specificity of the action of all three pesticides on oxidation-reduction processes. The shifts in these indices are possibly a consequence of a change in the physical condition or quantity of the mitochondria in the liver tissue (A. Lenindzher, 1966). Orig. art. has: 1 table.

[WA-50; CBE No. 39] [FT]

SUB CODE: 06/ SUBM DATE: none

Card 3/3

ACC NR: AP9000127

SOURCE CODE: UR/0079/68/038/011/2532/2538

AUTHOR: Pudovik, A. N.; Cherkasov, R. A.

ORG: Kazan' State University im. V. I. Ul'yanov-Lenin (Kazanskiy gosudarstvennyy universitet)

TITLE: Reactions of diethyl dithiophosphoric acid with 1,3-conjugate systems with a hetero atom

SOURCE: Zhurnal obshchey khimii, v. 38, no. 11, 1968, 2532-2538

TOPIC TAGS: kinetic chemical reaction rate, malonic ester, phosphoric acid, dithiophosphate ester

ABSTRACT: A study was made of the kinetics of the title reactions. The rate constants of the reaction of 0.5 M diethyl dithiophosphoric acid with 0.5 M unsaturated acids, their esters, and nitriles at $45 \pm 0.1^\circ\text{C}$ in heptane-xylene, 3:1, are shown in Table 1. The most probable mechanism of the reaction is the 1,4-orientation of the addend with

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UDC: 541.127:547.26'118

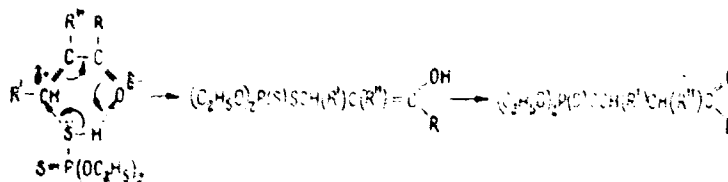
Table 1. Rate constants

No.	Unsaturated reagent	$k^* \times 10^4$ (l/mole-sec)
1	$\text{CH}_2=\text{CHCN}$	8.36
2	$\text{CH}_2=\text{C}(\text{CH}_3)\text{CN}$	7.23
3	$\text{CH}_2=\text{CHCOOH}$	1.89
4	$\text{CH}_2=\text{C}(\text{CH}_3)\text{COOH}$	1.43
5	$\text{CH}_2=\text{CHCOOCH}_3$	0.86
6	$\text{CH}_2=\text{C}(\text{CH}_3)\text{COOCH}_3$	0.43
7	$\text{CH}_2=\text{C}(\text{COOC}_2\text{H}_5)_2$	Rate is very high
8	$\text{CH}_3\text{CH}=\text{C}(\text{COOC}_2\text{H}_5)_2$	9.37
9	$\text{C}_6\text{H}_5\text{CH}=\text{C}(\text{COOC}_2\text{H}_5)_2$	4.57
10	$n\text{-C}_3\text{H}_7\text{CH}=\text{C}(\text{COOC}_2\text{H}_5)_2$	3.60
11	$\text{iso-C}_3\text{H}_7\text{CH}=\text{C}(\text{COOC}_2\text{H}_5)_2$	1.50

subsequent coincident transfer of the electrons in the hexacentric transition complex. A study was made of the effect of solvents and

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ACC NR: AP9000127



R = H, OH, O-Alk, R' = H, Alk, Ar, R'' = Alk, COO-Alk, H

alkali-type additives on the rate of addition of I to unsaturated electrophilic compounds. The effect of solvents on the reaction rate of 0.1 M I with 0.1 M acrylonitrile at $45 \pm 0.1^\circ\text{C}$ is shown in Table 2.

Table 2. Effect of solvents on the reaction rate

Solvent	$k^* \times 10^3$ (l per mole min)
Heptane-xylene, 3:1	50.1
HPh	35.3
CH_3OH	27.2
PhNO_2	25.0
Diisobutyl ether	23.2
EtOH	20.2

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Table 2. (Cont.)

Dioxane	20.2
CHCl ₃	18.9
HOAc	11.4
CH ₃ CN	5.4
HCON(CH ₃) ₂	0
50% EtOH	0

Alkali-type additives had almost no effect. Compounds I—X were obtained by heating diethyl dithiophosphoric acid (30% excess) with diethyl alkylidene- and benzylidenemalonates in xylene at 100—120°C.

Table 3
RCHCH(COOC₂H₅)₂
SP(S)(OC₂H₅)₂

No.	R	Bp (p in mm)	d ₂₀ ⁴	n _D ²⁰
I	H	158—160° (0.6)	1.1448	1.4710
II	CH ₃	149—150 (0.3)	1.1587	1.4910
III	C ₂ H ₅	152—153 (0.3)	1.1555	1.4902
IV	C ₃ H ₇	153—154 (0.3)	1.1300	1.4878
V	isoC ₃ H ₇	155—156 (0.3)	1.1406	1.4912
VI	CCl ₃	168—169 (0.3)	1.3316	1.5166
VII	C ₆ H ₅	168—169 (0.5)	—	—

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Table 3. (Cont.)

VIII	p-FC ₆ H ₄	Mp 47—48°	—	—
IX	p-ClC ₆ H ₄	Mp 62.5—63°	—	—
X	p-BrC ₆ H ₄	Mp 58—58.5°	—	—
		Mp 48—48.5°	—	—

O,O-Diethyl S-(diethyl succinate)dithiophosphate (XI) (58.6% yield, bp_{0.5} 139—141°C, d₄²⁰ 1.1736, n_D²⁰ 1.4920) was prepared by adding diethyl maleate to diethyl dithiophosphoric acid and heating for 4 hr at 70°C. Compound XI (55.8% yield, bp_{0.3} 136—137°C) was also obtained by adding diethyl maleate to diethyl dithiophosphoric acid and Et₃N. Orig. art. has: 5 tables. [WA-50; CBE No. 39][FT]

SUB CODE: 07/ SUBM DATE: 27Nov67/ ORIG REF: 019/ OTH REF: 010

AUTHOR: Pudovik, A. N.; Muratova, A. A.; Yarkova, E. G.; Marsheva, V. N.

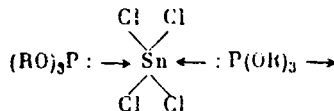
ORG: Kazan' State University im. V. I. Ul'yanov-Lenin (Kazanskiy gosudarstvennyy universitet)

TITLE: Study of the reaction of complete esters of phosphorous acid with stannic chloride

SOURCE: Zhurnal obshchey khimii, v. 38, no. 11, 1968, 2522-2528

TOPIC TAGS: intermolecular complex, tin compound, phosphorous acid

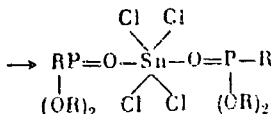
ABSTRACT: A complex of structure $[(\text{EtO})_3\text{P}]_2 \cdot \text{SnCl}_4$ (I) was obtained by allowing SnCl_4 to react with $(\text{EtO})_3\text{P}$ in pentane in a stream of CO_2 at -25°C and cooling at -5°C for 1 hr. A complex of structure $[\text{EtP}(\text{O})(\text{OEt})_2]_2 \cdot \text{SnCl}_4$ (II) (n_D^{20} 1.4949, d_4^{20} 1.5738) was obtained by heating I and $(\text{EtO})_3\text{P}$ for 30 min at $70 \pm 2^\circ\text{C}$. Complex II was also



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UDC: 547.26'118

ACC NR: AP9000125



obtained by adding SnCl_4 to $\text{EtP}(\text{O})(\text{OEt})_2$ at -30°C and heating to 20°C . Similarly prepared complexes are shown in Table 1. A complex of

Table 1

Starting products	Reaction conditions		Formed complex
	Temp., °C	Time, hr	
$[(\text{CH}_3\text{O})_3\text{P}]_2 \cdot \text{SnCl}_4$	15°	1	} $[\text{CH}_3\text{P}(\text{O})(\text{OCH}_3)_2]_2 \cdot \text{SnCl}_4$
$\text{CH}_3\text{P}(\text{O})(\text{OCH}_3)_2 + \text{SnCl}_4 (2:1)$	-20 ± 10	2	
$[(\text{C}_2\text{H}_5\text{O})_3\text{P}]_2 \cdot \text{SnCl}_4$	70 ± 2	1	} $[\text{C}_2\text{H}_5\text{P}(\text{O})(\text{OC}_2\text{H}_5)_2]_2 \cdot \text{SnCl}_4$
$\text{C}_2\text{H}_5\text{P}(\text{O})(\text{OC}_2\text{H}_5)_2 + \text{SnCl}_4 (2:1)$	-20 ± 10	2	

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Table 1. (Cont.)

$\{(n-C_3H_7O)_3P\}_2 \cdot SnCl_4$	70 ± 2	4	} $\{n-C_3H_7P(O)(OC_3H_7-n)_2\}_2 \cdot SnCl_4$
$n-C_3H_7P(O)(OC_3H_7-n)_2 + SnCl_4$ (2:1)	-20 ± 10	2	
$\{(iso-C_3H_7O)_3P\}_2 \cdot SnCl_4$	70 ± 2	3	$\{iso-C_3H_7P(O)(OC_3H_7-n)_2\}_2 \cdot SnCl_4$
$\{(n-C_4H_9O)_3P\}_2 \cdot SnCl_4$	70 ± 2	5	} $\{n-C_4H_9P(O)(OC_4H_9-n)_2\}_2 \cdot SnCl_4$
$n-C_4H_9P(O)(OC_4H_9-n)_2 + SnCl_4$ (2:1)	-20 ± 5	2	
$\{(sec-C_4H_9O)_3P\}_2 \cdot SnCl_4$	70	2	$\{sec-C_4H_9P(O)(OC_4H_9-sec)_2\}_2 \cdot SnCl_4$

structure $[EtP(O)(OEt)O]_2 \cdot SnCl_2$ was obtained by heating I to 80°C.
Orig. art. has: 2 figures and 2 tables. [WA-50; CBE No. 39][FT]

SUB CODE: 07/ SUBM DATE: 19Dec67/ ORIG REF: 003/ OTH REF: 002

Card 3/3

ACC NR: AP9002929

SOURCE CODE: UR/0020/68/183/004/0842/0845

AUTHOR: Pudovik, A. N. (Corresponding member AN SSSR); Yevstaf'yev, G. I.

ORG: Kazan' State University im. V. I. Ul'yanov-Lenin (Kazanskiy gosudarstvennyy universitet)

TITLE: Mechanism of transesterification of esters of trivalent phosphorus acids

SOURCE: AN SSSR. Doklady, v. 183, no. 4, 1968, 842-845

TOPIC TAGS: esterification, alcohol, glycol, phosphonous acid, phosphonite ester, phosphinite ester

ABSTRACT: A new mechanism is proposed for the transesterification of simple esters of P^{3+} acids with higher alcohols, substituted alcohols, and glycols. The change in the reaction rates of the transesterification of $EtPH(O)OEt$ with $H_2NC_2H_4OH$, HOC_2H_4OH , ClC_2H_4OH , and HOC_2H_4CN occurs in inverse sequence in comparison with the transesterification of $Ph_2P(OEt)$. This indicates different mechanisms in the transesterification of esters of P^{3+} and P^{5+} acids. The transesterification

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UDC: 541.124

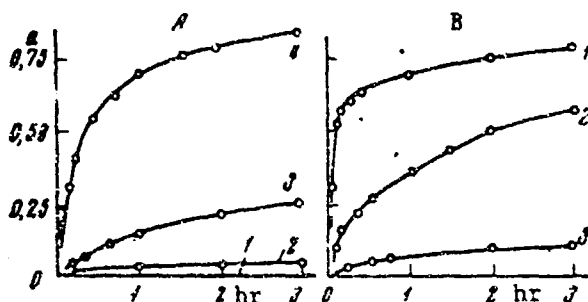


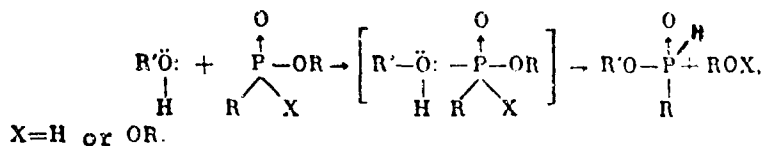
Fig. 1. Degree of completion of the reaction of EtPH(O)OEt (A) and the reaction of Ph P(OEt) at 130°C (B).

1 - With HOC₂H₄CN, 2 - with ClC₂H₄OH, 3 - with HOC₂H₄OH, 4 - with H₂NC₂H₄OH

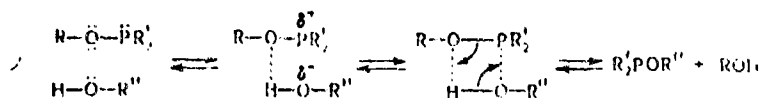
of esters of P⁵⁺ acids without catalysts proceeds by nucleophilic substitution at the tetrahedral P atom. In the transesterification

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ACC NR: AP9002929



of Ph₂P(OEt) with substituted alcohols at 130°C, the reaction rate increases in the order H₂NC₂H₄OH < HOC₂H₄OH < ClC₂H₄OH < HOC₂H₄CN. This also holds true in the transesterification of PhP(OEt)₂ and P(OEt)₃. In the absence of catalysts, the H of the alcohol molecule is attacked by the O of the alkoxy group of the phosphite. The P—C bond weakens because of the partial shift of electron density toward the O, and a certain formally positive charge appears on the P atom. The alkoxy group of the alcohol attracts the P atom and a "new" alcohol molecule is split off as a result of the cyclic synchronous transfer of electrons in the transition complex. Bases, such as alkalies and alkoxides, do



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ACC NR AP9002929

not greatly affect the rate of transesterification, but in the presence of $P(O)(OH)_3$ the transesterification rate increases, especially in the initial period. Orig. art. has: 1 figure. [WA-50; CBE No. 39][FT]

SUB CODE: 07/ SUBM DATE: 21Apr68/ ORIG REF: 007/ OTH REF: 001

Card 4/4

ACC NR: AP9000129

SOURCE CODE: UR/0079/68/038/011/2542/2547

AUTHOR: Razumova, N. A.; Petrov, A. A.; Yevtikhov, Zh. L.

ORG: Leningrad Technology Institute im. Lensevet (Leningradskiy tekhnologicheskiy institut)

TITLE: Phosphorus-containing heterocycles. XX. Condensation of glycol phosphorous acid isothiocyanates with diene hydrocarbons

SOURCE: Zhurnal obshchey khimii, v. 38, no. 11, 1968, 2542-2547

TOPIC TAGS: isocyanate, thiocyanate, phosphorous acid, heterocyclic phosphorus compound

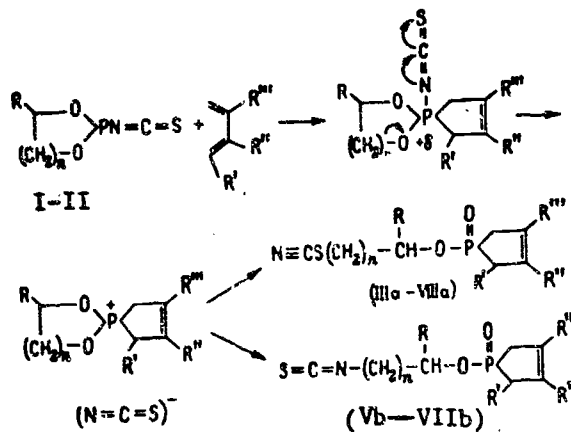
ABSTRACT: Butylene glycol phosphorous acid isothiocyanate (II) (92% yield, $bp_{0.5}$ 65°C, d_4^{20} 1.1350, n_D^{20} 1.4560) was prepared by adding NH_4SCN to butylene glycol phosphorous acid chloride and heating for 1 hr on a water bath. Ethylene glycol phosphorous acid isothiocyanate (I) was similarly prepared. 1-(2-Thiocyanoethoxy)-3-methyl-3-phospholene 1-oxide (VIa) and 1-(2-isothiocyanoethoxy)-3-methyl-3-phospholene 1-oxide (VIb) were obtained by heating I and isoprene for 4

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UDC: 547.341

ACC NR: AP9000129

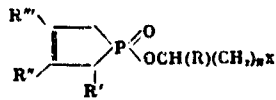
hr at 80—90°C. Compounds IIIa, IVa, 1-(2-thiocyanoethoxy)-3-phospholene 1-oxide (Va), 1-(2-isothiocyanoethoxy)-3-phospholene 1-oxide (Vb), VIIa, VIIb, and VIIIa were similarly prepared. Compound Va



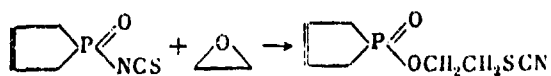
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ACC NR: AP9000129

Table 1



No.	R	R'	R''	R'''	x	n	% Yield	Bp, °C (p in mm)	n_D^{20}	d_4^{20}
IIIa	H	CH ₃	H	H	-SCN	1	92.0	165° (0.9)	1.5170	1.2415
IVa	H	H	CH ₃	CH ₃	-SCN	1	90.2	175 (0.9)	1.5281	1.2236
VIa	H	H	CH ₃	H	-SCN	1	70.2	162 (1.0)	1.5250	1.2585
VIb	H	H	CH ₃	H	-NCS	1	13.6	121 (0.9)	1.5110	1.1751
VIIa	H	H	Cl	H	-SCN	1	68.3	182 (0.9)	1.5459	1.3969
VIIb	H	H	Cl	H	-NCS	1	14.5	135 (1.0)	1.5321	1.3198
VIIIa	CH ₃	H	CH ₃	H	-SCN	2	84.3	132 (0.4)	1.5225	1.1897



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ACC NR: AP9000129

(55—60% yield) was also obtained by treating 1-isothiocyano-3-phospholene 1-oxide with ethylene oxide. Orig. art. has: 2 figures and 2 tables. [WA-50; CBE No. 39][FT]

SUB CODE: 07/ SUBM DATE: 31Oct67/ ORIG REF: 009/ OTH REF: 001

Card 4/4

ACC NR: AP9003570

SOURCE CODE: UR/0062/68/000/012/2811/2812

AUTHOR: Reznik, V. S.; Shvetsov, Y. S.; Pashkurov, N. G.

ORG: Institute of Organic and Physical Chemistry im. A. Ye. Arbuzov, Academy of Sciences SSSR (Institut organicheskoy i fizicheskoy khimii Akademii nauk SSSR)

TITLE: Some chemical conversions of N-(β -hydroxyethyl)uracils

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 12, 1968, 2811-2812

TOPIC TAGS: uracil, uracil derivative, pyrimidine, heterocyclic nitrogen compound

ABSTRACT: The treatment of 3-(β -hydroxyethyl)-6-methyluracil (I) with SOCl_2 , $(\text{CH}_3)_2\text{SO}_4$, and ClCH_2COCl gave compounds II—VI which are characterized in the table. Compound II is formed when a suspension of

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UDC: 542.91+547.854.4

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ACC NR: AP9003570

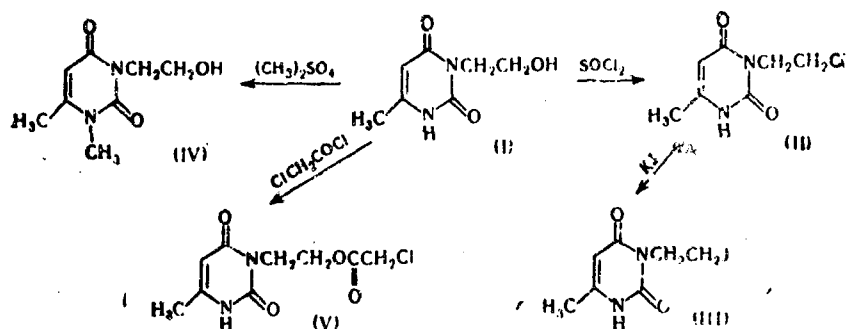


Table 1

Compound	Mp, °C	% Yield
II	196-197	77
III	201,5-203,5	81
IV	112-115	79,2
V	166-167	65,5
VI	71-72	49

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ACC NR: AP9003570

I in a mixture of CHCl_3 and pyridine is treated with SOCl_2 solution in CHCl_3 at $20-22^\circ\text{C}$ and then heated for 7 hr at 62°C . Compound VI was obtained in a similar procedure using 1,3-bis(β -hydroxyethyl)-6-methyluracil and SOCl_2 . Compound III is formed when II is treated with KI in dry acetone with boiling. Compound IV was obtained by treating a mixture of I and NaOH with $(\text{CH}_3)_2\text{SO}_4$ at $18-20^\circ\text{C}$ and then by heating the reaction mixture for 1/2 hr at $70-75^\circ\text{C}$. Compound V is formed when I is treated with chloroacetyl chloride in a mixture of pyridine and CHCl_3 with boiling. [WA-50; CBE No. 39] [PS]

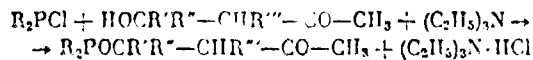
SUB CODE: 07/ SUBM DATE: 10Apr68/ ORIG REF: 001

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ACC NR: AP9003564

SOURCE CODE: UR/0062/68/000/012/2755/2761

AUTHOR: Rizpolozhenskiy, N. I.; Mukhametov, F. S.

ORG: Institute of Organic and Physical Chemistry im. A. Ye. Arbutov,
Academy of Sciences SSSR (Institut organicheskoy i fizicheskoy
khimii Akademii nauk SSSR)TITLE: Reactions of ketoalcohols with organophosphorus compounds. 1.
Reaction of β -ketoalcohols with dialkyl chlorophosphitesSOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 12, 1968,
2755-2761TOPIC TAGS: alkyl phosphite, phosphate ester, thiophosphate ester,
phosphonate ester, biologically active compoundABSTRACT: Phosphorus acid esters which contain ketoalkyl and aldoalkyl
groups display pronounced biological activity. Dialkyl 3-ketoalkyl
phosphites were synthesized by adding dialkyl chlorophosphite to β -keto-
alcohol and Et_3N in ether at -10 to -15°C . The synthesized compounds

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UDC: 542.91+661.718.1

ACC NR: AP9003564

Table 1. 3-Ketoalkyl phosphites

Compound	Bp, °C (p in mm)	d_4^{20}	n_D^{20}	% yield
$(\text{C}_2\text{H}_5\text{O})_2\text{PO}(\text{CH}_2)_2\text{CH}_2\text{COCH}_3$	73-75 (0.05)	1.0085	1.4330	73
$(n\text{-C}_3\text{H}_7\text{O})_2\text{PO}(\text{CH}_2)_3\text{CH}_2\text{COCH}_3$	76-78 (0.01)	0.9865	1.4400	70
$(i\text{-C}_3\text{H}_7\text{O})_2\text{PO}(\text{CH}_2)_2\text{CH}_2\text{COCH}_3$	77-79 (0.05)	0.9742	1.4353	62
$(n\text{-C}_4\text{H}_9\text{O})_2\text{PO}(\text{CH}_2)_3\text{CH}_2\text{COCH}_3$	100-102 (0.05)	0.9675	1.4427	76
$(i\text{-C}_4\text{H}_9\text{O})_2\text{PO}(\text{CH}_2)_2\text{CH}_2\text{COCH}_3$	87-89 (0.05)	0.9605	1.4383	68
$(\text{C}_2\text{H}_5\text{O})_2\text{PO}(\text{CH}_2)_2\text{CH}_2\text{COCH}_3$	56-58 (0.05)	0.9376	1.4630	15
$(\text{C}_2\text{H}_5\text{O})_2\text{PO}(\text{CH}_2)_2\text{CH}(\text{CH}_3)\text{COCH}_3$	60-62 (0.05)	1.0206	1.4365	70
$(n\text{-C}_3\text{H}_7\text{O})_2\text{PO}(\text{CH}_2)_2\text{CH}(\text{CH}_3)\text{COCH}_3$	82-83 (0.01)	0.9933	1.4400	65
$(i\text{-C}_3\text{H}_7\text{O})_2\text{PO}(\text{CH}_2)_2\text{CH}(\text{CH}_3)\text{COCH}_3$	61-66 (0.05)	0.9789	1.4330	58
$(n\text{-C}_4\text{H}_9\text{O})_2\text{PO}(\text{CH}_2)_2\text{CH}(\text{CH}_3)\text{COCH}_3$	93-95 (0.02)	0.9882	1.4460	68
$(i\text{-C}_4\text{H}_9\text{O})_2\text{PO}(\text{CH}_2)_2\text{CH}(\text{CH}_3)\text{COCH}_3$	87-89 (0.05)	0.9723	1.4390	63
$(\text{C}_2\text{H}_5\text{O})_2\text{PO}(\text{CH}_2)_2\text{CH}(\text{CH}_3)\text{COCH}_3$	57-58 (0.01)	1.0358	1.4367	67
$(n\text{-C}_3\text{H}_7\text{O})_2\text{PO}(\text{CH}_2)_2\text{CH}(\text{CH}_3)\text{COCH}_3$	77-78 (0.02)	1.0069	1.4591	50
$(i\text{-C}_3\text{H}_7\text{O})_2\text{PO}(\text{CH}_2)_2\text{CH}(\text{CH}_3)\text{COCH}_3$	55-56 (0.05)	0.9936	1.4310	66
$(n\text{-C}_4\text{H}_9\text{O})_2\text{PO}(\text{CH}_2)_2\text{CH}(\text{CH}_3)\text{COCH}_3$	90-91 (0.05)	0.9830	1.4420	85
$(i\text{-C}_4\text{H}_9\text{O})_2\text{PO}(\text{CH}_2)_2\text{CH}(\text{CH}_3)\text{COCH}_3$	58-59 (0.05)	1.0112	1.4358	49

are shown in Table 1. Dialkyl 2-methyl-3-ketobutyl thiophosphates
were prepared by adding S to dialkyl 3-ketoalkyl phosphites. Diethyl

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2-methyl-3-ketobutyl phosphate was obtained by passing N_2O_4 into diethyl 2-methyl-3-ketobutyl phosphite and CH_2Cl_2 at -15 to $-20^\circ C$. The synthesized compounds are shown in Table 2. Diethyl β,β -dichlorovinyl

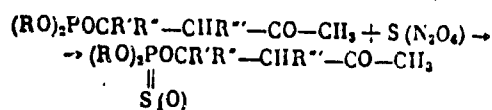


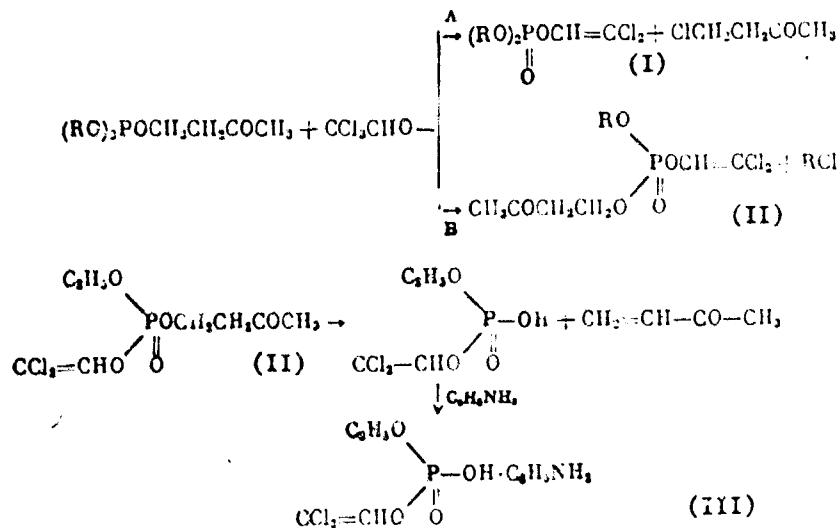
Table 2. 2-Methyl-3-ketobutyl (thio)phosphates

Compound	Bp, °C (p in mm)	d_4^{20}	n_D^{20}	% Yield
$(C_2H_5O)_2P(S)OCH_2CH(CH_3)COCH_3$	82-83 (0.01)	1.1034	1.4617	64
$(n-C_3H_7O)_2P(S)OCH_2CH(CH_3)COCH_3$	94-96 (0.08)	1.0656	1.4500	5
$(i-C_3H_7O)_2P(S)OCH_2CH(CH_3)COCH_3$	85-87 (0.01)	1.0528	1.4537	63
$(n-C_4H_9O)_2P(S)OCH_2CH(CH_3)COCH_3$	116-118 (0.08)	1.0391	1.4595	5
$(i-C_4H_9O)_2P(S)OCH_2CH(CH_3)COCH_3$	112-113 (0.05)	1.0256	1.4532	61
$(C_2H_5O)_2P(O)OCH_2CH(CH_3)COCH_3$	90-92 (0.001)	1.1070	1.4291	71

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phosphate (I) (40.4% yield, $bp_{0.04}$ $73-75^\circ C$) was obtained by adding CCl_3CHO to diethyl 3-ketobutyl phosphite and ether at $-40^\circ C$, cooling at $-20^\circ C$, and distilling at $140^\circ C$ (0.004 mm). Ethyl β,β -dichlorovinyl hydrogen phosphate anilide (III) (4 g from 13.5 g diethyl 3-ketobutyl phosphite, mp $88-89^\circ C$) was obtained from the reaction mixture of I by way of ethyl β,β -dichlorovinyl 3-ketobutyl phosphate (II).



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ACC NR: AP9003564

Dibutyl acetyl phosphonate (15.9% yield, bp_{0.06} 75—76°C) was obtained by adding dibutyl 3-ketobutyl phosphite to AcCl at -15 to -20°C, cooling at 0°C for 1 hr, and distilling the residue after the removal of volatile components at 102°C (0.004 mm). Orig. art. has: 2 tables and 1 figure. [WA-50; CBE No. 39][FT]

SUB CODE: 07/ SUBM DATE: 04Mar68/ ORIG REF: 009/ OTH REF: 004

Card 5/5

ACC NR: AP9003126

SOURCE CODE: UR/0366/68/004/012/2140/2144

AUTHOR: Rozhkova, N. G.; Zhegulova, I. A.; Baskakov, Yu. A.

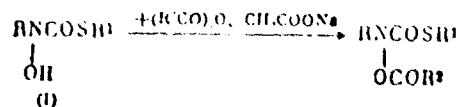
ORG: All-Union Scientific-Research Institute of Chemicals for Plant Protection (Vsesoyuznyy nauchno-issledovatel'skii institut khimicheskikh sredstv zashchity rasteniy)

TITLE: Herbicidal derivatives of hydroxylamine. XX. O-acylation of N-carbothioalkyl-N-alkyl(aryl)hydroxylamines

SOURCE: Zhurnal organicheskoy khimii, v. 4, no. 12, 1968, 2140-2144

TOPIC TAGS: hydroxylamine, hydroxylamine derivative, herbicide, aliphatic sulfur compound, aromatic sulfur compound

ABSTRACT: The acylation of N-carbothioalkyl-N-alkyl(aryl)hydroxylamine (I) with carboxylic acid anhydrides at room temperature in the presence of catalytic amounts of sodium acetate or phosphoric acid gave the acyl derivatives II and III:



R¹ = alkyl (II); R² = aryl (III).

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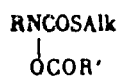
UDC: 547.238+547.555

- 121 -

ACC NR: AP9003126

characterized in Table 1. The reaction of I with isocyanates to form

Table 1



Compd no.	R	R'	Alk	% Yield	Bp (mm) or Mp, °C	d ₄ ²⁰	n _D ²⁰
1	CH ₃	CH ₃	iso-C ₃ H ₇	85	70° (0.13)	1.098	1.4741
2	CH ₃	C ₂ H ₅	iso-C ₃ H ₇	68	70 (0.02)	1.078	1.4720
3	CH ₃	C ₂ H ₅	iso-C ₃ H ₇	68	70 (0.02)	1.059	1.4700
4	C ₂ H ₅	CH ₃	C ₂ H ₅	99	108 (0.035)	1.195	1.5498
5	C ₂ H ₅	CH ₃	C ₂ H ₅	93	113—115 (0.03)	1.140	1.5381
6	C ₂ H ₅	CH ₃	iso-C ₃ H ₇	93	151 (0.025)	1.150	1.5359
7	C ₂ H ₅	C ₂ H ₅	iso-C ₃ H ₇	93	157 (0.025)	1.135	1.5450
8	C ₂ H ₅	C ₂ H ₅	iso-C ₃ H ₇	85	148 (0.12)	1.108	1.5202
9	C ₂ H ₅	C ₂ H ₅	iso-C ₃ H ₇	95	130 (0.5)	1.113	1.5321

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ACC NR: AP9003126

Table 1. (Cont.)

10	m-ClC ₆ H ₄	CH ₃	iso-C ₃ H ₇	71	73—75	—	—
11	m-ClC ₆ H ₄	C ₂ H ₅	iso-C ₃ H ₇	72	138 (0.05)	—	1.5416
12	p-ClC ₆ H ₄	CH ₃	iso-C ₃ H ₇	85	74	—	—
13	p-ClC ₆ H ₄	CH ₃	C ₂ H ₅	90	148 (0.055)	1.235	1.5381
14	p-ClC ₆ H ₄	C ₂ H ₅	C ₂ H ₅	83	152 (0.06)	1.181	1.5470

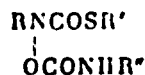
compounds I" proceeds at 40—50°C in dry dichloroethane without a catalyst:



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Compounds IV are characterized in Table 2. The reaction of I with some

Table 2

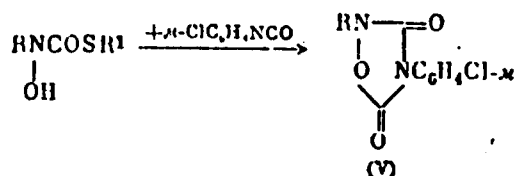


Compd no.	R	Alk	R'	Yield %	Bp (mm) or Mp, °C
1	CH ₃	iso-C ₃ H ₇	C ₆ H ₅	85	118—120°
2	CH ₃	iso-C ₃ H ₇	p-ClC ₆ H ₄	88	109—110
3	CH ₃	iso-C ₃ H ₇	o-ClC ₆ H ₄	94	66
4	CH ₃	iso-C ₃ H ₇	CH ₃	44	78—80 (0.05)
5	CH ₃	iso-C ₃ H ₇	p-NO ₂ C ₆ H ₄	55	128—129
6	m-ClC ₆ H ₄	C ₂ H ₅	C ₆ H ₅	97	90—91
7	m-ClC ₆ H ₄	C ₃ H ₇	o-ClC ₆ H ₄	50	103
8	m-ClC ₆ H ₄	C ₃ H ₇	3,4-Cl ₂ C ₆ H ₃	98	92—93
9	m-ClC ₆ H ₄	C ₃ H ₇	CH ₃	88	75
10	m-ClC ₆ H ₄	iso-C ₃ H ₇	C ₆ H ₅	66	63—65
11	m-ClC ₆ H ₄	iso-C ₃ H ₇	o-ClC ₆ H ₄	65	112
12	3,4-Cl ₂ C ₆ H ₃	iso-C ₃ H ₇	C ₆ H ₅	82	122—123
13	3,4-Cl ₂ C ₆ H ₃	iso-C ₃ H ₇	p-ClC ₆ H ₄	97	86—88
14	3,4-Cl ₂ C ₆ H ₃	iso-C ₃ H ₇	o-ClC ₆ H ₄	70	98

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ACC NR: AP9003126

aryl isocyanates proceeds with cyclization and elimination of S atom to form compounds V:



This reaction takes place in organic solvents (dichloroethane or ether) with heating at 50—65°C. The following compounds were prepared by the latter reaction: 2-m-chlorophenyl-4-p-chlorophenyl-1,2,4-oxadiazolidin-3,5-dione, mp 136°C, yield 86%; 2,4-bis(m-chlorophenyl)-1,2,4-oxadiazolidin-3,5-dione, mp 116—117°C, yield 87.5%; 2-m-chlorophenyl-4-p-nitrophenyl-1,2,4-oxadiazolidin-3,5-dione, mp 144°C, yield 93.5%; 2-(3',4'-dichlorophenyl)-4-m-chlorophenyl-1,2,4-oxadiazolidin-3,5-dione, mp 182°C, yield 66%; 2-(3',4'-dichlorophenyl)-4-p-chlorophenyl-1,2,4-oxadiazolidin-3,5-dione, mp 152—153°C, yield 58%; 2-(3',4'-dichlorophenyl)-4-(3'',4''-dichlorophenyl)-1,2,4-oxadiazolidin-3,5-dione, mp 159—161°C, yield 92.5%; and 2-m-chlorophenyl-4-phenyl-1,2,4-oxadiazolidin-3,5-dione, mp 125—126°C, yield 75.5%. The new compounds showed no herbicidal activity.

[WA-50; CBE No. 39][PS]

SUB CODE: 07/ SUBM DATE: 10Nov67/ ORIG REF: 002

Card 5/5

ACC NR: AF8037044

SOURCE CODE: UR/0240/68/000/011/0027/0031

AUTHOR: Rybakova, M. N.

ORG: Laboratory of Toxicology of Toxic Chemicals, Institute of Nutrition, AMN SSSR, Moscow (Laboratoriya toksikologii yadokhimikatov Instituta pitaniya AMN SSSR)

TITLE: The effect of some pesticides on the hypophysis and its gonadotropic effect

SOURCE: Gigiyena i sanitariya, no. 11, 1968, 27-31

TOPIC TAGS: pituitary gland, pesticide, reproductive system, pituitary hormone

ABSTRACT: This article appears in Biological Factors

Card 1/1

UDC: 615.778.4-092:612.433.62

ACC NR: AF8038127

SOURCE CODE: GE/0076/68/000/002/0062/0063

AUTHOR: Schubert, H.; Simon, H.; Jumar, A.

ORG: Institute of Organic Chemistry, Justus von Liebig Institute, Martin Luther University, Halle-Wittenberg (Institut für Organische Chemie, Justus-von-Liebig-Institute der Martin-Luther-Universität); Scientific Technical Center of the Chemical Industry for Plant Protectants and Pesticides, Magdeburg (Wissenschaftlich-Technisches Zentrum der chemischen Industrie für Pflanzenschutz- und Schädlingsbekämpfungsmittel)

TITLE: Further nucleophilic substitutions with alkylated 4-nitro-5-chloroimidazoles

SOURCE: Zeitschrift für Chemie, no. 2, 1968, 62-63

TOPIC TAGS: organic azole compound, mercaptan, sulfonamide

ABSTRACT: 1-Alkyl- and 1,2-dialkyl-4-nitro-5-arylmercaptoimidazoles (II) (see Table 1) were synthesized in 80-90% yields by allowing arylmercaptans to react with 1-alkyl- and 1,2-dialkyl-4-nitro-5-chloroimidazoles (I) in a solution of NaOEt in EtOH. Alkylated

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ACC NR: AP8038127

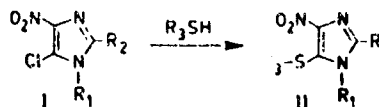


Table 1. 1-Alkyl- and 1,2-dialkyl-4-nitro-5-arylmercaptoimidazoles

R ₁	R ₂	R ₃	Mp, °C
CH ₃	H	p-NH ₂ -C ₆ H ₄	164-165
C ₂ H ₅	CH ₃	p-NH ₂ -C ₆ H ₄	15
n-C ₃ H ₇	C ₂ H ₅	p-NH ₂ -C ₆ H ₄	116.5
n-C ₄ H ₉	n-C ₃ H ₇	p-NH ₂ -C ₆ H ₄	135.5-136
1-C ₄ H ₉	1-C ₄ H ₉	p-NH ₂ -C ₆ H ₄	139-140
C ₆ H ₅	CH ₃	o-NH ₂ -C ₆ H ₄	128
n-C ₃ H ₇	C ₂ H ₅	o-NH ₂ -C ₆ H ₄	111
n-C ₄ H ₉	n-C ₃ H ₇	o-NH ₂ -C ₆ H ₄	146
1-C ₄ H ₉	1-C ₄ H ₉	o-NH ₂ -C ₆ H ₄	155
C ₆ H ₅	CH ₃	C ₆ H ₅	77-78
n-C ₃ H ₇	C ₂ H ₅	C ₆ H ₅	85
n-C ₄ H ₉	n-C ₃ H ₇	C ₆ H ₅	58
1-C ₄ H ₉	1-C ₄ H ₉	C ₆ H ₅	99.5-101
CH ₃	H	α-Naphthyl	151-153
C ₂ H ₅	CH ₃	α-Naphthyl	136
n-C ₃ H ₇	C ₂ H ₅	α-Naphthyl	173-174
n-C ₄ H ₉	n-C ₃ H ₇	α-Naphthyl	91
1-C ₄ H ₉	1-C ₄ H ₉	α-Naphthyl	127
H	H	p-CH ₃ -C ₆ H ₄	112.5
C ₆ H ₅	CH ₃	p-CH ₃ -C ₆ H ₄	108
n-C ₃ H ₇	C ₂ H ₅	p-CH ₃ -C ₆ H ₄	128.5
n-C ₄ H ₉	n-C ₃ H ₇	p-CH ₃ -C ₆ H ₄	64
1-C ₄ H ₉	1-C ₄ H ₉	p-CH ₃ -C ₆ H ₄	73

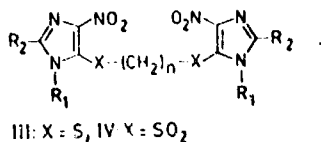
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ACC NR: AP8038127

Table 1. (Cont.)

CH ₃	H	Benzimidazolyl(2)	287-289 (Z.)
C ₂ H ₅	CH ₃	Benzimidazolyl(2)	238-240 (Z.)
n-C ₃ H ₇	C ₂ H ₅	Benzimidazolyl(2)	247-249 (Z.)
n-C ₄ H ₉	—	Benzimidazolyl(2)	170-171
1-C ₄ H ₉	1-C ₄ H ₉	benzimidazolyl(2)	—

α,ω-bis(4-nitro-5-imidazolylmercapto)alkanes (III) were similarly prepared from I and α,ω-dimercaptoalkanes. Alkylated α,ω-bis(4-nitro-5-imidazolylsulfonyl)alkanes (IV) were obtained in 70–90% yields by oxidation of III with H₂O₂ in HOAc. 1,2-Dialkyl-4-nitro-5-imidazolylarylsulfonamides



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ACC NR: AP8038127

Table 2. Alkylated α,ω -bis[(4-nitro-5-imidazolyl)mercapto]alkanes and α,ω -bis[(4-nitro-5-imidazolyl)sulfonyl]alkanes

R ₁	R ₂	n	Mp, °C (III)	Mp, °C (IV)
CH ₃	H	3	203 (Z)	262 (Z)
C ₂ H ₅	CH ₃	2	150	203-205
n-C ₃ H ₇	C ₂ H ₅	3	134	128-130
n-C ₄ H ₉	n-C ₃ H ₇	3	71-73	147-149
i-C ₄ H ₉	i-C ₃ H ₇	3	174-175	186
CH ₃	H	4	218-241 (Z)	263-265 (Z)
C ₂ H ₅	CH ₃	4	178	208 (Z)
n-C ₃ H ₇	C ₂ H ₅	4	168	184-186
n-C ₄ H ₉	n-C ₃ H ₇	4	150-151	126-127
i-C ₄ H ₉	i-C ₃ H ₇	4	226 (Z)	197
CH ₃	H	5	233	261-266 (Z)
C ₂ H ₅	CH ₃	5	206	182
n-C ₃ H ₇	C ₂ H ₅	5	91-96	98-100
n-C ₄ H ₉	n-C ₃ H ₇	5	96-97	108
i-C ₄ H ₉	i-C ₃ H ₇	5	166	108-111
CH ₃	H	6	176	247-248 (Z)
C ₂ H ₅	CH ₃	6	154	187-188
n-C ₃ H ₇	C ₂ H ₅	6	106-108	150-151
n-C ₄ H ₉	n-C ₃ H ₇	6	81-85,5	
i-C ₄ H ₉	i-C ₃ H ₇	6	113-115	73,5-75

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ACC NR: AP8038127

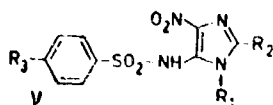


Table 3

R ₁	R ₂	R ₃	Mp, °C
CH ₃	H	CH ₃	216-211 (Z)
C ₂ H ₅	CH ₃	CH ₃	200-201
n-C ₃ H ₇	C ₂ H ₅	CH ₃	151
n-C ₄ H ₉	n-C ₃ H ₇	CH ₃	114-115
i-C ₄ H ₉	i-C ₃ H ₇	CH ₃	183-184
CH ₃	H	NH ₂	216 (Z)
C ₂ H ₅	CH ₃	NH ₂	223-224 (Z)
n-C ₃ H ₇	C ₂ H ₅	NH ₂	220-221 (Z)
n-C ₄ H ₉	n-C ₃ H ₇	NH ₂	114
i-C ₄ H ₉	i-C ₃ H ₇	NH ₂	200-202

(V) were obtained in high yields by allowing Na salts of arylsulfonamides to react with I. Orig. art. has: 3 tables. [WA-50; CBE No. 39] [FT]

SUB CODE: 07/ SUBM DATE: 22Nov67/ ORIG REF: 004/ OTH REF: 003/
SOV REF: 002

Card 5/5

ACC NR: AP8037868

SOURCE CODE: UR/0409/68/000/005/0921/0926

AUTHOR: Sedova, V. F.; Mamayev, V. M.

ORG: Institute of Organic Chemistry, Siberian Division, Academy of Sciences SSSR, Novosibirsk (Institut organicheskoy khimii Sibirskogo otdeleniya Akademii nauk SSSR)

TITLE: Pyrimidines. XV. Substituted 2,2'-dioxo-6,6'-spirobis(hexahydropyrimidines)

SOURCE: Khimiya geterotsiklicheskih soedineniy, no. 5, 1968, 921-926

TOPIC TAGS: phenol derivative, heterocyclic nitrogen compound, ketone, pyrimidine derivative

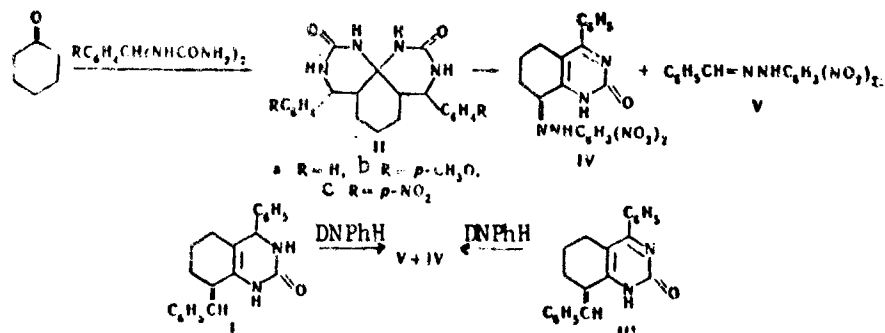
ABSTRACT: The title compounds were synthesized to confirm the structure of previously synthesized 2,2'-dioxo-4,4'-diphenyl-5,5'-trimethylene-6,6'-spirobis(hexahydropyrimidine) (IIa). 2-Hydroxy-4-phenyl-8-benzal-3,4,5,6,7,8-hexahydroquinazoline (I) (4% yield, mp 198-203°C) was prepared by boiling dibenzal cyclohexanone, urea, EtOH, and HCl for 8 hr. Compound IIa (85% yield, mp 355°C, decomposes), 2,2'-dioxo-4,4'-bis(p-methoxyphenyl)-5,5'-trimethylene-6,6'-spirobis(hexahydropyrimidine)

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UDC: 547.856:542.953.3+542.938

ACC NR: AP8037868

(IIb) (70% yield, mp >350°C), and 2,2'-dioxo-4,4'-bis(p-nitrophenyl)-5,5'-trimethylene-6,6'-spirobis(hexahydropyrimidine) (IIc) (85% yield, mp 330°C, decomposes) were prepared by boiling ketone, arylidenebisurea, EtOH, and concentrated HCl for 4 hr. 2-Oxo-4-phenyl-8-hydroxy-5,6,7,8-tetrahydroquinazoline 2,4-dinitrophenylhydrazone (IV) (0.75 g from 4 g

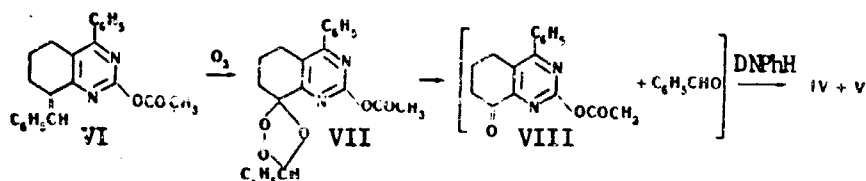


IIa, mp 315-317°C) and V (1.0 g, mp 238-241°C) were obtained by boiling IIa in HOAc and HCl for 1.5 hr with subsequent addition of 2,4-dinitrophenylhydrazine (DNPPhH) in EtOH and H₂SO₄ and boiling for 5 min.

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ACC NR: AP8037868

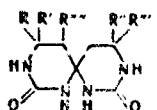
Compounds IV and V were also obtained by treating 1 or 2-oxo-4-phenyl-8-benzal-5,6,7,8-tetrahydroquinazoline (III) with DNPhH. 2-Acetoxy-4-phenyl-8-benzal-5,6,7,8-tetrahydroquinazoline (VI) was obtained from III. The ozonide of VI (VII) (77% yield, mp 139--141°C) was obtained by ozonation of VI in CCl₄ at 5--10°C for 1.5 hr. Compounds IV and V (mp 239--240°C) were also obtained by treating VII with DNPhH. Compound VIII could not be isolated. 2-Oxo-4-phenyl-8-hydroxy-5,6,7,8-tetrahydroquinazoline semicarbazone (mp 276--279°C) was obtained by



boiling VII, semicarbazide hydrochloride, and NaOAc in EtOH for 3 hr. 2,2'-Dioxo-4,4'-diphenyl-6,6'-spirobis(hexahydropyrimidine) (X) (25% yield, mp 312--315°C) was prepared by boiling dibenzal acetone and urea in alcoholic HCl for 9 hr. 2,2'-Dioxo-4,4'-diphenyl-5-methyl-5,5'-trimethylene-6,6'-spirobis(hexahydropyrimidine) (IX) (15% yield,

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ACC NR: AP8037868



X R=R''=C₆H₅, R'=R'''=R''''=H
 XT R=R''=C₆H₅, R''''=CH₃, R'=R'''=H

mp >350°C) and 2,2'-dioxo-4,4'-diphenyl-6,6'-spirobis(hexahydropyrimidine) (XI) (56% yield, mp 298--301°C) were similarly prepared. Orig. art. has: 1 figure and 1 table. [WA-50; CBE No. 39][FT]

SUB CODE: 07/ SUBM DATE: 18Jul66/ ORIG REF: 006/ OTH REF: 014

Card 4/4

ACC NR: AP8037658

SOURCE CODE: UR/0409/68/000/005/0878/0880

AUTHOR: Semenov, A. A.; Styngach, Ye. P.; Kuperman, G. M.

ORG: Institute of Chemistry, Academy of Sciences MoldSSR, Kishinev
(Institut khimii, Akademiya nauk MoldSSR)

TITLE: Indole derivatives. IV. Reaction of indole with α,β -unsaturated ketones

SOURCE: Khimiya geterotsiklicheskikh soyedineniy, no. 5, 1968, 878-880

TOPIC TAGS: indole derivatives, heterocyclic nitrogen compound, ketone

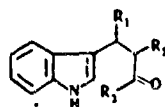
ABSTRACT: A series of α - and β -monosubstituted and α,β - and β,β disubstituted β -(3-indolyl) ketones was synthesized by the reaction of indole with the appropriate unsaturated ketones in the presence of HClO_4 (70%

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UDC: 547.753

ACC NR: AP8037858

Table 1



Compound	R ¹	R ²	R ³	Preparation conditions			Oxime
				Temperature, °C	Reaction time	% Yield	Mp, °C
II	2CH ₃	H	CH ₃	95-100	0.5	30	161-162
III	p-C ₆ H ₄	H	CH ₃	7-8	1.5	51	127-129
IV	C ₆ H ₅	H	CH ₃	10-20	4	41	122-141
V	C ₆ H ₅	H	C ₆ H ₅	80-95	0.25	83	204-205
VI	iso-C ₆ H ₇	H	CH ₃	0	21	59	108-109

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ACC NR: AP8037858

Table 1. (Cont.)

VII	CH ₃	CH ₃	CH ₃	90	100	0.25	55	
VIII	H	CH ₃	CH ₃	0		8	76	122-123
IX	C ₆ H ₅	CH ₃	CH ₃	100	105	1	29	

solution) in mesityl oxide at 80—95°C. The compounds synthesized were converted into oxime. They are characterized in the table.

[WA-50; CBE No. 39] [PS]

SUB CODE: 07/ SUEM DATE: 11Jul66/ GRIG REF: 001/ OTH REF: 007

Card 3/3

ACC NR: AP9002908

SOURCE CODE: UR/0218/68/033/006/1210/1213

AUTHOR: Severin, Ye. S.; Sashchenko, L. P.; Kovalova, G. K.; Khomutov, R. M.

ORG: Institute of Molecular Biology, AN SSSR, Moscow (Institut molekulyarnoy biologii SSSR)

TITLE: Effective inhibitor of transaminase of γ -aminobutyric acid

SOURCE: Biokhimiya, v. 33, no. 6, 1968, 1210-1213

TOPIC TAGS: transaminase, aminobutyric acid, cycloserine

ABSTRACT: Certain selective and irreversible inhibitors of pyridoxal enzymes may be obtained by the transformation of substrate amino acids into 3-isoxazolidones. An attempt was made to use this approach for the selective inhibition of the transaminase of γ -aminobutyric acid. A study was made of the effect of DL-cycloserine (I) and certain 3-isoxazolidones (II—V) on the transamination of γ -aminobutyric acid. The compounds studied were I, *cis*-5-carboxymethyl-4-amino-3-isoxazolidone (II), *trans*-5-carboxymethyl-4-amino-3-isoxazolidone (III), *erythro*-5-carboxyamino-methyl-3-isoxazolidone (IV), and *threo*-5-carboxyamino-methyl-3-isoxazolidone (V). The results are shown in Table 1. Although II displays great affinity for the transaminase of γ -aminobutyric acid,

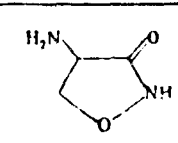
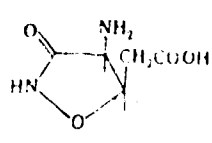
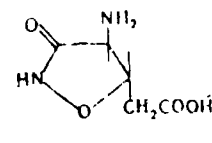
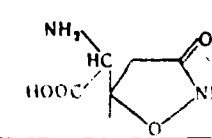
Card 1/3

UDC: 577.158.45

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ACC NR: AP9002908

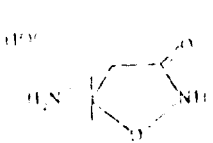
Table 1. Inhibition of transaminase of γ -aminobutyric acid by cycloserine and cycloglutamic acids

No.	Inhibitors	Inhibition (%) in relation to concentration of I-V, M				
		10^{-4}	10^{-5}	10^{-6}	10^{-7}	10^{-8}
I		100	100	40	—	—
II		100	100	100	85	40
III		100	20	—	—	—
IV		100	23	—	—	—

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ACC NR: AP9002908

Table 1. (Cont.)

V		100	20	—	—	—
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II exerts hardly any effect on the decarboxylase of L-glutamic acid. This property may be used to control the level of γ -aminobutyric acid in tissues. Orig. art. has: 1 table. [WA-50; (BF No. 39) (FF)]

SUB CODE: 067 SUBM DATE: 19Apr68/ ORIG REF: 0097 JTB REF: 011

Card 3/3

- 101 -

ACC NR: AP9001074

SOURCE CODE: UR/0450/68/002/011/0029/0032

AUTHOR: Sharapov, I. M.; Levkoyeva, Ye. I.; Nikitskaya, Ye. S.; Usovskaya, V. S.

ORG: All-Union Chemical and Pharmaceutical Institute im. S. Ordzhonikidze, Moscow (Vsesoyuznyy khimiko-farmatsevticheskiy institut)

TITLE: Synthesis and ganglioblocking activity of the derivatives of 2,2,6,6-tetramethyl- Δ^3 -dehydropiperidine

SOURCE: Khimiko-farmatsevticheskiy zhurnal, v. 2, no. 11, 1968, 29-32

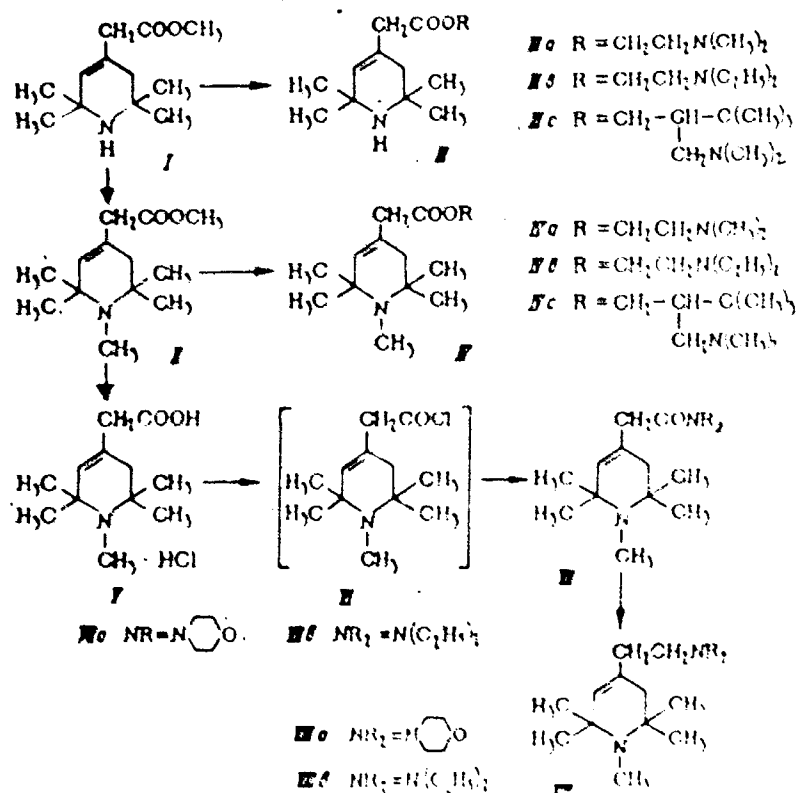
TOPIC TAGS: heterocyclic nitrogen compound, chlorinated organic compound, ganglionic blocking agent, piperidine derivative

ABSTRACT: A series of new ganglioblocking agents derivatives of 2,2,6,6-tetramethyl- Δ^3 -dehydropiperidyl-4-acetic acid (I) and its N-methyl derivative (II) was synthesized by the following general scheme:

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UDC: 615.217.4.012.1:542.9

ACC NR: AP9001074



Card 2/4

ACC NR: AP9001074

Transesterification of I and II with amino alcohols according to an earlier described method gave the amino esters III and IV. Saponification of II with HCl yielded the hydrochloride V, which was treated with thionyl chloride to form the intermediate VI. The latter without separation was treated with morpholine at 50°C to form VIIa (bp 148—152°C/0.4 mm). The treatment of VI with diethylamine gave VIIb (bp 117—119°C/0.3 mm). Compounds VIIa and VIIb were reduced with lithium aluminum hydride to VIIIa (bp 117—119°C/1 mm) and VIIIb (bp 122—124°C/1 mm). Compounds III and IV are characterized in Table 1. Pharmacological properties of compounds III (in form of

Table 1. Amino esters

Compd	Bp, °C (mm) or mp	% Yield
IIIa	140—2 (0.3 mm)	59.9
	60—2	
IIIb	124—5 (0.4 mm)	45.8
	60—1	
IIIc	150—2 (3 mm)	71.45
	80—2	
IVa	105—7 (0.2 mm)	44.0
	162—4	
IVb	125—7 (0.2 mm)	53.2
	160—2	
IVc	155—7 (3 mm)	64.1
	186—7	

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ACC NR: AP9001074

ditartrates) and of compounds IV and VIII (in form of methiodides) were studied on mice, cats, rabbits, and isolated muscles and organs. All compounds have ganglioblocking properties. The substituted amines VIIIa and VIIIb are more active than the corresponding esters III and IV. The ganglioblocking activity of VIIIb methiodide is close to that of dikolin and methiodide of VIIIa was more active than dimekolin. However, compounds VIII are more toxic than dikolin and dimekolin; LD₅₀ of VIIIa for white mice was 4.6 and 10.7 mg/kg, respectively, as compared with 35 and 61 mg/kg of dikolin and dimekolin. [WA-50; CBE No. 39][PS]

SUB CODE: 06, 07 SUBM DATE: 28Apr68/ ORIG REF: 002/ OTH REF: 002

Card 4/4

ACC NR: AP9002792

SOURCE CODE: UR/0450/68/002/012/0003/0007

AUTHOR: Shvedov, V. I.; Alekseyev, V. V.; Altukhova, L. B.; Grinev, A. N.

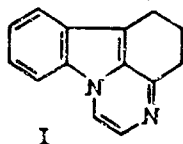
ORG: All-Union Scientific Research Chemicals and Pharmaceuticals Institute im. S. Ordzhonikidze, Moscow (Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut)

TITLE: Synthesis of pyrazino[1,2-a]indoles

SOURCE: Khimiko-farmatsevticheskiy zhurnal, v. 2, no. 12, 1968, 3-7

TOPIC TAGS: indole derivative, organic azine compound, bacteriostasis, fungicide

ABSTRACT: Some 1,10-trimethylenepyrazino[1,2-a]indoles (I) display antifungal activity and show bacteriostatic activity with respect to acid-fast bacteria. 1-Aryl-10-methylpyrazino[1,2-a]indoles (II-IX)



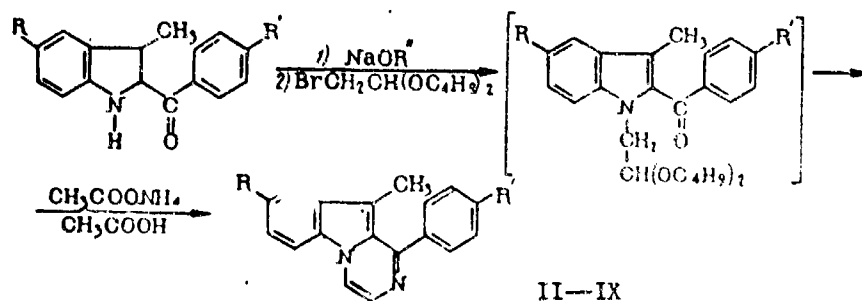
I

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UDC: 615.31:547.759].012.

ACC NR: AP9002792

were prepared by adding alcoholic Na alkoxide to 2-aryl-3-methylindole in dioxane, adding $\text{BrCH}_2\text{CH}(\text{OEt})_2$ in $\text{HC}(\text{O})\text{N}(\text{CH}_3)_2$ to the reaction residue, boiling for 1 hr, dissolving the residue in HOAc , adding NH_4OAc , and boiling for 1 hr. Compounds VI and IX were isolated as



II-IX

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Table 1. 1-Aryl-10-methylpyrazino[1,2-a]-indoles

No.	R	R'	% Yield	Mp, °C from CH ₃ OH
II	H	H	63	132-3
III	CH ₃	H	65	140-1
IV	H	CH ₃	61,5	145-6
V	H	CH ₃ O	55	150-1
VI	CH ₃ O	H	74	256-7 (De-comp)
VII	Cl	Cl	68	203-4
VIII	CH ₃ O	CH ₃ O	51,2	162-3
IX	CH ₃ O	CH ₃ O	—	230-2 (De-comp)

hydrochlorides. 1-Aryl-10-methyl-1,2,3,4-tetrahydropyrazino[1,2-a]indoles (X—XII), which are structurally similar to the antibiotic

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Glyotoxin, were prepared by adding Na to boiling II, III, or VI in EtOH for 5—10 min and boiling for 15—20 min. 1-(β -Diethylaminoethyl)-2-p-toluy1-3-methylindole (XIII) (73% yield, mp 223—224°C) was

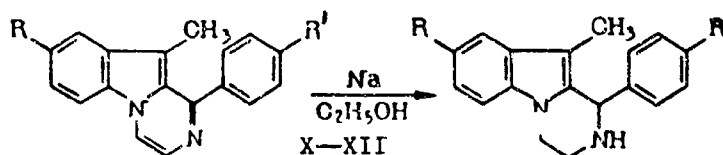


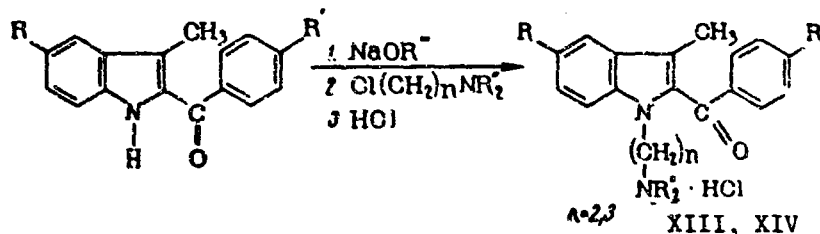
Table 2. 1-Aryl-10-methyl-1,2,3,4-tetrahydropyrazino[1,2-a]indoles

No.	R	R'	% Yield	Mp, °C
X	H	H	98,4	135-6
XI	CH ₃	H	93	115-6
XII	CH ₃ O	H	94	145-6

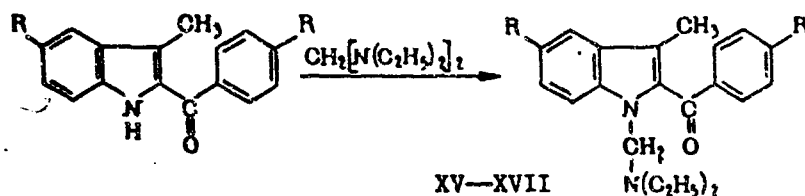
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ACC NR: AP9002792

obtained by adding alcoholic Na alkoxide to 2-p-toluy-3-methylindole in dioxane, adding $\text{ClC}_2\text{H}_4\text{NEt}_2$ and $\text{HCON}(\text{CH}_3)_2$, heating for 1 hr at $130-140^\circ\text{C}$, and treating the residue with HCl in ether. 1-(γ -Dimethylaminopropyl)-2-p-toluy-3,5-dimethylindole (XIV) (83.5% yield, mp $126-127^\circ\text{C}$) was similarly prepared. 1-(Diethylaminomethyl)-2-aroyl-3-methylindoles (XV-XVII) were prepared by adding $\text{CH}_2(\text{NEt}_2)_2$ to



2-aroyl-3-methylindole in dioxane, heating on a water bath for 2.5 hr,



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ACC NR: AP9002792

Table 3. N-Methyldiethylamino derivatives

No.	R	R'	% Yield	Mp, °C
XV	CH_3	H	70	73-4
XVI	H	CH_2O	85.2	90-90.5
XVII	Cl_2	CH_3	87	76-7

and treating the residue with HCl in ether. Orig. art. has: 3 tables. [WA-50; CBE No. 39][FT]

SUB CODE: 06, 07/ SUBM DATE: 22Apr68/ ORIG REF: 003/ OTH REF: 004

Card 6/6

ACC NR: AP9003131

SOURCE CODE: UR/0366/68/004/012/2245/2255

AUTHOR: Smirnova, A. A.; Perekalin, V. V.; Shcherbakov, V. A.

ORG: Leningrad State Pedagogical Institute im. A. I. Gertsen (Leningradskiy gosudarstvennyy pedagogicheskiy institut)

TITLE: Synthesis of γ -amino acids and α -pyrrolidones

SOURCE: Zhurnal organicheskoy khimii, v. 4, no. 12, 1968, 2245-2255

TOPIC TAGS: amino acid synthesis, pesticide, tranquilizer, central nervous system stimulant

ABSTRACT: The increased interest in γ -amino acids and α -pyrrolidones, which are precursors of various biologically active substances (medicinal preparations, pesticides, growth stimulators, and certain antibiotics), the discovery that γ -amino- β -phenylbutyric acid [Fenigama] displays mild tranquilizing properties, and the successful clinical testing of Fenigama have stimulated the development of a general method for synthesizing γ -amino acids and α -pyrrolidones from esters of γ -nitrocarboxylic acids. Methyl γ -nitro- γ -phenylbutyrate (I) (70% yield, bp, 128-134°C, n_D^{18} 1.516) was prepared by adding PhCH_2NO_2 in EtOH to $\text{CH}_2:\text{CHCOOCH}_3$, hydroquinone, and KF and stirring for 6 hr at 60°C. Compound I (65% yield) was also obtained by adding Et_2NH to

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UDC: 547.745

ACC NR: AP9003131

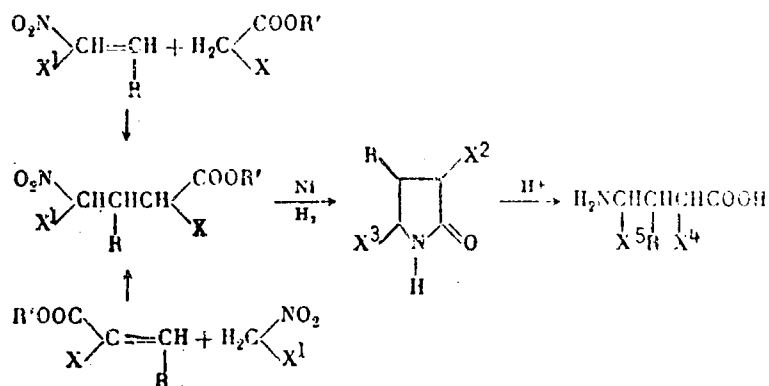
$\text{CH}_2:\text{CHCOOCH}_3$ and hydroquinone in PhCH_2NO_2 and distilling after 8 days. Dimethyl γ -nitro- γ -phenylpimelate (II) (10% and 20% yields, respectively, mp 215°C) was isolated from the residues of the syntheses of I. Dimethyl γ -carbethoxy- γ -nitropimelate (III) (90% yield, bp, 170°C) was prepared by adding 20% alcoholic $(\text{CH}_3)_3\text{PhNOH}$ to $\text{CH}_2:\text{CHCOOCH}_3$ and $\text{O}_2\text{NCH}_2\text{COOEt}$ in EtOH and stirring for 24 hr at 70-80°C. Methyl γ -nitro- α -carbomethoxybutyrate (IV) (43% yield, bp_{0.5} 105°C) was prepared by adding (with stirring) $\text{CH}_2:\text{CHNO}_2$ in CH_3OH with a small amount of pyrogallol to $\text{CH}_2(\text{COOEt})_2$, Na, CH_3OH , and a small amount of pyrogallol for 1 hr at -10°C, stirring for 1 hr at -10°C and 1 hr at 20°C, and treating the reaction mixture at -5°C with dry HCl. Methyl γ -nitro- α -carbomethoxy- α -phenylbutyrate (V) (70% yield, bp_{0.2} 122-127°C, n_D^{20} 1.5145) was similarly prepared. Et α,γ -dinitrobutyrate (VI) (63% yield, bp_{0.01} 110-114°C, n_D^{18} 1.4550) was obtained by adding Et_3N in HPh to $\text{CH}_2:\text{CHNO}_2$ and $\text{O}_2\text{NCH}_2\text{COOEt}$ in HPh with a small amount of pyrogallol, cooling for 30 min, and allowing the mixture to stand for 10 hr at 20°C. White acicular Et α,γ -dinitro- β -phenylbutyrate (VII) (92% yield, mp 58°C) was similarly prepared from $\text{PhCH}:\text{CHNO}_2$ and $\text{O}_2\text{NCH}_2\text{COOEt}$. Hydrogenation of I-VII and known γ -nitrocarboxylates in CH_3OH in the presence of Ni yielded δ -carbethoxy- δ -(β -carbethoxyethyl)- α -pyrrolidone (VIII) (71% yield, mp 69°C), δ -carbethoxy- β -phenyl- α -pyrrolidone (IX) (95.5% yield, bp_{0.5} 56°C), β -carbomethoxy- α -pyrrolidone (X) (63.5% yield, mp 131°C), β -carbomethoxy- β -phenyl- α -pyrrolidone

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ACC NR: AP9003131

(XI) (69% yield, mp 172°C), 1,4-bis-γ-(6-carbomethoxy-α-exopyrrolidinyl)-benzene (XII) (60% yield, mp 235°C), β-amino-γ-phenyl-α-pyrrolidone (XIII) (42% yield, mp 203°C), β-amino-γ,δ-diphenyl-α-pyrrolidone (XIV) (74.5% yield, mp 165°C), β-amino-γ,δ-diphenyl-α-pyrrolidone picrate (XV) (70% yield, mp 215°C), β-N-benzoylamino-γ,δ-diphenyl-α-pyrrolidone (XVI) (85% yield, mp 182°C), β-amino-δ-carbomethoxy-γ-phenyl-α-pyrrolidone oxalate (XVII) (35% yield, mp 186°C), and known α-pyrrolidones.



Hydrolysis of VIII, XII, XIV, XVI, and known α-pyrrolidones yielded γ-amino-α-methylbutyric acid hydrochloride (XVIII) (80% yield, mp 127°C),

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ACC NR: AP9003131

γ-N-benzoylamino-γ-phenylbutyric acid (XIX) (90% yield, mp 152°C), γ-amino-γ-carboxypimelic acid (XX) (70% yield, mp 144°C), 1,4-bis(α-amino-methyl-β-carboxyethyl)benzene hydrochloride (XXI) (78% yield, mp 232°C), α,γ-diamino-β,γ-diphenylbutyric acid hydrochloride (XXII) (90% yield, mp 223°C), γ-N-benzoylamino-α-amino-β,γ-diphenylbutyric acid (XXIII) (95% yield, mp 234°C), and known γ-amino acids. The structure of VIII—XVII was confirmed by IR, UV, and NMR spectra. Compounds XVIII—XXIII were tested for pharmacological activity. The pharmacological activity of γ-amino-α-methylbutyric acid was found to be the same as that of γ-aminobutyric acid, a CNS mediator. The position of the Ph radical significantly affects the pharmacological activity of α- and γ-phenyl analogs of Fenigama. The α-phenyl analog displays a stimulating component in the form of tonico-clonic spasms during administration of lethal doses. γ-Amino-γ-phenylbutyric acid displays weak inhibitory activity. The properties of 1,4-bis(α-amino-methyl-β-carboxyethyl)benzene and Fenigama are practically the same. Orig. art. has: 5 tables. [WA-50; CBE No. 39] [FT]

SUB CODE: 06, 07/ SUBM DATE: 22Aug67/ ORIG REF: 014/ OTH REF: 016

Card 4/4

ACC NR: AT9002815

SOURCE CODE: UR/3274/64/000/001/0110/0112

AUTHOR: Soldatov, V. M.; Ryabov, A. V.

ORG: Scientific Research Institute of Chemistry, State University im. N. I. Lobachevskiy (Nauchno-issledovatel'skiy institut khimii Gosudarstvennogo universiteta); Regional Administration, VKhO im. D. I. Mendeleev (Oblastnoye pravleniye VKhO)

TITLE: Preparation of new symmetric triazines. Reaction of N-phenyl(β -mercaptoethyl)amine with cyanuric chloride, 2,4-bis(phenylamino)-6-chloro-1,3,5-triazine, and 2-phenylamino-4,6-dichloro-1,3,5-triazine

SOURCE: Trudy po khimii i khimicheskoy tekhnologii, no. 1(9), 1964, 110-112

TOPIC TAGS: organic azine compound, mercaptan, amine derivative

ABSTRACT: 2,4-Dichloro-6-phenyl(β -mercaptoethyl)amino-1,3,5-triazine (47% yield) was prepared by adding phenyl(β -mercaptoethyl)amine to 2,4,6-trichloro-1,3,5-triazine in acetone at 0-5°C and filtering after 1 hr. 2-Chloro-4,6-bis(phenyl[β -mercaptoethyl]amino)-1,3,5-triazine (50% yield, mp 58°C) was similarly prepared, but the reaction mixture

Card 1/2

ACC NR. AT9002813

was heated to 30-40°C for 2 hr and treated with Na₂CO₃ and ice water. 2,4,6-Tris(phenyl[β -mercaptoethyl]amino)-1,3,5-triazine (54% yield, mp 124°C) was obtained by refluxing phenyl(β -mercaptoethyl)amine and benzene to boiling, slowly adding 2,4,6-trichloro-1,3,5-triazine in benzene, and filtering after 2 hr. 2,4-Bis(phenylamino)-6-chloro-1,3,5-triazine (57% yield, mp 157°C) was prepared by refluxing 2,4-bis(phenylamino)-6-chloro-1,3,5-triazine, PhNHC₂H₄SH·HCl, and benzene to boiling, slowly adding aqueous Na₂CO₃, and heating for 30 min. 2-Phenylamino-4,6-bis(phenyl[β -mercaptoethyl]amino)-1,3,5-triazine (61% yield, mp 92-94°C) was obtained by refluxing 2-phenylamino-4,6-dichloro-1,3,5-triazine, PhNHC₂H₄SH·HCl, and benzene to boiling adding aqueous Na₂CO₃, and heating for 1 hr. [WA-50; CBE No. 39][FT]

SUB CODE: 07/ SUBM DATE: 08Jan64/ ORIG REF: 001/ OTH RFF: 001

ACC NR: AP9003609

SOURCE CODE: UR/0394/68/006/012/0049/0052

AUTHOR: Spiridonov, Yu. Ya.; Gagua, K. V.

ORG: Georgia Branch, VNII of phytopathology (Gruz'nskiy filial VNII fitopatologii)

TITLE: Increasing the effectiveness of Simazin in meadow marshy soil of humid subtropics

SOURCE: Khimiya v sel'skom khozyaystve, v. 6, no. 12, 1968, 49-52

TOPIC TAGS: organic azine compound, weed killer, soil type, triazine derivative

ABSTRACT: Tests of Simazin [a symmetric triazine] were performed on meadow marshy soil in the humid subtropics of Adzharia in 1966. The effectiveness of a wetting powder of Simazin against blue foxtail millet and *Echinochloa crus-galli* was found to be improved by applying the Simazin (10 kg/hectare) in the 0-10 cm layer of soil with a disc harrow 2 days before sowing corn. When the herbicide was applied in this manner, the highest yield of corn (as much as 205 centners per hectare) was obtained. Granulated Simazin (also 10 kg/hectare) was less effective than powdered Simazin because it displayed low toxicity toward the weeds during the first two months of vegetation of the corn. Granulated Simazin,

Card 1/2

UDC: 632.954:213.2

ACC NR: AP9003609

however, was retained longer in the soil. Under humid subtropical conditions, the action of granulated Simazin may be enhanced by applying it as a mixture of granules from 0.2 to 4 mm in size. This promotes the settling out of the active ingredient during the vegetative period. Application of powdered or granulated Simazin to a depth of 20-22 cm with a terracing plow makes it possible to eliminate *Artemisia vulgaris*, a deeply rooted perennial weed. Orig. art. has: 4 tables.

[WA-50; CBE No. 39] [FT]

SUB CODE: 02/ SUBM DATE: 18Feb67

ACC NR: AP8037870

SOURCE CODE: UR/0409/68/000/005/0930/0932

AUTHOR: Studentsov, Ye. P.; Nemets, V. G. (Deceased)

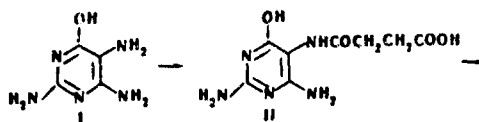
ORG: Leningrad Technological Institute im. Lensovet (Leningradskiy tekhnologicheskii institut)

TITLE: Synthesis of bis(2'-chloroethyl)amide of β -(8-guanyl)propionic acid

SOURCE: Khimiya geterotsiklicheskih soyedineniy, no. 5, 1968, 930-932

TOPIC TAGS: organic amide, hydroxy carboxylic acid, chlorinated organic compound, organic nitrogen compound, heterocyclic nitrogen compound

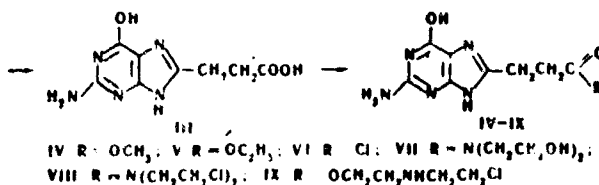
ABSTRACT: The synthesis of the potential antiplastic compound bis(2'-chloroethyl)amide of β -(8-guanyl)propionic acid (VIII) and its derivatives involves the following transformations:



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UDC: 547.857.7.07

ACC NR: AP8037870



Compound II, mp 247°C, is formed (72.5%) when compound I is treated with succinic acid at 175°C. On heating in a vacuum for 2 hr at 220°C, compound II undergoes transformation into III (mp 300°C). The esterification of III with anhydrous alcohols saturated with HCl gave the hydrochlorides IV (mp 230°C) and V (mp 259°C). The treatment of III with thionyl chloride in absolute benzene yielded (93%) the anhydride VI. Compounds IV and V on heating with aqueous diethanolamine at 80°C gave the amide VII (mp 170°C). The latter was also obtained by the reaction of VI with diethanolamine without a solvent. The treatment of VII with thionyl chloride in dry nitrogen atmosphere gave (84.5%) the amide VIII hydrochloride (mp 120°C), which on mixing with triethylamine at room temperature gave (81%) of the amide VIII (mp 110°C). A slow dissolution of VIII hydrochloride in methanol gave (72%) IX hydrochloride (mp 205°C). [WA-50; CBE No. 39][PS]

SUB CODE: 07/ SUBM DATE: 13Jul66/ ORIG REF: 003/ OTH REF: 002

Card 2/2

- 141 -

ACC NR: AP8037871

SOURCE CODE: UR/0409/68/000/005/0933/0934

AUTHOR: Studentsov, Ye. P.; Nemets, V. G. (Deceased)

ORG: Leningrad Technological Institute im Lensovet (Leningradskiy tekhnologicheskii institut)

TITLE: Synthesis of 8-xanthineacetic acid and some of its derivatives

SOURCE: Khimiya geterotsiklicheskih soyedineniy, no. 5, 1968, 933-934

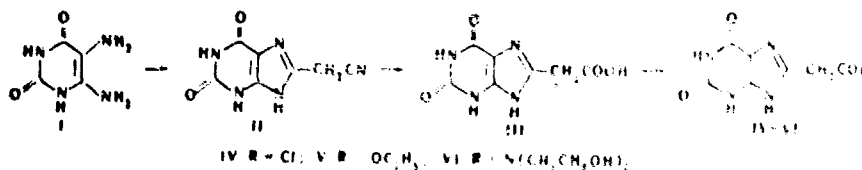
TOPIC TAGS: keto carboxylic acid, carboxylic acid, chlorinated organic compound, organic amide, heterocyclic nitrogen compound

ABSTRACT: 8-Xanthineacetic acid (III), mp 260°C, was synthesized in yield of 60.8% by the hydrolysis of the nitrile of 8-xanthineacetic acid (II) in 2N aqueous NaOH solution at 100-105°C. The nitrile II, mp 250°C, was obtained in a 97.5% yield by the condensation of 4,5-diaminouracil with ethyl cyanoacetate at 195-200°C. Boiling of III with thionyl chloride gave (96%) the chloride IV, mp 270°C. A suspension of III in absolute alcohol reacted with dry HCl to form (71%) V, which melts at 235°C with decomposition. The reaction of IV with diethylamine at 60°C yielded (80.1%) the amide VI, melts at 240°C with

Card 1/2

UDC: 547.857.4.07

ACC NR: AP8037871



decomposition. The amide VI was also obtained by the reaction of V with diethylamine. The general scheme of the conversion of I into III and its derivatives is shown. [WA-50; (201) 10] (10)

SUB CODE: 07/ SUBM DATE: 13Jul66/ ORIG REF: 101 CTR REF: 00

Card 2/2

ACC NR: AP9001131

SOURCE CODE: UR/0076/68/042/011/2720/2723

AUTHOR: Tarasov, V. V.; Arbisman, Ya. S.; Rylyakova, N. S.;
Kondrat'yev, Yu. A.; Ivin, S. Z.

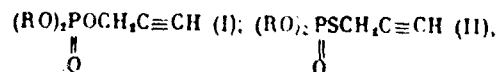
ORG: none

TITLE: Studies in the series of phosphorus compounds with acetylene
and allene groups. II. Study of hydrogen bonds in O- and S-propargyl
phosphates by IR spectroscopy

SOURCE: Zhurnal fizicheskoy khimii, v. 42, no. 11, 1968, 2720-2723

TOPIC TAGS: phosphate ester, hydrogen bonding, acetylene compound,
sulfur compound

ABSTRACT: A study was made of the behavior of IR bands character-
istic of P=O-, C≡C-, and ≡CH-groups in dialkyl propargyl phosphates
(I) and O,O-dialkyl S-propargyl thiolo phosphates (II), where R is
Et (Ia, IIa), Pr (Ib, IIb), iso-Pr (Ic, IIc), Bu (Id, IID), or iso-Bu
(Ie, IIe). The maxima of the P=O doublet bands of IIa—IIe in CCl₄



Card 1/3

UDC: 543.42

ACC NR: AP9001131

solution (with reference to the pure substances) practically do not
shift, i.e., the formation of a ≡P=O...HC≡C hydrogen bond does not
affect ν_{P=O}. The integral intensities of the ν_{C≡C} band were measured
to obtain data on the polarity of the triple bond in Ia—IIe. The
results are shown in Table 1. The considerable differences in the

Table 1. Integral intensities
of ν_{C≡C} bands

No.	10 ⁻³ A
Ia	1.51
Ib	1.52
Ic	1.58
Id	1.59
Ie	1.38
IIa	0.43
IIb	0.34
IIc	0.39
IID	0.37
IIe	0.41

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Card 2/3

ACC NR: AP90G1131

polarity of the triple bond are due to the differences in the polarizing ability of S and O. The polarity of the C:C triple bond in propargyl esters does not affect the activity of the H which participates in forming H bonds. Orig. art. has: 1 table and 3 figures.

[WA-50; CBE No. 39][FT]

SUB CODE: 07/ SUBM DATE: 03Mar67/ ORIG REF: 006/ OTH REF: 003

Card 3/3

ACC NR: AP9001071

SOURCE CODE: UR/045G/68/002/011/0009/0010

AUTHOR: Trofimov, F. A.; Mukhanova, T. I.; Grinev, A. N.; Shadurskiy, K. S.

ORG: Institute of Medical Radiology, AMN SSSR (Institut meditsinskoy radiologii AMN SSSR); All-Union Scientific Research Chemical and Pharmaceutical Institute im. S. Ordzhonikidze, Moscow (Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut)

TITLE: Synthesis of the oxygen analogs of mexamine

SOURCE: Khimiko-farmatsevticheskiy zhurnal, v. 2, no. 11, 1968, 9-10

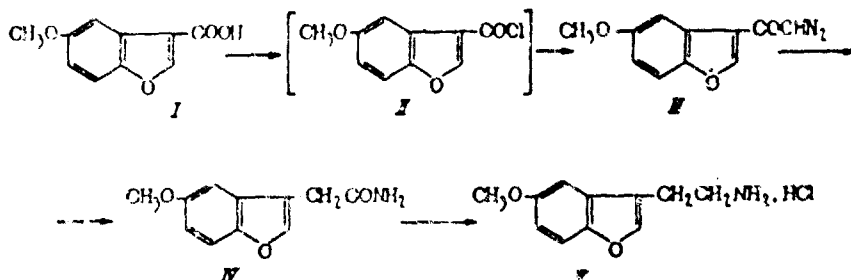
TOPIC TAGS: antiradiation drug, furan compound, heterocyclic oxygen compound, amine derivative

ABSTRACT: The antiradiation properties of mexamine [3-(2-aminoethyl)-5-methoxyindole] are well known. In a search for new antiradiation compounds, the oxygen analog of mexamine, 3-(6-aminoethyl)-5-methoxybenzofuran hydrochloride (V) was synthesized by the reaction:

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UDC: 615.22'755.012

ACC NR: AP9001071



The acid chloride II is formed (90—95%) when a suspension of the acid I in dry dioxane is boiled with thionyl chloride. The chloride II was treated with diazomethane at -2 to 2°C to form (42%) the compound III (mp 132—133°C). The amide IV (mp 172—173°C) was obtained by adding compound III to a hot (60°C) solution of silver nitrate in concentrated ammonia solution. The hydrochloride V (mp 165—166°C) is formed (65%) when a suspension of IV in ether is added to lithium aluminum hydride solution in ether and the reaction mixture is boiled for 3 hr. Compound V is less active as antiradiation drug, but more toxic (2 times) than mexamine. [WA-50; CBE No. 39] [PS]

SUB CODE: 06, 07/ SUBM DATE: 28Jan68/ ORIG REF: 003/ OTH REF: 001

Card 2/2

ACC NR: AP8038130

SOURCE CODE: GE/0076/68/000/003/0103/0104

AUTHOR: Volcker, C. -E.; Schonfeld, M.; Beyer, H.

ORG: Institute of Organic Chemistry, Ernst Moritz Arndt University, Greifswald (Institut für Organische Chemie der Ernst-Moritz-Arndt-Universität)

TITLE: 6H-Pyrimido[2,1-b]quinazol-6-ones and 10H-pyrimido[4,3-b]quinazol-10-ones

SOURCE: Zeitschrift für Chemie, no. 3, 1968, 103-104

TOPIC TAGS: ketone, organic azole compound, pyrimidine derivative

ABSTRACT. 2-(o-Carboxyanilino)-4,6-dimethylpyrimidine (Ia), 6-chloro-4-(o-carboxyanilino)pyrimidine (IIIa), 2,4-bis(o-carboxyanilino)-6-methylpyrimidine (Va) (60% yield, mp 214°C), and 2,4-bis(o-methoxycarbonylanilino)-6-methylpyrimidine (Vb) (71% yield, mp 166°C) were prepared by refluxing the corresponding chloropyrimidine with anthranilic acid or methyl anthranilate in EtOH and a few drops of concentrated HCl for 2.5—3 hr. Compounds Ib—If and IIIb—IIIc were similarly prepared. Compounds Ia, Ic, Ie, IIa—IIc, IIIa, and IVa decompose at the temperatures indicated in Table 1. Yellow

Card

- 15 -

Table 1

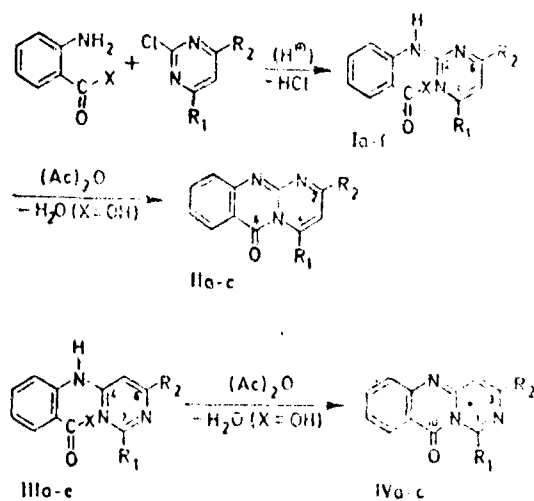
X	R ₁	R ₂	Mp, °C	Yield
Ia	OH	CH ₃	231-233	80
	Hydrochloride		212	50
b	OCH ₃	CH ₃	151	78
c	OH	NH ₂	237-238	74
d	OCH ₃	NH ₂	188	68
e	OH	NH ₂	228-230	75
f	OCH ₃	NH ₂	201-203	65
IIa		CH ₃	180-182	54
b	NH	COCH ₃	289-292	77
c	NH	COCH ₃	310	65
IIIa	OH	H	283-285	81
b	OH	NH ₂		
c	OCH ₃	NH ₂		
d	OH	NH ₂	181-183	61
e	OCH ₃	NH ₂	191-193	57
IVa		H	221-223	73
b	NH ₂			
c	NH	COCH ₃	171-187	55

2,4-dimethyl-6H-pyrimido[2,1-b]quinazol-6-one (IIa) and 3-chloro-10H-pyrimido[4,3-b]quinazol-10-one (IVa) were prepared by briefly heating

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ACC NR: AP8038130

Ia or IIIa in Ac₂O at 100°C. Compounds IIb, IIc, IVb, and IVc were similarly prepared. The colorless K salt of IIb (mp 350°C, decomposes)



Card 3/4

ACC NR: AP8038130

was obtained by boiling IVb in excess 10% alcoholic KOH for 15 min. The authors thank VEB Medicinals Works, Dresden, for preparing the chemicals and Mrs. Gesine Selditz for her collaboration in the experiment. Orig. art. has: 1 table. [WA-50; CBE No. 39][FT]

SUB CODE: 07/ PUBM DATE: 05Jan68/ ORIG REF: 006/ OTH REF: 001

Card 4/4

ACC NR: AP8038124

SOURCE CODE: GE/0076/68/000/001/0022/0023

AUTHOR: Wagner, G.; Rothe, L.

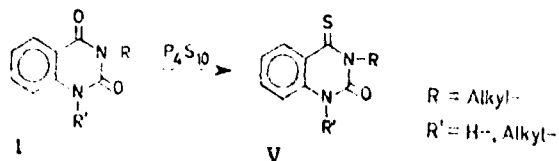
ORG: Pharmaceutics Institute, Karl Marx University, Leipzig (Pharmazeutisches Institut der Karl-Marx-Universität)

TITLE: Preparation of 2-oxo-4-thiono-1,2,3,4-tetrahydroquinazolines

SOURCE: Zeitschrift für Chemie, no. 1, 1968, 22-23

TOPIC TAGS: ketone, organic azole compound, aromatic sulfur compound

ABSTRACT: 1-Methyl-3-ethyl-2-oxo-4-thiono-1,2,3,4-tetrahydroquinazoline (Vi) (55.5% yield) was prepared by refluxing 1-methyl-3-ethyl-2,4-dioxo-1,2,3,4-tetrahydroquinazoline (Ii) with P_4S_{10} in pseudocumene for 30 min. Compounds Va--Vh, Vj, and Vk were similarly prepared.



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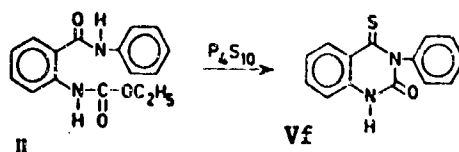
Table 1

R	R'	Compd	IV Mp, °C	V Mp, °C
H	H	a	196—198	278—279
Me	H	b	—	285—286
Et	H	c	147—148	239—240
CHMe ₂	H	d	161—162	205—406
CH ₂ Ph	H	e	—	246—247
Ph	H	f	136—127	277—278
C ₆ H ₄ Cl(p)	H	g	—	266—267
Me	Me	h	—	210—211
Et	Me	i	104—106	153—154
Ph	Me	j	—	191—192
C ₆ H ₄ Cl(p)	Me	k	—	228—229

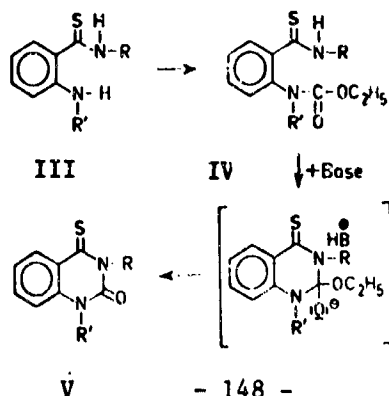
Yellowish orange 3-phenyl-2-oxo-4-thiono-1,2,3,4-tetrahydroquinazoline (Vf) (35% yield) was obtained by refluxing *o*-ethoxycarbonylamino benzamide (II) with P₄S₁₀ in pseudocumene for 15 min.

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ACC NR: AP8038124



o-Ethoxycarbonylaminothiobenzethylamide (IVc) was prepared by refluxing *o*-aminothiobenzethylamide (IIIc) with ClCO₂Et in pyridine for 3 hr with subsequent HCl neutralization. Compounds IVa, IVd, IVf, and IVi were similarly prepared. Yellow lamellar 3-ethyl-2-oxo-4-thiono-1,2,3,4-tetrahydroquinazoline (Vc) (61% yield) was obtained by shaking IVc with 3N KOH



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ACC NR: AP8038124

and neutralizing with 3N HCl. Orig. art. has: 1 table.
[WA-50; CBE No. 39] [FT]

SUB CODE: 07/ SUBM DATE: 14Nov67/ ORIG REF: 002/ OTH REF: 003

Card 4/4

ACC NR: AP8037876

SOURCE CODE: UR/0409/68/000/005/0954/0954

AUTHOR: Yutilov, Yu. M.; Bystrova, R. M.

ORG: Donetsk Branch IREA (Donetskiy filial IREA)

TITLE: Quaternization of 3-methyl-3H-imidazo[4,5-b]pyridine

SOURCE: Khimiya geterotsiklicheskih soyedineniy, no. 5, 1968, 954

TOPIC TAGS: quaternary amine, halogenated organic compound, pyridine derivative

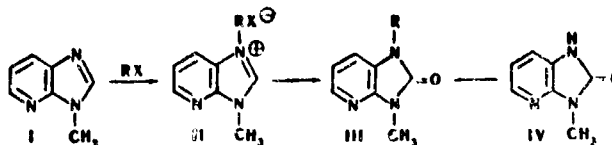
ABSTRACT: Alkylation of the title compound (I) gave the quaternary salts IIa (R = CH₃, X = Cl), mp 219°C; IIb (R = CH₂C₆H₅, X = Cl), mp 214—215°C; and IIc (R = CH₂CH₂OH, X = Cl), mp 199—200°C. Compounds IIa and IIb were oxidized with potassium ferrocyanide in an alkaline medium at 10°C to form IIIa (R = CH₃), mp 73°C and IIIb (R = CH₂C₆H₅), mp 96°C. Compound III was also obtained by the methylation and benzylation of compound IV (mp 235°C), which was prepared by heating a mixture

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UDC: 547.785.5

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ACC NR: AP8037876



of 2-methylamino-3-aminopyridine with urea at 170°C. The general conversion scheme is shown above. [WA-50; CBE No. 39][PS]

SUB CODE: 07/ SUBM DATE: 08Jan68/ ORIG REF: 001

Card 2/2

ACC NR: AP9000193

SOURCE CODE: UR/0366/68/004/011/2041/2048

AUTHOR: Zagorevskiy, V. A.; Savel'yev, V. I.; Dubykina, N. V.

ORG: Institute of Pharmacology and Chemotherapy, Academy of Medical Sciences SSSR (Institut farmakologii i khimioterapii Akademii meditsinskikh nauk SSSR)

TITLE: Studies in the series of β -an, its analogs, and related compounds. XXVIII. Reaction of amines with 4-chlorocoumarin

SOURCE: Zhurnal organicheskoy khimii, v. 4, no. 11, 1968, 2041-2048

TOPIC TAGS: amine derivative, heterocyclic oxygen compound, substituted amide

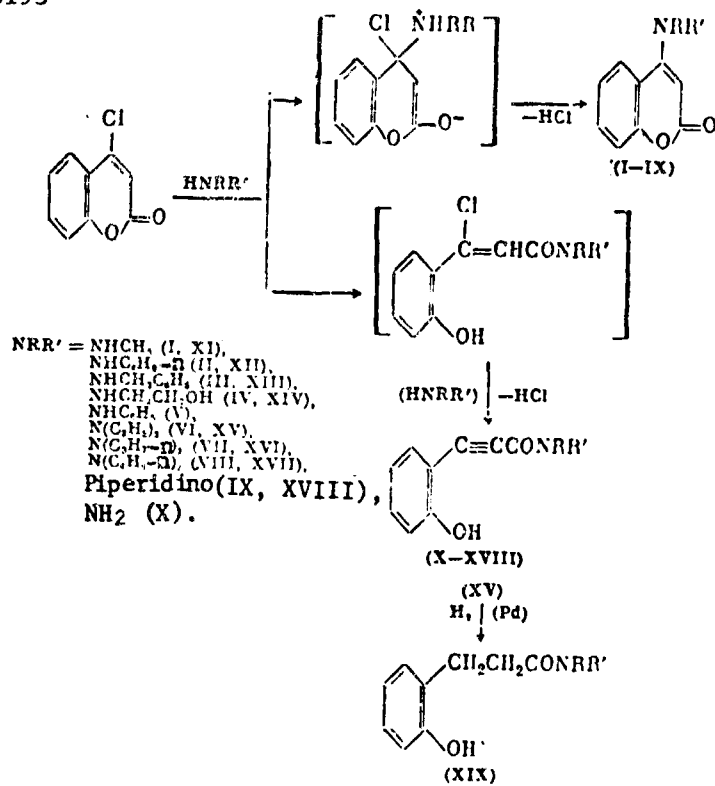
ABSTRACT: The title reaction was used to synthesize various N-substituted 4-aminocoumarins mainly to find biologically active substances. 4-(Methylamino)coumarin (I) and 2-hydroxyphenylpropionic acid methylamide (XI) were prepared by allowing $MeNH_2$ and 4-chlorocoumarin to react in EtOH at 20°C for 20 hr and treating the residue with 10% HCl and $(CH_2Cl)_2$. 4-(n-Butylamino)coumarin (II) and 2-hydroxyphenylpropionic acid n-butylamide (XII) were similarly prepared. 4-(Benzylamino)coumarin (III), 2-hydroxyphenylpropionic acid benzylamide (XIII), and

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UDC: 547.812.5

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ACC NR: AP9000193



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ACC NR: AP9000193

Table 1

Starting amine	Compd	% Yield	Mp, °C	Compd	% Yield	Mp
NH ₄ OH	—	—	—	X	74	139°
MeNH ₂	I	26	197-199°	XI	20	132-133
BuNH ₂	II	15	117-118	XII	63	103-110
PhCH ₂ NH ₂	III	15	240-242	XIII	62	196-197.5 (CCl ₄)
HOC ₂ H ₄ NH ₂	IV	46	173-175	XIV	9	137-138
PhNH ₂	V	—	266.5-267.5	—	—	—
Et ₂ NH	VI	21	38-39	XV	77	115-116
Pr ₂ NH	VII	28	70-71.5	XVI	38	100-102
Bu ₂ NH	VIII	27	0-11	XVII	50	77-79
Piperidine	IX	70	109-107	XVIII*	15	169-161

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ACC NR: AP9000193

β -benzylamino-*o*-hydroxycinnamic acid benzylamide (14% yield, mp 141—146°C, decomposes) were obtained by allowing PhCH₂NH₂ and 4-chlorocoumarin to stand for 30 min and adding CHCl₃ and 5% HCl. Benzofuran-2-carboxylic acid benzylamide (95% yield, mp 97—98°C) was obtained by boiling NaOH and XIII for 70 min, extracting with ether every 10 min. 4-(β -Hydroxyethylamino)coumarin (IV) and 2-hydroxyphenylpropionic acid β -hydroxyethylamide (XIV) were prepared by boiling HOC₂H₄NH₂ and 4-chlorocoumarin in EtOH for 2.5 hr. 4-(Diethylamino)coumarin (VI) and 2-hydroxyphenylpropionic acid diethylamide (XV) were prepared by allowing 4-chlorocoumarin and Et₂NH to react at 20°C for 48 hr and adding HPh and 10% HCl. Compounds V, VII—X, XVI—XVIII, and bis(4-coumarinyl)amine (4% yield, mp 196.5—198°C) were similarly prepared. *o*-Hydroxyphenylpropionic acid diethylamide (XIX) (0.09 g from 0.43 g XV, mp 129—130°C) was obtained by hydrogenating XV in EtOH over 5% Pd/BaSO₄, heating the residue with 2 N KOH for 3 hr at 100°C, and neutralizing with HCl. The authors thank V. S. Troitskaya and N. D. Konevskaya for photographing the UV and IR spectra. Orig. art. has: 2 tables and 1 figure. [WA-50; CBE No. 39][FT]

SUB CODE: 07/ SUBM DATE: 21Oct66/ ORIG REF: 004/ OTH REF: 007

Card 4/4

ACCESSION NUMBERS FOR CHEMICAL FACTORS

AP9003606	AP9004412	AP9006439
AP9003607	AP9004706	AP9006440
AP9003608	AP9004787	AP9006441
AP9004250	AP9004792	AP9006442
AP9004251	AP9004800	AP9006443
AP9004252	AP9004835	AP9006444
AP9004254	AP9005971	AP9006445
AP9004255	AP9005972	AP9006446
AP9004256	AP9005973	AP9006447
AP9004257	AP9005974	AP9006450
AP9004258	AP9005975	AP9006523
AP9004404	AP9006293	AP9006525
AP9004405	AP9006437	AP9006535
AP9004406	AP9006438	
AP9004407		AT9005936

II. BIOLOGICAL FACTORS

ACC NR: AP8033603

SOURCE CODE: UR/0016/68/000/009/0122/0127

AUTHOR: Akatov, A. K.; Prokhorov, V. Ya.

ORG: Institute of Epidemiology and Microbiology im. Gamaleya AMN SSSR (Institut epidemiologii i mikrobiologii AMN SSSR); Institute of Medical and Biological Problems, Ministry of Public Health SSSR, Moscow (Institut mediko-biologicheskikh problem Ministerstva zdravookhraneniya SSSR)

TITLE: Some mechanisms of Staphylococcal immunity upon infection of mice with various strains of pathogenic *Staphylococci*

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 9, 1968, 122-127

TOPIC TAGS: staphylococcus, immunogenesis, animal disease

ABSTRACT: Mice were infected with lethal doses of $10^{9.5}$ cells/ml taken from four different strains of pathogenic *Staphylococci* followed by toxoid or vaccine. Experimental data are shown in Table 1. It is

Card 1/3 UDC: 616.981.25-092.9-097.5+576.854.252.097.3

ACC NR: AP8033603

Table 1. Course of infection in immune and nonimmune animals infected with varying strains of *Staphylococci*

Strain	Group of mice	No. of dead mice (%) at various times after infection				
		6 hr	10-12 hr	1 day	7 days	14 days
B-214	Control	14	73	91	91	91
	Received toxoid	18	60	87	96	96
	Received vaccine	5	14	91	96	96
B-324	Control	0	0	0	2.5	2.5
	Received toxoid	0	0	0	0	0
	Received vaccine	0	0	2.5	2.5	2.5
L-1736	Control	10	89	100		
	Received toxoid	0	0	4	4	4
	Received vaccine	10	73	88	96	96
L-3304	Control	20	76	88	93	93
	Received toxoid	0	3	7	11	11
	Received vaccine	0	5	7	5	5

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ACC NR: AP8033603

evident from the table that, after administration of lethal doses of *Staphylococci* to mice, the course of the infection differs among the three groups of mice: a) the death toll was light in mice infected with strain B-324 regardless of treatment, while b) it was heavy in mice infected with B-243 and L-1726. The virulence of B-243 was explained by increased resistance of the organism to phagocytosis and production of a lethal toxin which the α -toxoid did not neutralize. Orig. art. has: 1 table and 5 figures. [WA-50; CBE No. 39][LP]

SUB CODE: 06/ SUBM DATE: 29Dec67

Card 3/3

ACC NR: AP8033875

SOURCE CODE: UR/0244/68/027/005/008: 0086

AUTHOR: Avakyan, A. O.

ORG: Institute of Epidemiology and Hygiene im. N. B. Akopyan, Ministry of Public Health, Armenian SSR, Yerevan (Institut epidemiologii i gigiyeny Ministerstva zdravookh. aneniya Armyanskoy SSR)

TITLE: Use of the fluorescent antibody method for diagnosis of food poisoning caused by *Cl. botulinum*

SOURCE: Veprosy pitaniya, v. 27, no. 5, 1969, 83-86

TOPIC TAGS: clostridium, fluorescent antibody method

ABSTRACT: The direct fluorescent antibody technique is a rapid but tentative method for detecting *Cl. botulinum* in material submitted for diagnosis of food poisoning. Samples from soil, food (cooked eggplant, bean, and stuffed pepper) and from the blood, liver, stomach and intestinal contents of corpses were tested with tagged antisera. Since results of the neutralization test with polyvalent antitoxin sera types A, B, C, and E were all positive, monovalent antitoxin serum was used to type the toxin. Stomach contents, small-intestine contents and one soil sample taken from the yard of a patient contained

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UDC: 616.981.553.008.781.001.001

ACC NR: AP8033875

botulinus toxin type B. These results confirmed the data from the
fluorescent antibody test. Orig. art. has: 2 figures.

[WA-50; CBE No. 39][JS]

SUB CODE: 06/ SUBM DATE: 07Sep67/ ORIG REF: 006/ OTH REF: 008

Card 2/2

ACC NR: AT8034081

SOURCE CODE: UR/0000/68/000/000/0056/0060

AUTHOR: Babadzhanyan, D. P.; Kaminir, L. B.; Borodina, V. M.; Ivkov,
V. G.

ORG: Biophysics Institute, AN SSSR (Institut biologicheskoy fiziki
AN SSSR)

TITLE: Differentiated automatic counting of microscopic objects
differing in their fluorescence spectrum

SOURCE: AN SSSR. Nauchnyy sovet po biofizike. Mashinnyy analiz
mikroskopicheskikh ob'yektov (Machine analysis of microscopic objects)
Moscow, Izd-vo "Nauka," 1968, 56-60

TOPIC TAGS: fluorescence microscopy, medical equipment

ABSTRACT: The article discusses the problem of the automatic counting
of microscopic objects whose fluorescence spectrum depends not only on
the luminescent dye but also on the functional state of a cell. There-
fore, the difference in the character of fluorescence can be used as
an index of microscopic object differentiation. An analyzer for the
automatic differentiated counting of cells has been designed on these
premises. Basically, it consists of a luminescence microscope, a

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UDC: 578.088.5

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ACC NR: AT8034081

monochromator and a system of mirrors and lenses, a photomultiplier, a pulse shaper, and a mechanical counter. The minimum size of microscopic objects which can be counted depends on the S/N ratio, the latter in turn being dependent on the photomultiplier used. The analyzer system was used in counting colonies of bacterias with a minimum area of the order of 15 micron². It was also used in counting live and dead yeast cells. A total of 120—150 yeast cells were counted in an area of about 0.6 mm². Orig. art. has: 2 figures.

[WA-50; CBE No. 39][JR]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 003/ OTH REF: 001

Card 2/2

ACC NR: AP8034095

SOURCE CODE: UR/0358/68/037/005/0565/0570

AUTHOR: Babayants, G. A.

ORG: Ashkhabad Institute of Epidemiology and Hygiene (Ashkhabadskiy institut epidemiologii i gigiyeny)

TITLE: Conditions of formation of reservoirs—breeding places of blood-sucking mosquitoes (*Culicidae*)

SOURCE: Meditsinskaya parazitologiya i parazitarnyye bolezni, v. 37, no. 5, 1968, 565-570

TOPIC TAGS: mosquito, biologic ecology, disease carrying insect

ABSTRACT: In the area of the Kara Kum canal in the Turkmen SSR, extensive breeding places for blood-sucking mosquitoes have been formed by filtration of water from the canal and increase in the level of ground water. The reservoirs, basins, ponds, etc. which are breeding places for mosquitoes can be divided by their length of existence into two main types: permanent and temporary. Most of the permanent reservoirs are in the first stages of becoming overgrown and swampy—only a few of them are heavily overgrown. The formation and alternation of biocenoses occurs most intensively in reservoirs or bodies of water

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UDC: 551.481.2:576.895.77

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ACC NR: AP8034095

near the canal. These processes proceed more slowly in bodies of water far away from the canal. The types of reservoirs are shown in Figure 1. Young reservoirs are poor in nutrient substances: only

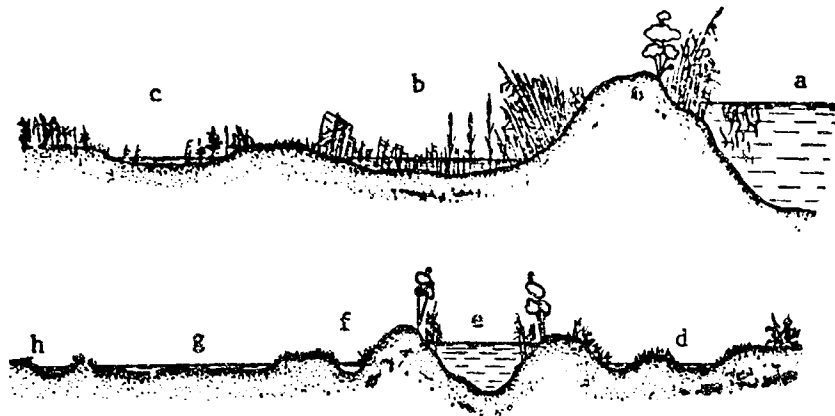


Figure 1

a - Kara Kum canal. Ban' zone, overgrown with reeds and pond weeds; b - permanent reservoir 3—4 yr old; c - permanent reservoir in the second year of existence; d - permanent reservoirs in the first year of existence; e - main irrigation canal; f - little pool; g - recently created temporary reservoir; h - intermittently active irrigation network

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ACC NR: AP8034095

with the appearance of water plants are conditions made favorable for the existence of insect larvae. Permanent reservoirs with sufficient water vegetation are good breeding places for *Culex pusillus* and other mosquitoes. Temporary reservoirs, particularly those which are well-heated and rich in humus are good breeding places for *Aedes caspius*.
Orig. art. has: 1 figure. [WA-50; CBE No. 39][JS]

SUB CODE: 06/ SUBM DATE: 23May67/ ORIG REF: 002

Card 3/3

ACC NR: AT8034077

SOURCE CODE: UR/0000/68/000/000/0038/0043

AUTHOR: Bel'kevich, V. I.

ORG: All-Union Scientific Research Institute for Medical Instrumentation
(Vsesoyuznyy nauchno-issledovatel'skiy institut meditsinskogo priboro-
stroeniya)

TITLE: Counter of microscopic objects

SOURCE: AN SSSR. Nauchnyy sovet po biofizike. Mashinnyy analiz
mikroskopicheskikh ob'yektov (Machine analysis of microscopic objects)
Moscow, Izd-vo "Nauka", 1968, 38-43

TOPIC TAGS: microbiology, biotechnology, medical equipment

ABSTRACT: The selection of the best methods for counting microscopic
objects, e.g., positive blood elements, is discussed, with emphasis on
some essentially different techniques which are used at present. In
each of the methods, the number of objects in a plane is counted on the
assumption that the thickness of the suspension is roughly equal to
the largest diameter of the particles being counted. In another, the
number of particles in a volume is determined, using various photometric
devices. However, these and other methods, such as the method of

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UDC: 578.087.1

ACC NR: AT8034077

individual particle counting, are subject to large errors, which in some
cases may exceed 30--40%. A method said to be more promising for this
purpose is luminescence microscopy. It is pointed out that when counting
in the plane is used, the material for differentiating various particles
should be based on chemical preparations. A method is proposed for
obtaining blood preparations which contain primarily leucocytes. It is
based on the use of cetylpyridine chloride or cetylpyridine bromide, which
perform the function of lysing the erythrocytes of the agents up to
optically transparent particles. Thus, it is concluded that for
differentiating positive blood elements, chemical compounds possessing
lysing properties should be utilized. Orig. 3 figures.

[50; CBE No. 39] [JR]

SUB CODE: 06/ SURM DATE: none

Card 2/2

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ACC NR: AP8035717

SOURCE CODE: UR/0479/68/000/004/0028/0031

AUTHOR: Berdyev, A.

ORG: Institute of Zoology/Director--A. O. Tashliyev/, AN TSSR (Institut zoologii AN TSSR)

TITLE: The tick *Hyalomma dromedarii* Koch--a natural carrier of *Rickettsia burneti* in the Turkmen SSR

SOURCE: Zdravookhraneniye Turkmenistana, no. 3, 1968, 28-31

TOPIC TAGS: tick, disease carrying tick, disease vector, Rickettsia, medical entomology, Q fever

ABSTRACT: *Rickettsia burneti* was revealed in 231 pupae and 174 larvae of *Hyalomma dromedarii* taken near Ashkhabad and the village of Akdash-ayak in 1965 and 1966. Bioassays were made in male and female guinea pigs. Positive complement fixation titers of 1:20--1:80 were obtained. Dead male ticks as a group had the highest rate of infection. Of 14 assays, 8 were positive. Orig. art. has: 1 table. [WA-50; CBE No. 39] [LP]

SUE CODE: 06/ SUBM DATE: none

Card 1/1

ACC NR: AT9001460

SOURCE CODE: UR/3393/66/000/018/0253/0265

AUTHOR: Biglova, R. G.; Yevdokimova, I. P.

ORG: Department of Histology /Head--prof. G. I. Zabusov/, KGMI (Kafedra gistologii KGMi)

TITLE: Morphological responses in motor neuron structures of the skeletal muscles to the injection of several organophosphorus compounds

SOURCE: Kazan. Gosudarstvennyy meditsinskiy institut. Trudy, no. 18, 1966. Voprosy morfologii nervnoy i sosudistoy sistem; sbornik rabot kafedry anatomii cheloveka i kafedry gistologii (Problems of morphology of the nervous and vascular system; papers of the Department of Human Anatomy and the Department of Histology), 253-265

TOPIC TAGS: organophosphorus compound, nerve fiber, nervous system drug effect

ABSTRACT: Histochemical studies of the effects of organophosphorus compounds (chlorophos) on the morphology of the myoneural synapses were made. White rats received a 0.1 g dose/animal, a nonlethal dose. A few minutes after exposure the rats exhibited the severe neuromuscular tremors and related symptoms of chlorophos poisoning. After 2 hr their appearance returned to normal and histological examination of tissues

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ACC NR: AT9001460

was begun. The innervation (nerve fiber and endings) of the *m. tibialis* anterior and *m. soleus* were studied at the following intervals: 1, 2, 3, 6, 12, 24, 48, and 72 hr, and 5 and 10 days after the start of the experiment. Several histological techniques were employed to reveal the variety of chemical reactions in the neural tissue. Changes first appear in the chromosomes of the treated preparations (dissolution of structure) of the nerve endings rather than the nerve trunk itself. However, this response varies greatly and diminishes with time. Signs of atrophy are also noted soon after poisoning but not later; pre-terminal regions are often thickened. The neurologia are at first unchanged, but after several hours, exhibit thickening of the cell body and enlargement and proliferation of nuclei. Increased protoplasmic movement was observed in live preparations. Orig. art. has: 6 figures. [WA-50; CBE No. 39] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 014

Card 2/2

ACC NR: AT8034076

SOURCE CODE: UR/0000/68/000/000/0031/0037

AUTHOR: Bogdanov, K. M.; Dolgonosova, V. V.; Za:yalov, A. P.; Yanovskiy, K. A.

ORG: Institute of Human Morphology, AMN SSSR (Institut morfologii cheloveka AMN SSSR)

TITLE: Device for analyzing microstructures by their statistical characteristics

SOURCE: AN SSSR. Nauchnyy sovet po biofizike. Mashinnyy analiz mikroskopicheskikh ob'yektov (Machine analysis of microscopic objects) Moscow, Izd-vo "Nauka", 1968, 31-37

TOPIC TAGS: statistics, microbiology, machine analysis, particle size

ABSTRACT: A diagnostic system is presented for analyzing microstructures by mathematical description and recognition of ordered microstructures on the basis of their statistical characteristics. The system is developed in two versions, the first for analyzing histological preparations, and the second for analyzing photo-images (negatives) of histological preparations or other microstructures (including negatives from electron microscopy). The equipment for analyzing histological

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UDC: 578.087.1

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ACC NR: AT8034076

preparations is designed around the MBI-8M microscope. This microscope, which is designed for studying elementary particle tracks in thick photo-emulsions, is found to be best suitable for this purpose because of its special platform, whose design permits precise linear displacements and fixed rotations of the preparations. For the analysis of negatives of microstructures as well as other preparations, the other version is developed in which an MF-4 type microphotometer is used as a scanner. The error of this apparatus does not exceed 4%. Orig. art. has: 4 figures. [WA-50; CBE No. 39] [JR]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 005

Card 2/2

ACC NR: AP8037039

SOURCE CODE: UR/0444/68/000/005/0093/0098

AUTHOR: Bondarevskaya, F. G.; Mirchink, T. G.

ORG: Department of Soil Biology, Moscow University (Kafedra biologii pochv Moskovskogo universiteta)

TITLE: Phytotoxic and insecticidal properties of soil fungi

SOURCE: Moscow. Universitet. Vestnik. Seriya VI. Biologiya, pochvovedeniye, no. 5, 1968, 93-98

TOPIC TAGS: soil bacteriology, toxin, plant parasite

ABSTRACT: Results are reported on the phytotoxic and insecticidal properties of fungi isolated from soils of Guinea, India, and the subtropical parts of the USSR. Phytotoxic activity was determined by the inhibition of germination of seeds of plants by culture fluid of the fungal strains studied. Culture fluid was neutralized to pH 7.0. Pea, vetch, mustard, wheat, and wild oat seeds were used to determine the selective action of the toxin. Insecticidal activity was determined by the percentage of larval deaths of *Aedes aegypti* L. in culture fluid of the strains studied. Of 145 strains tested, 92 were toxic for all or some of the plants tested. *Penicillium P. purpurogenum*, *P. janthincllum*, *Aspergillus terreus* and *Mycelia sterilia* had the greatest

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UDC: 631:466.1

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Table 1. Distribution of toxic strains of fungi by groups

Family	Genus and species	No. of strains tested	Toxic strains		No. of strains toxic for					
			No.	%	Vetch	Peas	Mustard	Wild oat	Wheat	<i>Aedes aegypti</i> larvae
Aspergillaceae	<i>Penicillium</i>	56	43	77	19	15	25	11	15	24
	<i>P. purpurogenum</i> Stoll.	31	25	80.6	14	11	20	7	11	9
	<i>P. claviforme</i> Bainier.	1	1	—	1	1	1	1	1	1
	<i>P. juniculosum</i> Thom.	4	3	—	1	1	1	1	0	2
	<i>P. janthinellum</i> Biourge	20	11	55	3	3	3	2	2	7
	<i>Aspergillus</i>	37	33	87	19	27	14	1	4	15
	<i>A. terreus</i> Thom.	27	26	96	13	22	10	0	2	8
	<i>A. niger</i> Tieghem.	4	3	—	3	3	4	1	2	2
	<i>A. flavus</i> Link.	3	3	—	2	1	1	1	1	3
	<i>A. fumigatus</i> Fresenius	2	2	—	1	0	0	0	0	2
Mucedinaceae	<i>Fusarium</i>	2	0	0	0	0	0	0	0	0
	<i>Cephalosporium</i>	2	0	0	0	0	0	0	0	0
	<i>Trichoderma</i>	3	0	0	0	0	0	0	0	0
	<i>Mycelia sterilia</i>	31	25	80	14	14	8	3	4	14

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Table 1. (Cont.)

Dematiaceae	<i>Alternaria</i>	2	0	0	0	0	0	0	0	0
	<i>Stemphylium</i>	1	0	0	0	0	0	0	0	0
	<i>Mycelia sterilia</i>	11	9	88	3	4	0	0	0	6
Total		145	92	63	110	120	95	31	46	113

Table 2. Effect of toxin from *Penicillium purpurogenum* Stoll. on seed germination

Concentration of toxin	Length of stalk, cm					Length of root, cm				
	Pea	Vetch	Mus-tard	Wheat	Wild oat	Pea	Vetch	Mus-tard	Wheat	Wild oat
Control (without toxin)	5.0	5.2	4.5	6.0	3.6	6.5	6.0	5.0	9.2	7.1
1:80	0	0	0	0	0	0	0	0	0	0
1:160	0	0	0	0	0	0	0	0	0	0
1:320	0.8	1.2	0	0	0	0	1.2	1.5	0	0
1:640	1.5	2.6	0.5	2.0	1.2	2.5	3.0	0.3	0.8	1.0
1:1280	4.8	5.0	0.8	3.6	1.8	6.0	5.8	0.3	1.1	1.1
1:2560	5.1	5.2	2.4	3.5	2.2	6.2	5.8	1.5	1.6	3.0
1:5120	5.0	5.6	4.3	6.6	3.5	6.0	5.8	4.5	5.6	5.9
1:10240	5.0	5.0	4.6	6.5	3.6	6.5	6.5	4.8	8.2	6.8

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ACC NR: AP8037039

number of toxic strains. The distribution of the toxic strains are shown in Table 1. Of 31 strains of *Penicillium purpurogenum*, 5 strains (3, 24, 58, 89, and A1/4) showed significant effect on all test plants. *P. purpurogenum* also showed a narrow range of antimicrobial action; the majority of the strains inhibited only *Azotobacter chroococcum*, *Bacillus mycoides*, *B. subtilis* and *Actinomyces griseus*. Since strain A1/4 showed the greatest phytotoxic and insecticidal effect, the effect of toxin from this strain on the germination of seed was studied. Results are shown in Table 2. It was also shown that *Penicillium purpurogenum* toxin was completely inactivated in the soil within 10 days. Orig. art. has: 6 tables. [WA-50; CBE No. 39] [XF]

SUB CODE: 06/ SUBM DATE: 08Dec67/ ORIG REF: 009

Card 4/4

ACC NR: AP8033594

SOURCE CODE: UR/0016/68/000/009/0060/0066

AUTHOR: Dashkevich, I. O.; Lokhova, M. D.

ORG: Military Medical Academy im. Kirov, Leningrad (Voyenno-meditsinskaya akademiya)

TITLE: The use of new fluorochromes for the preparation of luminescent antibodies

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 9, 1968, 60-66

TOPIC TAGS: fluorochrome, fluorescent antibody method, luminescent microscopy

ABSTRACT: Conditions for the fluorescent labeling of immune globulins with various fluorochromes are discussed, and the properties of the resultant fluorescent antibodies are described. Of sulforhodamine chloride, sulforhodamine fluoride, and fluorescein isothiocyanate, sulforhodamine fluoride was as good as fluorescein isothiocyanate for conjugation with antibodies. Orig. art. has: 3 tables.

[WA-50; CBE No. 39] [LP]

SUB CODE: 06/ SUBM DATE: 18Dec67/ ORIG REF: 010/ OTH REF: 010

Card 1/1

UDC: 615.373:616-078]:535.37

AUTHOR: Dolgov, V. A.; Chabovskiy, V. I.; Shilova, S. A.; Efron, K. M.

ORG: none

TITLE: Certain problems in shrew ecology (*Mammalia, Sorex*) and its significance in a tickborne encephalitis focus

SOURCE: Moskovskoye obshchestvo ispytateley prirody. Otdel biologicheskoy. Byulleten', v. 73, no. 6, 1968, 17-28

TOPIC TAGS: tickborne encephalitis, shrew, disease carrying mammal, disease vector, epizootiology

ABSTRACT: The following species of shrew occur in Perm Oblast: *Sorex araneus*, *S. caecutiens*, *S. centralis*, *S. minutus*, *S. minutissimus*, and *S. arcticus*. Special population and parasite studies were made of these animals and of rodents that share their habitat to determine their role in the maintenance and propagation of tickborne encephalitis. This is connected with the population fluctuations and territoriality of these mammals, and accordingly, a study was set up, dividing the area by biotope. The relative proportions of the various species over a long period were determined. Station data shown in Tables 2, 3, and 4 show that the different shrew species inhabit different biotopes in this generally

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UDC: 576.88/.89 Sorex

ACC NR: AP9001031

Table 1. Relative proportions of shrew species in a subzone of the southern taiga of Perm Oblast

Year	Sorex						Totals
	<i>araneus</i>	<i>caecutiens</i>	<i>minutus</i>	<i>minutissimus</i>	<i>centralis</i>	<i>arcticus</i>	
1954	112	?	6	0	—	—	118
1955	322	?	97	80	—	—	499
1956	515	216	138	0	—	—	869
1957	138	68	34	14	—	—	254
1958	1728	443	213	6	36	3	2429
1959	281	83	34	32	36	0	466
1960	365	120	51	17	97	14	664
1961	827	274	124	4	55	0	1284
1962	1108	511	199	11	22	0	1841
1963	35	12	22	0	8	0	77
Totals	5431	1727	918	161	251	17	8501

*Totals of animals caught between 15 May and 15 August

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Table 2. Station distribution of the common shrew (*Sorex araneus*)
(by calculations according to standard digs from 15 May to 15 August)

Habitat locus	1954		1955		1956		1957		1958		1959		1960		1961		1962		1963	
	1*	2**	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
Mixed spruce forest and grassland	19	5.8	26	7.9	65	31.1	109	2.8	65	10.0	70	11.4	83	12.1	232	16.5	225	19.0	572	0.39
Spruce-fir area	--	--	--	--	--	--	--	69	17.0	78	0.2	15	5.0	70	6.6	70	10	--	--	--
Sphagnum swamp	76	1.3	48	1.3	61	8.0	113	0.8	--	--	--	--	--	--	--	--	--	--	--	--
Swampy spruce-fir taiga	74	1.2	32	7.1	50	16.0	143	1.5	--	--	--	--	--	--	--	--	--	--	--	--
Spruce, fir, birch open forest***	71	0.1	76	3.1	32	0	98	0	--	--	--	--	--	--	--	--	--	--	--	--
Secondary birch, fir, aspen forest	120	1.1	31	1.5	65	9.7	130	0.2	41	20.0	77	0.4	35	2.3	81	1.0	--	--	--	--
Raspberry brambles in clearings and burned-out areas	20	0	5	3.6	--	--	29	0.5	--	78	1.9	56	1.0	90	1.3	99	1.0	95	0	--
Ravines in spruce-fir forest	--	--	110	1.1	--	--	--	162	23.0	72	2.3	--	--	--	--	--	--	--	--	--
2-4 Year cutover zone	98	0.1	91	1.3	--	--	--	61	20.0	74	2.3	68	3.0	23	2.6	2.0	5.1	317	0.2	--
Floodplain	--	--	--	--	--	--	--	126	15.0	15	5.0	106	2.3	113	3.0	--	--	--	--	--

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* No. of digging-days
** Avg. no. of animals caught in 10 days digging
*** Pasturage

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Table 3. Station data on average shrew numbers
(*S. caecutiens*)

Hapitat locus	Years							
	1955	1957	1958	1959	1960	1961	1962	1963
Mixed spruce forest	15.5	0.8	14.1	1.4	5.0	4.5	13.7	0.1
Spruce-fir area	--	--	6.7	0.3	1.2	1.1	4.2	--
Sphagnum bog	5.0	0.9	--	--	--	--	--	--
Swampy spruce-fir taiga	9.2	0.4	--	--	--	--	--	--
Secondary spruce, birch, fir forest	2.5	1.4	4.6	0.1	1.2	1.7	--	--
Raspberry brambles in clearings and burned-out areas	--	0.24	--	--	0.4	0.2	0.4	--
Ravines in spruce-fir forest	--	--	10.1	1.2	--	--	--	--
2-4 Year cut-over	--	--	?	1.0	1.2	1.0	2.0	0.08
Floodplain	--	--	5.7	1.8	2.0	1.7	--	--

Legend: Here and in Table 4 the numbers indicate ten-day averages;
see also Table 2

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Table 4. Station data for the Lesser Shrew (*S. minutus*)

Habitat locus	Years									
	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963
Mixed spruce forest	1.6	2.0	8.5	0.6	6.0	0.6	3.7	3.3	4.0	0.1
Spruce-fir area	—	—	—	—	5.0	0.5	0.5	0.8	4.1	—
Sphagnum bog	0	1.2	3.1	0	—	—	—	—	—	—
Swampy spruce-fir taiga	0	1.0	9.0	0.5	—	—	—	—	—	—
Pastureland containing spruce, fir, and aspen*	0	1.0	0	0	—	—	—	—	—	—
Secondary spruce, birch, fir forest	0	?	2.0	0	1.2	0	0.4	0.4	—	—
Raspberry brambles in clearings and burned-out areas	0	0.2	—	0.1	—	0.1	0.2	0.1	0.4	—
Ravines in spruce-fir forest	—	2.3	—	—	1.6	0.8	—	—	—	—
2-4 Year cut-over	0	0.2	—	—	0.2	0.3	0.4	0.2	0.4	0.07
Floodplain	—	—	—	—	7.9	0	—	0.3	—	—

Table 5. Relative numbers of Soricidae and rodents determined in field work in different years, %

Species	Years									
	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963
Shrews . . .	93,0	59,9	79,9	50,1	88,3	20,0	51,5	59,4	77,8	17,0
Murine rodents . .	7,0	40,1	20,1	49,9	11,7	80,0	48,5	40,6	22,2	83,0

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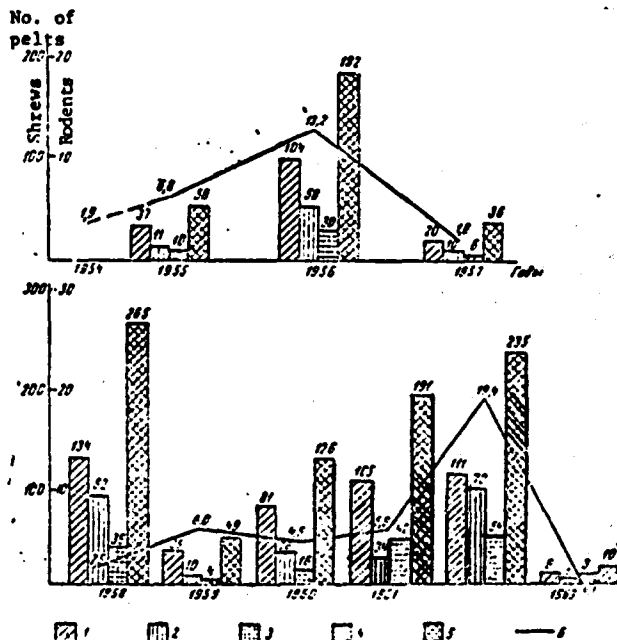


Figure 1. Variation in numbers of shrews and rodents in Perm Oblast (Upper graph -- vicinity of Yayva; the lower -- near Kamenka)

1 - *Sorex araneus*; 2 - *S. caecutiens*; 3 - *S. minutus*; 4 - *Sorex* sp.; 5 - total *Sorex*; 6 - rodents/ 100 trapping-days; numbers: for shrews--no. of individuals caught between June 1 and August 1; for rodents--average no. of individuals/ 100 catch-days in the same biotopes at the same times; no. of pelts.

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ACC NR: AP9001031

Table 6. Changes in numbers of young in a shrew population

Species	Years	May		June				July				August					
		21-31		1-10		11-20		21-30		1-10		11-20		21-31		1-10	
		1*	2**	1	2	1	2	1	2	1	2	1	2	1	2	1	2
<i>S. araneus</i>	1955	19	0	38	0	37	49.0	42	35.0	38	86.0	41	89.0	28	95.8	30	89.9
	1956	34	0	62	0	91	9.4	90	20.8	84	69.1	52	75.4	63	82.0	2	—
	1958	84	15.6	125	32	180	54.4	102	62.7	98	83.8	91	85.0	113	90.2	109	83.4
	1960	18	0	35	15.6	44	52	59	79.2	51	73.2	24	89.3	28	75.2	21	80.0
	1961	31	0	68	0	70	32	61	19.6	88	82.0	52	80.0	51	97.9	40	93.7
	1962	39	0	80	10.4	88	19.5	125	38.8	90	61.5	110	52.0	63	70.8	—	—
<i>S. caecutiens</i>	1955	11	0	24	0	28	15.2	42	50.0	49	71.4	52	65.2	59	80.0	48	91.5
	1958	29	4.6	40	18.1	44	35.4	51	34.2	34	80.0	57	74.9	30	71.2	22	109
	1960	10	0	14	19.2	19	38.9	24	59.1	18	82.3	28	80.7	15	91.8	12	98.5
	1961	14	0	30	35.1	31	45.1	44	60.2	50	59.4	19	71.6	14	78.5	15	80.4
	1962	39	0	45	10.4	51	—	74	44.5	58	50.0	60	64.4	52	80.2	28	79.7
	<i>S. minutus</i>	1958	11	0	24	40.2	21	32.0	25	50.1	16	64.4	14	88.1	10	91.2	—
1962		14	0	25	41.2	30	39.9	35	62.0	15	60.1	15	78.4	—	—	—	—

* No. of pelts; ** % Of young

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ACC NR: AP9001031

Table 7. Maturing of young common shrews (*S. araneus*) in 1958

Pelts examined	May		June			July			August
	21-31	1-10	11-20	21-30	1-10	11-20	21-31	1-10	
Number	13	44	98	64	82	79	102	91	
% Reproducing	Females	20.4	22.4	15.6	32.9	48.1	19.6	1.1	
	Males	0	2.3	9.2	12.5	3.0	7.5	0.9	

Table 8. Normal and transient(%) ticks (*Ixodes persulcatus*) on insectivora and rodents of varying ages (averages of pelts obtained over a 10-yr period)

Species	Sex	Age	No. of pelts	Occurrence, %	Average no. ticks/pelt	
					LL	NN
<i>Sorex araneus</i>	♀♀	ad	609	30.2±1.86	1.0	0.2
	♀♂	ad	860	31.1±1.58	0.9	0.2
	♂♂	sed	2219	35.0±1.0	1.3	0.2

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Table 8. (Cont.)

<i>S. caecutiens</i>	○○○○	ad	180	43,5±3,7	1,0	0,09
		ad	247	41,0±3,13	1,3	0,1
		sad	333	43,7±2,64	1,2	0,2
<i>S. minutus</i>	○○○○	ad	90	17,0±3,96	0,4	—
		ad	140	24,6±3,64	0,3	—
		sad	217	22,4±2,82	0,4	—
<i>Clethrionomys glareolus</i>	○○○○	ad	310	6,8±1,4	0,1	0,2
		sad no 14 z	325	10,2±1,6	0,5	0,2
		ad	328	39,1±2,6	1,7	1,3
		sad > 14 z	471	68,6±2,1	1,9	1,9
<i>Cl. rufocanus</i>	○○○○	ad	114	15,2±3,36	0,4	0,3
		ad no 14 z	152	9,4±2,37	0,6	0,2
		ad	235	30,5±3,1	1,4	1,5
		sad > 14 z	120	51,2±4,5	2,0	1,6
<i>Cl. rutilus</i>	○○○○	ad	60	10,2±3,9	0,8	0,4
		sad no 14 z	72	14,6±4,1	0,7	0,3
		ad	54	43,5±6,7	2,0	1,8
		sad > 14 z	92	60,2±5,1	3,1	1,9
<i>Microtus oeconomus</i>	○○○○	ad	228	6,8±1,6	0,4	0,2
		sad no 15 z	422	12,6±1,64	0,5	0,1
		ad	260	48,8±3,1	0,8	0,7
		sad > 15 z	421	49,5±2,4	1,5	1,0

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forested area, although close analysis of the data shows that all the shrews are widely distributed in different biotopes. It is considered that since the shrews are more mobile and eurytropic than the rodents, they can effect a broad spread of the tick vector. Further analysis of the different habits of rodents and shrews indicated that they complement each other in the process of forming stable foci of tickborne encephalitis. This can be observed especially in times of acute shrew population depression in dry, snowless winters. Reproduction starts in the first days of May and a large proportion of pregnant females are found in the second 10 days of the month, and young are born in the first part of June. The relationship of ticks to rodents and shrews is shown in Table 8. Orig. art. has: 8 tables and 1 figure.

[WA-50; CBE No. 39] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 020/ OTH REF: 007

Card 10/10

ACC NR: AP8034810

SOURCE CODE: UR/0219/68/066/010/0064/0067

AUTHOR: Dubrovina, T. Ya.; Polyak, P. Ya.; Zhilova, G. P.; Sena, N. L.; Smorodintsev, A. A.

ORG: Department of Virology, Institute of Experimental Medicine, AMN SSSR, Leningrad (Otdel virusologii Instituta eksperimental'noy meditsiny AMN SSSR)

TITLE: The role of disintegrating agents in viral reproduction

SOURCE: Byulleten' eksperimental'noy biologii i meditsiny, v. 66, no. 10, 1968, 64-67

TOPIC TAGS: virus reproduction, influenza virus

ABSTRACT: The synthesis of virus-deproteinizing enzymes induced by the RNA-containing influenza virus and the DNA-containing smallpox virus was studied. In cells infected with either virus, factors with a disintegrating effect on influenza virus were synthesized or activated. An infectious subviral fraction sensitive to the effect of RNA-ase was formed. In half of the tests, light increase in the infectiousness of the virus-containing material after contact with RNA-ase was observed, which did not exceed 0.5—1 mg of infective dose. Treatment of

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UDC: 576.858.098.095.6

ACC NR: AP8034810

influenza virus with an extract from uninfected cells did not produce sensitivity to RNA-ase in the viral subfraction. Maximum disintegrating effect of the cellular homogenates was observed after 1—1.5 hr of interaction with the virus. In contrast, a ribonuclease-sensitive virus subfraction was formed by polio virus not only under the influence of homogenates of cells infected with this virus, but also under the influence of extracts from uninfected cells. Orig. art. has: 4 tables.
[WA-50; CBE No. 39][JS]

SUB CODE: 06/ SUBM DATE: 22Apr57/ ORIG REF: 001/ OTH REF: 007

Card 2/2

ACC NR: AP9000290

SOURCE CODE: UR/0031/68/000/011/0008/0013

AUTHOR: Galuzo, I. G. (Academician AN KazSSR); Bezukladnikova, N. A.
(Candidate of biological sciences)

ORG: none

TITLE: Helminths in the role of *Toxoplasma* carriers

SOURCE: AN KazSSR. Vestnik, no. 11, 1968, 8-13

TOPIC TAGS: parasitology, parasitic disease, animal parasite

ABSTRACT: The role of helminths as possible carriers of pathogenic protozoa is reviewed. The interaction of helminths with protozoa strengthens the concept of parasitocenosis, a concept requiring further research in order for the methods of circulation of the pathogens in nature to be explained, and for control methods to be organized. Future research requires a better understanding of the contacts between *Toxoplasma* and helminths in the animal body. The possibility cannot be excluded that *Toxoplasma* utilizes other species of nematodes, especially *Toxocara canis*, which is widely distributed in nature, due to exchange of hosts. It has been demonstrated in experimental animals that *Toxoplasma* invade larvae of the nematodes *Ascaris suum* and *Parascaris equorum*

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ACC NR: AP9000290

and can be transmitted with these larvae to other experimental animals. The article also discusses the possibility of *Toxoplasma* infections in *Herbivora* and *Insectivora* by biocenotic relations of various helminths with *Toxoplasma*, and of nonparasitized invertebrates with helminths when they pass through certain periods of their development outside the host. [WA-50; CBE No. 39] [XF]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 006/ OTH REF: 009

Card 2/2

ACC NR: AP8034097

SOURCE CODE: UR/0358/68/037/005/0574/0582

AUTHOR: Gitsu, F. V.

ORG: Entomology Department, Institute of Medical Parasitology and Tropical Medicine im. Ye. I. Martsinovskiy, Ministry of Public Health SSSR, Moscow (Entomolog'cheskiy otdel Instituta meditsinskoy parazitologii i tropicheskoy meditsiny Ministerstva zdravookhraneniya SSSR)

TITLE: Characteristics of the microclimate in dwelling places of sandflies in a Karshi oasis settlement

SOURCE: Meditsinskaya parazitologiya i parazitarnyye bolezni, v. 37, no. 5, 1968, 574-582

TOPIC TAGS: animal vector research, disease carrying insect

ABSTRACT: Round-the-clock observations of the microclimate in human dwellings and cattle sheds, conducted in Kara Tepe, Karshi Rayon, Uzbek SSR, from 15 June to 10 September 1965, showed that temperature variations in the day resting-places of sandflies during the summer were considerable. At times, the temperature exceeded 30°C, which is unfavorable for sandflies. The greatest number of hours above 30°C occurred in June, July, and early August. The curve of changes in

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UDC: 595.771-152:577.4(575.192)

ACC NR: AP8034097

mean daily temperature inside human dwellings and cattle sheds paralleled the temperature curve in the air, but with a lesser amplitude. At twilight the temperature inside these locations became equal to the outside temperature. Active flight of sandflies occurred at this time. In Central Asian villages, active flights of sandflies into and out of homes and barns begin an hour before sunset and continue until sunrise. The temperature inside houses and barns is not the chief factor determining distribution of sandflies along the walls. With an optimal temperature on the floor, most sandflies are still observed on the ceiling, apparently because there is less movement of air in the upper parts of the room. Information on the microclimate in the dwelling places of sandflies can be used to determine the value of temperature and humidity variations in the development of leishmania in the sandfly organism. Measurements were taken in both the old-style clay huts and more modern brick houses. Sandfly species observed in the village of Kara Tepe included *Ph. papatasi*, *S. arpaklensis*, *S. sogdiana*, *S. grekovi*, *Ph. alexandri*, *Ph. sergenti*, *Ph. andrejevi*, *Ph. mongolensis*, and *Ph. caucasicus*. Orig. art. has: 3 figures and 2 tables. [WA-50; CBE No. 39][JS]

SUB CODE: 06/ SUBM DATE: 08Jan68/ ORIG REF: 015/ OTH REF: 001

Card 2/2

ACC NR: AP9001542

SOURCE CODE: UR/0451/68/000/006/0020/0026

AUTHOR: Glukhov, S. A.

ORG: All-Union Scientific Research Institute of Medical Machine Construction, Moscow (Vsesoyuznyy nauchno issledovatel'skiy institut meditsinskogo pribostroyeniya)

TITLE: Theory and calculation of an ejection sprayer

SOURCE: Meditsinskaya tekhnika, no. 6, 1968, 20-26

TOPIC TAGS: biologic aerosol, bacterial aerosol, spray nozzle, medical equipment

ABSTRACT: This article appears in General Section

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UDC: 615.453.24:615.471

ACC NR: AT8032431

SOURCE CODE: UR/3411/66/000/049/0121/0128

AUTHOR: Gudkov, A. V. (Candidate of biological sciences)

ORG: Department of Microbiology, Technological Faculty, Vologoda Milk Institute (Kafedra mikrobiologii tekhnologicheskogo fakul'teta Vologodskogo molochnogo instituta)

TITLE: Developmental phases of some *Clostridium* species

SOURCE: Molochnoye. Vologodskiy molochnyy institut. Trudy, no. 49, 1966. Trudy. Tekhnologicheskiy fakul'tet (Proceedings of the technological faculty), 121-128

TOPIC TAGS: clostridium, pathogen, microorganism growth, bacteria growth

ABSTRACT: Two strains of *Cl. butyricum*, 5 strains of *Cl. tyrobutyricum*, 3 strains of *Cl. beijerinckii*, 2 strains of *Cl. bifementans*, 3 strains of *Cl. perfringens*, 3 strains of *Cl. sporogenes* and 1 strain of *Cl. botulinum* were grown on RCM medium with added tris buffer at 37°C to determine the differences in growth phases of the strains. Growth curves for the most typical representatives of each species are shown in Figure 1. On the basis of their growth characteristics, these organisms can be classified as follows: 1) *Cl. perfringens*, *Cl. bifementans*; 2) *Cl. beijerinckii*,

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ACC NR: AT8032431

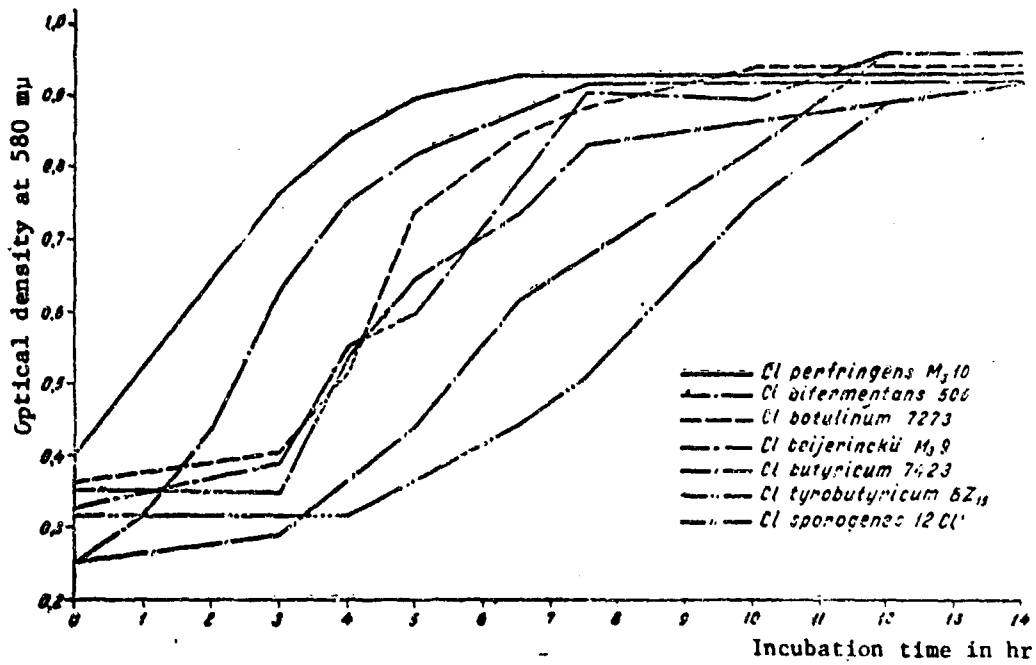


Fig. 1. *Clostridium* growth curve. Medium RCMB with tris buffer (M/80) seed dose, 0.2 ml of 12-hr culture; incubation at 37°C

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ACC NR: AT8032431

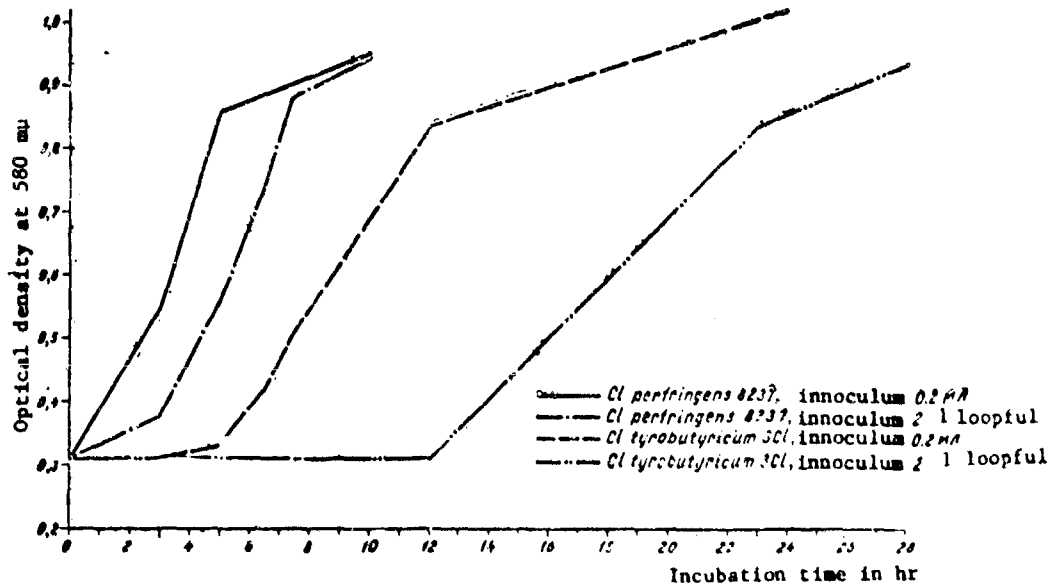


Fig. 2. Growth of *Cl. tyrobutyricum* and *Cl. perfringens* depending on inoculum size. medium, RCMB with tris buffer (M/80) at 37°C

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ACC NR: AT8032431

Cl. botulinum, *Cl. sporogenes*; and 3) *Cl. butyricum* and *Cl. tyrobutyricum*. This first group has a short lag-phase and initial growth phase (about 1 hr), and a rapid appearance of biomass in the log-phase. The maximum no. of organisms is reached at 6.5—8 hr. Second group organisms reached maximum concentration at 8—12 hr. Third group organisms have very long lag- and early growth phases (4—6 hr) and slow growth during the log-phase; maximum organism concentration appears from 12—15 hr after inoculation. Figure 2 shows the difference in growth characteristics caused by differences in seed dose. Orig. art. has: 2 figures.

[WA-50; CBE No. 38] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 003/ OTH REF: 002

Card 4/4

ACC NR: AT8034075

SOURCE CODE: UR/0000/68/000/000/0006/0021

AUTHOR: Ivanitskiy, G. R.; Litinskaya, L. L.; Orlovskiy, G. N.

ORG: Biophysics Institute, AN SSSR (Institut biologicheskoy fiziki AN SSSR)

TITLE: Basic principles of constructing a system for the automation of microscopic studies

SOURCE: AN SSSR. Nauchnyy sovet po biofizike. Mashinnyy analiz mikroskopicheskikh ob'yektov (Machine analysis of microscopic objects) Moscow, Izd-vo "Nauka", 1968, 6-21

TOPIC TAGS: biologic modeling, scanning equipment, microbiology

ABSTRACT: A general discussion is made of automatic systems for analyzing microscopic objects, with emphasis on equipment for obtaining data on microscopic objects, equipment for data processing according to a given program, and output devices. Among the systems for obtaining data on microscopic objects, those, which for isolating microscopic objects use their optical characteristics, are said to have great possibilities. Such a system which converts optical data on microscopic objects into electric pulses represents a combination of an ordinary optical microscope and a TV scanner. The entire system is described

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UDC: 578.086

ACC NR: AT8034075

as a scanning microscope. The scanning operation itself consists in measuring the intensity of the light beam at each point of a preparation. A classification of the scanning methods according to the position of the scanning element, the ratio of magnitudes between the scanning element and a microscopic object, and the type of scanning device used is presented, together with types of mechanical scanning devices most widely used in scanning microscopes. The conversion of the image of a microscopic object into video pulses irrespective of the types of scanners, light receivers, and light sources, is then examined. Finally, the principles of designing systems for processing data on microscopic objects are discussed, showing that such designs are determined by data processing algorithms and that they differ appreciably, depending on the task for which they are intended and the ratio of magnitudes between a scanning element and the microscopic objects. Orig. art. has: 2 tables, 8 figures, and 17 formulas. [WA-50; CBE No. 39] [JR]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 008/ OTH REF: 020

Card 2/2

ACC NR: AP8033941

SOURCE CODE: UR/0402/68/000/005/0600/0605

AUTHOR: Kagan, G. Ya.; Kulikova, K. S.; Neustroyeva, V. V.; Rezepova, A. I.; Sultanova, Z. D.

ORG: Institute of Epidemiology and Microbiology im. N. F. Gamaleya, AMN SSSR (Institut epidemiologii i mikrobiologii); Institute of Viral Preparations, Ministry of Public Health SSSR, Moscow (Institut virusnykh preparatov Ministerstva zdravookhraneniya SSSR)

TITLE: Effect of *Mycoplasma* infection of cell cultures on reproduction, cytopathic effect, and hemagglutinating capacity of some viruses

SOURCE: Voprosy virusologii, no. 5, 1968, 600-605

TOPIC TAGS: mycology, virology, agglutination, biologic ecology

ABSTRACT: Swine embryo kidney cells were cultured on nutrient medium no. 199 with 10% bovine serum. The strain of *Mycoplasma* isolated from this culture showed a cytopathic effect on chick embryo and mouse fibroblasts and a transplanted line of NER-2 cells. Vaccinia virus, adenovirus type 6, Coxsackie B₃, group A arbor viruses (Western equine encephalitis, Eastern equine encephalitis, Sindbis, Chikungunya fever virus, Semliki Forest) group B arborviruses (tickborne encephalitis, Sophian strain, Omsk hemorrhagic fever, West Nile, Saint Louis, Japanese

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UDC: 576.858.095:576.8.093.35:576.858.74

Table 1. Effect of *Mycoplasma* infection of tissue culture on the cytopathic action and hemagglutinating capacity of arborviruses and vaccinia virus

Viruses	Cytopathic effect (days)		Titer of hemagglutinins	
	Tissue cultures			
	Contaminated	Decontaminated	Contaminated	Decontaminated
Arborviruses				
Group A				
Western equine encephalitis—WEE	+(1)	+(2)	1:8—1:16	1:64—1:256
Eastern equine encephalitis—EEE	+(1)	+(2)	1:8—1:16	1:128
Sindbis	—	—	0	0
Chikungunya	+(1)	+(2)	0—1:2	1:16—1:128
Semliki Forest	+(1—2)	+(3)	0—1:2	1:128
Arborviruses				
Group B				

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Table 1. (Cont.)

Tickborne encephalitis	+(1—3)			
Omsk hemorrhagic fever	+(2)	+(2—4)	0—1:2	1:32—1:128
Western Nile	+(2)	+(4)	0	1:16—1:132
Saint Louis	+(2)	±(3)	0—1:2	1:32—1:164
Japanese encephalitis	+(2)	+(3)	0	0
Ntaya	—	—	0	1:8—1:32
Bun'yamvera	—	—	0	0
Vaccinia virus	+(3)	+(3)	0	0
			0—1:2	1:16—1:32

Symbols: + degeneration; ± weak or variable generation; — no generation

encephalitis, strain Ya 47, Ntaya) and Bun'yamvera viruses were inoculated on the tissue culture containing *Mycoplasma*, and on the same type of tissue culture not infected with *Mycoplasma* (tetracycline-treated). The effect of *Mycoplasma* on the viruses was determined by the cytopathic action, viral replication (by titer), and formation of hemagglutinins. The hemagglutination reaction with arborviruses was determined with a mixture of goose erythrocytes; the hemagglutination reaction with vaccinia virus was determined with chicken erythrocytes. Results are shown in the tables. The direct effect of *Mycoplasma* on

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Table 2. Effect of *Mycoplasma* infection of tissue culture on viral replication

Viruses	Titer (in log of tissue cytopathic dose ₅₀ /ml)		Appearance of cytopathic effect (days)		Intensity of cytopathic changes
	Tissue culture				
	Contami-nated	Decontami-nated	Contami-nated	Decontami-nated	
Adenovirus type 6	2.5	4.5	2	2	Intensity and time of appearance of cytopathic changes equal in both cultures
Vaccinia virus	4.5	4.5	2	2	The same
Coxsackie B ₃	6.0	6.0	2	2	In decontaminated culture, intensity of cytopathic changes appear 1 day later

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Table 2. (Cont.)

Tickborne encephalitis	6.0	6.0	1-2	2	In decontaminated culture, time of appearance or intensity of cytopathic changes appear 1 day later
Eastern equine encephalomyelitis (EEE)	6.75	6.75	1	2	In decontaminated culture, appearance and intensity of cytopathic changes appear 1 day later

on the virus can be illustrated by the inhibiting effect on the hemagglutinating properties of the viruses, independent of the effect of *Mycoplasma* on their cytopathic action and replication. This fact was established in almost all the viruses studied, although it was possible to note some selectivity. Thus, the cytopathic effect of vaccinia virus and the intensity of replication in contaminated and decontaminated tissue was approximately equal, while at the same time the hemagglutinating activity was different: in contaminated tissue culture it was

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ACC NR: AP8033941

0 or 1:2, in tissue culture free from *Mycoplasma* it was 1:16 or 1:32.
Orig. art. has: 2 tables and 1 figure. [WA-50; CBE No. 39] [XF]

SUB CODE: 06/ SUBM DATE: 20May67/ ORIG REF: 003/ OTH REF: 009

Card 6/6

ACC NR: AT8034080

SOURCE CODE: UR/0000/68/000/000/0049/0056

AUTHOR: Kaminir, L. B.; Babadzhanyan, D. P.; Khrust, Yu. R.

ORG: Biophysics Institute, AN SSSR (Institut biologicheskoy fiziki AN SSSR)

TITLE: Automatic analysis of microscopic objects based on their fluorescence

SOURCE: AN SSSR. Nauchnyy sovet po biofizike. Mashinnyy analiz mikroskopicheskikh ob'yektov (Machine analysis of microscopic objects) Moscow, Izd-vo "Nauka," 1968, 49-56

TOPIC TAGS: fluorescence microscopy, microbiology, medical equipment

ABSTRACT: The article discusses an automatic analysis of microscopic objects, consisting of: 1) automatic measurement of some parameters characteristic for the given object, 2) automatic counting of microscopic objects located in a specific section of a preparation, and 3) separation from the total number of various microscopic objects of those of the type required, and their differentiated counting. The various characteristics of fluorescence, whose presence and spectrum depend on the chemical composition of a microscopic object and its

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UDC: 578.088.5

ACC NR: AT8034080

functional state, are taken as the basic parameters in the automatic analysis of microscopic objects, i.e., their count, recognition, and chemical composition. It is shown that an analysis of fluorescent microscopic objects can be performed in the presence of their natural fluorescence in the visible region of the spectrum, in the presence of their natural fluorescence in the ultraviolet region of the spectrum, and when processing of the preparations is made by fluorescent dyes in the presence of a secondary fluorescence. Some possible directions of such an analysis are enumerated. Thus, by counting fluorescent cells in a preparation which contains both fluorescent and nonfluorescent cells, the number of cells belonging to a specific group can be determined. An example of this is the differentiated count of leukocytes in a blood preparation, containing the leukocytes, thrombocytes, and erythrocytes. By comparing different automatic analysis systems, it is concluded that 1) systems, based on fluorescence, will make it possible to expand the possibilities of automatic analysis, and 2) difficulties associated with very weak light fluxes, limit both the speed of the analysis and the minimum size of the fluorescent microscopic objects being examined. rig. art. has: 1 figure.

[WA-50; CBE No. 39][JR]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 009

Card 2/2

ACC NR: AP8033940

SOURCE CODE: UR/0402/68/000/005/0596/0599

AUTHOR: Karakuyumchan, M. K.; Bektemirova, M. S.

ORG: Moscow Scientific Research Institute of Virus Preparations
(Moskovskiy nauchno-issledovatel'skiy institut virusnykh preparatov)

TITLE: Formation and effect of interferon in experimental infection with fixed rabies virus

SOURCE: Voprosy virusologii, no. 5, 1968, 596-599

TOPIC TAGS: rabies, interferon, mouse, antiviral agent

ABSTRACT: A study of the interferogenic activity of fixed rabies virus in cultures of chick embryo fibroblasts and mouse L cells revealed interferon in titers of 1:2—1:4 only in the culture fluid of chick embryo fibroblasts within 24 hr after introduction of the virus. The amount of interferon did not increase on the following day. Interferon was not detected in L cell cultures. The ability of rabies virus to induce interferon was then studied in mice infected intracerebrally (100 LD₅₀/0.03 ml) or intramuscularly (100 LD₅₀/0.5 ml). Rabies virus and interferon titers in the brain and other organs were determined daily for 6 days. Results are shown in Table 1. Analogous results

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UDC: 616.988.21-095.383

Table 1. Interferon distribution in the organs of mice infected intracerebrally with rabies virus

Day of assay	Virus titer in brain (LD ₅₀)	Interferon titer			
		Brain	Liver	Kidney	Spleen
1	<10 ^{-1.0}	<1:20	<1:20	<1:20	<1:20
2	10 ^{-2.0}	1:40	1:20	<1:20	20
3	10 ^{-4.0}	1:320	40	80	20
4	10 ^{-5.0}	1:640	80	80	40
5	10 ^{-6.0}	1:1280	80	80	40
6	10 ^{-6.5}	1:2560	Undetermined		

Table 2. Effect of exogenous interferon on the development of infection in mice infected with rabies virus

Method of infection	Substance administered	Mortality in animals infected with rabies virus							Virus titer (LD ₅₀)
		10 ⁻¹	10 ⁻²	10 ⁻³	10 ⁻⁴	10 ⁻⁵	10 ⁻⁶	10 ⁻⁷	
Intra-cerebral	Interferon	10/10	10/10	10/10	10/10	10/10	2/10	0/10	10 ^{-5.65}
	Normal serum	10/10	10/10	10/10	10/10	10/10	1/10	0/10	10 ^{-5.55}
Intra-muscular	Interferon	10/10	0/10	0/10	0/10	10/10	—	—	10 ^{-1.55}
	Normal serum	10/10	10/10	0/10	0/10	0/10	—	—	10 ^{-3.44}

Note: numerator - no. of animals which died
 Card 2/3 denominator - no. of animals in experiment

were received following intramuscular injection of the virus; however, the virus and interferon titers reached their maximum 2 days later because of the longer incubation period. The effect of approximately 250 units of intracerebrally or intramuscularly administered exogenous interferon on the development of rabies in mice infected intracerebrally or intramuscularly was then studied. All animals except controls also received 0.5 ml of interferon intramuscularly for 3 days after the initial 250 units. Control animals were infected intracerebrally or intramuscularly with a mixture of virus and normal serum. Results are shown in Table 2. The development of the disease was inhibited by intramuscular injection of interferon; no inhibiting effect of interferon was demonstrated by intracerebral inoculation. The low sensitivity of brain tissue to interferon is probably due to its low production of antiviral protein-inducing interferon. Orig. art. has: 2 tables.

[WA-50; CBE No. 39] [XF]

SUB CODE: 06/ SUBM DATE: 29Dec67/ ORIG REF: 003/ OTH REF: 003

ACC NR: AP8033970

SOURCE CODE: UR/0016/68/000/010/0135/0138

AUTHOR: Karpukhin, G. I.; Slobodenyuk, V. K.; Slobodenyuk, A. V.

ORG: Sverdlovsk Institute of Virus Infections (Sverdlovskiy institut virusnykh infektsiy)

TITLE: Experimental basis for aerosol disinfection during virus diseases. Report 1. A method of quantitative determination of virus on surfaces contaminated by aerosol

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 10, 1968, 135-138

TOPIC TAGS: viral aerosol, aerosol chamber, biologic decontamination

ABSTRACT: Optimal conditions for the quantitative determination of a virus on environmental surfaces contaminated by aerosol were established using as models adenovirus type 3 (initial titer $10^{7.3}$ — $10^{7.5}$ TCD₅₀/ml), type 3 attenuated polio virus (initial titer $10^{7.0}$ — $10^{7.3}$ TCD₅₀/ml), and Coxsackie B virus, type 1 (initial titer $10^{6.0}$ — $10^{6.5}$ TCD₅₀/ml). The smallest dose of virus necessary for contamination and recovery from surfaces in titers not lower than $10^{3.0}$ TCD₅₀/ml was 3 ml of

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UDC: 616.988-084.48+576.858.07

ACC NR: AP8033970

atomized virus-containing fluid in a titer of $10^{7.0}$ — $10^{7.5}$ TCD₅₀/ml per 1 m³ of air. The optimal conditions for virus contamination of surfaces consisted of aerosol of virus-containing fluid with a particle diameter from 20—30 μ and a 10-min exposure after atomization. A surface dimension of 5 x 5 cm was the smallest from which virus could be recovered in sufficiently high titer with a minimum amount (1.5 ml) of washing fluid (medium 199). Tests were conducted in a model chamber 0.5 m³ in volume. Chamber temperature varied from 20—22°C, and relative humidity from 45—50%. Two types of atomizers were used: an atomizer of original design [Abstractor's note: no further description or designation given] delivering up to 80% of particles 1—2 μ in diameter, and an atomizer, delivering 75—80% of particles 20—30 μ in diameter. Tested surfaces included painted wood, linoleum, poly(vinyl)-chloride, and glass. Hep-2 cell cultures were used for quantitative determination of virus. Under identical experimental conditions (3 ml of virus-containing fluid per 1 m³ of air, 20—30 μ particles, 10 min exposure, 5 x 5 cm surface and 1.5 ml of medium 199) adenovirus titers on tested surfaces varied from $10^{3.5}$ to $10^{4.0}$, as compared with $10^{2.0}$ — $10^{3.5}$ TCD₅₀/ml for Coxsackie virus B 1. Orig. art. has: 2 tables. [WA-50; CBE No. 39][JS]

SUB CODE: 06/ SUBM DATE: 09Jan68/ ORIG REF: 003/ OTH REF: 001

Card 2/2

ACC NR: AP8034770

SOURCE CODE: UR/0346/68/000/010/0102/0105

AUTHOR: Khor'kov, I. A. (Aspirant)

ORG: All-Union Scientific Research Institute of Veterinary Sanitation
(Vsesoyuznyy nauchno-issledovatel'skiy institut veterinarnoy sanitarii)

TITLE: Aerosol disinfection of commercial installations of bioindustry concerns

SOURCE: Veterinariya, no. 10, 1968, 102-105

TOPIC TAGS: hoof and mouth disease, biologic decontamination

ABSTRACT: This article appears in General Section

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UDC: 619:616.988.43-054.484

ACC NR: AP8034758

SOURCE CODE: UR/0346/68/000/010/0016/0017

AUTHOR: Khristoyev, G. (Chief of veterinary section); Ovcharenko, P. (Director); Azbukin, S. (Head of serology section); D'yakov, V. (Chief veterinarian)

ORG: Belgorod Oblast Veterinary Laboratory (Belgorodskaya oblvetlaboratoriya)

TITLE: Brucellosis is vanquished

SOURCE: Veterinariya, no. 10, 1968, 16-17

TOPIC TAGS: brucellosis, animal disease therapeutics

ABSTRACT: In 1954 there were more than 150 locations in Belgorod Oblast which were unsafe with respect to brucellosis, while in the 1962--1967 period brucellosis was found on only three collective farms. Brucellosis isolation areas were eliminated as a principal source of infection, and all infected cattle were slaughtered from 1957 on. Serological studies were conducted at 15--30-day intervals. In eradicating brucellosis all animals reacting positively in the complement-fixation or agglutination tests or clinically ill (abortions, etc.) were slaughtered. Most animals with a doubtful reaction on the first test gave a positive reaction on

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ACC NR: AP8034758

the second test. Farm personnel wore special clothes and passed through disinfection barriers [not described] before leaving the farm or entering the animal shelters. Inoculation of cattle with strain 19 vaccine was not found to be effective, because of the confusion between post vaccinal and infectious responses to serologic tests. A mobile laboratory toured unsafe locations and conducted the complex serologic tests on the spot. Young animals from mothers with a positive serologic reaction should be isolated, fed, and slaughtered. Flocks containing more than half positively reacting animals should be gradually slaughtered.

[WA-50; CBE No. 39] [JS]

SUB CODE: 06/ SURM DATE: none

Card 2/2

ACC NR: AT8037226

SOURCE CODE: UR/3435/68/000/003/0083/0089

AUTHOR: Klimchuk, N. D. (L'vov)

ORG: none

TITLE: Use of laboratory cultures of lice for comparative study of the effect of some antibiotics on *Rickettsia prowazeki*

SOURCE: Dnepropetrovsk. Meditsinskiy institut. Antibiotiki, no. 3, 1968, 83-89

TOPIC TAGS: rickettsial disease, rickettsia, antibiotic, tetracycline

ABSTRACT: An *in vitro* study of the effect of synthomycin (chloramphenicol, racemic form), chlortetracycline, oxytetracycline, and tetracycline on a suspension of *Rickettsia prowazeki* obtained from the intestines of infected lice revealed that chlortetracycline and oxytetracycline were twice as effective as tetracycline and 10 times more effective than synthomycin and levomycetin. The effect is dependent on the duration of contact of the antibiotic with *R. prowazeki*. The temperature (+37° or +4°) at which *R. prowazeki* and the antibiotic mixture were maintained had no significant effect. A study of the effect of the above antibiotics in concentrations of 1.0—0.01 mg/ml on *R. prowazeki* developing in the

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UDC: 616.981.71

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ACC NR: AT8037226

epithelial cells of the intestines of infected lice showed that chlor-tetracycline and oxytetracycline were 20—40 times more effective than synthomycin and levomycetin and twice as effective as tetracycline.
[WA-50; CBE No. 39] [XF]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 008/ OTH REF: 005

Card 2/2

ACC NR: AP8037045

SOURCE CODE: UR/0240/68/000/011/0031/0034

AUTHOR: Kolomiytseva, M. G.; Voznesenskaya, F. M.

ORG: Department of Hygiene, Leningrad Pediatric Medical Institute
(Kafedra gigeny Leningradskogo pediatricheskogo meditsinskogo instituta)

TITLE: Effect of experimental diets of copper and manganese on the immunobiological reactivity

SOURCE: Gigiyena i sanitariya, no. 11, 1968, 31-34

TOPIC TAGS: copper, manganese, nutrition, natural immunity, phagocytosis

ABSTRACT: Albino mice weighing 17—20 g were divided into 4 groups and fed an artificial ration for 8 weeks as follows: group I control mice received a diet containing a copper and manganese salt mixture calculated in mg/100 g of body wt; group II received the same diet without manganese; group III received the diet without copper; and group IV received the same diet without copper or manganese. Immunobiological reactivity was evaluated by determination of the phagocyte activity, the lysozyme titer, and the bactericidal activity of the blood serum. Body weight and organ weight (liver and spleen) were compared at the beginning and end of the experiment. There was a significant increase in body weight in group II

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UDC: 613.27:[546.56+546.711]:612.017.1

ACC NR: AP8037045

animals, and a less pronounced increase in group IV animals. The relative weight of the liver was higher in group II mice, and lower in group IV animals. A decrease in the content of copper and manganese in the diet was accompanied by a decrease in the relative weight of the spleen. Phagocyte activity, determined after administration of a nonpathogenic strain of *Staphylococcus albus* into the peritoneal cavity of the animals was found to vary in response to differences in the content of copper and manganese in the diet. The lysozyme titer was highest in group I mice and lowest in group III animals. This was determined by adding a 24-hr culture of *Micrococcus* to diluted blood serum from each animal and incubating for 3 hr at 37°. Bactericidal activity of the blood serum was determined by adding a 24-hr culture of *Escherichia coli* to diluted sera and incubating for 4 hr at 37°. The lowest bactericidal index was found in group III mice (0.36); the highest index was in group I animals (1.33). It was concluded that the immunobiological reactivity of the body depends to some extent on the concentration and ratio of the different trace elements in the diet. Copper and manganese deficiencies in the diet of animals led to decreased phagocyte activity of the leukocytes, decreased lysozyme titer, and bactericidal activity in the blood serum. Orig. art. has: 2 tables. [WA-50; CBE No. 39] [XF]

SUB CODE: 06/ SUBM DATE: 09Oct68/ ORIG REF: 001

Card 2/2

ACC NR: AP8034057

SOURCE CODE: UR/0325/68/000/009/0022/0029

AUTHOR: Komarova, L. V.; Dubrovskiy, Yu. A.

ORG: none

TITLE: Seasonal variation in the external appearance of great gerbil burrows in different regions

SOURCE: Nauchnyye doklady vyshey shkoly. Biologicheskiye nauki, no. 9, 1968, 22-29

TOPIC TAGS: animal vector research, epidemiologic focus

ABSTRACT: The external appearance of great gerbil burrows changes with seasonal changes in the life of the rodent. These changes can be used to estimate natural foci of human disease such as plague and cutaneous leishmaniasis. In different natural areas of the sand and desert region, the burrow-building activity of animals depends on the environment (favorable or unfavorable to gerbils). The degree of activity can be estimated by the amount of fresh dirt thrown up around burrow entrances. Under ideal conditions, gerbil activity is chiefly directed toward extending the underground structure in the center of the burrow.

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UDC: 599.323.4:591.521

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ACC NR: AP8034057

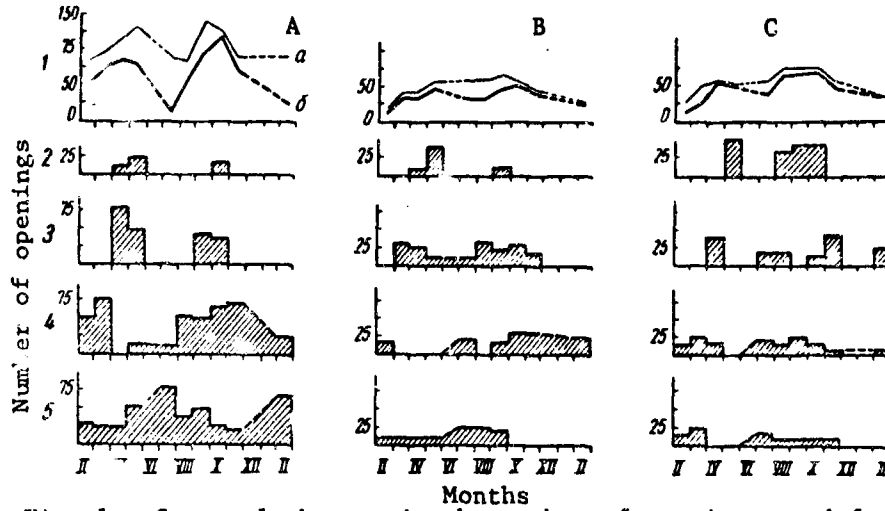


Fig. 1. Seasonal changes in the number of openings used for different purposes in great gerbil burrows. A - Terrain covered with black saksaul, B - terrain covered with white saksaul, C - semiconsolidated sands

1 - Number of openings in burrow (a) and the number of usable openings (b); 2 - number of openings with high dirt piles around the burrow; 3 - the same with low dirt piles; 4 - the same without dirt piles, but with fresh gerbil tracks; 5 - number of openings without fresh gerbil tracks

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ACC NR: AP8034057

Under less favorable conditions, intense digging activity in the surface passages is observed throughout the burrow. These differences over many gerbil generations lead to a group of external signs which indicate the favorability of the burrow for gerbil life. Seasonal changes in the external appearance of burrows are shown in Figure 1. Orig. art. has: 2 figures. [WA-50; CBE No. 39][JS]

SUB CODE: 06/ SUBM DATE: 27Mar68/ ORIG REF: 008

Card 3/3

ACC NR: AT8034078

SOURCE CODE: UR/0000/68/000/000/0043/0047

AUTHOR: Kozlov, B. L.; Kuniskiy, A. S.

ORG: Biophysics Institute, AN SSSR (Institut biologicheskoy fiziki AN SSSR)

TITLE: Measuring some parameters of micro-objects

SOURCE: AN SSSR. Nauchnyy sovet po biofizike. Mashinnyy analiz mikroskopicheskikh ob'yektov (Machine analysis of microscopic objects), Moscow, Izd-vo "Nauka," 1968, 43-47

TOPIC TAGS: biotechnology, medical equipment, biophysics

ABSTRACT: Some problems dealing with the quantitative evaluation of the optical density and linear dimensions of microscopic objects are discussed. It is indicated that a selective absorption, by organic compounds, of the spectral components of UV radiation makes photometric studies in the monochromatic ultraviolet very promising. A TV microscope system, the TM-1, has been developed for this purpose. It is said to be very suitable for investigating preparations in the monochromatic ultraviolet because of a built-in monochromator adjustable to a wide range of wavelengths. Since it is often necessary to study not the

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UDC: 578.087.1

ACC NR: AT8034078

statistically averaged data on a great number of specific cell material, but the individual characteristics of any of the selected cells, the problem has arisen of an exact identification of individual sections of an image and the corresponding points on the absorption distribution curve. A system, intended to operate in conjunction with the TM-1 TV microscope, has been designed for such measurements. In this system, the amplitude is measured by comparing the instantaneous values of a videosignal with stabilized control voltage. In addition to absorption, the system makes it possible to determine linear dimensions of details on the image. The measuring accuracy for absorption is of the order of 7%, and for linear dimensions, 5%. Orig. art. has: 1 figure.
[WA-50; CBE No. 39][JN]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

- 188 -

AUTHOR: Krashennnikov, O. A.

ORG: First Moscow Medical Institute im. I. M. Sechenov (I Moskovskiy meditsinskiy institut)

TITLE: Features of the geographic distribution of *Shigella*. Report 2. Changes in the etiological structure of dysentery in the Soviet Union from 1950—1965

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 9, 1968, 93-101

TOPIC TAGS: shigella, human ailment, dysentery, medical geography

ABSTRACT: Epidemiological features of dysentery in various parts of the Soviet Union are shown in Figure 1 and Table 1.

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UDC: 616.935-02-078:576.851.49.01

ACC NR: AP8033599

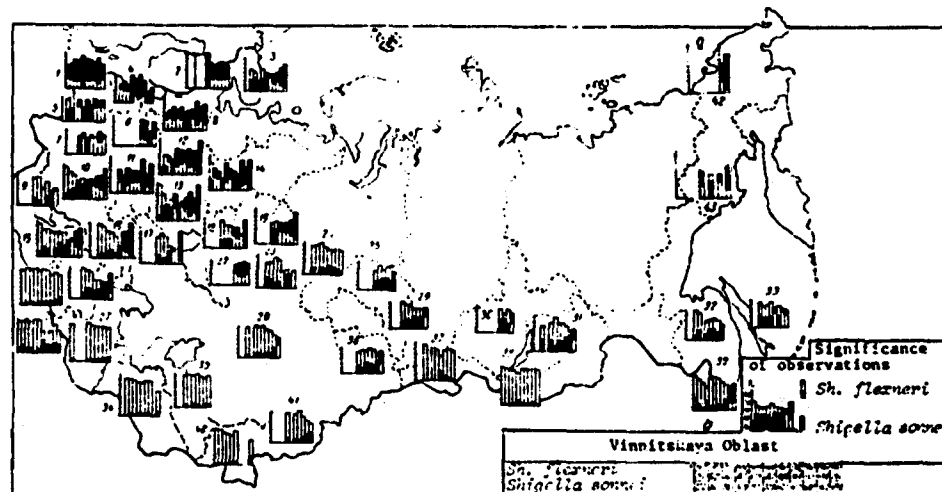


Figure 1. Proportion of *Sh. flexneri* and *Sh. sonnei* in the Soviet Union from 1955—1965 (2 of total no. of cultures)

1 - Latvian SSR; 2 - Karelian ASSR; 3 - Murmansk Oblast; 4 - Estonian SSR; 5 - Lithuanian SSR; 6 - Novgorod Oblast; 7 - Belorussian SSR; 8 - Leningrad Oblast; 9 - Moldavian SSR; 10 - Ukrainian SSP; 11 - Moscow Oblast; 12 - Yaroslavl Oblast; 13 - Gorkiy Oblast; 14 - Kostromskaya Oblast; 15 - Krasnodarsk Krai; 16 - Volgograd Oblast; 17 - Saratov Oblast; 18 - Tatar ASSR; 19 - Sverdlovsk Oblast; 20 - Georgian SSR; 21 - Stavropol Krai; 22 - Chelyabinsk Oblast; 23 - Kurgan Oblast; 24 - Tyumen Oblast; 25 - Tomsk Oblast; 26 - Armenian SSR; 27 - Azerbaidzhan SSR; 28 - Kazakh SSR; 29 - Kemerovo Oblast; 30 - Irkutsk Oblast; 31 - Chita Oblast; 32 - Khabarovsk Krai; 33 - Sakhalin SSR; 34 - Turkmen SSR; 35 - Uzbek SSR; 36 - Altay Krai; 37 - Tuvin Autonomous Oblast; 38 - Transbaikali; 39 - Primorskiy Krai; 40 - Tadzhik SSR; 41 - Kirgiz SSR; 42 - Chukhotsk national region; 43 - Magadan Oblast

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Table 1. Proportion of *Shigella* types isolated in the Soviet Union between 1951—1955

Yr	Territory	<i>Shigella</i> species in %					
		Sh. grigoriewa-shigae	Sh. stutzeri-shmitzii	Sh. flexneri	Sh. sonnei	Sh. newcastle	Others
1951	Arkhangel'sk	—	—	100,0	—	—	—
1952		—	—	82,0	—	18,0	—
1953		—	—	67,0	16,0	17,0	—
1954		—	—	74,4	15,2	10,4	—
1955		—	—	84,0	7,3	8,7	—
1951	Leningrad	—	0,6	39,6	58,8	0,5	0,2
1952		0,1	0,5	37,9	56,0	4,5	0,6
1953		—	0,4	24,4	61,0	12,5	1,1
1954		—	0,2	32,5	52,6	13,6	1,0
1955		—	0,4	38,6	43,3	15,7	1,7
1956	Lithuanian SSR	—	—	55,1	27,1	7,6	3,0

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Table 1. (Cont.)

1951	Yaroslavl	—	—	—	—	—	—
1952		0,3	0,1	41,1	58,6	—	—
1953		0,5	—	70,5	20,8	—	8,2
1954		0,04	0,09	46,1	46,6	—	7,3
1955		—	—	74,7	17,1	—	8,2
1956	—	—	76,5	15,3	—	5,2	
1953	Syktyvkar	—	0,08	66,2	7,1	22,9	—
1954		—	0,8	55,8	13,3	28,3	—
1955		—	—	63,0	16,0	10,6	—
1956		—	—	63,6	21,0	9,7	—
1957		—	—	48,7	18,4	21,6	—
1958		—	1,3	69,5	10,2	5,8	—
1959		—	0,5	22,2	63,4	7,0	—
1960	—	0,5	48,7	45,8	4,6	—	
1951	Gorky	—	2,0	54,0	44,0	—	—
1952		—	0,3	63,6	36,1	—	—
1953		—	0,7	84,9	14,4	—	—
1954		—	0,3	88,9	10,8	—	—
1955		—	1,0	89,8	9,2	—	—
1953	Ryazan'	—	0,6	84,1	10,6	—	—
1953	Kuybyshev	—	—	90,5	9,5	—	—
1954		—	—	86,7	13,3	—	—
1955		—	—	95,0	5,0	—	—
1956		—	—	83,5	7,7	6,6	—

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Table 1. (Cont.)

1953	Astrakhan'	0,6	—	88,0	5—11 10,9	0,5	—
1954		—	0,5	91,3	3,6	2,6	1,7
1960							
1951— 1952 1953	Omsk	—	—	100,0	—	—	—
		—	—	92,9	2,8	4,3	—
1951 1952 1953 1954 1955 1956	Chita	—	—	96,9	3,1	—	—
		—	1,1	96,3	2,6	—	—
		—	0,3	97,3	2,4	—	—
		—	—	99,0	1,0	—	—
		—	2,3	92,5	5,2	—	—
		—	2,3	88,1	9,6	—	—
1951 1952 1953 1954 1955	Transbaikal	—	1,2	94,5	4,1	—	0,2
		—	1,5	92,5	4,5	—	1,5
		—	0,5	94,5	0,5	—	4,5
		—	—	91,3	0,5	—	8,2
		—	1,0	96,0	2,0	—	1,0
1951	Khabarovsk	—	—	93,3	—	—	6,7

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Table 1. (Cont.)

1951 1952 1952 1956	Vladivostok	—	—	84,0	14,9	—	1,1
		—	—	81,0	18,3	0,6	0,1
		—	—	73,8	25,6	0,6	—
		—	—	71,9	23,0	5,1	—
1951 1952 1953 1954 1955	Southern Sakhalin	—	0,15	99,1	0,75	—	—
		—	0,4	95,4	0,9	0,7	1,6
		—	—	73,9	0,8	20,6	4,7
		—	—	79,1	4,2	15,9	0,8
		—	0,7	85,9	1,6	10,9	0,9
1951 1952 1953 1954 1955	Ukrainian SSR in general	0,8	0,3	76,7	16,8	1,2	—
		0,4	0,3	79,6	14,8	1,9	—
		0,2	0,2	82,7	7,5	5,1	—
		0,01	—	76,5	18,3	3,0	—
		0,1	—	83,7	10,0	2,5	—
1951	Kishenev	—	0,8	95,0	4,2	—	—
1952	Odessa	0,08	0,6	79,2	18,2	—	1,82

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ACC NR: AP8033599

Table 1. (Cont.)

1952	Stavropol'	—	—	95,3	3,4	1,3	—
1951— 1952	Dagestan ASSR	—	—	96,3	3,4	0,3	—
1955	Azerbaydzhan SSR (rural part)	—	2,4	63,2	3,7	30,7	—
1955	Tbilisi	Ex. ca.	6,0	84,9	4,1	4,8	—
1962	Tbilisi	0,1	1,5	90,0	7,6	—	—
1953	Armenia	—	—	86,6	—	—	13,4
1955 1956 1957 1958	Yerevan	4,4 0,6 1,3 3,05	1,9 2,0 1,4 3,05	79,9 78,6 84,0 78,7	13,8 18,1 10,7 13,3	— 0,4 0,9 0,3	— 0,3 1,7 1,4

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ACC NR: AP8033599

Table 1. (Cont.)

1951	Alma-Ata	—	0,3	80,2	3,4	—	16,1
1953 1954 1955	Frunze	— — —	— — —	89,8 97,3 35,0	9,4 2,7 5,0	0,8 — —	— — —
1951	Karaganda	0,2	0,9	95,0	1,4	—	2,5
1952	Tashkent	0,04	—	87,7	5,5	—	—
1953 1954 1955 1956 1957 1958	Ashkhabad	0,4 — — 0,2 1,3 0,2	— — — 0,4 2,8 4,9	98,7 99,8 99,4 95,9 67,9 72,6	0,8 0,2 0,2 0,9 10,9 5,3	0,1 — 0,2 1,3 14,9 4,7	— — 0,2 1,3 2,2 12,3
1951 1953 1951— 1952	Turkmen SSR	1,2 1,7 —	— 5,2 —	76,8 67,1 70,2	4,3 6,3 9,3	— 6,3 17,5	— 12,8 3,0

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ACC NR: AP8033599

Table 1. (Cont.)

1952		-	0.4	94.5	4.4	0.7	-
1954	Dushanbe	-	2.2	88.8	4.3	4.7	-
1955		-	2.5	90.7	4.9	4.9	-
1956	Tadzhik SSR	35.0	16.0	25.0	16.0	5.0	3.0

Orig. art. has: 1 figure and 5 tables. [WA-50; CBE No. 39][LP]

SUB CODE: 06/ SUBM DATE: 08Dec67/ ORIG REF: 063

Card 9/9

ACC NR: AP8033958

SOURCE CODE: UR/0016/68/000/010/0051/0056

AUTHOR: Kudelina, R. I.; Fedorova, N. I.

ORG: Institute of Epidemiology and Microbiology im. Gamaleya AMN SSSR, Moscow (Institut epidemiologii i mikrobiologii AMN SSSR)

TITLE: Protective properties of sera during Q-fever

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no.10, 1968, 51-56

TOPIC TAGS: Q-fever, blood serum

ABSTRACT: The protective effect of the sera of guinea pigs and rabbits convalescing from Q fever was demonstrated in serum-protection tests. Early sera, containing antibodies only to phase I antigen, had a weak protective effect. This protective effect was expressed in guinea pigs in a slight drop in temperature reactions caused by both *Rickettsia burneti* phase I and phase II. Late sera, containing antibodies to both phase I and phase II antigens, had a pronounced protective effect with respect to phase I rickettsia and a partial protective effect with respect to phase II rickettsia. Phase I antigens consisted of white mouse spleen (15 passages), and phase II antigens of chick embryo

UDC: 616.981.718-07:616.

15-097.5+576.851.71.097.5

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ACC NR: AP8033958

yolk sacs (50 passages). Serum containing antibody to phase II antigen in a titer of 1:1280 and serum taken on the 20th day after infection was used as early serum. Late serum contained antigens to both phase I and phase II antigens in titers of 1:1280, and was taken on the 60th day after infection. Orig. art. has: 1 table and 2 figures.

[WA-50; CBE No. 39][JS]

SUB CODE: 06/ SUBM DATE: 29Dec67/ ORIG REF: 005/ OTH REF: 008

Card 2/2

ACC NR: AT9000531

SOURCE CODE: UR/3436/67/049/000/0386/ 392

AUTHOR: Kvirikadze, V. V. (Head, Candidate of medical sciences)

ORG: Immunological Laboratory/Head—Candidate of medical sciences V. V. Kvirikadze/, Moscow Scientific Research Institute of Psychiatry (Immunologicheskaya laboratoriya Moskovskogo nauchno-issledovatel'skogo instituta psikhiiatrii)

TITLE: Effect of aminazin, stelazine and reserpine on the activity of artificial antitoxic immunity

SOURCE: Moscow. Nauchno-issledovatel'skiy institut psikhiiatrii. Trudy, v. 49, 1967. Voprosy psikhofarmakologii (Problems in psychopharmacology), 386-392

TOPIC TAGS: chlorpromazine, psychopharmacology, tetanus, antibody formation

ABSTRACT: Chinchilla rabbits were immunized with tetanic toxoid (0.5 and 1.0 ml) administered subcutaneously at 20-day intervals. Sixty days after the second immunization, a third dose of toxoid (1 ml) was administered. On the day before immunization and during the whole immunization period, the animals received 20, 10, and 5 mg/kg of aminazin; or 1.0, 0.5, and 0.3 mg/kg of stelazine; or 0.075, 0.05, and 0.03 mg/kg of

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ACC NR: AT9000531

reserpine. The antitoxic titer of immune sera was determined on day 20 after the first immunization; on days 10, 20, 40, and 60 after the second immunization; and on days 10, 20, 40, 60, 80, 100, 120, and 140 after the third immunization. Avidity of the antitoxic sera and the antitoxin titer were determined simultaneously by administration of a mixture of the serum and toxin to mice. The antibody titer in rabbits receiving 20 and 10 mg/kg of aminazin was significantly higher than in control animals which had received only tetanus toxoid. There was no difference in avidity of the immune sera in animals receiving 20, 10, and 5 mg/kg of aminazin. The antibody titer in rabbits receiving reserpine was significantly lower than in control animals; the lowest titer was noted in animals receiving the largest dose (0.075 mg/kg), which attests to the negative effect of large doses of reserpine in immunogenesis. Avidity of the immune sera in animals receiving reserpine was lower than in animals immunized without reserpine. The antibody titer in animals receiving 1 mg/kg of stelazine was significantly lower than in control animals; however, the avidity of the immune sera in this group and in control animals was good. Antibody titer in animals receiving 0.5 mg/kg of stelazine was significantly higher than in control animals, and was almost equal to the titer in animals receiving 20 mg/kg of reserpine; however, the avidity of the immune sera was weak. In order to determine the relationship of the resistance of immunized animals receiving

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ACC NR: AT9000531

different doses of the drugs to avidity of the immune sera, white mice were repeatedly immunized with tetanus toxoid. Mice receiving 20 and 10 mg/kg of aminazin and 0.5 mg/kg of stelazine were most resistant to tetanus intoxication, while animals receiving 0.075 and 0.05 mg/kg of reserpine and 1 mg/kg of stelazine were most sensitive to tetanus intoxication. Results of this study attest to the effective use of psychotropic drugs, especially phenothiazines, in tetanus. The effective use of these drugs is believed due to stimulation of tetanus antibodies and increased resistance of the animals to tetanus intoxication. Orig. art. has: 2 tables and 3 figures.

[WA-50; CBE No. 39] [XF]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 014/ OTH REF: 003

Card 3/3

ACC NR: AP8033584

SOURCE CODE: UR/0016/68/000/009/0003/0009

AUTHOR: Lebedeva, M. N.

ORG: none

TITLE: Multiple drug resistance in microorganisms

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 9, 1968, 3-9

TOPIC TAGS: drug resistance, microorganism, penicillinase, DNA, microbial genetics

ABSTRACT: The sensitivity of a microorganism to the initial action of the chemotherapeutic agent determines the likelihood of its fixation within the microorganism and its subsequent effects. The resistance (absence or sensitivity) to a drug on the part of the microorganism can have several origins, such as inherent resistance, either naturally occurring or as a result of exposure to the drug for generations; the presence or absence of specific enzymes which neutralize the drug; structure type of the organism under attack; and other factors. Most antibiotic resistance lies in the lack of contact between the organism and the antibiotic (the formation of protective capsules in some

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UDC: 576.8.097.22

ACC NR: AP8033584

species, for example). Resistant strains often have other features besides their resistance to guide the investigator in strain selection without growth tests or bioassay. Other means of induction of polyresistance include transformation, transduction, and conjugation, which have been thoroughly investigated in *E. coli* (the "fertility factor"). Recently, the existence of a specific, heritable resistance factor has been demonstrated; it is called the resistance transfer factor (RTF). Results of many studies have shown that the transmission of multiple resistance occurs through microbial conjugation. The RTF is passed on in transduction in many organisms including *S. typhimurium*. [WA-50; CBE No. 39][LP]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AT9003200

SOURCE CODE: UR/3445/68/000/004/0103/0107

AUTHOR: Levchuk, G. A.; Bogdanovich, V. S.; Shevkoplyas, N. P.

ORG: Kiev Scientific Research Institute of Pharmacology and Toxicology
(Kiyevskiy nauchno-issledovatel'skiy institut farmakologii i toksikologii)

TITLE: Effect of cholinesterase reactivators on some indices of the
oxygen metabolism of the organism

SOURCE: Kiyev. Nauchno-issledovatel'skiy institut farmakologii i
toksikologii. Farmakologiya i toksikologiya, no. 4, 1968, 103-107

TOPIC TAGS: cholinesterase, oxygen metabolism, cholinesterase reactivator,
organic oxime compound

ABSTRACT: This article appears in Chemical Factors

Card 1/1

UDC: 615-092.259

ACC NR: AT9003198

SOURCE CODE: UR/3445/68/000/004/0092/0094

AUTHOR: Levchuk, G. A.; Maksimov, Yu. N.; Arkad'yev, V. G.

ORG: Kiev Scientific Research Institute of Pharmacology and Toxicology
(Kiyevskiy nauchno-issledovatel'skiy institut farmakologii i toksikologii)

TITLE: Effect of TMB-4 [Dipiroksim] on some indices of organism
reactivity

SOURCE: Kiyev, Nauchno-issledovatel'skiy institut farmakologii i
toksikologii. Farmakologiya i toksikologiya, no. 4, 1968, 92-94

TOPIC TAGS: cholinesterase, cholinesterase reactivator, cholinesterase
inhibitor, phagocytosis

ABSTRACT: This article appears in Chemical Factors

Card 1/1

UDC: 615-092.259
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ACC NR: AT8035457

SOURCE CODE: UR/3406/67/000/058/0121/0124

AUTHOR: Lugovoy, A. Ye. (Candidate of biological sciences)

ORG: none

TITLE: Some data on the species composition and population figures for small mammals in the Sabayevskiy Prisure'ya

SOURCE: Saransk. Mordovskiy gosudarstvennyy universitet. Uchenyye zapiski, no. 58, 1967. Seriya veterinarnykh i meditsinskikh nauk (Series of veterinary and medical sciences), 121-124

TOPIC TAGS: population ecology, zoogeography, mammal, epizootiology

ABSTRACT: Results of mammal trapping in the Mordovian ASSR are summarized in Table 1. In all, 2500 animals were caught, of which

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ACC NR: AT8035457

Table 1. Results of rodent and insectivora catches at sites in the Sura River valley in 1964 and 1965

Species	June, 1964		June, 1965		September 1965	
	No. of pelts/100 l/n	% of total animals caught	No. of pelts/100 l/n	% of total animals caught	No. of pelts/100 l/n	% of total animals caught
Common squirrel	1.2	11.3	0.2	5.0	1.4	12.5
European water shrew	—	—	—	—	0.4	3.6
Forest dormouse	—	—	0.2	5.0	0.4	3.6
Field mouse	3.3	30.6	0.4	10.0	0.8	7.1
Forest mouse	2.2	21.1	1.6	40.0	2.8	25.0
Yellow-throated field mouse	1.4	13.2	—	—	0.2	1.8
Common redbacked vole	1.8	17.2	1.6	40.0	5.2	46.4
Field vole	0.6	5.6	—	—	—	—
Total	10.5	100	40	100	12.0	100

234 caught in a small area were considered for this study. Orig. art. has: 1 table. [WA-50; CBE No. 39] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 004

Card 2/2

ACC NR: AT8037233

SOURCE CODE: UR/3435/68/000/003/0121/0125

AUTHOR: Lukovskaya, V. L. (Dnepropetrovsk)

ORG: none

TITLE: The effect of bacteria producing hydrogen peroxide on strict anaerobes

SOURCE: Dnepropetrovsk. Meditsinskiy institut. Antibiotiki, no. 3, 1968, 121-125

TOPIC TAGS: clostridium, bacteriology, hydrogen peroxide, food sanitation

ABSTRACT: Results are reported on a study of the protective effect of H₂O₂-producing bacteria against strict anaerobic microorganisms *Clostridium perfringens*, *Cl. paraputrificum*, and *Cl. sporogenes*. The interaction of these microbes was studied on meat-peptone bouillon and meat-peptone agar. Microorganisms producing H₂O₂ were cultivated for 24 hr at 37° in anaerobic conditions. However, some of the growing cultures were placed in strict anaerobic conditions for 72 hr. The anaerobic microorganisms were cultivated for 24 hr at 37° on the agar medium adjacent to the already-growing H₂O₂-producing microorganisms. Inhibition of the growth of the strict anaerobes and the test microorganism, *Vibrio metchnikowi*,

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UDC: 615.779.925

ACC NR: AT8037233

depended on the amount of H₂O₂ liberated into the nutrient medium by the different strains. It was noted that when weak H₂O₂-producing strains were grown in anaerobic conditions, they tended to produce large amounts of H₂O₂, and increased the zone of inhibition of growth of anaerobic microorganisms or *Vibrio metchnikowi*. The possibility of utilizing these bacteria in the dairy industry to control the growth of anaerobic microorganisms, especially *Cl. perfringens*, was discussed. Orig. art. has: 2 tables. [WA-50; CBE No. 39] [XF]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 003

Card 2/2

ACC NR: AT8037234

SOURCE CODE: UR/3435/68/000/003/0126/0131

AUTHOR: Lukovskaya, V. L. (Dnepropetrovsk)

ORG: none

TITLE: On the ability of strict anaerobes to inactivate hydrogen peroxide

SOURCE: Dnepropetrovsk. Meditsinskiy institut. Antibiotiki, no. 3, 1968, 126-131

TOPIC TAGS: clostridium, hydrogen peroxide, bacterial aerosol, bacteriostasis

ABSTRACT: *Clostridium perfringens*, *Cl. paraputrificum*, and *Cl. sporogenes*, obtained from a 24-hr culture containing 1 billion microbes/ml, were cultured on agar adjacent to mycococci producing high and low concentrations of H₂O₂, and incubated for 24 hr at 37° in anaerobic conditions. Cultures were then sprayed with an aerosol containing the aerobic microbe, *Vibrio metchnikowi*, [sic] and incubated for 24 hr in aerobic conditions. The dimensions of the zones of inhibition of growth of all anaerobes and *V. metchnikowi* varied from 39 to 90 mm in diameter when the microbes were cultivated in the presence of mycococci producing

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UDC: 615.779.925

ACC NR: AT8037234

high concentrations of H₂O₂, although far greater numbers of anaerobes (1 billion/ml) than of *V. metchnikowi* were cultivated. No zones of H₂O₂ inactivation by the anaerobes were noted. Zones of growth inhibition of anaerobes varied from 0 to 9 mm, while inhibition zones of *V. metchnikowi* varied from 8 to 35 mm when they were cultivated in the presence of mycococci producing low concentrations of H₂O₂. The small zones of growth inhibition of obligate anaerobes when large numbers are cultivated are due to the presence of a substance with catalase activity in a large number of the cells. The small amount of catalase-like substance in the cells develops its ability to inactivate H₂O₂ only when there is a significant increase in the number of these cells. The data obtained from these experiments indicate that the sensitivity of obligate anaerobes to the antibacterial effect of H₂O₂ is dependent upon the number of anaerobes cultivated. Orig. art. has: 5 tables.

[WA-50; CBE No. 39] [XF]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 004/ OTH REF: 001

Card 2/2

ACC NR: AP8034759

SOURCE CODE: UR/0346/68/000/010/0018/0018

AUTHOR: Luzhenetskiy, A. L. (Senior veterinarian)

ORG: Kolkhoz im. K. Libknekht, Odessa Oblast (Kolkhoz, Odesskoy oblasti)

TITLE: Methods and results of antibrucellosis measures on collective farms

SOURCE: Veterinariya, no. 10, 1968, 18

TOPIC TAGS: brucellosis, animal disease therapeutics

ABSTRACT: A typical outbreak of cattle brucellosis on a collective farm is described from the initial failure to observe the 30-day quarantine of newly-purchased animals which led to the outbreak. Cows were purchased in 1960, and the first serologically confirmed abortion of brucellosis etiology occurred in 1961. By late 1961, 89 out of 594 adult and young cattle gave positive serological reactions. The following summer all positively reacting animals were slaughtered. All 5-month-old calves were vaccinated with strain 19 and subsequently revaccinated. Vaccination was stopped in 1964. Periodic checks for the

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ACC NR: AP8034759

brucellosis carrier state among formerly immunized animals were made. The collective farm now contains 548 cattle, including 100 unvaccinated animals. In the period from 1967 to mid-1968, 293 cows calved without any abortions of brucellosis etiology. This example illustrates the importance of strict adherence to the antibrucellosis program.

[WA-50; CBE No. 39][JS]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: A18033130

SOURCE CODE: UR/3289/67/046/000/0154/0161

AUTHOR: Lysikov, V. N. (Candidate of agricultural science); Orinshteyn, Z. A.

ORG: none

TITLE: Study of mutagenic factors on change in resistance of corn to smut

SOURCE: Kishinev. Sel'skokhozyaystvennyy institut. Trudy, no. 46, 1967. Biofizika, vypusk 3 (Biophysics, third edition), 154-161

TOPIC TAGS: plant disease, plant fungus, agriculture crop, corn, plant genetics

ABSTRACT: The effects of gamma-rays, chemical mutagens, and both agents on resistance of corn to smut were determined. Twenty-four hours before planting, seeds were treated with 0.05% ethylene imine, 0.2% diethylsulfate, 0.2% dimethylsulfate, 1,4-bisdiazoacetylbutane (0.1%), 0.0066% nitrosoethylurea, 0.01% urethane, 0.01% 5-bromouracil, 0.01% adenine, and 0.1% hydroxylamine for 15-20 min. Control seeds were soaked in water. Another batch of seeds were irradiated with gamma-rays in the following doses: 5000, 10,000, 12,000, 15,000, and

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ACC NR: AT8033130

20,000 r. Control seeds were unirradiated. Combined treatment was given to several batches of seeds as follows: ethyleneimine-0.05% + 3,000 r; diethylsulfate-0.2% + 3,000 r; dimethylsulfate-0.2% + 3,000 r; 1,4-bisdiazoacetylbutane-0.1% + 3,000 r; nitrosoethylurea-0.0066% + 3,000 r; nitrosomethylurea-0.01% + 3,000 r; urethane-0.1% + 3,000 r; 5-bromouracil-0.01% + 3,000 r; adenine-0.01% + 3,000 r, and hydroxylamine-0.1% + 3,000 r. All batches were soaked in mutagen solution for 24 hr and then irradiated. The seeds were then planted and the developing plants carefully observed before and after infection with smut. The control plants were generally nonimmune, but varying degrees of immunity to smut were found in treated corn plants and their progeny. No plants were completely immune; however, of 271 plants raised from treated seeds, 15% were highly resistant to smut, 16-30% had average resistance, and 31-50% were weakly resistant. Nevertheless, in general, about 50-90% of plants were either susceptible or highly susceptible to smut. Only the nitrosoethylurea-treated seeds produced significant numbers of highly resistant or resistant plants, and the combination of this compound with irradiation was the most effective of all at producing resistance to smut. Of the radiation treatments, the most resistant plants came from seeds treated with 10,000-12,000 r. Orig. art. has: 6 tables. [WA-50; CBE No. 39][LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 006

Card 2/2

AUTHOR: Machinskiy, A. P. (Docent)

ORG: none

TITLE: Effect of physical factors on oocysts in coccidiosis of chickens

SOURCE: Saransk. Mordovskiy gosudarstvennyy universitet. Uchenyye zapiski, no. 58, 1967. Seriya veterinarnykh i meditsinskikh nauk (Series of veterinary and medical sciences), 107-119

TOPIC TAGS: animal disease, coccidiosis

ABSTRACT: Immature oocysts of *E. tenella* are extremely resistant to environmental factors. The end result of any given factor depends on the length of time the oocysts are subjected to it as well as the presence or absence of other contributing factors. Immature oocysts are more resistant than mature ones to environmental factors, (except for ultraviolet light). High temperatures and drying or a combination of the two are the most lethal to oocysts. Experiments were designed to resolve discrepancies between standard values and ones recently reported

Card 1/4

ACC NR: AT8035456

Table 1. Effect of high temperatures on the viability of immature oocysts of *E. tenella* (based on the literature data)

Temperature	Exposure	% kill	Temperature	Exposure	% kill
45°	24 hr	100,0	55°	10 min	100,0
	2 hr	14,4		5 min	100,0
	1 hr	15,1		3 min	100,0
	30 min	5,6		1 min	90,0
50°	90 min	100,0	60°	20 sec	61,2
	60 min	97,2		1 min	100,0
	40 min	95,4	30 sec	100,0	
	20 min	53,1	15 sec	100,0	
	10 min	34,9	80°	15 sec	100,0
			5 sec	100,0	

Table 2. Experimental determination of the effects of different temperatures on the viability of immature oocysts of *E. tenella*

Temperature in degrees	Exposure temp.	% sporulation of oocysts after exposure to high			Control
		<i>E. tenella</i>	<i>E. necatrix</i>	<i>E. maxima</i>	
40	10 min	69,6	67,1	68,9	<i>E. tenella</i> 71,6% <i>E. necatrix</i>
40	20 min	70,2	67,9	69,1	
40	30 min	71,0	70,2	68,5	
40	60 min	72,8	68,7	67,9	

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ACC NR: AT8035456

Table 2. (Cont.)

70	30 min	70.1	69.8	70.1	75.5% E. maxima 72.0%
70	5 sec	68.5	69.7	67.8	
70	10 sec	45.6	46.8	44.7	
70	20 sec	31.2	35.6	37.2	
70	30 sec	18.0	33.7	35.7	
70	40 sec	25.2	39.4	26.7	
70	50 sec	19.6	21.1	18.6	
70	3 min	15.4	16.1	14.8	
70	5 min	9.1	8.9	10.1	
70	10 min	1.2	2.5	1.6	
70	20 min	0	0.4	0	
70	30 min	0	0	0	
70	3 sec	27.0	21.6	27.8	
70	5 sec	18.1	17.8	16.5	
70	10 sec	20.2	15.6	16.0	
70	20 sec	11.8	10.5	9.5	
70	30 sec	0	0	0	
70	60 sec	0	0	0	
70	90 sec	0	0	0	
70	3 min	0	0	0	
70	5 min	0	0	0	
70	10 min	0	0	0	
70	20 min	0	0	0	
70	30 min	0	0	0	
70	3 sec	12.1	13.5	11.5	
70	5 sec	9.8	10.0	9.5	
70	10 sec	3.6	4.0	3.5	
70	15 sec	0	0	0	
70	20 sec	0	0	0	
70	30 sec	0	0	0	
70	60 sec	0	0	0	
70	90 sec	0	0	0	
70	3 min	0	0	0	
70	5 min	0	0	0	

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ACC NR: AT8035456

in the literature. Low temperature and oxygen shortages also affect viability to some extent, but they must be of long duration. Orig. art. has: 2 tables. [WA-50; CBE No. 39] [LP]

SUB CODE: 06/ SUBM DATE: none

ACC NR: AT8035455

SOURCE CODE: UR/3406/67/000/058/0103/0106

AUTHOR: Machinskiy, A. P. (Docent); Orekhov, V. S. (Aspirant)

ORG: none

TITLE: Distribution of coccidiosis in Mordovia

SOURCE: Saransk. Mordovskiy gosudarstvennyy universitet. Uchenyye zapiski, no. 58, 1967. Seriya veterinarnykh i meditsinskikh nauk (Series of veterinary and medical sciences), 103-106

TOPIC TAGS: animal disease, coccidiosis, medical geography, economic entomology

ABSTRACT: Investigations of infestation with coccidiosis were made in several sovkhoses, meat packing plants, and experiment stations in Mordovia. Species composition of the pest is shown in Table 1.

Card 1/4

ACC NR: AT8035455

Table 1. Species composition of *Coccidia* in chicks and adult fowl in Mordovia

Establishment	No. of birds examined	<i>Coccidia</i> species	In the birds examined	
			No.	%
Kovylinskiy chicken packing plant	1451	<i>E. tenella</i>	636	55,5
		<i>E. mitis</i>	208	13,6
		<i>E. necatrix</i>	48	3,3
		<i>E. maxima</i>	15	1,0
Kadoshkinsk chicken farm	160	<i>E. tenella</i>	97	54,4
		<i>E. maxima</i>	3	1,9
Mordovskiy University experimental farm	88	<i>E. tenella</i>	5	5,7
		<i>E. mitis</i>	48	54,5
Rep'yevskiy sovkhos	35	<i>E. tenella</i>	7	19,1
		<i>E. mitis</i>	8	22,2
		<i>E. necatrix</i>	3	8,3

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ACC NR: AT8035455

Table 2. *Coccidia* of chicks and adult fowl in the Soviet Union

Republic or oblast	<i>Coccidia</i> species		
KazSSR	E. tenella,	E. mitis,	E. acervulina
	E. maxima,	E. necatrix	E. praecox
AzerSSR	E. mitis,	E. tenella	E. maxima
	E. acervulina,	J. galliformica.	
UkrSSR	E. maxima,	E. mitis,	E. acervulina
	E. tenella,		
BSSR	E. tenella,	E. necatrix,	E. mitis
	E. acervulina,	E. maxima,	E. praecox
EstSSR	E. tenella,	E. mitis,	E. maxima
	E. acervulina	E. necatrix,	E. beachi
	E. Johnsoni,	E. sporadica,	
TatarASSR	В основном E. tenella		
Gor'khov oblast	E. tenella,	E. necatrix,	E. acervulina
	E. praecox,	E. maxima,	E. mitis
MordovianASSR	E. tenella,	E. mitis,	E. necatrix
	E. maxima		

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ACC NR: AT8035455

Distribution of the pest throughout the Soviet Union is shown in Table 2.
 Orig. art. has: 2 tables. [WA-50; CBE No. 39] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 009

Card 4/4

ACC NR: AP8033818

SOURCE CODE: UR/ 0473/68/004/010/0102/0111

AUTHOR: Medvedeva, T. Ye.; Sominina, A. A.; Smorodintsev, A. A.

ORG: All-Union Scientific Research Institute of Influenza, Ministry of Public Health SSSR, Leningrad (Vsesoyuznyy nauchno-issledovatel'skiy institut grippa Ministerstva zdravookhraneniya SSSR)

TITLE: Reproduction characteristics of temperature variants of influenza A2 virus as determined by the plaque and fluorescent antibody methods

SOURCE: Genetika, v. 4, no. 10, 1968, 102-111

TOPIC TAGS: influenza virus, mutant, fluorescence microscopy, diagnostic medicine

ABSTRACT: A combination of the plaque method and the FAM was used to differentiate A₂ influenza virus temperature variants. It was shown that these variant strains differed from one another in adsorption rate, penetration, and subsequent reproduction in cells maintained at differing temperatures, and in pathogenicity. Rates of penetration and replication were higher but adsorption rate was lower in the thermophilic

Card 1/4

UDC: 576.858

ACC NR: AP8033818

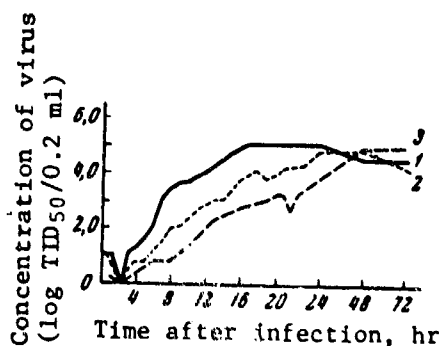


Fig. 1. Replication of temperature variants of influenza virus A2/65/151 in chick embryo kidney tissue culture

1 - Thermophilic; 2 - native strain; 3 - cryophilic

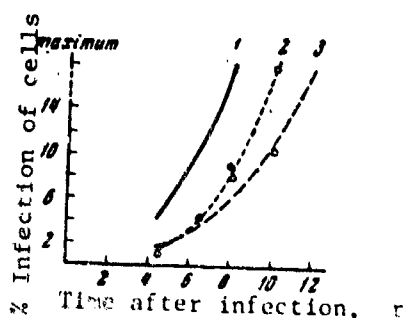


Fig. 2. Reproduction of temperature variants of influenza virus A2/65/151 in chick embryo kidney tissue culture according to quantitative data obtained with the fluorescent antibody method

1 - Thermophilic; 2 - native strain; 3 - cryophilic

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ACC NR: AP8033818

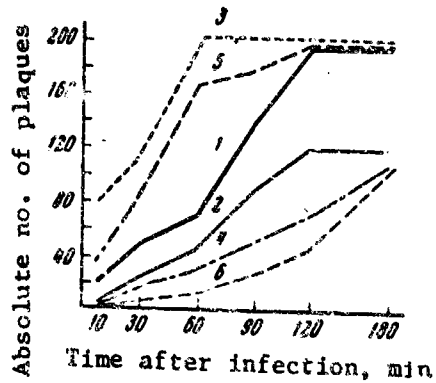


Fig. 3. Kinetics of adsorption and penetration of A2 influenza virus into chick embryo kidney tissue culture cells

1 - Adsorption of the thermophilic strain; 2 - penetration of the thermophilic strain; 3 - adsorption of the native strain; 4 - penetration of the native strain; 5 - adsorption of the cryophilic strain; 6 - penetration of the cryophilic strain

variant than in the cryophilic strain. (See Figures 1 and 2). A comparison of methods by which the adsorption rate is obtained is shown

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ACC NR: AP8033818

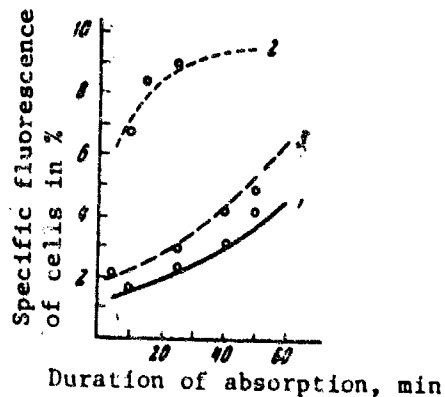


Fig. 4. Adsorption kinetics of A2 influenza virus according to FAM data

1 - Thermophilic; 2 - native; 3 - cryophilic

in Figures 3 and 4. Orig. art. has: 8 figures and 2 tables.

[WA-50; CBE No. 39] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 004/ OTH REF: 003

Card 4/4

ACC NR: AT8037231

SOURCE CODE: UR/3435/68/000/003/0102/0103

AUTHOR: Medvednikov, V. G. (Dnepropetrovsk)

ORG: none

TITLE: On the sensitivity to antibiotics of strains of *Salmonella typhi* isolated in 1966 in the Dnepropetrovsk oblast

SOURCE: Dnepropetrovsk. Meditsinskiy institut. Antibiotiki, no. 3, 1968, 102-103

TOPIC TAGS: antibiotic, bacteriophage, bacterial antigen, bacteria

ABSTRACT: The sensitivity to 10 antibiotics of strains of *Salmonella typhi abdominalis* isolated from the blood of patients with typhoid fever and from products which were a source of infection is shown in Table 1. Since cells resistant to biomycin, streptomycin, penicillin, and terramycin were found in the cultures. There was no change in the biochemical and antigenic properties, and the phage type of cultures from colonies

Card 1/3

UDC: 576.809.55

ACC NR: AT8037231

Table 1. Diameter of the zone of growth inhibition of *Salmonella typhi abdominalis* (mm)

Antibiotic	Diameter of zone of strains isolated			
	From blood		From Products	
	Strain no. 292	Strain no. 284	Strain no. 434/1	Strain no. 434/2
Polymyxin	11	12	12	14
Mitserin	18	20	17	20
Oleandomycin	0	0	0	0
Erythromycin	26	22	22	25
Penicillin	14	12	0	14
Biomycin	18	18	19	20
Levomycetin	26	26	26	26
Terramycin	18	18	17	18
Streptomycin	18	17	18	20
Actinomycin	0	0	0	0

Card 2/3

ACC NR: AT8037231

grown from resistant cells, and original cultures which were sensitive to these antibiotics. Orig. art. has: 2 tables.

[WA-50; CBE No. 39] [XF]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 001

Card 3/3

ACC NR: AP8033968

SOURCE CODE: UR/0016/68/000/010/0119/0124

AUTHOR: Melikova, Ye. N. (Deceased); Lesnyak, S. V.; Koval'skaya, S. Ya.

ORG: Control Institute of Medical and Biological Preparations im. Tarasevich (Kontrol'nyy institut meditsinskikh biologicheskikh preparatov)

TITLE: Comparison of results of laboratory tests of the reactivity of various typhoid vaccines with data of human observations

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 10, 1968, 119-124

TOPIC TAGS: typhoid fever, typhoid vaccine, vaccination reaction

ABSTRACT: Results of the hemagglutination-inhibition reaction and the Schwartzman reaction in rabbits completely corresponded with data from tests of human reactivity to corpuscular, liquid, heated typhoid vaccine (H-65); dry, heated typhoid vaccine (H-66); and acetone vaccine (K). The reactivity of typhoid vaccine is apparently connected to a considerable degree, with the presence of soluble antigens, inasmuch as a parallelism has been observed between the quantity of soluble antigens

Card 1/2

UDC: 615.371/.372:576.851.49/.092.22

ACC NR: AP8033968

and the reactivity of the vaccine. It was not possible to characterize the synthesizing properties of sorbed typhoid vaccine in experiments with rabbits, since development of the Schwartzman reaction hindered the sorbent (which formed white necrotic spots at the site of intracutaneous inoculation). Soluble antigens were not found in the supernatant fluid of sorbed typhoid vaccine (G), which indicates their complete sorption and explains the negative results in the hemagglutination-inhibition reaction. Both liquid and dry heated vaccines produced a more pronounced reactivity than the acetone vaccine. Orig. art. has: 4 tables. [WA-50; CBE No. 39][JS]

SUB CODE: 06/ SUBM DATE: 08Jan68/ ORIG REF: 003/ OTH REF: 003

Card 2/2

ACC NR: AP8035374

SOURCE CODE: UR/0439/68/047/009/1343/1353

AUTHOR: Narchuk, E. P.

ORG: Zoological Institute Academy of Sciences SSSR, Leningrad (Zoologicheskii institut Akademii nauk SSSR)

TITLE: Characteristics of the pest complex of *Diptera*, *Chloropidae* for agriculture

SOURCE: Zoologicheskii zhurnal, v. 47, no. 9, 1968, 1343-1353

TOPIC TAGS: plant pest, agriculture crop, harmful insect

ABSTRACT: Grass flies (*Diptera*, *Chloropidae*) are especially harmful to Graminae and Liliaceae and are widely distributed in temperate regions of the northern hemisphere, with the pest species being richer in the Palearctic than in the Nearctic region. Most of the 73 harmful species of cereal flies found in the Soviet Union and neighboring countries are wheat pests; only 4 attack millet. There are four principal types of damage caused, depending on what part of the embryo plant the larvae feed. A special complex of grain pests is found in the Far East. This complex is composed of 4 species groups of differing economic significance depending on the individual species. The specific type of damage caused

Card 1/3

UDC: 595.773.4Chloropidae:591.15

ACC NR: AP8035374

Table 1. Types of areas inhabited by grass flies which are crop pests

Type of area	No. of species	Type of area	No. of species
Holarctic	8	Ponto-Kazakh	2
Panpalaearctic	10	Southern European	2
Eurosiberian boreal	12	Mediterranean	4
Western Eurosiberian	2	Central Asian	1
European	22	Manchurian	8

Table 2. Number of harmful Chloropidae for certain grains

Grain	Chloropidae								
	All species	Of these							
		Elachiptera	Tropidoscina	Conioscinella	Oscinella	Rest of Oscinellinae	Chlorops	Meromyza	Rest of Chloropidae
Wheat	20	4	1	1	6	5	3	6	3
Barley	20	5	1	1	2	3	2	5	1
Rye	16	2	1	1	2	2	1	5	2
Oats	14	2	1	1	3	2	1	1	3
Corn	0	3	1	—	2	1	—	1	1
Millet	3	3	—	—	—	—	—	—	—
Rice	8	3	—	—	—	2	2	—	1
Quack grass	20	2	1	1	5	1	4	5	1

Card 2/3

ACC NR: AP8035374

Table 3. A number of species harmful to crops

Pest species	No. of pest species	Total No. of species in the Palearctic	Pest species	No. of pest species	Total No. of species in the Palearctic
1. Oscinella Beck.	14	19	11. Polycaaspis Duda	1	2
2. Chlorops Mg.	9	≈ 60	12. Calamoneosis End.	1	8
3. Meromyza Mg.	9	36	13. Aphanotrigonum Duda	1	10
4. Elachiptera Mcq.	7	16	14. Tricimba Lioy	1	3
5. Dicraeus Lw.	6	19	15. Oscinimorpha Lioy	1	9
6. Cetema Hend.	4	10	16. Eribolus Beck.	1	4
7. Conioscinella Duda	4	9	17. Lioscinella Duda	1	5
8. Tropidoscina Duda	2	5	18. Camarota Mg.	1	1
9. Goniopsita Duda	2	7	19. Lasiosina Beck.	1	10
10. Togecephus Nish.	1	1	20. Anthracophaga Lw.	1	2

are described. Table 1 shows the areas in which the pests are distributed. Table 2 shows the principal pests grouped according to the grains they attack. The most important pest species are shown in Table 3. Orig. art. has: 3 tables. [WA-50; CBE No. 39] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 020/ OTH REF: 020

Card 3/3

ACC NR: AT8035458

SOURCE CODE: UR/3406/67/000/058/0125/0127

AUTHOR: Nikolayev, Yu. Ye. (Candidate of veterinary sciences)

ORG: none

TITLE: Specific prophylaxis of leptospirosis in cattle

SOURCE: Saransk. Mordovskiy gosudarstvennyy universitet. Uchenyye zapiski, no. 58, 1967. Seriya veterinarnykh i meditsinskikh nauk (Series of veterinary and medical sciences), 125-127

TOPIC TAGS: animal disease, leptospirosis, disease therapeutics

ABSTRACT: Vaccination against leptospirosis should take place within the first 10—15 days of life. Two shots should be given at a one-week interval: 3 ml, first dose; and 5 ml, second dose-per head. At six months, a booster shot should be given. In the absence of clinical symptoms, the administration of antiserum is not advised. Orig. art. has: 1 table.

[WA-50; CBE No. 39] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 1/1

ACC NR: AP8034761

SOURCE CODE: UR/0346/68/000/010/0038/0041

AUTHOR: Orlov, Ye. S. (Doctor of veterinary sciences); Kas'yanov, A. N. (Candidate of veterinary sciences)

ORG: All-Union Institute of Experimental Veterinary Science (Vsesoyuznyy institut eksperimental'noy veterinarii)

TITLE: Diagnosing brucellosis by the palpebral test with VIEV brucellin

SOURCE: Veterinariya, no. 10, 1968, 38-41

TOPIC TAGS: brucellosis, animal disease therapeutics

ABSTRACT: Brucellin developed by the All-Union Institute of Experimental Veterinary Science for use in the palpebral (eyelid) test for diagnosing brucellosis is a specific and active allergen which does not form agglutinins or complement-fixing antibodies in healthy animals. The VIEV brucellin was introduced under the skin of the lower eyelids of sheep and goats. After 48 hr, sheep or goats with brucellosis showed an inflammation at the site of injection. More than 11,500 sheep and goats from 236 flocks were tested by this method. The palpebral method is more sensitive than the intracutaneous

Card 1/2

UDC: 619:616.981.42-077.31:636.32/.38

ACC NR: AP8034761

allergic test. The palpebral brucellin test has been recommended for diagnosis of brucellosis in sheep and goats. Orig. art. has: 4 tables.
[WA-50; CRE No. 39][US]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AP8034771

SOURCE CODE: UR/0346/68/000/010/0108/0109

AUTHOR: Pavlov, Ye. G. (Member)

ORG: Domanevsk Veterinary Laboratory, Nikolayev Oblast (Domanevskaya veterinarnaya laboratoriya, Nikolayevskaya oblast')

TITLE: Diagnosing cattle brucellosis with the prolonged complement fixation reaction

SOURCE: Veterinariya, no. 10, 1968, 108-109

TOPIC TAGS: brucellosis, complement fixation reaction

ABSTRACT: The prolonged complement fixation test (PCFT), conducted in the cold and lasting 16 to 18 hr, is a specific and more sensitive method of detecting cattle brucellosis than the standard complement fixation reaction. In cases of recent infection, especially with acute brucellosis, the PCFT can be used to uncover infected animals earlier and in greater percentages than either the agglutination or the standard complement fixation tests. Serum samples of 0.1 ml and 0.05 ml (the same size as those used for the standard complement fixation test) are considered diagnostic for the prolonged complement fixation test.

Card 1/2

UDC: 619:616.981.42-007.37.636.22/.28

ACC NR: AP8034771

Serological study of 6404 sera of cattle from 16 farms with different epidemiological situations with respect to brucellosis were conducted. A total of 298 positive reactions were obtained in the agglutination and complement fixation tests. The PCFT was also positive in 276 of these samples, and gave 100 additional positive reactions. Animals from unsafe herds with positive reactions in the PCFT with both serum doses (0.5 ml and 0.1 ml), and also with a single dose of 0.1 ml are definitely infected with brucellosis. [WA-50; CBE No. 39][JS]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AP8033962

SOURCE CODE: UR/0016/68/000/010/0090/0094

AUTHOR: Perishorina, S. I.; Shenderov, B. A.

ORG: Saratov Medical Institute (Saratovskiy meditsinskiy institut)

TITLE: Transfer of antibiotic resistance by conjugation. Report 11. The effect of furazolidone and chloramphenicol on episome transfer of antibiotic resistance among intestinal bacteria

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 10, 1968, 90-94

TOPIC TAGS: bacterial genetics, chloramphenicol antibiotic

ABSTRACT: Addition of furazolidone or chloramphenicol in sub-bacteriostatic concentrations to a conjugating mixture of dysentery bacteria and *E. coli* completely inhibited transfer of resistance to chloramphenicol, tetracycline, and monomycin from dysentery bacteria (7 strains of *Sh. sonnei*, and 3 strains of *Sh. flexneri*) to *E. coli* M.-17, which was highly sensitive to these antibiotics. Preliminary cultivation of recipient *E. coli* in the presence of chloramphenicol prevented formation of chloramphenicol-resistant recombinants.

Card 1/2

UDC: 576.8.097.22:615.773.9/.095.57

ACC NR: AP8033962

Culturing of donor cells in the presence of sub-bacteriostatic concentrations of chloramphenicol, however, did not effect transfer of resistance. Preliminary culturing of both donor and recipient cells in the presence of furazolidone considerably decreased the yield of antibiotic-resistant recombinants. The inhibitor effect of furazolidone and chloramphenicol on the transfer of resistance (R-factor) may be connected with the inhibition of energy processes in the parent cells caused by these chemicals. Markers of neomycin resistance and chloramphenicol resistance are not linked. No transfer of streptomycin resistance from donor to recipient cells was observed. Orig. art. has: 1 table. [WA-50; CBE No. 39][JS]

SUB CODE: 06/ SUBM DATE: 26Apr67/ ORIG REF: 014/ OTH REF: 009

Card 2/2

ACC NR: AP8034763

SOURCE CODE: UR/0346/68/000/010/0046/0047

AUTHOR: Pinigin, A. F. (Candidate of biological sciences), Kokourov, A. P. (Junior research associate); Petykhova, O. S. (Junior research associate); Merinov, S. P. (Junior research associate)

ORG: Irkutsk State Scientific Research Antiplague Institute of Siberia and the Far East (Irkutskiy gosudarstvennyy nauchno-issledovatel'skiy protivochumnyy institut Sibiri i Dal'nego Vostoka)

TITLE: Brucellosis among yaks

SOURCE: Veterinariya, no. 10, 1968, 46-47

TOPIC TAGS: brucellosis, complement fixation reaction, serologic test

ABSTRACT: Study of brucellosis among yaks in the Tuva ASSR, the Gorno-Altay Oblast and Mongolia in 1961-1962 showed that the agglutination reaction detected considerably more positively reacting animals than the complement-fixation reaction, which is usually a more sensitive indicator of brucellosis among cattle. Results of this study showed that yaks can spread brucellosis to other farm animals, particularly to cattle, when they are mixed with local cattle

Card 1/2

UDC: 619:616.981.42:636.293.3

ACC NR: AP8034763

or shipped with them. Huddleson's test cannot be used for diagnosis of yak brucellosis. Some abortions of brucellosis etiology (bacteriologically confirmed as due to *Brucella abortus*) were uncovered during serological study of 1876 yaks in Tuva ASSR and Gorno-Altay Oblast. [WA-50; CBE No. 39][JS]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AP8033588

SOURCE CODE: UR/0016/68/000/009/0022/0026

AUTHOR: Plotkina, N. S.

ORG: Scientific Research Institute of Clinical and Experimental Surgery, Ministry of Public Health SSSR (Nauchno-issledovatel'skiy institut klinicheskoy i eksperimental'noy khirurgii Ministerstva zdravookhraneniya SSSR)

TITLE: Effect of washing and sterilization on the antimicrobial activity of dressings

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 9, 1968, 22-26

TOPIC TAGS: bactericide, bacteriostasis, surgical equipment

ABSTRACT: The antimicrobial effect was determined in cellulose material with silver (2.5% and 6%), copper (3.5%), iodine (10%), N-cetylpyridium (2%), mycerin and colimycin (20,000 units/g of material), and acetate and viscous material with hexachlorophene (4% and 1%) after washing in the cleansing agent OP-10 lg l for 30 min, and after 3 rinsings, and drying, or autoclaving for 20 min at 2 atm. Inhibition of the growth of *Staphylococcus*, *Escherichia coli*, *Pseudomonas aeruginosa*, *Proteus vulgaris*, and *Candida* was greatest after washing the acetate material

Card 1/2

UDC: 615.778.014.16

ACC NR: AP8033116

was determined by titration of the virus and its RNA in a Detroit-6 cell culture. Determination of acid and alkaline RNAase was done by comparison with the activity of a purified commercial preparation. Macrophages were extremely resistant to the action of RNAase and to the intact poliomyelitis virus in all cases. Specifically, their resistance to the intact virus can be traced to the failure of the virus to deproteinate within the cell; in the case of RNAase resistance, specific RNAase inhibitors were detected in the cell. Orig. art. has: 6 tables.

[WA-50; CBE No. 39] [LP]

SUB CODE: 06/ SUBM DATE: 29May67/ ORIG REF: 005/ OTH REF: 005

Card 2/2

ACC NR: AT9000528

SOURCE CODE: UR/3436/67/049/000/0356/0364

AUTHOR: Polyakova, N. B.

ORG: Department of Psychopharmacology/Head--Candidate of medical sciences G. Ya. Avram'skiy/, Moscow Scientific Research Institute of Psychiatry (Otdel psikhofarmakologii Moskovskogo nauchno-issledovatel'skogo instituta psikhiiatrii)

TITLE: Features of the effect of different doses of stelazine on animals

SOURCE: Moscow. Nauchno-issledovatel'skiy institut psikhiiatrii. Trudy, v. 49, 1967. Voprosy psikhofarmakologii (Problems in psychopharmacology), 356-364

TOPIC TAGS: psychopharmacology, behavior pattern, rodent

ABSTRACT: Results are reported on a study of the pharmacological activity of stelazine in doses ranging from 10 mg/kg to 10^{-6} mg/kg in mice and rats. The following behavior effects of the drug on the animals were studied: 1) orientation or investigative reaction in mice; 2) aggressive-ness and pain threshold in electrically stimulated mice; 3) phenamine stereotypy in rats receiving 10 mg/kg of phenamine intraperitoneally

Card 1/2

A C NR: AP8033588

with hexachlorophene among the materials noted above; the antimicrobial activity was unchanged after 20 washings. There was some decrease in antimicrobial activity in materials containing antibiotics after 20 washings. Antimicrobial activity was maintained in the viscous material containing hexachlorophene and cellulose with copper after being autoclaved 5 times. Decreased antimicrobial activity was observed in materials with silver, N-cerylpyridium, and acetate with hexachlorophene. Orig. art. has: 2 tables. [WA-50; CBE No. 39] [XF]

SUB CODE: 06/ SUBM DATE: 25Apr67/ ORIG REF: 004

Card 2/2

ACC NR: AP8033116

SOURCE CODE: UR/0301/68/014/005/0475/0480

AUTHOR: Polyak, R. Ya.; Movsesyan, E. A.; Dubrovina, T. Ya.

ORG: Department of Virology, Institute of Experimental Medicine, AMN SSSR (Otdel virusologii, Instituta eksperimental'noy meditsiny AMN SSSR); All-Union Scientific Research Influenza Institute, Ministry of Public Health SSSR, Leningrad (Vsesoyuznyy nauchno-issledovatel'skiy institut grippa Ministerstva zdravookhraneniya SSSR)

TITLE: The nature of macrophage cell resistance to infection by viral nucleic acids

SOURCE: Voprosy meditsinskoy khimii, v. 14, no. 5, 1968, 475-480

TOPIC TAGS: polio virus, infectious RNA, RNAase, cell physiology, human ailment

ABSTRACT: The mechanism of macrophage resistance to infection by infectious nucleic acid from poliomyelitis virus type 1 was studied in a macrophage Detroit-6, leucocyte, chick embryo fibroblast, and swine embryo kidney tissue cultures. Cells were cultured in Igla medium plus 5% denatured serum at 37°C for varying times during which viable cell counts were made at intervals. The infectious activity of the RNA

Card 1/2

UDC: 612.112.9.017.1:576.858.098.393.32

ACC NR: AP8033116

was determined by titration of the virus and its RNA in a Detroit-6 cell culture. Determination of acid and alkaline RNAase was done by comparison with the activity of a purified commercial preparation. Macrophages were extremely resistant to the action of RNAase and to the intact poliomyelitis virus in all cases. Specifically, their resistance to the intact virus can be traced to the failure of the virus to deproteinate within the cell; in the case of RNAase resistance, specific RNAase inhibitors were detected in the cell. Orig. art. has: 6 tables.

[WA-50; CBE No. 301 [LP]

SUB CODE: 06/ SUBM DATE: 29May67/ ORIG REF: 005/ OTH REF: 005

Card 2/2

ACC NR: AT9000528

SOURCE CODE: UR/3436/67/049/000/0356/0364

AUTHOR: Polyakova, N. B.

ORG: Department of Psychopharmacology/Head--Candidate of medical sciences G. Ya. Avrutskiy/, Moscow Scientific Research Institute of Psychiatry (Otdel psikhofarmakologii Moskovskogo nauchno-issledovatel'skogo instituta psikhiiatrii)

TITLE: Features of the effect of different doses of stelazine on animals

SOURCE: Moscow. Nauchno-issledovatel'skiy institut psikhiiatrii. Trudy, v. 49, 1967. Voprosy psikhofarmakologii (Problems in psychopharmacology), 356-364

TOPIC TAGS: psychopharmacology, behavior pattern, rodent

ABSTRACT: Results are reported on a study of the pharmacological activity of stelazine in doses ranging from 10 mg/kg to 10^{-6} mg/kg in mice and rats. The following behavior effects of the drug on the animals were studied: 1) orientation or investigative reaction in mice; 2) aggressiveness and pain threshold in electrically stimulated mice; 3) phenamine stereotype in rats receiving 10 mg/kg of phenamine intraperitoneally

Card 1/2

ACC NR: AT9000528

within 1 hr after receiving stelazine; 4) catalepsy-inducing capacity in mice; and 5) change in the sensitivity to the convulsion-inducing action of corazol. Orientation reaction activity was significantly increased in mice administered stelazine in doses as small as 0.1 mg/kg. The greatest increase in orientation reaction activity was noted with $3 \cdot 10^{-2}$ mg/kg. Stelazine (10^{-2} mg/kg) actively increased the aggressive behavior and pain threshold of electrically stimulated mice, while 10 mg/kg increased the threshold of both reactions 3—3.5 times. Both thresholds were decreased in animals receiving from 10^{-3} mg/kg to 10^{-5} mg/kg. The phenamine stereotype reaction was completely prevented in rats receiving 10^{-1} mg/kg of stelazine or more. In doses of 10^{-2} mg/kg and less, stelazine prolonged the phenamine stereotype reaction. Catalepsy was induced in mice with doses of from 10^{-1} mg/kg; 0.28 mg/kg induced catalepsy in 50% of the mice, and 2.5 mg/kg in 100%. There was a 28% decrease in the convulsion threshold following corazol administration in mice receiving 10^{-6} mg/kg of stelazine. The qualitative and quantitative differences in the reaction of the animal body to different doses of stelazine emphasize the necessity for selecting individual therapeutic doses in man with consideration to the form and stage of the disease and individual differences. Orig. art. has: 6 figures.

[WA-50; CBE No. 39] [XF]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 009/ OTH REF: 017

Card 2/2

ACC NR: AT9000738

SOURCE CODE: UR/3438/67/000/008/0103/0107

AUTHOR: Popov, F. S.

ORG: Moscow Scientific Research Institute of Vaccines and Sera im. I. I. Mechnikov (Moskorskiy NII vaktsin i syvorotok)

TITLE: Use of a liquid extract of *Eleutherococcus* roots in hyperimmunization in horses

SOURCE: Materialy k izucheniyu zhen'shenya i drugikh lekarstvennykh sredstv Dal'nego Vostoka, no. 8, 1967. Eleuterokokk v zhivotnovodstve (Eleutherococcus in animal husbandry), 103-107

TOPIC TAGS: antibody formation, biostimulation, acquired immunity, diphtheria

ABSTRACT: Four horses used for production of antidiphtheria sera were hyperimmunized with tetanus, influenza, and diphtheria antigens; antibody formation was low. The animals were then hyperimmunized with diphtheria toxoid 3 times in a single cycle for 7 cycles at 4-day intervals with 100-, 200-, and 300-ml doses. Activity of the toxoid was equal to 35 antigen units. In 4 cycles, 3 of the animals received 50 ml of liquid extract of *Eleutherococcus* root by mouth. Periodic titration of the

Card 1/2

ACC NR: AP8033588

with hexachlorophene among the materials noted above; the antimicrobial activity was unchanged after 20 washings. There was some decrease in antimicrobial activity in materials containing antibiotics after 20 washings. Antimicrobial activity was maintained in the viscous material containing hexachlorophene and cellulose with copper after being autoclaved 5 times. Decreased antimicrobial activity was observed in materials with silver, N-cerylpyridium, and acetate with hexachlorophene. Orig. art. has: 2 tables. [WA-50; CBE No. 39] [XF]

SUB CODE: 06/ SUBM DATE: 25Apr67/ ORIG REF: 004

Card 2/2

ACC NR: AP8033116

SOURCE CODE: UR/0301/68/014/005/0475/0480

AUTHOR: Polyak, R. Ya.; Movsesyan, E. A.; Dubrovina, T. Ya.

ORG: Department of Virology, Institute of Experimental Medicine, AMN SSSR (Otdel virusologii, Instituta eksperimental'noy meditsiny AMN SSSR); All-Union Scientific Research Influenza Institute, Ministry of Public Health SSSR, Leningrad (Vsesoyuznyy nauchno-issledovatel'skiy institut grippa Ministerstva zdravookhraneniya SSSR)

TITLE: The nature of macrophage cell resistance to infection by viral nucleic acids

SOURCE: Voprosy meditsinskoy khimii, v. 14, no. 5, 1968, 475-480

TOPIC TAGS: polio virus, infectious RNA, RNAase, cell physiology, human ailment

ABSTRACT: The mechanism of macrophage resistance to infection by infectious nucleic acid from poliomyelitis virus type I was studied in a macrophage Detroit-6, leucocyte, chick embryo fibroblast, and swine embryo kidney tissue cultures. Cells were cultured in Igla medium plus 5% denatured serum at 37°C for varying times during which viable cell counts were made at intervals. The infectious activity of the RNA

Card 1/2

UDC: 612.112.9.017.1:576.858.098.393.32

ACC NR: AT9000738

blood showed that antibody formation was stimulated only mildly. The extract was then administered subcutaneously every other day in 10- and 20-ml doses; antibody formation occurred much more rapidly, and by the end of the study, the titer was 3 times higher than the initial level, and showed no tendency to decrease. There was no increase in the antibody titer of the horse which did not receive *Eleutherococcus* root extract. In animals administered *Eleutherococcus* root extract, there was also an increase in the hemoglobin, blood proteins, and erythrocyte and leukocyte counts. Orig. art. has: 2 tables.

[WA-50; CBE No. 39] [XF]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AT9000739

SOURCE CODE: UR/3438/67/000/008/0108/0112

AUTHOR: Popov, F. S.; Filyunina, Ye. V.; Golshmid, V. K.; Vasil'yev, V. P.

ORG: Moscow Scientific Research Institute of Vaccines and Sera im. I. I. Mechnikov (Moskovskiy NII vaktsin i syvopotok)

TITLE: Effect of a liquid extract of *Eleutherococcus* root on antibody production in diphtheria hyperimmunization

SOURCE: Materialy k izucheniyu zhen'shenya i drugikh lekarstvennykh sredstv Dal'nego Vostoka, no. 8, 1967. Eleuterokokk v zhivotnovodstve (*Eleutherococcus* in animal husbandry), 108-112

TOPIC TAGS: antibody formation, diphtheria, biostimulation, vaccine

ABSTRACT: Results are reported on the stimulating effect of *Eleutherococcus* on antibody production in horses hyperimmunized with diphtheria toxoid. Seven horses were first immunized with a total of 900 ml of diphtheria toxoid administered in 3 doses of 200, 300, and 400 ml at different intervals. Immunization with this dosage regimen was repeated for 13 cycles. Six cycles of hyperimmunization were then carried out with 3 doses of diphtheria toxoid 150 ml, 250 ml, and 350 ml administered at different intervals. A liquid extract of from 10 to 25 ml of

Card 1/3

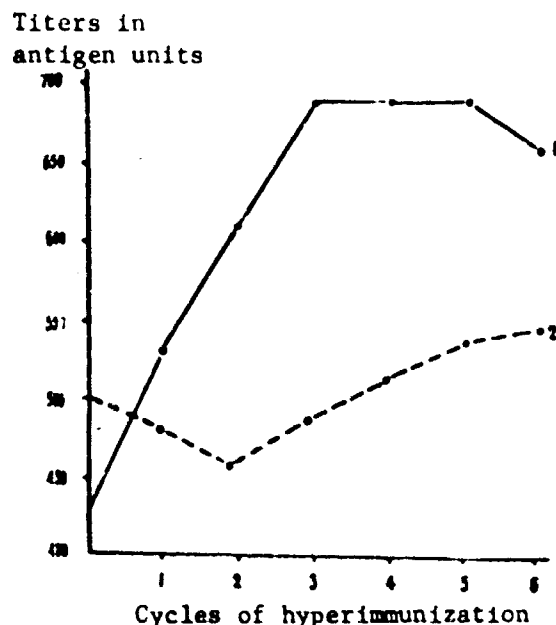


Fig. 1. Dynamics of antibody titers in the process of hyperimmunization

1 - in experiment; 2 - in control

Card 2/3

ACC NR: AT9000739

Eleutherococcus root was administered subcutaneously on the day of immunization and on the 2nd day after immunization. Control horses were administered a physiological solution instead of *Eleutherococcus* extract. Antibody formation in horses receiving *Eleutherococcus* extract is shown in Figure 1. The dynamics of the hemoglobin and erythrocyte counts and blood proteins were also studied in animals receiving *Eleutherococcus* extract. The RLQ refractrometer was used to determine the blood proteins; protein fractions were determined by electrophoresis on chromatography paper. Results were calculated on the FEK-M electrophotocalorimeter. There was an increase in the (β) and I protein fractions of blood proteins in horses receiving *Eleutherococcus* extract. The increase in the protein fractions occurred simultaneously with the increase in anti-toxin titers. There was no difference in the hemoglobin and erythrocyte counts between animals receiving *Eleutherococcus* extract and control animals. The importance of increased antibody production with *Eleutherococcus* in horses and for the production of sera is noted. Orig. art. has: 1 figure and 1 table. [WA-50; CBE No. 39] [XF]

SUB CODE: 06/ SUBM DATE: none

Card 3/3

ACC NR: AP8033955

SOURCE CODE: UR/0016/68/000/010/0036/0042

AUTHOR: Popov, V. F.; Ivanova, L. M.

ORG: none

TITLE: Epidemiological characteristics of the alimentary route of tickborne encephalitis infection in territories of the RSFSR

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 10, 1968, 36-42

TOPIC TAGS: encephalitis, tick, food sanitation, insect vector

ABSTRACT: Tickborne encephalitis transmitted by the alimentary route has been registered in 16 oblasts and autonomous republics of the RSFSR and accounts for 12% of the total number of cases. *Ixodes persulcatus* is the dominant species in most of these foci, while *Ixodes ricinus* is the dominant species in the Leningrad and Moscow oblasts and in the Belorussian SSR. The incidence of tickborne encephalitis transmitted by the alimentary route was highest in the Kirov, Sverdlovsk, and Perm oblasts, and in the Udmurt SSR, where 68% of all cases in the RSFSR for a 12-yr period were registered. The incidence from 1959 to 1966 is shown in Table 1. An analysis of case histories and epidemiological data of

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UDC: 616.988.25-022.395.42]-022.38(470)

ACC NR: AP8033955

Table 1. Incidence of tickborne encephalitis transmitted by the alimentary route in 4 oblasts (from 1959 to 1966)

Territory	Morbidity (in % of the total no. of diseases)							
	1959	1960	1961	1962	1963	1964	1965	1966
Kirov oblast.	68,82	53,02	36,5	50,0	57,0	24,4	46,2	33,0
Udmurt ASSR.	8,6	15,7	10,2	11,2	9,3	4,8	16,0	11,0
Perm oblast.	19,8	15,6	7,0	14,9	13,2	9,0	10,0	8,5
Sverdlovsk oblast.	9,4	8,7	4,0	4,4	4,9	2,0	1,2	4,0

377 patients from the Perm and Kirov oblasts showed that the disease was of a familial nature, that the incidence was greatest from early May to early August, and that 56% of affected cases were children under 15 yr of age who were the chief consumers of raw goat's milk. However, it was concluded that the incidence of infection did not depend on the number of goats in the areas, but on the intensity of the natural focus, and on properties of the virus strains circulating in a given territory. Orig. art. has: 4 tables. [WA-50; CBE No. 39] [XF]

SUB CODE: 06/ SUBM DATE: 22Aug67/ ORIG REF: 015/ OTH REF: 001

Card 2/2

ACC NR: AP8034101

SOURCE CODE: UR/0358/68/037/005/0591/0595

AUTHOR: Prisyagina, L. A.

ORG: Department of Medical Protozoology, Institute of Medical Parasitology and Tropical Medicine im. Ye. I. Martynovskiy, Ministry of Public Health SSSR, Moscow (Otdel meditsinskoy protozoologii Instituta Meditsinskoy parazitologii i tropicheskoy meditsiny Ministerstva zdravookhraneniya SSSR)

TITLE: The immunological structure of the population in a foothill-taiga focus of tickborne encephalitis in the construction zone of the Krasnoyar Hydroelectric Station after tick extermination

SOURCE: Meditsinskaya parazitologiya i parazitarnyye bolezni, v. 37, no. 5, 1968, 591-595

TOPIC TAGS: epidemiologic focus, encephalitis, tick, immunology, disease carrying insect

ABSTRACT: Study of the immunological structure of the population in a tickborne-encephalitis focus in the construction zone of the Krasnoyar Hydroelectric Station after 10 yr of annual tick extermination in the large forests showed that only 4.2% of the people had hemagglutination-inhibiting antibodies, as compared with an average 30% of the population

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UDC: 614.449.42:616.988.25-097(571.51)

ACC NR: AP8034101

with virus-neutralizing antibodies before tick extermination. In all of 1967, only 7 out of 906 people visiting treated areas of the forest reported tick attacks. In 1957, 45—85% of the population, and 51% of children under five, reported contacts with ticks. The percentage of people with antibodies in the blood noticeably increased with age, from 0.9% among children under 10 to 5.2% for 11—15-yr-olds, and 6.9% for adults. In sections of Krasnoyar where tick extermination was not conducted, antibodies were found in the blood of 30% of children under ten. No cases of tickborn encephalitis in the treated area have been recorded since 1958. Furthermore, the population of this area has increased tremendously since 1958, with a constant influx of nonimmune people. All these statistics confirm the effectiveness of the anti-encephalitis program, in which a total of 20,000 ha were treated in 10 yr. Orig. art. has: 1 table. [WA-50; CBE No. 39] [JS]

SUB CODE: 06/ SUBM DATE: 12Jan68/ ORIG REF: 019

Card 2/2

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ACC NR: AT8037880

SOURCE CODE: UR/3434/68/000/010/0172/0181

AUTHOR: Prokhorchik, R. A.; Mashtakov, S. M.

ORG: Plant Physiology and Biochemistry Section, Institute of Experimental Botany, AN BSSR (Sektsiya fiziologii i biokhimii rasteniy pri Institute eksperimental'noy botaniki AN BSSR)

TITLE: Effect of simazin and atrazine on catalase and peroxidase activity in plants

SOURCE: Vsesoyuznoye botanicheskoye obshchestvo. Belorusskoye otdeleniye. Botanika; issledovaniya, no. 10, 1968, 172-181

TOPIC TAGS: herbicide, plant metabolism, plant growth, catalase, enzyme, plant respiration

ABSTRACT: Corn (Sterling type) and summer wheat (Minsk type) seed were allowed to germinate in a closed thermostat on Pryanishnikov's nutrient medium to which simazin and atrazine had been added. After 5 days, the plants were moved to the light, and the leaves were examined at different periods thereafter. Plants were also studied which had been allowed to germinate only in lighted conditions after simazin and atrazine had been added to the medium at the time of seeding or upon the

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UDC: 632.954.(633.11+633.15)

ACC NR: AT8037880

appearance of the first leaf. Catalase activity was determined by the Feinsein perborate method as modified by Dekok. Peroxidase activity was evaluated by the Boyapkin method, based on the photoelectrocalorimetric determination of the benzidine oxidation reaction. It was determined that simazin and atrazine caused changes in the oxidation-reduction systems of the plants. Peroxidase activity under the influence of simazin and atrazine was activated only slightly (or not at all) in corn, which is resistant to herbicides. Catalase activity was decreased slightly sometimes, but more frequently remained unchanged. Peroxidase activity was decreased initially, but was later restored and even slightly stimulated in wheat which is sensitive to herbicides. Catalase activity was noticeably decreased. Orig. art. has: 5 tables.
[WA-50; CBE No. 39] [XF]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 024/ OTH REF: 008

Card 2/2

ACC NR: AT9J03205

SOURCE CODE: UR/3445/68/000/004/0153/0155

AUTHOR: Prokina-Kaminskaya, T. I.

ORG: Kiev Scientific Research Institute of Industrial Hygiene and Professional Diseases (Kiyevskiy nauchno-issledovatel'skiy institut gigiyeny truda i profzabolevaniy)

TITLE: Change of the activity of tissue respiration, cytochromoxidase, and succindehydrogenase in rat liver under the influence of carbamates

SOURCE: Kiev. Nauchno-issledovatel'skiy institut farmakologii i toksikologii. Farmakologiya i toksikologiya, no. 4, 1968, 153-155

TOPIC TAGS: tissue physiology, biologic respiration, carbamate, enzymatic activity, white rat, liver, thiocarbamate

ABSTRACT: This article appears in Chemical Factors

Card 1/1

UDC: 615-092.259

ACC NR: AT9000527

SOURCE CODE: UR/3436/67/039/000/0337/0347

AUTHOR: Rapoport, A. Ya.

ORG: Laboratory of Pathophysiology of Higher Nervous Activity/
Head--Candidate of biological sciences V. I. Savchuk/, Moscow Scientific
Research Institute of Psychiatry (Laboratoriya patofiziologii vysshey
nervnoy deyatel'nosti Moskovskogo nauchno-issledovatel'skogo instituta
psikhiatrii

TITLE: Effect of stelazine on higher nervous activity and some vegeta-
tive functions in dogs

SOURCE: Moscow. Nauchno-issledovatel'skiy institut psikhiatrii. Trudy,
v. 49, 1967. Voprosy psikhofarmakologii (Problems in psychopharmacology),
337-347

TOPIC TAGS: psychopharmacology, dog, nervous system drug

ABSTRACT: An American brand of stelazine in doses of from 0.05 to
3.0 mg/kg was administered to 7 dogs with different types of higher
nervous activity to determine its effect on the conditioned reflexes
and some vegetative functions. There was a decrease in the intensity
of stimulation processes, an increase in development of inhibition, and
decrease in the lability of nervous processes with the above doses.

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ACC NR: AT9000527

Large doses (1.0—3.0 mg/kg) caused muscle weakness alternating with
muscle hypertonia, somnolence, and ataxia. Conditioned reflex activity
changes were noted with the lowest doses of stelazine in dogs with a weak
type of nervous system. Dogs with an unbalanced type of higher nervous
activity were most resistant to the effect of stelazine. The effect of
the drug usually appeared within the first hour, and reached its maximum
effect within 3—4 hr. With the different doses of stelazine, there was
an increase in the pulse rate in most animals, a decrease in the pulse
rate in some, an increase in respiration (sometimes with panting), slight
body temperature change of $\pm 1^\circ$, and dilated pupils. No correlation could
be established between sympathetic function changes under the influence
of stelazine and the type of higher nervous activity. Orig. art. has:
2 tables and 5 figures. [WA-50; CBE No. 39] [XF]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 006/ OTH REF: 011

Card 2/2

ACC NR: AP8037046

SOURCE CODE: UR/0240/68/000/011/0042/0044

AUTHOR: Rechmenskiy, S. S. (Professor)

ORG: Kiev Institute of Postgraduate Medicine (Kiyevskiy institut usovershenstvovaniya vrachey)

TITLE: A bacteria trap

SOURCE: Gigiyena i sanitariya, no. 11, 1968, 42-44

TOPIC TAGS: biologic warfare agent filter, aerobiology, biologic aerosol

ABSTRACT: A bacteria and virus trap shown in Figures 1 and 2 is described. The device works on a principle of kinematic coagulation,

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UDC: 614.718+613.155]-078

ACC NR: AP8037046



Fig. 1. Liquid-film filter

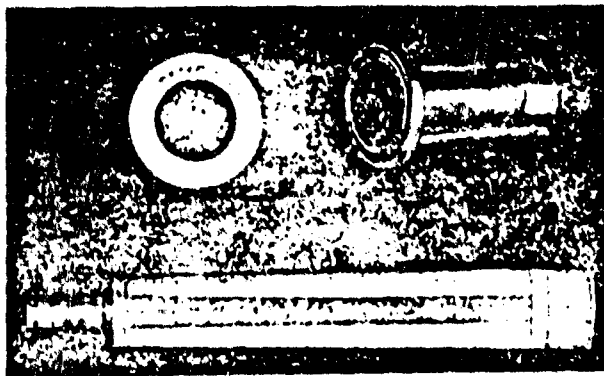


Fig. 2. Universal portable trap for bacteria and viruses

Card 2/3

ACC NR: AP8037046

trapping droplets down to the dimensions of very fine aerosols. Also trapped in tests were fine dust particles, dry and dispersed in liquids and having varying types of surfaces. The particles pass through a glass filter and are caught on the surface of a film-forming liquid (peptone, glycerine) or on a plastic film disc coated with such a liquid. There are many references to the testing of this device with actual bacterial aerosols [types of bacteria not given]. Orig. art. has: 2 figures. [WA-50; CBE No. 39][LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 007

Card 3/3

ACC NR: AP8033942

SOURCE CODE: UR/0402/68/000/005/0618/0623

AUTHOR: Rezepova, A. I.; Neustroyev, V. D.; Salagova, T. A.

ORG: Moscow Scientific Research Institute of Viral Preparations
(Moskovskiy nauchno-issledovatel'skiy institut virusnykh preparatov)

TITLE: Increasing the hemagglutinating and infectious activity of some arboviruses in tissue culture

SOURCE: Voprosy virusologii, no. 5, 1968, 618-623

TOPIC TAGS: arbovirus, encephalitis, tissue culture, hemagglutination

ABSTRACT: The dependence of the hemagglutinating activity of Sindbis, Chikungunya, West Nile fever and tickborne encephalitis viruses (Sophian strain—isolated in the Far East, Khivr—isolated in Czechoslovakia and number of 1961—isolated in the Urals) on the volume of tissue culture fluid was established. The hemagglutinating activity of these viruses can be increased by enriching the hemagglutinin content of culture fluid with subsequent passages. The infectious titer of viruses was determined by the cytopathic effect on transplanted cultures of fetal pig kidney cells. The hemagglutinating activity of all viruses increased both after the first and second

Card 1/3

UDC: 576.858.25.093

ACC NR: AP803394?

consecutive passages, independently of initial titer, 4—16 times. Further passages decreased the hemagglutinating activity, and hemagglutinins disappeared completely by the sixth to seventh passage. The infectious titer of tickborne encephalitis viruses, West Nile fever virus, and Chikungunya virus increased after the first passage only. During the second passage, in spite of the increase in hemagglutinin, the infectious titer of these virus decreased. Apparently, increase in the number of passages promotes accumulation of metabolic products, which have a negative effect on hemagglutinin formation. The cytopathic effect of viruses on tissue culture cells varied with consecutive passages: after the first and second passages of West Nile fever virus and tickborne encephalitis virus, degeneration usually occurred more rapidly (from 4 days to 2 days and then 1 day for encephalitis virus). No acceleration of the cytopathic effect of Sindbis or Chikungunya virus was observed, since 24 hr after the initial infection cells were destroyed. The antihemagglutinin titer in the hemagglutination inhibition reaction with rat sera (obtained after immunization with culture fluid from the first passage) increased 2 to 4 times. The method of enrichment of culture fluid with hemagglutinin by means of consecutive passages is suggested for production of diagnostic material for

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ACC NR: AP8033942

tickborne encephalitis virus and other group A viruses. The activity of preparations obtained by this method is 1:512—1:2048. Orig. art. has: 4 figures and 1 table. [WA-50; CBE No. 39][JS]

SUB CODE: 06/ SUBM DATE: 08Jun67/ ORIG REF: 011/ OTH REF: 006

Card 3/3

ACC NR: AP8037044

SOURCE CODE: UR/0240/68/000/011/0027/0031

AUTHOR: Rybakova, M. N.

ORG: Laboratory of Toxicology of Toxic Chemicals, Institute of Nutrition, AMN SSSR, Moscow (Laboratoriya toksikologii yadokhimikatov Instituta pitaniya AMN SSSR)

TITLE: The effect of some pesticides on the hypophysis and its gonadotropic effect

SOURCE: Gigiyena i sanitariya, no. 11, 1968, 27-31

TOPIC TAGS: pituitary gland, pesticide, reproductive system, pituitary hormone

ABSTRACT: Results are reported on subacute and chronic toxicity studies with DDT and Sevin in rats. In subacute experiments, animals were divided into 3 groups; group I received 50 mg/kg (1/10 of LD₅₀) of Sevin and group II received 25 mg/kg (1/10 of LD₅₀) of DDT daily for 50 days; group III rats served as controls. In chronic experiments which were continued for 12 months, animals received daily doses of Sevin (7 mg/kg, 14 mg/kg, or 70 mg/kg), and DDT (0.2 mg/kg or 1.4 mg/kg). In both subacute and chronic experiments, there was a disruption in the estrus cycle rhythm and in the

Card 1/2

UDC: 615.778.4-092:612.433.62

ACC NR: AP8037044

length of its separate phases in animals receiving DDT and Sevin. The average length of the estrus cycle was increased in both subacute and chronic experiments. Morphological examinations revealed an increase in the number of corpus luteum and atresia of the ovarian follicles. Hypophysial gonadotropic function was determined at the conclusion of the subacute experiment, and at 6, 9, and 12 months in the chronic experiment. There was an increase in gonadotropic function, especially luteinization, in rats receiving both Sevin and DDT in subacute experiments. Analogous changes in the estrus cycle were noted in chronic experiments; however, more pronounced hypophysial gonadotropic function changes were noted with DDT. Results of the study indicate a high degree of sensitivity of some endocrinological tests and the possibility of their use for determining pesticide toxicity. Orig. art. has: 2 figures.

[WA-50; CBE No. 39] [XF]

SUB CODE: 06/ SUBM DATE: 17Jun67/ ORIG REF: 001/ OTH REF: 002

Card 2/2

ACC NR: AP8034772

SOURCE CODE: UR/0346/68/000/010/0109/0110

AUTHOR: Sadykhov, S. F. (Chief of expedition for the prevention of brucellosis in agricultural live stock)

ORG: Main Veterinary Administration, MSKh, AzerbSSR (Glavnoye upravleniye veterinarii MSKh Azerbaydzhanskoy SSR)

TITLE: The diagnostic value of the PCFT (prolonged complement fixation test) and the ring test for diagnosis of brucellosis among buffalo

SOURCE: Veterinariya, no. 10, 1968, 109-110

TOPIC TAGS: brucellosis, complement fixation reaction, serologic test

ABSTRACT: Study of 2212 serum samples from buffalo with brucellosis showed that the ring test and the prolonged complement fixation test are specific and more sensitive methods of detecting buffalo brucellosis than either the agglutination reaction or the standard complement fixation test. In addition, both the ring test and PCFT are simpler to conduct. Both these tests can be recommended for widespread use because they uncover a larger percentage of sick animals. For example, in a study of 1106 buffalo, the hemagglutination reaction gave 127

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UDC: 619:616.981.42-077.3:636.293.2

ACC NR: AP8034772

positive and doubtful results, and the ring test 168 positive tests. The PCFT gave 227 positive results from unsafe farms and brucellosis isolation areas, as compared with 137 positive results using the standard complement fixation test. The studies was conducted under the guidance of Scientific Director, Doctor of Veterinary Science, A. M. Tevosov. Orig. art. has: 2 tables. [WA-50; CBE No. 39][JS]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AP8033952

SOURCE CODE: UR/0249/68/024/008/0079/0083

AUTHOR: Safarov, Yu. B.; Kadymov, R. A.

ORG: Azerbaydzhan SKhI (Azerb SKhI)

TITLE: The effect of a tissue biostimulator on the immunobiological reactivity of animals vaccinated against brucellosis

SOURCE: AN AzerbSSR. Doklady, v. 24, no. 8, 1968, 79-83

TOPIC TAGS: brucellosis, immunogenesis

ABSTRACT: Administration of a tissue biostimulator (prepared according to Z. P. Filatov's method) in a dose of 0.1 ml/kg to sheep and guinea pigs inoculated with strain 19 brucellosis vaccine intensified specific immunity. Animals were later infected with cultures of *Br. melitensis*. The titer of specific antibodies increased significantly when biostimulator was injected together with antigens into guinea pigs. In sheep, use of biostimulator with vaccine improved the immunological response of animals, as indicated by pronounced leukocytosis, intensified phagocytic activity of leukocytes, excess of lymph cells, and increase in the level of α - and γ -globulins in the serum. Addition of biostimulators after immunization with strain 19 vaccine can be recommended as

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ACC NR: AP8033952

an effective means of increasing the immunological response to brucellosis vaccination. The paper was presented by Academician, AN AzerbSSR, M. K. Ganiyev. [WA-50; CBE No. 39][JS]

SUB CODE: 06/ SUBM DATE: 28Sep67

Card 2/2

ACC NR: AP8035412

SOURCE CODE: UR/0240/68/000/010/0039/0045

AUTHOR: Sergeyeva, T. I.; Matveyev, K. I.

ORG: Institute of Epidemiology and Microbiology im. N. F. Gamaleya, AMN SSSR, Moscow (Institut epidemiologii i mikrobiologii AMN SSSR)

TITLE: The geographical distribution of *Cl. tetani* in the soil of the USSR

SOURCE: Gigiyena i sanitariya, no. 10, 1968, 39-45

TOPIC TAGS: tetanus, soil bacteriology, clostridium tetani .

ABSTRACT: Study of 6175 soil samples, were taken at a depth of 5-10 cm, from different climatic and geographic zones of the SSSR, showed that *Cl. tetani* is unevenly distributed in the soil. The highest degree of soil contamination was observed in the southern region with fertile chernozem soil, areas characterized by a long vegetation period for both plants and soil microflora. These climatic and geographic zones are also the most epidemiologically hazardous areas for tetanus. The distribution of tetanus in the SSSR is directly related to the distribution of *Cl. tetani* in the soil; this relationship also underlies the endemic nature of the disease in some locations. Soils in settlements, or in other areas where larger

Card 1/2

UDC: 576.851.551.01:631.46(47)

ACC NR: AP8035412

numbers of people and animals are accumulated, contain more *Cl. tetani* than the soil of fields, meadows, and forests. A comparison of the degree of soil contamination with tetanus bacteria with the animal density per unit of area showed that animals promote enrichment of the soil population of *Cl. tetani*, although soil and climatic conditions are the overall determining factors. The higher incidence of tetanus among the agricultural population is explained by more frequent contact of agricultural workers with the soil. Active soil reservoirs of *Cl. tetani* exist in Moldavia and Armenia, Krasnodar Kray, Rostov, Lvov, and other oblasts of the SSSR. Favorable conditions for growth of tetanus bacteria are absent in the soil of Belorussia, Latvia, and Altay and Krasnoyar Krays in spite of the considerable cattle population. In the Turkmen, Uzbek, and Kazakh SSR, The cattle population is small, but climatic conditions favor *Cl. tetani*. Orig. art. has: 2 tables.

[WA-50; CBE No. 39][JS]

SUB CODE: 06/ SUBM DATE: 29May67/ ORIG REF: 015

Card 2/2

ACC NR: AT8035454

SOURCE CODE: UR/3406/67/000/058/0097/0101

AUTHOR: Shepelev, D. S. (Docent); Machinskiy, A. P. (Docent)

ORG: none

TITLE: Observations on soil invasions

SOURCE: Saransk. Mordovskiy gosudarstvennyy universitet. Uchenyye zapiski, no. 58, 1967. Seriya veterinarnykh i meditsinskikh nauk (Series of veterinary and medical sciences), 97-101

TOPIC TAGS: soil biology, soil microorganism, soil

ABSTRACT: Certain helminths and other eggs are viable in the uppermost soil layers for over a year. Farm animals are attacked by many of these pests via contaminated soils; thus, the farmer and veterinarian must take steps to remove this danger as much as possible. Chemical reactions of applied disinfectants take place between the inorganic and organic matter of the soil and the disinfectant. Insoluble compounds are formed, and generally the effectiveness of a chemical disinfectant is almost nil. For soil sterilization a disinfectant is recommended which will: 1) generate a certain amount of heat, 2) heat and disinfect as deep as 20 cm, and 3) be effective against helminths and *coccidia*. Orig. art. has: 1 table. [WA-50; CBE No. 39] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 009

Card 1/1

ACC NR: AP8033823

SOURCE CODE: UR/0439/68/047/010/0539/0548

AUTHOR: Shiranovich, P. I.

ORG: Rostov-on-Don State Scientific Research Antiplague Institute (Rostovskiy-na-Donu gosudarstvennyy nauchno-issledovatel'skiy protivochumnyy institut)

TITLE: Causes of the drop in the little suslik population (*Citellus pygmaeus*) in the Northwest Ciscaspian semidesert

SOURCE: Zoologicheskii zhurnal, v. 47, no. 10, 1968, 1539-1548

TOPIC TAGS: biologic ecology, animal vector research

ABSTRACT: The area in the northwest Ciscaspian region densely populated with susliks has been sharply reduced in the last 20 yr (two-to three-fold). The colony type of little susliks (*Citellus pygmaeus*) also changed considerably, from a continuous type of settlement in the recent past to the present scattered, mosaic type of settlement characterized by small foci. The present severe depression in the small suslik population was caused by ecological changes, i.e., the transformation of the northwest Ciscaspian semideserts into steppes. The climate of this area has become more humid since the mid 1940's,

Card 1/3

UDC: 599.322.2:591.526

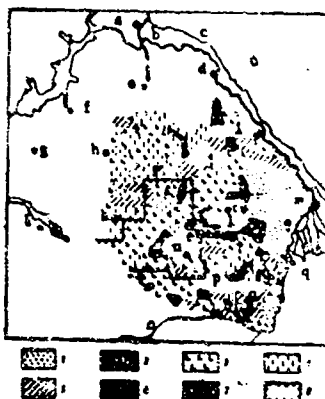


Fig. 1. The population density of the little suslik in the northwest Caspian area in 1964. Population of susliks/ha:

1 - no susliks; 2 - 0 to 1; 3 - 2-5;
4 - 6-10; 5 - 11-20; 6 - 21-30; 7 -
more than 30; 8 - boundary of the territory
on which susliks have not been terminated
since 1943.

a - Volgograd; b - Volga; c - Akhtuba, d -
Chernyy Yar; e - Gorodovikovo; f - Kotel'nikovo;
g - Zimovniki; h - Zavetnoye; i -
Yemotayevka; j - Sarpa; k - Elieta; l -
Khalkhuta; m - Astrakhan; n - Yuzhnyy; o -
Kuma; p - Chernozemel'ekoye; q - Kaspiyskiy

Card 2/3

and more mesophytes (plants growing under medium moisture conditions) are now found there. Land use has also changed, as unused pastures become utilized. Further development of the northwest Caspian area along these lines (more and more mesophytes) is predicted, which will lead to still greater reductions of the little suslik population. The density of the little suslik population in 1964 is shown in Figure 1. Orig. art. has: 3 figures. [WA-50; CBE No. 39][JS]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 040/ OTH REF: 001

Card 3/3

ACC NR: AP8035411

SOURCE CODE: UR/0240/6S/000/010/0035/0039

AUTHOR: Sidorenko, G. I.; Pivovarov, Yu. P.

ORG: Department of General Hygiene, Second Moscow Medical Institute
im. N. I. Pirogov (Kafedra obshchey gigiyeny II Moskovskogo meditsin-
skogo instituta)

TITLE: The effect of different factors on multiplication of *Cl. perfringens*

SOURCE: Gigiyena i sanitariya, no. 10, 1968, 36-39

TOPIC TAGS: clostridium, bacteria growth

ABSTRACT: Salt concentrations of 8-10% and sugar concentrations of 15-20% inhibited growth of *Cl. perfringens*. Nitrites and synthetic smoke preparations, in the concentrations used in the food industry, do not have a significant effect on growth of *Cl. perfringens*. In food products with a low pH, however, nitrites and smoke preparations can delay multiplication of *Cl. perfringens*. *Cl. perfringens* spores can remain viable in a 20% salt solution for 30 days, or on pieces of meat placed in a 20-25% salt solution for up to 45 days. Spores die considerably faster in sugar solutions: viable spores survived in

Card 1/2

UDC: 576.851.555.095.6

ACC NR: AP8035411

a 30% sugar solution for 5 days only. *Cl. perfringens* can multiply in nutrient media and in food products with pH 5.0-8.0. The optimum conditions for multiplication of *Cl. perfringens* are pH 7.0-7.5. The closer the incubation temperature to the optimum temperature for multiplication of *Cl. perfringens* (45-46°C), the weaker the effect of various factors on multiplication of the bacteria.

[WA-50; CBE No. 39]{JS}

SUB CODE: 06/ SUBM DATE: 30Nov67/ ORIG REF: 002/ OTH REF: 002

Card 2/2

ACC NR: AP8033935

SOURCE CODE: UR/0402/68/000/005/0554/0560

AUTHOR: Sitnikov, B. S.; Gendon, Yu. Z.

ORG: Moscow Scientific Research Institute of Viral Preparations
(Moskovskiy nauchno-issledovatel'skiy institut virusnykh preparatov)

TITLE: Resistance of the variola-vaccinia subgroup of viruses to the influences damaging predominantly the protein membrane or the nucleic component of the virus

SOURCE: Voprosy virusologii, no. 5, 1968, 554-560

TOPIC TAGS: Results are reported on a comparative study of the sensitivity of vaccinia virus strain JA, the neurovariant of vaccinia virus strain MM passed through rabbit brain, the neurovariant of vaccinia virus strain WR passed through mouse brain, and ectromelia virus strain ER, to factors inactivating the virus by destruction of the protein or nucleic component. The viruses were cultivated on chorioallantoic membranes of 11-day-old chick embryos; the infected membranes were then pulverized and centrifuged. The virus-containing liquid was inactivated in a water bath at 56°, with urea, UV rays from a BUV-30 lamp providing a radiation dose of 15 erg/mm²/sec, hydroxylamine, or the photodynamic effect of methylene blue. Sensitivity to desoxyribonuclease of viruses inactivated by heat or urea was determined by

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UDC: 576.858.13.097.22

ACC NR: AP8033935

cultivating the microorganisms on medium no. 199 containing desoxyribonuclease (4 mg/ml) and maintaining the culture at 20° for 1½ hr, after which the titer of the virus was determined. There was a difference in the resistance of subgroups of vaccinia-variola viruses to heat and urea, which inactivated the microorganisms by damaging the protein; thus, ectromelia virus showed the greatest sensitivity to both heat and to urea. There was no difference among the different strains in the degree of inactivation by UV rays, the photodynamic effect of methylene blue, or of hydroxylamine, which damage the nucleic component of the virus. Viruses inactivated by heat and urea did not show any sensitivity to the action of desoxyribonuclease. Orig. art. has: 4 figures.

[WA-50; CBE No. 39] [XF]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 005/ OTH REF: 019

Card 2/2

ACC NR: AP8035718

SOURCE CODE: UR/0479/68/000/004/0031/0037

AUTHOR: Sivak, F. P.

ORG: none

TITLE: The role of flies in the seasonality of dysentery

SOURCE: Zdravookhraneniye Turkmenistana, no. 3, 1968, 31-37

TOPIC TAGS: dysentery, disease vector, fly, disease carrying insect

ABSTRACT: In general, flies are not an important factor in the spread of dysentery except in August and September. In most months, only 1.4% of the flies caught gave positive reactions to *Shigella*, and over 97% of the flies caught were the common housefly. In July and September phage titer positives rose to 9.5%. Morbidity to dysentery corresponds roughly to the increase in the numbers of flies; however, indications that changes in virulence of the infective strains with the advancing season, as well as the increase in vector numbers are responsible for increased dysentery cases. Orig. art. has: 2 tables and 2 figures.

[WA-50; CBE No. 39] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 1/1

ACC NR: AP8033274

SOURCE CODE: UR/0438/68/030/005/0432/0438

AUTHOR: Smaliy, V. T.; Bagnyuk, V. M.; Perepelyak, L. P.

ORG: Institute of Microbiology and Virology AN URSR (Instytut mikrobiologiy i virusologiy AN URSR)

TITLE: Effect of methods of irrigation on the microbiological processes in the soil of the southern Ukrainian SSR

SOURCE: Mikrobiologichnyy zhurnal, v. 30, no. 5, 1968, 432-438

TOPIC TAGS: soil bacteriology, agriculture crop

ABSTRACT: Results are reported of a study of microbiological processes in the dark brown soil, black soil, and strongly alkaline soil in the Shevchenko Sovichoz, Oktyabr' Rayon of the Nikolayev Oblast of the southern Ukraine during overhead and ground irrigation of corn in 1965. Counts of bacteria, fungi, *Actinomycetales* and their different physiological groups were made. Potential nitrifying and nitrogen-fixing properties of the soil and the intensity of cellular tissue decomposition were determined. There was an increase in the count of all microorganisms except *Actinomycetales*, and in the nitrogen-fixing capacity of the soil and in cellular tissue decomposition during irrigation.

Card 1/2

UDC: 631.46+631.117

ACC NR: AP8033274

There was an increase in the count of oligonitrophilic bacteria and *Azotobacter* in the top soil of areas irrigated along the furrows, as compared with areas irrigated from overhead. Also, in areas irrigated along the furrows, there was greater nitrifying and nitrogen-fixing activity in the soil, and more intense decomposition of cellular tissue. Orig. art. has: 4 tables. [WA-50; CBE No. 39] [XF]

SUB CODE: 06/ SUBM DATE: 16May68/ ORIG REF: 005

Card 2/2

ACC NR: AP8034903

SOURCE CODE: UR/0396/68/012/005/0066/0067

AUTHOR: Smirnov, B. N.

ORG: Department of General Pathology /Head--Corresponding Member AMN SSSR, Professor P. N. Veselkin/, Institute of Experimental Medicine, AMN SSSR, Leningrad (Otdel obshchey patologii Instituta eksperimental'noy meditsiny AMN SSSR)

TITLE: Antibacterial properties of leukocytes during antibiotic therapy of experimental paratyphoid infection

SOURCE: Patologicheskaya fiziologiya i eksperimental'naya terapiya, v. 12, no. 5, 1968, 66-67

TOPIC TAGS: leukocyte, paratyphoid fever, antibiotic drug effect

ABSTRACT: Study of the properties of leukocytes during experimental paratyphoid infection treated with antibiotics (syntomycin and chloramphenicol) showed that the bacteriostatic properties of leukocytes from the peritoneal exudate of rabbits increased during the period of clinical convalescence from paratyphoid. Rabbits were infected with fifty million cells of *S. typhimurium* and treated with 0.4 g/kg per day of syntomycin. Bacteriostatic properties of

Card 1/2

UDC: 616.927.7-092.9-085.33-07:612.112.3

ACC NR: AP8034903

leukocytes (with respect to *S. typhimurium*) were determined in 11 healthy rabbits and 16 rabbits recovering from paratyphoid, (8 treated with syntomycin). Orig. art. has: 1 figure. [WA-50; CBE No. 39][JS]

SUB CODE: 06/ SUBM DATE: 15Jul67/ ORIG REF: 005/ OTH REF: 001

Card 2/2

ACC NR: AP8037041

SOURCE CODE: UR/0468/68/002/006/0563/0567

AUTHOR: Sten'ko, A. S.; Kriviskiy, A. S.

ORG: Institute of Microbiology and Virology, AN UkrSSR, Kiev (Institut mikrobiologii i virusologii AN UkrSSR); Institute of Molecular Biology, AN SSSR, Moscow (Institut molekulyarnoy biologii AN SSSR)

TITLE: Mutagenic effect of ethyleneimine on transforming DNA of *Bacillus subtilis*

SOURCE: Tsitologiya i genetika, v. 2, no. 6, 1968, 563-567

TOPIC TAGS: mutagen, ethyleneimine, DNA, microorganism

ABSTRACT: An attempt to induce mutagenesis of the transforming DNA of *Bacillus subtilis* with ethyleneimine (EI) is described. A prototrophic strain is used as donor and a try-strain as recipient. Fluorescent ind-mutants were counted after treatment of the donor culture with small quantities of EI and the mating of the two cultures. Residual transformation activity was evaluated by determining the % of F-mutants at different temperatures. Although mutagen concentration, length of treatment and pH affected the percent of mutants observed, the

Card 1/2

ACC NR: AP8037041

increase in temperature only increased the rate of DNA inactivation,
but not the mutagenic effect of EI. Orig. art. has: 2 figures and
1 table. [WA-50; CBE No. 39][LP]

SUB CODE: 06/ SUBM DATE: 24Jan68/ ORIG REF: 011/ OTH REF: 005

Card 2/2

ACC NR: AP8034764

SOURCE CODE: UR/0346/68/000/010/0047/0049

AUTHOR: Taranov, V. A.

ORG: Tadzhik Republic Veterinary Laboratory (Tadzhikskaya respublikan-
skaya veterinarnaya laboratoriya)

TITLE: [Serological methods of detecting brucellosis in yaks]

SOURCE: Veterinariya, no. 10, 1968, 47-49

TOPIC TAGS: brucellosis, serologic test

ABSTRACT: The agglutination reaction is a specific method of diagnos-
ing brucellosis in yaks. The agglutination reaction in a 10% saline
solution uncovered more positively reacting animals and most completely
reflected the height of the agglutination titer. For the complement
fixation test, the best regime for inactivation of yak serum is a tem-
perature of 58°C and a duration of 30 min. Yaks reacting to brucellin
or *Brucella* hydrolysate in a dose of 0.3—0.5 ml can be considered
infected with brucellosis. Results of the agglutination reaction
showed that yak serum has a higher titer than cattle serum, apparently

Card 1/2

UDC: 619:616.981.42.636.293.0

ACC NR: AP8034764

because yaks show a high immunological response in the acute period of the disease as well as 2--3 yr later. The study was conducted under the guidance of Scientific Director, Professor M. M. Ivanov.

[WA-50; CBE No. 39][JS]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AP8033589

SOURCE CODE: UR/0016/68/000/009/0026/0030

AUTHOR: Temper, R. M.

ORG: First Moscow Medical Institute im. Sechenov (I Moskovskiy meditsinskiy institut)

TITLE: Experimental infection produced by polyresistant *Staphylococci*

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 9, 1968, 26-30

TOPIC TAGS: staphylococcus, drug resistance, microorganism

ABSTRACT: The infectious processes produced by *Staphylococci* polyresistant to antibiotics and the therapeutic effects of the semisynthetic antibiotic ceporin were studied. In the experiments, 15 strains of polyresistant and 5 strains of antibiotic-sensitive organisms isolated from patients and hospital personnel were used. The following biological activities were determined: pigment formation, hemolytic activity, types of hemolysins, plasmocoagulation, hyaluronidase, fibrinolytic and lecithinase activity, virulence for mice, dermonecrosis in rabbits, phagetype, and antibiotic sensitivity. More severe symptoms were produced by strains polyresistant to antibiotics; the

Card 1/2

UDC: 616.981.25-036.62-02:576.851.252.097.22:615.779.9

ACC NR: AP8033589

organisms were more widespread in the blood, organs, and tissues of the host. Ceporin and antibiotics from the cephalosporin C group of compounds were effective against polyresistant *Staphylococci*. Orig. art. has: 5 tables. [WA-50; CBE No. 39][LP]

SUB CODE: 06/ SUBM DATE: 19Mar68/ OTH REF: 008

Card 2/2

ACC NR: AP8033977

SOURCE CODE: UR/9062/68/003/005/0775/0776

AUTHOR: Ternovskiy, M. F.; Mitrofanova, I. I.

ORG: All-Union Scientific Research Institute of Tobacco and Makhorka, Krasnodar (Vsesoyuznyy nauchno-issledovatel'skiy institut tabaka i makhorki)

TITLE: The resistance of tobacco to white mottle (virus)

SOURCE: Sel'skokhozyaystvennaya biologiya, v. 3, no. 5, 1968, 775-776

TOPIC TAGS: plant disease, potato virus Y, mottle virus

ABSTRACT: Tobacco varieties resistant to white mottle were uncovered during tests in 1966 and included: *N. paniculata*, *N. knightiana*, *N. solanifolia*, *N. raimondii*, *N. glauca*, *N. tomentosa*, *N. tomentosiformis*, *N. otophora*, and *N. setchellii*. Completely resistant varieties are mostly found in the Paniculatæ or Tomentosæ groups. White mottle of tobacco is caused by potato virus Y. [WA-50; CBE No. 39][JS]

SUB CODE: 06/ SUBM DATE: 16Jun67

Card 1/1

UDC: 631.52+582.951.4

ACC NR: AP8033960

SOURCE CODE: UR/0016/68/000/010/0070/0074

AUTHOR: Vishnyakov, S. V.; Gorbunov, M. A.; Vasyuta, Yu. S.; Savinova, T. I.; Klug, A. S.; Retina, T. N.; Rakhmatullina, I. K.; Martsinkevich, Ch. I.; Yevladov, A. V.; Kurcheyeva, L. I.; Kuznetsova, K. V.; Fillippenkova, Ye. D.; Klug, L. S.; Baran, I. T.; Kochetov, V. A.; Myasnikov, Yu. A.

ORG: Central Disinfection Institute (Tsentral'nyy dezinfektsionnyy institut); Main Sanitation and Epidemiological Administration, Ministry of Public Health RSFSR (Glavnoye sanitarno-epidemiologicheskoye upravleniye Ministerstva zdravookhraneniya RSFSR); Republic Sanitation and Epidemiological Station, BASSR (Respublikanskaya sanitarno-epidemiologicheskaya stantsiya BASSR); Ufa Municipal Sanitation and Epidemiological Station (Ufinskaya gorodskaya sanitarno-epidemiologicheskaya stantsiya); Institute of Poliomyelitis and Viral Encephalitides, AMN SSSR (Institut poliomyelita i virusnykh entsefalitov AMN SSSR)

TITLE: The distribution of hemorrhagic fever with a renal syndrome in Ufa and the epidemiological effectiveness of rodent extermination

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 10, 1968, 70-74

Card 1/2

UDC: 616.61-002.151-022.6-
-036.2:614.449.932.34(470.52)

ACC NR: AP8033960

TOPIC TAGS: hemorrhagic fever, rodent, disease control

ABSTRACT: An active focus of hemorrhagic fever with a renal syndrome exists in Ufa, and is characterized by a great variety of conditions of infection of the population. During the last 10 yr, more than 1500 people in Ufa had hemorrhagic fever. A total of 65% of them were infected within the city. Large outbreaks of hemorrhagic fever recorded in Ufa and Bashkir in 1959, 1964, and 1966 coincided with peaks in the rodent population (red-backed voles), although a complete correlation between the size of outbreaks and the rodent population has not been established. A rodent extermination program (poisoned bait) conducted in the large forests of Ufa (in an area of 4000 ha) in 1965 and 1966 produced a sharp and stable decrease in the population of forest rodents and decreased the incidence of hemorrhagic fever approximately 22-fold, as compared with an untreated control area. The extermination program sharply changed the epidemiology of the disease, decreasing the number of infections contracted in the daily routine and at work, and changing the seasonal character of the disease. Orig. art. has: 2 figures.

[WA-50; CBE No. 39] [JS]

SUB CODE: 06/ SUBM DATE: 25Jul67/ ORIG REF: 003

Card 2/2

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ACC NR: AP9001712

SOURCE CODE: UR/0346/68/000/011/0096/0099

AUTHOR: Voinov, S. I.

ORG: All-Union Scientific Research Institute of Veterinary Sanitation
(Vsesoyuznyy nauchno-issledovatel'skiy institut veterinarnoy sanitarii)

TITLE: Viability of hoof and mouth disease virus in the air

SOURCE: Veterinariya, no. 11, 1968, 96-99

TOPIC TAGS: aerobiology, hoof and mouth disease virus, biologic
aerosol, aerosol chamber, virus viability

ABSTRACT: The viability of hoof-and-mouth-disease virus in the air of a sealed chamber was determined. An aerosol containing 20 ml/M³ of 1, 5, and 10% suspensions of the A22 mutant was released into a hermetically sealed chamber of 19 M³. Virus samples were taken 2, 3, 4, 5, 24, and 48 hr after release of the aerosol. Temperature was maintained at 12-26°C, and the relative humidity at 30-82% during all experiments. Smears of the internal surfaces of the chamber were taken at 1, 3, 24, and 48 hr after aerosol release. The virus persisted up to 24 hr but was absent at 48 hr. Sixteen experiments were performed in

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UDC: 619:616.986.43-095.1

ACC NR: AP9001712

all; and in the 12th and 15th, animals were placed in the chamber. Also, throughout experiment 15, air samples were taken at 5-min intervals. [WA-50; CBE No. 39][LP]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

- 246 -

ACC NR: AT9001895

SOURCE CODE: UR/3287/67/000/022/0078/0094

AUTHOR: Yelinov, N. P. (Professor; Research head); El'-Sukkari, A.

ORG: none

TITLE: Hyaluronidase—hyaluronic acid as a biological system. (Survey)

SOURCE: Leningrad. Khimiko-farmatsevticheskiy institut. Trudy, no. 22, 1967. Nekotoryye voprosy biokhimi i mikroorganizmov (Some problems dealing with the biochemistry of microorganisms) part 2, 78-94

TOPIC TAGS: hyaluronidase, enzyme action, enzyme kinetics

ABSTRACT: Dissolving factors are classified as hyaluronidase or non-specific dissolving factors and aid in the transport of inert substances through the skin of living and dead animals. One of these nonspecific substances is associated with the dissolution of hyaluronic acid but is not an enzyme. Among these substances is a probable activating factor which triggers hyaluronidase production. Microorganisms and tissues containing hyaluronidase and hyaluronic acid are shown in Tables 1 and 2. Hyaluronidase is also found in snake and scorpion venoms, toad extracts, and fish toxins. Highly purified preparations have been prepared by modern methods such as electrophoresis and ultracentrifugation. Microbial

Card 1/6

ACC NR: AT9001895

Table 1. Microorganisms which produce hyaluronidase

Name of microorganism
Bacteria
Streptococcus, Staphylococcus
Strept. agalactiae, S. dysgalactiae
Strept. mitis, S. salivarius
Strept. faecalis, S. bovis
Pneumococcus
Neisseria meningitidis
Bac. subtilis
Clostr. welchii, C. septicum,
C. oedematiens
Bac. histolyticus, B. sordelli,
B. sporogenes
Corynebact. diphtheriae (gravis, mitis).
6 308. 721

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ACC NR: AT9001895

Table 2. Location of hyaluronic acid in tissue

Location of hyaluronic acid
Animal tissue
Human umbilical cord
Human spinal fluid
Human mesothelium
Swine spinal cord
Swine and sheep follicular fluid
Swine and pig skin
Comb (connective tissue)
Microorganisms
E. Coli
<i>Streptococcus hemolyticus</i>
Strept. zymogenes A and C
Aerobacter aerogelles
<i>Pseudomonas aeruginosa</i>

Card 5/6

ACC NR: AT9001895

polysaccharides to the medium decreases the hyaluronidase yield. Extracellular enzymes can be studied by analyzing the nutrient medium while sophisticated fractionation techniques are required for the study of endoenzymes. Several hyaluronidases have been isolated which have different chemical and light-response properties. A description of hyaluronic acid, its properties, and the method of isolation is also given. Orig. art. has: 2 tables. [WA-50; CBE No. 39] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 004/ OTH REF: 099

Card 6/6

ACC NR: AP8035716

SOURCE CODE: UR/0479/68/000/004/0024/0028

AUTHOR: Yurko, L. P.; Gleyberman, S. Ye.; Stepanyan, Ye. G.

ORG: Ashkhabad Institute of Epidemiology and Hygiene/Director--docent, Ye. S. Popova/(Ashkhabadskiy institut epidemiologii i gigiyeny); Department of Microbiology, Turkmen State Medical Institute(Kafedra mikrobiologii, Turkmenskogo gosudarstvennogo meditsinskogo instituta)

TITLE: The role of endotoxin from various types of *Salmonella typhimurium* in the development of the infectious process

SOURCE: Zdravookhraneniye Turkmenistana, no. 3, 1968, 24-28

TOPIC TAGS: endotoxin, toxin effect, salmonella, animal disease

ABSTRACT: The pathological and immunological roles of *Salmonella breslau* (strains 10a and no. 7/1) toxins in intact guinea pig conjunctiva were determined. The animals were given 0.33 or 0.26 mg of dry toxin preparation in 0.05 ml sterile saline and were observed for 21 days. Some of the animals were sacrificed at 3-day intervals for organ studies. In all animals in one group, specific antibody titers rose to 1:100--1:6400 (strain 10a); in the second group (those receiving strain 7/1), titers

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ACC NR: AP8035716

were 1:400--1:6400. The morphological changes in the conjunctiva produced by these endotoxins are described. Low doses (0.1 mg) produced minimal changes in the tissues. [WA-50; CBE No. 39] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AT9001899

SOURCE CODE: UR/3287/67/000/022/0117/0123

AUTHOR: Zaikina, N. A.

ORG: none

TITLE: Biological activity of microbial endotoxins

SOURCE: Leningrad. Khimiko-farmatsevticheskiy institut. Trudy, no. 22, 1967. Nekotoryye voprosy biokhimii mikroorganizmov (Some problems dealing with the biochemistry of microorganisms) part 2, 117-123

TOPIC TAGS: endotoxin, toxin effect, Pseudomonas, Proteus, Staphylococcus, polysaccharide, Salmonella

ABSTRACT: Bacterial endotoxins can lower the resistance of animals to infections, as can complex polysaccharides not possessing qualities of endotoxins. *Pseudomonas fluorescens*, *Ps. aeruginosa*, *Proteus vulgaris*, and *Cornibacterium diphtheriae* toxins produce a dermonecrotic reaction in rabbits when injected subcutaneously. This treatment increases their susceptibility to the Staphylococci which invade, causing hemorrhagic dermonecrosis and the formation of α -hemolysins. Mice receiving endotoxin before bacteria die faster than control mice not receiving endotoxin. Endotoxin injection also alters serotonin, glucose, histamine,

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ACC NR: AT9001899

epinephrine, ACTH, and lysozyme metabolism. The lipopolysaccharide from *Salmonella abortus equi* produces kills of *Streptococcus albus* in leucocyte mixtures because of increased phagocytosis. In *in vitro* experiments it was shown that endotoxin acts on leucocytes in the absense of serum, increasing their phagocytic activity by action similar to that of opsonins. [WA-50; CBE No. 39] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 007/ OTH REF: 035

Card 2/2

ACC NR: AT9000521

SOURCE CODE: UR/3436/67/049/000/0005/0014

AUTHOR: Zakusov, V. V. (Director, Active member AMN SSSR, Professor)

ORG: Institute of Pharmacology and Chemotherapy, AMN SSSR /Director--
Active member AMN SSSR, Professor V. V. Zakusov/ (Institut farmakologii
i khimioterapii)

TITLE: Principles of the study of psychotropic substances

SOURCE: Moscow. Nauchno-issledovatel'skiy institut psikhatrii.
Trudy, v. 49, 1967. Voprosy psikhofarmakologii (Problems in psycho-
pharmacology), 5-14

TOPIC TAGS: psychopharmacology, nervous system drug effect, psycho-
therapeutic drug

ABSTRACT: The behavioral, electrophysiological and biochemical aspects
of psychotropic drugs are reviewed. In an evaluation of behavioral
effects; spontaneous and induced motor activity; hypnotic and analgesic
effects; postural tone; cataleptic effect; convulsive reaction and
group toxicity; the effect on conditioned reflex, on the emotional
state, and on the course of experimental neuroses and nervous system
disorders should be considered. Evaluation of bioelectric activity

Card 1/2

ACC NR: AT9000521

following administration of psychotropic drugs should include effects
on spontaneous activity, evoked potentials, and synaptic transmission
of excitation. The effects of psychotropic drugs on the biochemical
structure of the nervous system may be reflected by changes in catechol-
amines, 5-hydroxytryptamine, acetylcholine, cholinesterase and monoamine
oxidase. Effects on the vegetative and hormonal reactions should be
studied. Also, the antagonistic and synergistic action of psychotropic
agents with other pharmacological agents should be considered: the
potentiating effect of narcotics, soporifics and analgesics, synergism
with phenamine, and antagonism with reserpine. Orig. art. has: 3
tables. [WA-50; CBE No. 39][XF]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 008

Card 2/2

ACC NR: AT9001875

SOURCE CODE: UR/0000/68/000/000/0026/0035

AUTHOR: Zelepukha, S. I.

ORG: Institute of Microbiology and Virology AN UkrSSR (Institut mikrobiologii i virusologii AN UkrSSR)

TITLE: Antimicrobial properties of novoimanine

SOURCE: AN UkrSSR. Institut mikrobiologii i virusologii. Novoimanin i yego lechebnyye svoystva (Novoimanin and its therapeutic properties). Kiev, "Naukova dumka," 1968, 26-35

TOPIC TAGS: bactericide, bacteriostasis, staphylococcus, streptococcus, antibiotic drug effect, (U) novoimanine

ABSTRACT: The antibacterial product novoimanine is highly effective against gram-positive cocci which are resistant to other antibiotics (see Tables 1 and 2). It is basically a bacteriostatic compound, but

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UDC: 615.9

ACC NR: AT9001875

Table 1. Lethal and bacteriostatic doses of novoimanine for different organisms

Microorganism and bacteriostatic dose
0.1—1 µg/ml
<i>Staphylococcus aureus</i> *
<i>Streptococcus haemolyticus</i>
<i>Str. viridans</i>
<i>Str. faecalis</i> **
<i>Micrococcus catarrhalis</i>
<i>Corynebacterium diphtheriae gravis</i>
<i>Cor. diphtheriae mitis</i>
<i>Cor. diphtheriae intermedius</i>
<i>Cor. michiganense</i>
<i>Bacillus perfringens</i>
<i>Bac. megatherium</i>
<i>Bac. mycoides</i>
2—4 µg/ml

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ACC NR: AT9001875

Table 1. (Cont.)

<i>Staph. aureus</i> *** <i>Mycobacterium B₆</i>
<i>Bac. histolyticus</i> <i>Bac. sporogenes</i>
<i>Bac. mesentericus</i> <i>Bac. subtilis</i> <i>Cor. sepedonicum</i> <i>Cor. lasidicum</i>
10 - 20 µg/ml
<i>Leuconostoc mesenteroides</i> <i>Streptococcus lactis</i>
40 - 100 µg/ml
<i>Actinomyces griseus</i> <i>Bac. macerans</i>
200 - 400 µg/ml
<i>Xanthomonas phaseoli</i> <i>X. phaseoli</i> var. <i>fuscans</i> <i>X. campestris</i>
<i>X. maffaeorum</i> <i>X. vesicatoria</i> <i>X. bellicola</i> <i>X. necrosis</i> <i>X. begoniae</i> <i>X. translucens</i>

Card 3/6

ACC NR: AT9001875

Table 1. (Cont.)

<i>Pseudomonas pisi</i> <i>Ps.lachrimans</i> <i>Ps. andropogonis</i> <i>Ps. phaseolicola</i> <i>Ps. tabaci</i> <i>Ps. nigrae</i> <i>Ps. syringae</i> <i>Erwinia phytophthora</i> <i>E. avoidae</i> <i>Bacterium herbicola</i> <i>Epidemiophyton rubrum</i> Not sensitive to 400 µg/ml
<i>Bacterium coli</i> <i>B. proteus vulgaris</i> <i>B. dysenteriae Flexneri</i> <i>B. dysenteriae Sonnei</i> <i>B. dysenteriae Newcastle</i> <i>B. typhi abdominalis</i> <i>B. fluorescens</i> <i>B. pyocyaneus</i> <i>B. Friedländeri</i> <i>B. prodigiosum</i> <i>Erwinia carotovora</i> <i>Bacterium tumefaciens</i> <i>Saccharomyces ellipsoideus</i> <i>Penicillium chrisogenum</i> <i>Fusarium avenaceum</i> <i>Mucor plumbeum</i> <i>Aspergillus niger</i> <i>Candida albicans</i>

Card 4/6

ACC NR: AT9001875

Table 1. (Cont.)

Geotrichum amygdalicum
Trichophyton crateriformi
Epidermophyton Kaufmann-Wolf

- * 90% of *St. aureus* strain 209 isolated from patients were sensitive to this dose.
- ** According to the data of other authors, *St. fecalis* is sensitive to 40 µg/ml.
- *** 10% of strains plus mutant strain 209 UDE-3, isolated from patients are sensitive to this dose.

Table 2. Antimicrobial titer of novoimanine in the presence of normal horse serum

Medium	Bacterio-static titer	Bacteri-cidal titer
Meat-peptone bouillion	1:1 000 000	1:50 000
Same + 4% serum	1:50 000	1:10 000
Same + 10% serum	1:25 000	1:10 000
Same + 20% serum	1:10 000	1:5 000

Legend: about 200,000 cells (*St. aureus* 209) /ml

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ACC NR: AT9001875

is bactericidal at high concentrations. Also, it is effective against some gram-negative organisms at high concentrations. Its antibacterial effects diminish in the presence of serum. Tests showed it to be therapeutic in the treatment of suppurating wounds and burns. Orig. art. has: 5 tables. [WA-50; CBE No. 39][LP]

SUB CODE: 06/ SUBM DATE: none

Card 6/6

ACC NR: AP8034769

SOURCE CODE: UR/0346/69/000/010/0097/0099

AUTHOR: Zharov, V. G. (Candidate of veterinary sciences)

ORG: Tyumen Branch, All-Union Scientific Research Institute of Veterinary Sanitation (Tyumenskiy filial Vsesoyuznogo nauchno-issledovatel'skogo instituta veterinarnoy sanitarii)

TITLE: Aerosol disinfection of livestock barns during brucellosis

SOURCE: Veterinariya, no. 10, 1968, 97-99

TOPIC TAGS: brucellosis, biologic decontamination

ABSTRACT: Summer disinfection of livestock barns infected with *Brucella* was done with aerosols of a 20% formaldehyde solution, using 15-20 ml/m³ and an exposure time of 3 to 4 hr. Addition of Dipterex to the formaldehyde solution (0.5 g/m³) simultaneously killed all flies in the livestock barns. Enclosed milking areas 500 m³ in volume were disinfected with aerosols of 20% formaldehyde solution in an amount of 18-20 ml/m³ and an exposure of 2.5-3 hr. Aerosol disinfection was conducted with a VDM machine mounted on an automobile chassis. [WA-50; CBE No. 39][JS]

SUB CODE: 06/ SUBM DATE: none

Card 1/1

UDC: 619:616.981.42-084.434:636.083.1

ACC NR: AP9001703

SOURCE CODE: UR/0346/68/000/011/0023/0027

AUTHOR: Zhidkova, L. A. (Aspirant)

ORG: State Scientific Control Institute of Veterinary Preparations (Gosudarstvennyy nauchno-kontrol'nyy institut veterinarnykh preparatov)

TITLE: Biological properties of hoof and mouth disease virus mutant A22

SOURCE: Veterinariya, no. 11, 1968, 23-27

TOPIC TAGS: hoof and mouth disease virus, mutant, tissue culture

ABSTRACT: The immunobiological and physicochemical properties of a native (virulent) and modified strain of hoof-and-mouth virus A22 during passage in nonsusceptible animals and in pig kidney tissue culture at low temperatures (24°C) are described. After 149 passages in animals (cattle) and in tissue cultures, the virus possessed decreased virulence for mice, rabbits, and guinea pigs. This passaged strain was immunogenic for cattle, demonstrating the efficacy of the above attenuation method. Prolonged passaging not only changed immunochemical properties of the virus, but also its cardiotropic and myotropic behavior. The low temperature also was a

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UDC: 619.616.988.43-095.5

ACC NR: AP9001703

factor in such changes since viruses raised in parallel experiments at 41, 37, 28, and 24°C lost pathogenicity and the ability to produce a CPE at 28 and 24°C. Orig. art. has: 4 tables.

[WA-50; CBE No. 39][LP]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AP8035421

SOURCE CODE: UR/0433/68/000/010/0045/0046

AUTHOR: Zhukovskaya, S. A. (Senior associate)

ORG: Far Eastern Experimental Station, VIR, Vladivostok (Dal'-nevostochnaya opytnaya stantsiya VIR)

TITLE: Wilt of legumes

SOURCE: Zashchita rasteniy, no. 10, 1968, 45-46

TOPIC TAGS: plant disease, fungus

ABSTRACT: Some varieties of beans, peas, and soybean were killed by wilt (caused by *Gliocladium roseum*) at the Far Eastern Experimental Station in 1964—1965. In 1965, wilt was noted in commercial plantings in Primorskiy Kray, apparently because of a combination of unfavorable conditions and improper crop rotation. Peas and beans were most heavily damaged. Wilt developed shortly after the appearance of true leaves, slowed plant development and prevented bean formation. In 1965, *Verticillium* wilt appeared in early August on plants weakened by dry, cool weather. Damaged seeds were covered with rotten spots with occasional little black nodules. The death of many strain specimens in the station's collection indicates the great hazard of wilt

Card 1/1

UDC: 632.4:633.31/.37

ACC NR: AP8035421

for commercial plantings of legumes. Preventive measures include proper crop rotation and sowing in baked soil of high-quality, disinfected seeds. Orig. art. has: 3 figures. [WA-50; CBE No. 39][JS]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AP9001707

SOURCE CODE: UR/0346/68/000/011/0044/0045

AUTHOR: Zusmanovskiy, A. G. (Candidate of veterinary sciences); Gnusin, I. A. (Veterinary doctor)

ORG: [Zusmanovskiy] Ul'yanov Agricultural Institute (Ul'yanovskiy sel'skokhozyaystvennyy institut); [Gnusin] Ul'yanov Oblast Veterinary Laboratory (Ul'yanovskaya oblastnaya veterinarnaya laboratoriya)

TITLE: Experimental control of hog cholera with live ADV vaccine

SOURCE: Veterinariya, no. 11, 1968, 44-45

TOPIC TAGS: hog cholera, hog cholera vaccine, liver vaccine

ABSTRACT: A lapinized avirulent, vaccine (ADV) was used to immunize 2-5000 pigs on several collective farms against hog cholera (swine plague). Similar vaccines had been used successfully against bronchial pneumonia, gastroenteritis, and paratyphoid in pigs. To minimize post-vaccinal complications, a dose of immune serum and antibiotics was given 4-6 days after the initial vaccination. This procedure was repeated on other farms and found to be successful. Its ultimate success, however, depends on adequate accompanying sanitation and quarantine measures. [WA-50; CBE No. 39][LP]

SUB CODE: 06/ SUBM DATE: none

Card 1/1

UDC: 619:616.988.75-084:636.4

ACC NR: AP8033978

SOURCE CODE: UR/9062/68/003/005/0783/0784

AUTHOR: Zykin, V. A.

ORG: Kazakh Research Location, VIR, Shortandy, Tselinograd Oblast
(Kazakhskiy opornyy punkt VIRa)

TITLE: The resistance of spring wheat to rust

SOURCE: Sel'skokhozyaystvennaya biologiya, v. 3, no. 5, 1968, 783-784

TOPIC TAGS: rust fungus, plant disease

ABSTRACT: During rust epiphytotics in North Kazakhstan, a definite connection has been established between the length of the developmental cycle of soft spring wheat and the degree of damage by stem and brown rust. The greatest number of varieties of spring wheat highly resistant to rust are found in the early and early-ripening groups, and the smallest number of resistant strains among late varieties. A 1964 study of 61 samples of soft wheat of the North American hybrid group naturally infected with rust showed that the correlation coefficient between length of cycle and degree of damage for brown rust was 96, and 91-93 for stem rust. A total of 31% of middle-ripening varieties were resistant to stem rust, and 16.7% to brown rust. Resistant

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UDC: 632.938.2

ACC NR: AP8033978

varieties of middle-ripening spring wheat, (which must be used in certain climates) which can be used for development of more resistant strains include the local Kazakh strain k-15157, and hybrid k-43095 and k-44432. [WA-50; CBE No. 39][JS]

SUB CODE: 06/ SUBM DATE: 28Nov67/ ORIG REF: 010

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ACCESSION NUMBERS FOR BIOLOGICAL FACTOR

AP8022218	AP9001005	AP9002282
AP8024221	AP9001111	AP9002367
AP8024292	AP9001113	AP9002368
AP8024598	AP9001288	AP9002369
AP8024797	AP9001290	AP9002855
AP8024801	AP9001293	AP9002859
AP8024804	AP9001294	AP9002863
AP8024951	AP9001298	AP9002866
AP8025038	AP9001299	AP9002867
AP8025928	AP9001301	AP9002868
AP8026716	AP9001303	AP9002869
AP8027613	AP9001305	AP9002872
AP8027614	AP9001307	AP9002875
AP8029006	AP9001311	AP9002906
AP8029566	AP9001313	AP9002907
AP8029567	AP9001314	AP9002951
AP8029570	AP8001315	AP9002953
AP8029571	AP9001316	AP9002954
AP8029573	AP9001398	AP9002956
AP8029574	AP9001415	AP9002961
AP8029575	AP9001416	AP9002982
AP8029576	AP9001417	AP9002990
AP8 29578	AP9001418	AP9003754
AP8031030	AP9001419	AP9003770
AP8031032	AP9001420	AP9003772
AP8033192	AP9001507	AP9003821
AP8033193	AP9001508	AP9003870
AP8033194	AP9001510	AP9003871
AP8033195	AP9001511	AP9003872
AP8033196	AP9001550	AP9004528
AP8033273	AP9001551	
AP8034765	AP9001552	
AP8034767	AP9001567	AT8003052
AP8035485	AP9001569	AT8033770
AP8036119	AP9001702	
AP8036704	AP9001704	AT9000522
AP8036851	AP9001706	AT9000524
AP8036852	AP9001708	AT9000525
AP8036853	AP9001709	AT9000526
AP8036854	AP9001710	AT9000529
AP8037406	AP9001711	AT9000737
AP8037430	AP9001717	AT9001479
AP8037431	AP9001718	AT9001480
AP8038120	AP9001719	AT9001484
AP8038121	AP9001919	AT9001877
	AP9002069	AT9001881
AP9000724	AP9002070	AT9001898
AP9000728	AP9002071	AT9001903

III. ENVIRONMENTAL FACTORS

ACC NR: AT8031358

SOURCE CODE: UK/3251/68/000/008/0003/0016

AUTHOR: Aitov, M. B.

ORG: none

TITLE: Thunderstorm activity in the Kuybyshev reservoir region

SOURCE: Komsomolskiy. Gidrometeorologicheskaya observatoriya. Sbornik rabot. no. 8, 1968, 3-16

TOPIC TAGS: atmospheric wind field, thunderstorm, frontal storm, intramass storm, reservoir storm

ABSTRACT: An analysis is made of observations made during thunderstorms recorded at twenty shore stations, one island station and two floating buoy stations on the Kuybyshev reservoir area from 1959 to 1965 (May through September). The storms were grouped as either of the intramass or frontal types, the fronts being either cold fronts with a wave or occluded. The frequency of the frontal storms was found to be 6--10% higher than that of the intramass storms. A small-scale sketch shows the locations of some of the land stations and depicts by isolines the number of days these storms occurred at the stations. Tabulations are given for the frequency of wind directions at the heights of the 500-mb and 200-mb surfaces during intramass storms, the frequency of frontal

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UDC: 551.501

ACC NR: AT8031358

storms by month and type of front and the frequency of wind directions and speeds three hours before the storms. Other related data investigated include the air temperature and humidity, dewpoint and the solar heat, variously affecting the water and land areas. Orig. art. has: 3 figures and 11 tables. [WA 50; CBE No. 39] [EN]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 006

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ACC NR: AT8033422

SOURCE CODE: UR/2531/68/000/230/0019/0030

AUTHOR: Alekseyeva, Ye. G.; Grosheva, L. A.

ORG: none

TITLE: Critical analysis of mean monthly wind-speed magnitudes

SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy, no. 230, 1968. Kontrol' i pervichnyy analiz rezul'tatov meteorologicheskikh nablyudeniy (Control and initial analysis of the results of meteorological observations), 19-30

TOPIC TAGS: atmospheric wind field, wind velocity, error analysis, statistic analysis

ABSTRACT: Mean monthly wind-speed measurements made at 36 stations in the Moscow and Kalinin areas from 1936 through 1960 are the basic data used in a computer analysis of the results obtained by spatial and temporal interpolation procedures. Mean square deviations from the mean values, calculated and tabulated for the 25-year period, show a clearly expressed annual trend with maxima in the winter and minima in the summer months. The diurnal trend of these deviations varies

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UDC: 551.501

ACC NR: AT8033422

with the season. The coefficients of correlation of the mean monthly wind speed are calculated for different pairs of stations. The low coefficients obtained are attributed to local factors such as relief, proximity to water bodies, etc. Linear spatial interpolation procedures are used for stations whose data were available in a limited number of series of observations. Since the area covered by the interpolation analysis was elongated latitudinally and many of the stations were located near its borders, another area was selected, with extrapolation rather than interpolation techniques used in the analysis. In this evaluation the mean monthly wind speeds for 1300 hr (1961 through 1965) were the basic data. The analysis indicated that linear spatial interpolation procedures could be used successfully if an interpolation discrepancy of 1 m/sec was accepted as the rejection criterion. For the analysis of data from single stations located in various types of relief, linear interpolation is recommended. "Anemorumbograph" observations made at the Voyeykovo station for January and July (1952—1965) were used in the investigation of the possibility of using temporal interpolations. The results indicated that the mean square interpolation discrepancies were smaller than the rejection criterion and that their distribution was close to the normal distribution (about 68% assurance). The mean square discrepancy of temporal interpolation, calculated in terms of the structural function (non-stationary relation),

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ACC NR: AT8033422

did not exceed 0.5 m/sec, and this value is recommended as a rejection criterion in making temporal interpolations. Finally, temporal interpolations are demonstrated to be more precise than spatial interpolations. Orig. art. has: 3 figures, 9 tables, and 3 formulas.

[WA-50; CBE No. 39][ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 009

Card 3/3

ACC NR: AP8031189

SOURCE CODE: UR/0026/68/000/009/0123/0124

AUTHOR: Balakirev, Ye. K.

ORG: Ashkhabad Hydrometeorological Observatory (Ashkhabadskaya gidrometeorologicheskaya observatoriya)

TITLE: Tornadoes in the Amu-Dar'ya valley

SOURCE: Priroda, no. 9, 1968, 123-124

TOPIC TAGS: atmospheric wind field, local wind, tornado

ABSTRACT: In the last few years (1963--1967) tornadoes have occurred repeatedly during the summer months in the Amu-Dar'ya River valley during periods of very unstable weather conditions (invasion of air masses from the northwest, partial displacement of the Murgab low). The weather conditions producing the tornadoes in the Amu-Dar'ya valley, however, produced only heavy thunderstorms, hail, rain storms, high winds, or dust storms in other areas affected by the same weather patterns. Of special interest is the fact that tornadoes reoccurred in the Amu-Dar'ya valley at equal time intervals of two years.

[WA-50; CBE No. 39][ER]

SUB CODE: 04/ SUBM DATE: none

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ACC NR: AT8031018

SOURCE CODE: UR/2789/68/000/085/0131/0139

AUTHOR: Britvina, R. A.; Koshel'kov, Yu. P.

ORG: Central Aerological Observatory (Tsentral'naya aerologicheskaya observatoriya)

TITLE: Vertical wind shear and air-mass transformation in the polar stratosphere

SOURCE: Tsentral'naya aerologicheskaya observatoriya. Trudy, no. 85, 1968. Sinopticheskiye issledovaniya (Synoptic studies), 131-139

TOPIC TAGS: atmospheric circulation, air mass transformation, atmospheric wind field, stratospheric wind field, wind shear, air pollution

ABSTRACT: Results are presented of a study of the role of vertical wind shear in air-mass transformation over the Arctic in the 30--100-mb layer of the atmosphere. The procedure used involved the construction of air parcel trajectories for a 10-day period (about 160 pairs of trajectories for individual months in 1961 and 1962), using 3-day intervals (0.5, 1, 2, days, etc.). The difference in distance between air parcels displaced on the two levels was then calculated for each pair of trajectories; the difference in longitudinal and latitudinal

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UDC: 551 510.53

ACC NR: AT8031018

positions of these parcels, and the circulation conditions on the 30-mb surface were also determined. In calculating the trajectories in terms of latitude, the trajectory pairs were subdivided into two groups. The first included those trajectories for which the prevailing winds in the middle stratosphere were easterlies and those in the lower layers were westerlies. The second group included those trajectories for which the prevailing winds were westerlies at both levels. Analysis of these data showed that the mean latitudinal divergences varied very little when easterly circulation prevailed in the middle stratosphere despite a change in season, although maximum divergence during the first 3 days of tracking the air parcels occurred during the winter, but occurred during the spring and summer after the first 3 days. The minimum annual divergence occurred in the autumn because of the low temperature contrast and little wind shear present in the stratosphere during this period. Analysis of specific trajectories indicated that air parcels ordinarily moving out from the Arctic at the 100-mb level were generally south of those at the 30-mb level (about 10° or more in latitude). Similar analyses, made for the second group of trajectories by longitude, indicated that minimum divergences occurred in the autumn when the median divergence magnitudes during the first 4 days were two to three times smaller than in other seasons and over the last days of the

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ACC NR: AT8031018

observations were even smaller. The divergence distribution was greatly smoothed during the winter, increasing in 10% of the instances, rapidly increases to 80° in a day and to 135° every 2 days. Maximum values were recorded every 5—7 days. The longitudinal divergence was most clearly defined during the summer (i.e. $6-120^\circ$ every 4 days and $150-180^\circ$ every 7 days), with a subsequent tendency to a reversed direction and smoothed distribution. The mean total wintertime trajectory divergence, calculated simultaneously on the 30- and 100-mb surfaces, increased rapidly for the first few days to an initial maximum observed every 6—7 days in October, 3—6 days in November, 3—4 days in December, and 3 days in April. There was no autumnal maximum. Data averaged for the entire winter (prevailing westerlies) showed an almost linear increase for distances of up to 3000 km for 3-day periods, with almost no increase for the 3—10 day period (3000—3500 km). With easterly circulation in the middle stratosphere there was almost no maximum; for the first few days the mean divergence had a linear dependence on time, subsequently becoming less clearly expressed. The minimum total divergence, calculated on an annual basis, occurred in the autumn and extended for 1500—3000 km for average periods of 5 days and 2500—3000 km every 9—10 days. These results suggest that vertical wind shear is the principal cause for the rapid deformation of air masses in the lower

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ACC NR: AT8031018

stratosphere in the high latitudes and in all seasons of the year. This deformation in the 30—100-mb layer is such that clouds of particles which extend upward for several kilometers should increase horizontally in size and cover several thousand kilometers. In addition, it is shown that the intensity of interlatitudinal exchange is greater at the 100-mb level than it is at the 30-mb level, especially during the summer. Orig. art. has: 3 figures, 3 formulas, and 4 tables. [WA-50; CBE No. 39][ER]

SUB CODE: 04/ SUBM DATE: 17Dec66/ ORIG REF: 004/ OTH REF: 002

Card 4/4

ACC NR: AT8032183

SOURCE CODE: UR/3133/67/000/012/0093/0096

AUTHOR: Burman, E. A.; Ulanova, L. V.

ORG: Odessa Hydrometeorological Institute (Odesskiy gidrometeorologicheskiy institut)

TITLE: Calculation of the strength and intensity of breezes

SOURCE: AN UkrSSR. Mezhdudomstvennyy geofizicheskiy komitet. Informatsionnyy byulleten', no. 12, 1967. Meteorologiya i gidrologiya (Meteorology and hydrology), 93-96

TOPIC TAGS: atmospheric model, weather forecasting, atmospheric wind field, local wind, breeze, ocean breeze, land breeze, atmospheric circulation

ABSTRACT: Formulas are derived to describe breeze strength and intensity using the similarity theory. Under conditions of small-scale local circulation above a flat surface in nonadiabatic stratification, the characteristics of the process are interrelated by the following relations:

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UDC: 551.5

ACC NR: AT8032183

$$X = (\beta g)^{1/2} k^{-1} \Gamma_{t \text{ pot}}^{-4/3} (\Delta\theta)^3, \quad (1)$$

$$Z = \Gamma_{t \text{ pot}}^{-1} \Delta\theta, \quad (2)$$

$$V = (\beta g)^{1/2} \Gamma_{t \text{ pot}}^{-1/3} \Delta\theta, \quad (3)$$

$$W = k \Gamma_{t \text{ pot}} (\Delta\theta)^{-1}, \quad (4)$$

$$\delta\theta = \Delta\theta. \quad (5)$$

Here X is the horizontal distance; Z is the vertical distance, the deviation of the temperature potential from the statistical $\delta\theta$; V is the horizontal velocity; W is the vertical velocity; β is the air volume expansion coefficient; g is the gravitational acceleration; k is the coefficient of turbulence; $\Gamma_{t \text{ pot}}$ is the temperature potential gradient; and $\Delta\theta$ is the land—sea temperature contrast. Empirical data are used to check equations (1)—(5) to determine whether the apparent condition that although the horizontal scales of breezes depend greatly on the sea—air temperature contrast, the vertical scales are

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ACC NR: AT8032183

much less dependent; the investigation also included a study to determine whether these relationships could be used to calculate some of the breeze characteristics used in short-term forecasting. Since $\delta\theta$ can be determined directly from observations only with considerable difficulty, expression (5) is used; this shows that $\delta\theta$ numerically equals the deviation in temperature from its statistical value. Assuming that the statistical value was observed in the morning (no breezes present), $\delta\theta$ is the air-temperature amplitude (in the physical sense); the magnitude A is then used to denote the amplitude of the variations in air temperature. Attempts to demonstrate the dependence of the strength of a breeze Z directly from $\delta\theta$ or its equivalent A or from the velocity of a thermally undisturbed wind $V_{0,0}$ (velocity at $h = 3$ km) were not fruitful. A distinct relationship between Z and γ (lapse rate), however, was taken as evidence that a dependence existed between the thickness of the boundary layer and the temperature stratification. There was also a close relationship between the actual values for the lower breeze H and its magnitude calculated from (2), as expressed by

$$H = 22 \frac{A}{t \text{ pot}} \quad (6)$$

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ACC NR: AT8032183

The use of equation (3) was found to be satisfactory for determination of breeze intensity (can be used to calculate only the breeze components of the wind). Orig. art. has: 1 figure, 1 table, and 6 formulas. [WA-50; CBE No. 39][ES]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 003

Card 4/4

ACC NR: AT8032184

SOURCE CODE: UR/3133/67/007/012/0097/0101

AUTHOR: Burman, E. A.; Voloshina, Zh. V.

ORG: Odessa Hydrometeorological Institute (Odesskiy gidrometeorologicheskii insitiut)

TITLE: Aerological structure of the breeze (longitudinal) winds of the southern shore of the Crimea

SOURCE: AN UkrSSR. Mezhdovedomstvennyy geofizicheskiv komitet. Informatsionnyy byulleten', no. 12, 1967. Meteorologiya i gidrologiya (Meteorology and hydrology), 97-101

TOPIC TAGS: atmospheric circulation, shore breeze, local wind, breeze, mountain valley wind, ocean breeze

ABSTRACT: The data used in a study of local circulation (observed from 25 July—21 August 1964) in a mountainous region located on a seacoast, specifically, at Alushta (h = 40 m, 2 km from the coast) and in the Angarskiy Pass (h = 755 m, 12 km from the coast) on the southern shore of the Crimea, consisted of pibal measurements at both stations (8 times per day) and temperature and wind soundings with A-22 Sh radiosondes at Alushta (twice a day)—a total of 450 pibal and 43 radiosonde observations. These data made it possible to derive the vectorial sum of several wind components for breezes, mountain-valley winds, slope winds,

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UDC: 551.5

ACC NR: AT8032184

and components generated by the overall pressure gradient. Along the coast the breezes and mountain-valley winds are from the same direction; the first and second components therefore are treated as breezes since they are the predominant winds. Projections of the actual winds were constructed on 100 graphs, one of the axis paralleling the valley axis and the other, perpendicular to it, to study the breeze and slope components. The observations were made at 0900, 1200, 1500, and 1800 hr for the daytime calculations, and at 2100, 0300, and 0600 for the nighttime observations. The thickness of both the lower and upper currents (flows) were calculated for each day. Analysis of all data indicated that the frequency of the breeze at Alushta during daylight was 59%, with the probability that breezes would occur, being maximal (71%) between 1200 and 1500 hr and minimal (5—8%) at 0600 and 2100 hr. The nighttime frequency of shore breezes of all types was between 41 and 43%. The daytime frequency of breezes at the Angarskiy Pass station was less than at Alushta (about 42%), and the probability for the occurrence of breezes was maximal at 1500 hr (56% probability). At both stations, nocturnal winds assumed the properties of mountain winds. Orig. a.c. has: 1 figure and 4 tables. [WA-50; CBE No. 39] [EK]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 003

Card 2/2

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ACC NR: AT8031221

SOURCE CODE: UR/2599/68/000/070/0050/0065

AUTHOR: Buykov, M. V. (Candidate of physico-mathematical sciences);
Dekhlyar, M. I.

ORG: none

TITLE: Theory of stratiform clouds. III. Effect of turbulent diffusion
on cloud-drop spectra

SOURCE: Kiyev. Ukrainskiy nauchno-issledovatel'skiy gidrometeorologi-
cheskiy institut. Trudy, no. 70, 1968. Issledovaniya protsessov
oblako- i osadkoobrazovaniya (Study of the processes of cloud formation
and precipitation), 50-65

TOPIC TAGS: atmospheric turbulence, atmospheric boundary layer, cloud
microstructure, weather forecasting, turbulent diffusion, cloud drop
spectrum, stratus cloud, cloud supersaturation

ABSTRACT: The authors elaborate on equations derived in Part I (Intro-
duction) of this study to present a mathematical method of expressing
the effects of turbulent diffusion on stratiform cloud-droplet spectra.
The study also investigates the role of supersaturation in stratus
clouds and gives a general and unique scheme for describing cloud
evolution which takes into account variations and changes of droplet

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UDC: 551.574.1(061.6)+551.576.1+551.577.1

ACC NR: AT8031221

spectra. The model is based on the assumptions that the air mass is
spatially homogeneous and that the coefficient of turbulent diffusion
is vertically independent of height. The droplets are assumed to be
passive pollutants, and no correlation is made between fluctuations
in the distribution function and saturation. The results of the study
demonstrate that turbulent mixing tends to convert a discrete droplet
spectrum to a continuous spectrum, inhibits an indefinite increase
in droplet concentration at the cloud top, obliterates differences
between rising and falling drops, but has very little effect on
intra-cloud saturation. The general approach to this method is as
follows. When $q = q_s(T)$, where q is the vapor density and $q_s(T)$ is
the density of saturated vapor, the functions S and Π are determined
from

$$S(\tilde{x}, \tilde{y}, \tilde{z}, t) = w(\tilde{x}, \tilde{y}, \tilde{z}, t) + q_s \left[\Pi(\tilde{x}, \tilde{y}, \tilde{z}, t) - \alpha w(\tilde{x}, \tilde{y}, \tilde{z}, t) \right], \quad (1)$$

where w is the water content of the cloud, $\tilde{x}, \tilde{y}, \tilde{z}$ are the coordinates
of the cloud boundaries when $q = q_s$, and from

$$S(\tilde{x}, \tilde{y}, \tilde{z}, t) = -q_s \Pi(\tilde{x}, \tilde{y}, \tilde{z}, t) \quad (2)$$

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ACC NR: AT8031221

when thick clouds are being considered. The cloud boundaries are then determined as surfaces on which the water content becomes zero and the vapor density equals that of saturated vapor. The functions $S = w + \bar{q}$ and $\Pi = T - aw$ are determined from the equations

$$\frac{c}{\sigma r} (rf) + (u - cr^2) \frac{\partial f}{\partial z} = J + k \frac{\partial^2 f}{\partial z^2} + \Pi(f); \quad (3)$$

$$\Pi(f) \equiv \left(\frac{\partial f}{\partial t} \right)_{\text{coag}}$$

and

$$\frac{d}{dz} (r f_\lambda) + [(u - cr^2) i\lambda - \lambda^2 k] f_\lambda = J_\lambda + \Pi_\lambda, \quad (4)$$

and they depend on both the winds and turbulence, on the boundary conditions for temperature and vapor density and also on cloud microstructure expressed by the J function which in the first approximation can be expressed by fifth-order moments (M_5) from the distribution function

$$J = \frac{4\pi}{3} \cdot \rho c \frac{dM_5}{dz} [\Theta(z_n - z') - \Theta(z_n - z)]. \quad (5)$$

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ACC NR: AT8031221

The function within the brackets is added to reduce to zero the distribution functions at the limiting boundaries $z = z_{\text{top}}$ and $z = z_{\text{base}}$. Therefore, the cloud tops and bases are determined only from the small-drop components of the droplet spectra. The spectra of the large-droplets which are formed by gravitational coagulation are determined from the equation

$$f(r, z) = f_0(r, z) + \frac{\sqrt{\rho\Gamma}}{\sqrt{2\pi D \Delta_0 k}} \int_0^r \frac{dr'}{\sqrt{r^2 - r'^2}} \int_{-\infty}^{+\infty} dz' \Pi(r', z') G_0(z - z', r')$$

$$G_0(z - z', r') = \exp \left\{ - \frac{\left[z - z' - \frac{\rho\Gamma}{2D\Delta_0} \left((r^2 - r'^2)u - \frac{c(r^4 - r'^4)}{2} \right) \right]^2}{2\rho\Gamma k(r^2 - r'^2)/D\Delta_0} \right\}, \quad (6)$$

where f_0 is the solution which does not take coagulation into account. Since, where r values are small, the solution differs only slightly from $f_0(r, z)$, the large-drop fraction can be determined as the difference

$$f_{\text{large}} = f - f_0.$$

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ACC NR: AT8031221

The flow of drops through the cloud base is computed with the equation

$$j = \frac{4\pi}{3} \int_{\text{base}}^{\infty} r^3 (v_r - u) [f(r, z) - f_0(r, z)] \Big|_{z=\text{top}} d\tau. \quad (7).$$

The method described is recommended as a means of determining cloud microstructure and as a basis for developing a method of forecasting cloud covers and precipitation. It also makes it possible to predict the positions of cloud tops, bases, and thicknesses. Orig. art. has: 13 figures and 49 formulas. [WA-50: CBE No. 39][ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 005/ OTH REF: 001 ..

Card 5/5

ACC NR: AT8031222

SOURCE CODE: UR/2599/68/000/070/0076/0085

AUTHOR: Dekhtyar, M. I.; Buykov, M. V. (Candidate of physico-mathematical sciences)

ORG: none

TITLE: On the theory of stratiform clouds. Part V. Effect of turbulent diffusion on the spectra of large drops

SOURCE: Kiev. Ukrainskiy nauchno-issledovatel'skiy gidrometeorologicheskii institut. Trudy, no. 70, 1968. Issledovaniya protsessov oblako-i osadkoobrazovaniya (Study of the processes of cloud formation and precipitation), 76-85

TOPIC TAGS: atmospheric physics, cloud structure, atmospheric turbulence, stratus cloud, turbulent diffusion, drop spectra, atmospheric model, large cloud drop

ABSTRACT: Previous theoretical studies, carried out at the Central Aerological Observatory with special equipment, have reported that the drop-size distribution of large drops in clouds follows the inverse power law (e.g., Borovikov, Mazin, and Nevzorov. *Izv. AN SSSR, ser. fiz. atmos. i okeana*, no. 3, 1965). However, in the models used, the effects of turbulent diffusion on the spectra of these large drops were

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UDC: 551.574.1(061.6)+551.576.1+551.577.1

not taken into account. Past experience also demonstrated that the magnitude of the function of large-drop distribution when $r = 50 \mu$ had to be considered as an empirically determined magnitude and treated as a parameter. In the present paper, it is assumed that the large-drop sector of the spectrum is mainly caused by gravitational coagulation, but turbulent diffusion is also a factor. The model is for stratiform clouds; other conditions included were the heights of the cloud bases and tops and the presence or lack of inversions. The problem is reduced to the solution of the equation;

$$\frac{Ewa}{4\rho} \frac{\partial}{\partial r}(rf_1) + (u - v_r) \frac{\partial f_1}{\partial z} = k \frac{\partial^2 f_1}{\partial z^2} \quad (1)$$

This equation combines the equations for the stationary function of the large-drop distribution (neglecting condensational growth) and the coagulation term when $r \gg r_{av}$. Here, E is the effectiveness of the capture of small drops by large drops; ρ is water density; u is the velocity of the ascending atmospheric motion; t is time; k is the coefficient of turbulent diffusion; z is the vertical coordinate reckoned from the cloud base; $v_r = ar$ ($a = 6.10^3 \text{ sec}^{-1}$), the precipitation rate of large drops relative to calm air; w is the water content of the cloud determined by the small-drop sector of the spec-

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trum (assumed to be constant); H is the height of the cloud top; and f is the function of the large-drop distribution at the cloud base. The initial conditions are

$$f_1 = f_n(r_0, z); \quad r = r_0; \quad (2)$$

the boundary conditions at the cloud base are

$$\frac{\partial f_1}{\partial z}(0, r) = 0. \quad (3)$$

At the cloud top, either

$$\frac{\partial f_1}{\partial z} = 0; \quad z = H; \quad (4)$$

$$-k \frac{\partial f_1}{\partial z} + (u - v_r) f_1 = 0; \quad z = H; \quad (5)$$

or

$$f_1 = 0; \quad z = H \quad (6)$$

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are used. The function of the large-drop distribution under the cloud f_2 is found from (1) if $z = 0$. The rate of the large-drop motion, relative to the air, is considered to be independent of drop sizes ($u - v_r = -u^*$). To solve the convective diffusion equation

$$\begin{aligned} \frac{\partial \Phi_1}{\partial t} - v \frac{\partial \Phi_1}{\partial z} &= D \frac{\partial^2 \Phi_1}{\partial z^2}; & \Phi &= \begin{cases} \Phi_1, & 0 < z < H; \\ \Phi_2, & z < 0, \end{cases} \\ -v \frac{\partial \Phi_2}{\partial z} &= D \frac{\partial^2 \Phi_2}{\partial z^2}; & & \end{aligned} \quad (7)$$

the following designations are introduced:

$$\Phi = fr, \quad t = \ln \frac{r}{r_0}; \quad v = \frac{4 \rho u^*}{E w^2}, \quad D = \frac{4 \rho k}{E w a^2} \quad (8)$$

The boundary conditions are

$$\frac{\partial \Phi_1}{\partial z} = 0; \quad z = 0; \quad (3a)$$

$$-\frac{\partial \Phi_1}{\partial z} = 0; \quad z = H; \quad (4a)$$

$$-D \frac{\partial \Phi_1}{\partial z} = v \Phi_1; \quad z = H; \quad (5a)$$

$$\Phi_1 = 0; \quad z = H, \quad (6a)$$

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and the initial condition (2) is rewritten as

$$\Phi_1(z, 0) = r_0 f_{u^*}(r_0, z). \quad (2a)$$

The new function

$$\Phi_1 = \exp \left\{ -\frac{v^2 t}{4D} - \frac{v z}{2D} \right\} \varphi \quad (9)$$

is introduced, and the index 1 is dropped. Equation (7) gives the usual diffusion equation

$$\frac{\partial \varphi}{\partial t} = D \frac{\partial^2 \varphi}{\partial z^2},$$

with the conditions

$$\frac{\partial \varphi}{\partial z} = \frac{v}{2D} \varphi, \quad z = 0; \quad \frac{\partial \varphi}{\partial z} = -\frac{v}{2D} \varphi, \quad z = H, \quad (4b)$$

or

$$\frac{\partial \varphi}{\partial z} = -\frac{v}{2D} \varphi, \quad z = 0; \quad \frac{\partial \varphi}{\partial z} = \frac{v}{2D} \varphi, \quad z = H, \quad (5b)$$

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or

$$\frac{\partial \varphi}{\partial z} = \frac{v}{2D} \varphi, \quad z=0; \quad \varphi=0, \quad z=H; \quad (6b)$$

the initial condition is

$$\varphi(z, 0) = e^{\frac{vz}{2D}} r_0 f_{\mu}(r_0, z). \quad (2b)$$

The more general solution of the diffusion equation

$$\begin{aligned} \frac{\partial \varphi}{\partial t} &= D \frac{\partial^2 \varphi}{\partial z^2}; \\ \frac{\partial \varphi}{\partial z} &= h_1 \varphi, \quad z=0; \quad \frac{\partial \varphi}{\partial z} = -h_2 \varphi, \quad z=H; \\ \varphi|_{t=0} &= \varphi_0(z), \end{aligned}$$

obtained by the standard method, has the form

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$$\begin{aligned} \varphi(z, t) &= 2 \sum_{n=1}^{\infty} e^{-\mu_n^2 D t} \frac{h_2^2 + \mu_n^2}{(h_1 + h_2)(\mu_n^2 - h_1 h_2) + H(\mu_n^2 + h_1^2)(\mu_n^2 + h_2^2)} \\ &\times \int_0^H d\xi \varphi_0(\xi) (h_1 \sin \mu_n z + \mu_n \cos \mu_n z) (h_1 \sin \mu_n \xi + \mu_n \cos \mu_n \xi), \end{aligned} \quad (10)$$

where μ_n is the root of the transcendental equation

$$\operatorname{tg} H \mu_n = \frac{h_1 + h_2}{\mu_n^2 - h_1 h_2} \mu_n \quad (11)$$

From this solution the following are found for the boundary condition (4b):

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$$\Phi(z, t) = \frac{2}{H} e^{-\frac{vz}{2D} - \frac{v^2 t}{4D}} \sum_{n=1}^{\infty} \frac{e^{-\left(\frac{\pi n}{H}\right)^2 D t}}{\left(\frac{\pi n}{H}\right)^2 + \frac{v^2}{4D}} \times$$

$$\times \int_0^H d\xi r_0 f_n(\xi, r_0) e^{\frac{v\xi}{2D}} \left(\frac{v}{2D} \sin \frac{\pi n \xi}{H} + \frac{\pi n}{H} \cos \frac{\pi n \xi}{H} \right) \times$$

$$\times \left(\frac{v}{2D} \sin \frac{\pi n z}{H} + \frac{\pi n}{H} \cos \frac{\pi n z}{H} \right). \quad (12)$$

For large r , when $r \gg r_0$ ($t \gg 1$), terms containing $n = 1$ contribute most to the sum, and the asymptote for f has the form

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$$f \sim K_1(z) \left(\frac{r_0}{r} \right)^{P_1};$$

$$K_1(z) = \frac{2}{H} e^{-\frac{u^2 z}{2k}} \frac{\frac{u^2}{2k} \sin \frac{\pi}{H} z + \frac{\pi}{H} \cos \frac{\pi}{H} z}{\left(\frac{\pi}{H}\right)^2 + \frac{u^2}{4k}} \times$$

$$\times \int_0^H e^{\frac{u^2 \xi}{2k}} r_0 f_1(r_0, \xi) \left(\frac{u^2}{2k} \sin \frac{\pi}{H} \xi + \frac{\pi}{H} \cos \frac{\pi}{H} \xi \right) d\xi;$$

$$P_1 = 1 + \frac{u^2 \rho}{k \pi u k} + \frac{4 \gamma k \pi}{k \pi u H}.$$

A similar solution is found for the boundary condition (5b), for its asymptote (here μ is determined from the equation

$$\operatorname{tg} H \mu_1 = \frac{\frac{u^2}{k} \mu_1}{\mu_1^2 - \left(\frac{u^2}{2k}\right)^2}.$$

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and for (6b). These solutions show that the asymptote of the function of large-drop distribution is universal in character, regardless of the type of boundary condition at the cloud top, and has the form

$$f_i \sim \frac{1}{r^{P_i}} \quad (i=1, 2, 3), \quad (14)$$

although P_i is somewhat dependent on them. The inverse power character of the large-drop distribution function agrees with results obtained by Barovikov and Mazin. The total number of large drops decreases with an increase in P . The formulas for P_i show that an increase in the water content of clouds causes a decrease in P_1 and P_1 increases with an increase in the rate of drop precipitation u^* , while the number of drops decreases. An increase in cloud thickness also causes the number of large drops to increase. An increase in the coefficient of turbulent diffusion diminishes the second term in P_1 and increases the third, and therefore its effect on the number of cloud drops depends on whether P_1 increases or diminishes. Therefore, other cloud characteristics can be correlated experimentally if the appropriate parameters are measured simultaneously with the drop-number measurements.

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Equation

$$f \sim K_1(z) \left(\frac{r_0}{r} \right)^{P_1};$$

$$K_1(z) = \frac{2}{H} e^{-\frac{u^* z}{2k}} \frac{\frac{u^*}{2k} \sin \frac{\pi}{H} z + \frac{\pi}{H} \cos \frac{\pi}{H} z}{\left(\frac{\pi}{H} \right)^2 + \frac{u^{*2}}{4k^2}} \times \quad (13)$$

$$\times \int_0^H e^{\frac{u^* z}{k}} r_0 f_n(r_0, z) \left(\frac{u^*}{2k} \sin \frac{\pi}{H} z + \frac{\pi}{H} \cos \frac{\pi}{H} z \right) dz;$$

$$P_1 = 1 + \frac{u^{*2}}{Lxuk} + \frac{4k\pi^2}{Lx\pi H^2},$$

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equation

$$f(r, z) \sim K_2(z) \left(\frac{r_0}{r}\right)^{P_2};$$

$$K_2(z) = e^{-\frac{u^* z}{2k}} \frac{\frac{u^*}{2k} \sin \mu_1 z + \mu_1 \cos \mu_1 z}{\frac{u^*}{k} + H\left(\mu_1^2 + \frac{u^{*2}}{4k^2}\right)} \times \quad (15)$$

$$\times \int_0^H d\xi e^{\frac{u^* \xi}{2k}} r_0 f_u(r_0, \xi) \left(\frac{u^*}{2k} \sin \mu_1 \xi + \mu_1 \cos \mu_1 \xi\right);$$

$$P_2 = 1 + \frac{u^{*2} p}{Ewa k} + \frac{4\mu_1^2 k p}{Ewa}.$$

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and equation

$$f \sim K_3(z) \left(\frac{r_0}{r}\right)^{P_3}, \quad P_3 = 1 + \frac{u^{*2} p}{Ewa k} + \frac{4\mu_1^2 k p}{Ewa},$$

$$\operatorname{tg} H \mu_1 = -\frac{2k \mu_1}{u^*},$$

$$K_3(z) = e^{-\frac{u^* z}{2k}} \frac{\frac{u^*}{2k} \sin \mu_1 z + \mu_1 \cos \mu_1 z}{\frac{u^*}{2k} + H\left(\mu_1^2 + \frac{u^{*2}}{4k^2}\right)} \times \quad (16)$$

$$\times \int_0^H d\xi e^{\frac{u^* \xi}{2k}} r_0 f_u(r_0, \xi) \left(\frac{u^*}{2k} \sin \mu_1 \xi + \mu_1 \cos \mu_1 \xi\right)$$

are integrated for r in the limits from r_0 to r , and taking into account that $r \gg r_0$, the total number of large drops is found from

$$N_{\text{lar}} \sim \frac{K_1 r_0}{P_1 - 1}. \quad (17)$$

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The expression for K_1 , in order of magnitude, is estimated as

$$K_1 \approx \frac{x_1(z) N_m(r_0)}{r_k} \quad (18)$$

where $N_m(r_0)$ is the number of small drops having a radius of 50 μ ; $X_1(z)$ is a function weakly dependent on z of the order of unity; and r_k is the characteristic dimension of the small-drop spectrum. Finally,

$$N_{cr} \sim x_1(z) \frac{N_m(r_0) r_0}{(P_1 - 1) r_k} \quad (19)$$

The dependence of N_{cr} on the type of boundary condition at the cloud top is slight, but that of P_1 and $N_m(r_0)$ is significant, i.e. directly on the cloud properties. Since P_1 is large when the humidity is low, the number of large drops may be tens and hundreds of times fewer than the number of 50- μ drops. The exponents of the inverse power law P generally exceed by 3 to 8 the magnitudes of this exponent which were obtained in analyzing the experimental data reported by Borovikov et al. It is assumed that this is due to the fact that the rate of cloud-drop precipitation was calculated as being independent of drop sizes and that consideration of this situation diminishes P and therefore increases the number of large drops. This hypothesis is checked by

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solving (1), assuming $v_r = ar$ and using the initial and boundary conditions. Then, substituting in equation (8), the formula

$$\frac{\partial \Phi}{\partial t} + \frac{4\rho(a - ar_0 e^t)}{E_{\text{wet}}} \frac{\partial \Phi}{\partial z} = D \frac{\partial^2 \Phi}{\partial z^2} \quad (20)$$

is derived, i.e., the equation of convective diffusion, the convection velocity being dependent on time. Therefore, the hypothesis check leads to a comparison of the asymptotic behavior encountered in solving equation (20), with the asymptotic equation

$$\Phi(z, t) = 2e^{-\frac{az}{2D}} \sum_{n=1}^{\infty} \frac{e^{-\frac{1}{2} \mu_n^2 D t} \left(\frac{v}{2D} \sin \mu_n z + \mu_n \cos \mu_n z \right)}{\frac{v}{D} + H \left(\mu_n^2 - \frac{v^2}{4D^2} \right)} \times \int_0^z dt f_{cr}(r_0, t) \left(\frac{v}{2D} \sin \mu_n t + \mu_n \cos \mu_n t \right) e^{-\frac{v}{2D} t} \quad (21)$$

in which the convective velocity is constant. Since the asymptotic solution of equation (20) is mathematically very delicate, a numerical solution is derived for

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making the comparison. Here, equation

$$\frac{\partial \Phi}{\partial t} + c' \frac{\partial \Phi}{\partial x} = \frac{\partial^2 \Phi}{\partial x^2} \quad (22)$$

is solved using the following initial and boundary conditions:

$$\Phi = 0, \quad x = 0; \quad \frac{\partial \Phi}{\partial x} = 0, \quad x = 1; \quad \Phi = 1, \quad t = 0. \quad (23)$$

For the same conditions as in (5), the solution of this equation was compared with that for the equation

$$\frac{\partial \Phi}{\partial t} + v_0 \frac{\partial \Phi}{\partial x} = \frac{\partial^2 \Phi}{\partial x^2}. \quad (24)$$

Equation (22) was solved by the "successive elimination" method [metod progonki], using a scheme with 0.05 steps for time (total of 40 steps) and 0.2 on the axis. The results are presented in Fig. 1.

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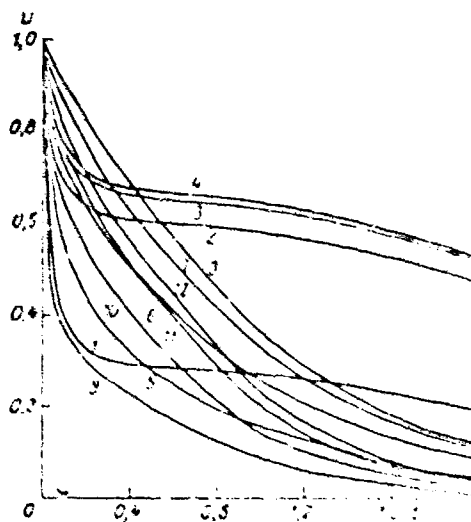


Fig. 1. Solutions of equation(22)
 —1—4 and (24)—5—8, with
 $v_0 = 1.8$; 9—12 with $v_0 = 1$
 1— $t=0.2$; 2— $t=0.4$; 3— $t=0.6$; 4— $t=0.8$
 5— $t=1.0$; 6— $t=1.2$; 7— $t=1.4$; 8— $t=1.6$
 9— $t=0.2$; 10— $t=0.4$; 11— $t=0.6$; 12— $t=0.8$

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Equation (24) was solved in analytical form from equation (10) as

$$\Phi(x, t) = e^{-\frac{v_0^2}{4} + \frac{v_0 r}{2}} 2 \sum_{n=1}^{\infty} e^{-\mu_n^2 t} \frac{\mu_n \left(1 + e^{-\frac{v_0}{2}} \cos \mu_n\right)}{\frac{v_n}{2} + \mu_n^2 + \frac{v_0^2}{4}} \sin \mu_n x. \quad (25)$$

These solutions are represented in Fig. 1 for $v_0 = 1.8$ and $v_0 = 1$, for various x . This graph shows that for short time periods, the solution of an equation containing the velocity variable (22) recedes more rapidly than does the solution of (24) in which the velocity is constant. At some moment in time, it recedes more slowly than (24). This means that, beginning with certain radii, the distribution function recedes much more slowly, if it is taken into account that the sedimentation rate depends on sizes, as compared with instances when the droplet fall-out rate does not depend on drop sizes. If the asymptotic distribution function for (22) is of the inverse power character, this fact is equated to a smaller P exponent of the inverse power law. In all cases, this model suggests that other boundary conditions of the distribution function will recede in the same manner. Orig. art. has: 1 figure, 1 table, and 31 formulas. [WA-50; CBE No. 39] [ER]

Card SUB CODE: 04/ SUBM DATE: none
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ACC NR: AT8031005

SOURCE CODE: UR/2789/68/000/085/0003/0012

AUTHOR: Caygerov, S. S.; Koshel'kov, Yu. P.; Finus, N. Z.

ORG: none

TITLE: Present status of experimental investigations of transformations in the free atmosphere

SOURCE: Tsentral'naya aerologicheskaya observatoriya. Trudy, no. 85, 1968. Sinopticheskiye issledovaniya (Synoptic studies), 3-12

TOPIC TAGS: air mass transformation, atmospheric circulation, atmospheric turbulence, turbulent exchange, atmospheric temperature, adiabatic temperature

ABSTRACT: A concise review is presented which traces the history of advances made in studies (largely Soviet) of air-mass transformations from the first definition of the problem and the early empirical investigations by Asknazy and Khromov in 1934, the early theoretical studies of Kibel', Laykhtman, Berlyand and others dealing with the influences exerted by entropic factors, those by Bakalov, Klyucharev and others which dealt with non-advective temperature changes, to studies tracing air-mass movements from pressure-aerological pattern charts (Taborovskiy, Pogosyan and others) and to the latest balloon studies. The survey is divided into three sections: 1) Turbulent heat

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UDC: 551.513

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ACC NR: AT8031015

exchange and adiabatic changes in temperature in the lower troposphere; 2) thermal transformation of the air in the upper troposphere and lower stratosphere; and 3) prospects for global experimental investigations of air transformations. The paper also points out the needs of Soviet meteorologists for improved instrumentation and analytical procedures. Paper presented at a session of the Scientific Council on the Problem "Weather Forecasting and the Physics of Atmospheric Processes," held 26 October 1966. Orig. art. has: 5 figures, 1 table and 1 formula.
[WA-50; CBE No. 39] [ER]

SUB CODE: 04/ SUBM DATE: 15Aug67/ ORIG REF: 036/ OTH REF: 007

Card 2/2

ACC NR: AT8031361

SOURCE CODE: UR/3251/68/000/008/0104/0115

AUTHOR: Khoruzhev, A. P.

ORG: none

TITLE: Thunderstorms and squalls over the waters of the Kuybyshev reservoir in the area around the Volga Hydroelectric Power Station

SOURCE: Komsomolskiy. Gidrometeorologicheskaya observatoriya. Sbornik rabot. no. 8, 1968, 104-115

TOPIC TAGS: atmospheric wind field, atmospheric surface boundary layer, wind forecasting, reservoir wind, storm frequency, storm duration

ABSTRACT: Data collected at thirteen hydrometeorological stations located near the Kuybyshev reservoir in the 1958—1961 period are analyzed to define the frequency and duration of thunderstorms and squalls around and over the reservoir. These phenomena are further analyzed relative to the time of occurrence (day or night) and season. Wind speeds during the squalls were for the most part in the 10—20 m/sec range, with winds rarely reaching 21—25 m/sec, and very rarely, 25 m/sec; the areas experiencing the most squalls were at Staraya Mayna, Kazan', the buoyed station, and on the Ul'yanovskiy Islands. Synoptic and climatic situ-

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UDC: 551.509.32

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ACC NR: AT8031361

ations producing these storms, 98% of which occurred in lows, were analyzed (atmospheric humidity, lapse rate, isobar curves) to determine their interrelationships. Weather forecasting criteria for these storms are evaluated. Orig. art. has: 9 tables. [WA-50; CBE No. 39] [ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 008

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ACC NR: AT8031022

SOURCE CODE: UR/2667/68/000/054/0075/0082

AUTHOR: Koshinskiy, S. D.; Terziyev, F. S.

ORG: none

TITLE: Frequency of supercooled water cloud fogs of various continuous durations on the shore of the Kola Peninsula

SOURCE: Moscow. Nauchno-issledovatel'skiy institut aeroklimatologii. Trudy, no. 54 (4), 1968. Voprosy gidrometeorologii Sibiri (Problems of the hydrometeorology of Siberia), 75-82

TOPIC TAGS: microclimatology, fog, coastal fog, fog frequency, maritime fog, supercooled fog, rime, glaze, steam fog

ABSTRACT: Punch-card weather data reported at weather stations located on the Kola Peninsula are analyzed in a study of the frequency of local supercooled fog durations. The analysis was made at the Novosibirsk Computer Plant of the Novosibirsk Branch of the Institute of Aeroclimatology. The data were tabulated both for individual fogs and for fogs of various durations, by 6-hr observation intervals, i. e. < 6 hr, if the fog was observed at only one observation period; from 6-12 hr, if the fog was observed during two observation periods, etc. (up to

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UDC: 551.575(470.21)

ACC NR: AT8031022

> 54 hr). The information covered a 28—30-year period. Table 1 summarizes the fog duration information obtained from nine stations in

Table 1. Frequency (%) of water cloud fogs (minus air temperatures) of various continuous duration on the Kola Peninsula shores

Stations	Period of observation	Mean no. of instances	Continuous fog duration (in hr.)										T _{max}		
			<5	6—11	12—18	18—24	24—30	30—36	36—42	42—48	48—54	>54			
Pyalitsa	1936—1960	13,0	71,7	18,6	4,8	2,4	1,6	0,9	—	—	—	—	—	—	36
Kandalaksha	1936—1965	12,0	68,8	20,6	5,7	2,6	0,9	0,6	0,3	0,3	0	0,2	—	—	60
Kola	1936—1965	8,2	61,0	24,0	8,1	2,2	1,3	0	0,4	—	—	—	—	—	42
Polyarnoye	1936—1965	9,4	50,0	25,4	12,5	5,9	2,6	1,5	1,1	1,0	—	—	—	—	48
Tersko-Orlovskiy mayak (lighthouse)	1936—1965	15,6	56,0	28,0	9,8	2,2	1,4	0,9	0,9	0,4	0,2	0,2	—	—	60
Umba	1936—1965	12,0	61,0	25,0	7,1	3,0	0,6	0,3	—	—	—	—	—	—	36
Svyatoy Nos, mys (Point)	1936—1963	9,5	62,0	27,5	6,6	1,9	0,8	0,4	0,4	—	—	—	0,4	—	66
Kovda	1936—1965	8,0	61,0	26,4	6,5	2,2	0,9	—	—	—	—	—	—	—	30
Murmansk	1936—1964	20,0	53,0	22,0	9,0	4,8	3,0	1,3	0,9	0,8	0	0,2	—	—	60

Note: T_{max} — maximum continuous duration (in hr.) for observation period

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ACC NR: AT8031022

the area. During a single winter, fogs were most frequent at Murmansk, 20 such fogs occurring. Of these, 3/5 of them lasted no longer than 6 hr, 1/3 persisted for 6—18 hr, and about 1% for 42 hr or more (1 in 5 yr). At the Tersko-Orlovskiy lighthouse, there were 16 fogs per year, the majority of them lasting less than 6 hr. There were fewer fogs on the Kandalaksha Bay station, i. e. 70% lasted less than 6 hr and rarely for more than a half-day. At Pyalitsa, continuous fogs have not occurred for the past 25 yr. It is noteworthy that at the Polyarnoye and Kola stations (near Murmansk), the fog frequency was only one-half that observed at Murmansk. This fact is attributed to the fact that the Polyarnoye and Kola stations are located 10—12 km away from the coast. The data indicated also that the fogs were of short duration at the Umba and Pyalitsa stations on the southern coast of the Kola Peninsula, average 12—13 per winter, with 90% lasting for less than 12 hr. Calculations were made to determine the extreme values of various weather characteristics. Goodrich graphs were found to be adequate to calculate fog duration. Integral distribution confidence curves were constructed for six stations on the Kola Peninsula (see Fig. 1). The extremums of possible continuous fog duration were calculated from the graphs for 1—5, 10, 20, 50, and 100 occurrences per year. These data indicate that in the Murmansk region, a fog duration is maximum once in 50 years

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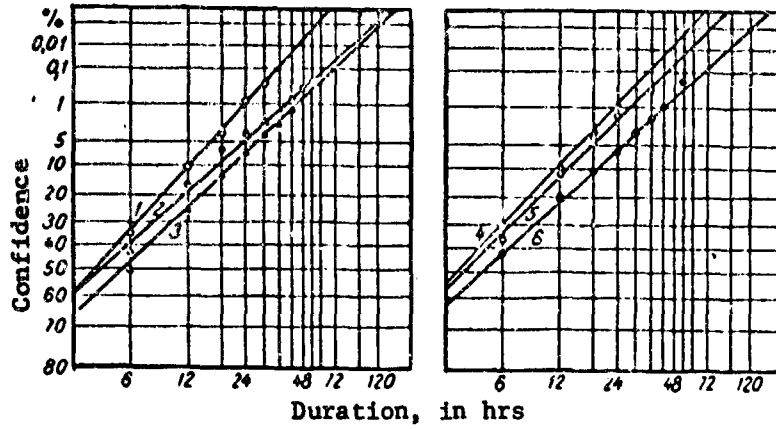


Fig 1. Confidence curves of the continuous duration of supercooled water-cloud fogs at Umbo 1, Tersko-Orlovskiy 2, Polyarmoye 3, Kovda 4, Pyalitsa 5, and Murmansk 6

and lasts 70 hr, and once in 100 years, lasting 80 hr. These magnitudes are somewhat smaller at the Tersko-Orlovskiy and Polyarmoye stations (1 in 50 yr, lasting 66 and 60 hr respectively). At the remaining stations these values are even smaller, especially at Umbo and Kovda.

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Studies of the winds during the fogs (see Fig. 2) indicated that in

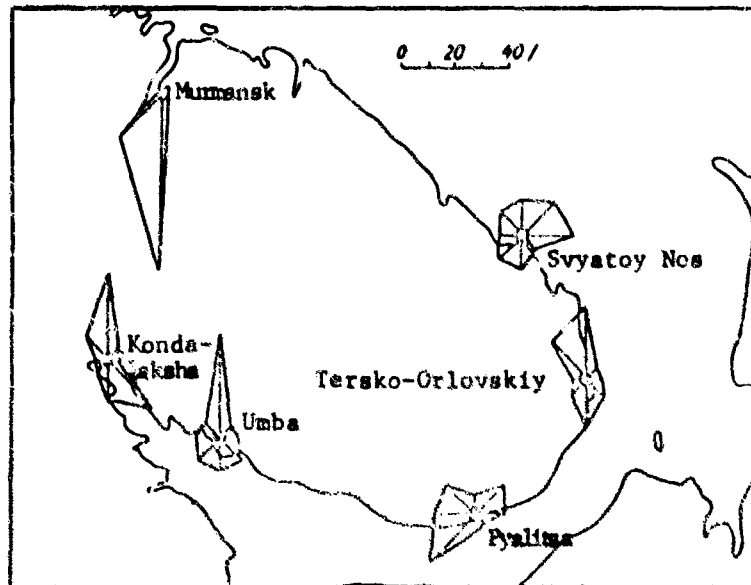


Fig. 2

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ACC NR: AT8031022

Kola Bay, the occurrence of steam fogs during any but southerly winds is very rare. On the eastern shore of the Kola Peninsula the winds occurring during fogs are mostly northerly and northwesterly (45%), with fewer fogs developing in southerly winds. On the Kandalaksha Bay coast during the winter, the fogs developed primarily during off-shore winds. At Umba and at Kandalaksha, respectively, 48% and 49% of the fogs occurred during northerly winds. Fogs were frequent at many stations during calms, e.g. 2/3 of the fogs at Kandalaksha during the winter, and 40% of those at Umba and Kovda. In Kola Bay, 22-34% of the fogs occurred in calm weather. Calm conditions during fogs were rare on the northeastern coast of the point (~ 4%). Orig. art. has: 3 figures and 3 tables. [WA-50; CBE No. 39] [ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 007

Card 6/6

ACC NR: AP8031175

SOURCE CODE: PO/0027/68/000/002/0167/0173

AUTHOR: Kowalski, D.

ORG: Polish Institute of Meteorology and Hydrology (Polskie towarzystwo meteorologiczne i hydrologiczne)

TITLE: Effect of differences between water and air temperatures on the wind speeds over Szczecin Bay

SOURCE: Przegląd geofizyczny, no. 2, 1968, 167-173

TOPIC TAGS: microclimatology, marine microclimatology, water temperature, atmospheric temperature, water air interface, wind speed

ABSTRACT: A study is made of the effect on wind velocities of the differences between the water temperatures of and the air temperatures over Szczecin Bay. The atmospheric equilibrium of the upper layers of the atmosphere (to 2 km) are taken into account. Wind-speed data (V) and the temperature differences ($T_w - T_p = \Delta T$), plotted on graphs, show that for various pressure gradients (G), the majority of the wind speeds fall in a straight line, despite some data scattering. On the assumption that a simple relationship exists between ΔT and V , equations are derived to express the mean wind speeds over

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ACC NR: AP8031175

Szczecin Bay for the range in temperatures differences of -6° to $+6^{\circ}\text{C}$ and a pressure gradient of up to 2 mb/100 km, as follows: For the mean velocity V_m , without taking atmospheric equilibrium into account:

$$V_m = (-0.09 G + 0.49) \Delta T + 2.76 G + 1.54;$$

condition of unstable atmospheric equilibrium:

$$V_u = (-0.07 G + 0.62) \Delta T + 2.67 G + 2.55;$$

condition of stable atmospheric equilibrium:

$$V_s = (0.14 G + 0.16) \Delta T + 2.66 G + 1.08,$$

where G is measured in mb/100 km, ΔT in $^{\circ}\text{C}$, and V in m/sec. Data on the wind speeds observed most frequently over the Bay are tabulated, with the differences in sea and air temperatures with different horizontal pressure gradients taken into account. When conditions of extreme cold advection existed, the most frequent wind speeds were, for identical pressure gradients, about 5—8 m/sec higher than occurred during heat advection (difference in V of up to 10 m/sec); the strongest effects occurred when the atmosphere was unstable. The equations presented above are evaluated as being rather accurately definitive in predicting wind speeds over the Bay. Orig. art. has: 5 figures, 2 tables, and 3 formulas. [Based on author's abstract]

[WA-50; CBE No. 39][ER]

Card

SUB CODE: 04/ SUBM DATE: 02Oct67/ ORIG REF: 005/ OTH REF: 003
2/2

ACC NR: AT8033466

SOURCE CODE: UR/2531/68/000/228/0087/0097

AUTHOR: Krichak, M. O.

ORG: none

TITLE: Some problems in the objective analysis of the wind field

SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy, no. 228, 1968. *Primeneniye statisticheskikh metodov v meteorologii* (Use of statistical methods in meteorology), 87-97

TOPIC TAGS: atmospheric wind field, numeric analysis, error analysis, meteorologic data analysis, wind field analysis

ABSTRACT: An evaluation is made of a proposal presented by the author in an earlier paper (*Meteorologiya i gidrologiya*, no. 1, 1968), according to which optimum interpolations might be made of wind vectors at network grid intersections using aerological station soundings. The empirical evaluation of the accuracy of this proposed scheme involved experimental interpolation for the station data; these results were then compared with the measured data for the u and v fields at three levels (850, 500, and 300 mb) for nine situations. Data from about 200 stations were used in the analyses; the mean square errors of u

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UDC: 551.509.317

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ACC NR: AT8033466

and v were calculated and compared for each of these levels, i.e. velocities of about 5, 7, and 11 m/sec. The interpolation analysis demonstrated close agreement between the theoretical and empirical data and, therefore, that the theoretically derived values are good indicators for a true accuracy analysis. A small-scale map, which represents in generalized form the theoretical interpolation errors at the junctions of a regular grid at the 500-mb level, shows that errors of the order of 4-5 m/sec can be anticipated in regions where the station network is dense, and of the order of 9-10 m/sec where the stations are far apart. In the latter areas additional data, preferably for the geopotential, had to be included in the analysis. The geopotential data were analyzed by the optimum differentiation method proposed by R. L. Kagan. These results indicated that geostrophic winds calculated by this method defined the field of the real wind more precisely than did the method of interpolation of actual wind measurements. Another sketch map shows the theoretical errors obtained by the optimum method of calculating the geostrophic wind. Orig. art. has: 4 figures and 10 formulas. [WA-50; CBE No. 39][ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 009/ OTH REF: 001

Card 2/2

ACC NR: AT8030486

SOURCE CODE: UR/3391/67/000/024/0052/0095

AUTHOR: Ladejchikov, N. P.

ORG: Irkutsk Pedagogical Institute (Irkutskiy pedinstitut)

TITLE: Fogs on the upper Lena

SOURCE: Irkutsk. Gosudarstvennyy pedagogicheskiy institut. Uchenyye zapiski, no. 24, pt. 2, 1967. Seriya geograficheskaya, 52-95

TOPIC TAGS: microclimatology, weather forecasting, atmospheric surface boundary layer, river fog, fog, fog forecasting

ABSTRACT: Weather data for the upper Lena river valley, principally in the section between the Kachuga and Vitim rivers, collected in the 1938-1943 period at 14 weather stations (station locations shown on a small-scale sketch map along the upper Lena) and a few distant stations used for comparison purposes, comprise the basic information used in an extensive survey and analysis of the factors controlling the development and evolution of river fogs in the area. Meteorological observations utilized included atmospheric temperatures, humidities, barometric pressures, and wind speeds and directions; fog characteristics were observed visually. Other factors determined and included in the

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ACC NR: AT8030486

analysis covered such physico-geographical features as mountain ranges, drainage patterns, degree of river incision, steepness of river banks and slopes, and widths of the Lena and its tributaries. General climatological conditions are also described and brief notes are given of the areal and vertical extents of the most prevalent types of vegetation. Data on the annual and diurnal changes in fog occurrence for the major stations are tabulated or are summarized in graphs. The influence on fog formation processes of such factors as cloud cover, forest cover and of microrelief and daytime insolation are also discussed. The results of the study indicate that: 1) Summer fogs are not always radiational. Diurnal changes in microbarometric conditions of the river valleys set off advective processes and an interface is formed between the cooler air over the water and the warmer air over the floodplain area, causing fog to develop. The latent heat of the river water acts as a control on the seasonal changes in the heat balance in the valley; 2) Summer fogs are not always of the "evaporation fog" type; 3) Lena fogs are produced by a clearly defined valley regime; this regime differs from that over the water areas, and the processes of the various synoptic situations are extremely regular and stable; 4) Detailed knowledge of the microclimate of individual areas, supplementing weather maps, is required in accurate fog forecasting for the area; 5) Local forecasting criteria, such as the effects of high promontaries

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ACC NR: AT8030486

on river banks, high-level swamps, and forests are also of great value in fog forecasting; and 6) The fact that the general physical conditions producing fog are essentially identical for most points along the upper Lena river basin serves to facilitate fog forecasting in the area. Orig. art. has: 9 figures. [WA-50; CBE No. 39][ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 011

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Card 3/3

ACC NR: AT8031020

SOURCE CODE: UR/2667/68/000/054/0055/0060

AUTHOR: Lebedinskiy, A. B.

ORG: none

TITLE: Indirect calculation of the frequency of thick ground-level inversions in Siberian cities

SOURCE: Moscow. Nauchno-issledovatel'skiy institut aeroklimatologii. Trudy, no. 54 (4), 1968. Voprosy gidrometeorologii Sibiri (Problems of the hydrometeorology of Siberia), 55-60

TOPIC TAGS: microclimatology, air pollution, urban air pollution, atmospheric temperature inversion

ABSTRACT: A relatively simple, but adequate, method is described for the calculation and prediction of "dangerous" air pollution of an area being considered for future construction and development. In the study the principle factors considered are the characteristics and behavior of ground-level and upper-level temperature inversions (frequency, thickness of inversion layer, height of the base and top of the inversion layer above the polluting source) and local physicogeographical conditions. Ground-level inversions having a thickness > 300 m are considered to be "dangerous" while those having a thickness < 300 m are

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UDC: 551.510.522

ACC NR: AT8031020

not; upper-level inversions are considered to be most "dangerous" when the inversion base is near the pollutant source and the atmospheric conditions are stagnant. "Dangerous" upper-level inversions may occur at levels ranging from 300 to 1000 m. Data analyzed in the study consisted of morning observations made at five weather stations (Kolpashevo, Novosibirsk, Krasnoyarsk, Barnaul, Abakan). Determinations were made of the monthly frequency of ground-level inversions whose tops were in the 100-200-, 200-250-, and 250-300-m layers. The results were comparable to those noted in Eastern Siberia, i.e., an average of 1 per month in the winter, 1-2 per month in the summer, in each gradation occasionally amounting to 3 per month during the winter, and as many as 5 per month during the summer. Calculations of the annual frequencies of the total number of inversions, the "dangerous" and the ground-level inversions, indicated that pollution was maximum only during periods of maximum inversion frequency and when the inversions persisted for great lengths of time; a parallelism was found to exist between the variations in the annual frequencies of the ground-level and the "dangerous" inversions in November-February. Graphs were constructed for this period of time to show the relationship of the frequency of morning ground-level inversions to the "dangerous" inversions as measured at two groups of stations, subdivided by terrain characteristics (Krasnoyarsk, Nizhneudinsk, Zhigalovo, Yerbogachen, Kirensk-dissected relief; southeastern Western Siberia, Kolpashevo,

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ACC NR: AT8031020

Novosibirsk, Barnaul—in open, flat terrain). Determinations were also made of the coefficient of correlation of the frequency of ground-level and "dangerous" inversions. A close relationship was found to exist between the frequency of ground-level inversions and the winds at any given station, especially for the winter months. Empirical determinations indicated that the maximum frequency of the ground-level inversions (60 to 70% of the total number of inversions) occurred on days when the mean diurnal wind speed was ≤ 1.5 m/sec, in the winter (90% of the total) the maximum frequency occurred during periods of calm. Orig. art. has: 2 figures. [WA-50; CBE No. 39] [ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 011

Card 3/3

ACC NR: AT8032186

SOURCE CODE: UR/3133/67/000/012/0106/0110

AUTHOR: Mikhaylenko, N. M.

ORG: Ukrainian Scientific Research Hydrometeorological Institute (Ukrainskiy nauchno-issledovatel'skiy gidrometeorologicheskiy institut).

TITLE: Spatial distribution of condensation nuclei in the Kiev region

SOURCE: AN UkrSSR. Mezhdudomstvennyy geofizicheskiy komitet. Informatsionnyy byulleten', no. 12, 1967. Meteorologiya i gidrologiya (Meteorology and hydrology), 106-110

TOPIC TAGS: air pollution, condensation nuclei, atmospheric boundary dust, atmospheric wind field, aerosol

ABSTRACT: A study of the vertical distribution of condensation nuclei concentrations over the Kiev area is based on observations made with Sholts counters over the 1961—1964 period from aircraft flown on special single-altitude passes over the city, an area well-known for dust storms. Weather conditions governing the vertical distribution of both the dust and the condensation nuclei, investigated in the study, include: air-mass advection, turbulence, water vapor condensation, precipitation,

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UDC: 551.5

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ACC NR: AT8032186

and winds. The coagulation and the gravitational settling of condensation nuclei, and the degree of local sources of pollution are also taken into account. The processes of the formation and dispersion of nuclei (in condensation, coagulation, fall-out, wash-out) are identical but their intensities differ, causing a volume of air to contain varying numbers of nuclei according to the time of day or year (e.g. 3.4×10^4 — 1.2×10^3 per cm^3 at Kiev in the surface boundary layer). Tabulated data show no well-defined annual variations in the condensation nuclei over Kiev, but the extremes occurred during different months. Investigation of the effects on condensation nuclei concentrations on the condition of the surface of the ground gave the following mean values: dry (without grass)— $15,900 \text{ cm}^{-3}$; moist (without grass)— $7,900 \text{ cm}^{-3}$; grass covered— $10,100 \text{ cm}^{-3}$; frozen (without snow)— $6,300 \text{ cm}^{-3}$; snow-covered— $7,600 \text{ cm}^{-3}$; and snow-covered taiga— $6,500 \text{ cm}^{-3}$. Study of the dependence of nuclei concentrations on lapse rates and winds in the surface boundary layer (0—100 m) indicated that maximum concentrations occurred during easterly winds and the minimum concentrations, in south-westerly winds, the critical wind speed for nuclei dispersal being about 6 m/sec. No relationship was found to exist between nuclei concentrations and relative humidities. Cloud cover, on the other hand, i.e. clouds of lower and middle stages, during the morning and evening hours, had almost no effect on nuclei concentrations, but during the daytime, turbulence and other factors had considerable effect. The number of

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ACC NR: AT8032186

nuclei in the clouds averaged 35—40% less than in clear skies for the same heights. Another weather condition studied included the effects on nuclei concentrations as a function of the position of cloud tops and bases, i.e. with higher bases this gradient decreased. Sharp reductions in nuclei concentrations were observed between cloud layers. Measurements made prior to and during periods of precipitation showed that rain reduced the concentrations by 30—35% and snow, about 10%. Average condensation nuclei contents, measured in different kinds of air masses, were as follows: in Arctic continental air, $6,200 \text{ cm}^{-3}$; Arctic maritime air, $8,930 \text{ cm}^{-3}$; middle-latitude maritime air, $8,690 \text{ cm}^{-3}$; middle-latitude continental air, $12,400 \text{ cm}^{-3}$; and tropical air, $17,700 \text{ cm}^{-3}$. However, there was considerable variation with season, and there were fewer nuclei over the ocean than over the land area. Fewer nuclei also were found in low-pressure areas. In general, as expected, the number of nuclei decreased with height, the exception being in inversions. Orig. art. has: 4 tables. [WA-50; CRE No. 39] [ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG RFF: 004

Card 3/3

ACC NR: AT8032181

SOURCE CODE: UR/3133/67/000/012/0077/0080

AUTHOR: Prikhot'ko, G. F. (Doctor of geographical sciences, Deceased);
Royev, L. M.; Tovbin, M. V.

ORG: Ukrainian Scientific Research Hydrometeorological Institute, Kiev
State University (Ukrainskiy nauchno-issledovatel'skiy gidrometeorologi-
cheskiy institut, Kievskiy gosudarstvennyy universitet)

TITLE: Results of the first experiments in combating fogs of the
evaporation type on Kola Bay

SOURCE: AN UkrSSR. Mezhdovedomstvennyy geofizicheskii komitet.
Informatsionnyy byulleten', no. 12, 1967. Meteorologiya i gidrologiya
(Meteorology and hydrology), 77-80

TOPIC TAGS: weather modification, fog dispersal, surfactant, evapora-
tion fog, maritime fog, research vessel

ABSTRACT: Results are presented for three field experiments carried out
in cold temperatures to test the efficiency of high molecular, second-
ary non-saponifying alcohols ($C_{18}-C_{23}$) used as surfactants to disperse
evaporation fogs over Kola Bay. The emulsions were prepared aboard ship and
were dispersed from the experimental ship *Voskhod*, operated by the

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UDC: 551.5

ACC NR: AT8032181

Murmansk Administration of the Hydrometeorological Service. The test
sites were near the port of Murmansk. The emulsions were spread on
the water during the first two experiments at the rate of 15 liters per
min (total of 1000 liters) and at 50 liters per min in the third
experiment. Strong currents made observations of the emulsion impossi-
ble during the first test. Weather conditions for the second test on
21 January were: light winds, waves low, the air and water tempera-
tures were 14° and 0°C respectively, and the visibility was 50-150 m,
occasionally as high as 500 m. In test no. 2 a clearing, 300 x 400 m²
in area, extended throughout the entire vertical thickness of the fog.
As the clearing drifted with the currents, its size and shape changed
constantly, attaining maximum dimensions of 1100 x 500 m². The third
experiment was carried out on 27 January in light fog 2 m thick, with
8-9 m/sec southerly winds, an air temperature of 15.2°, a water tem-
perature of -1°C, and a visibility of 100-400 m. Three-hundred kg
of the reagent produced a clearing of 150 x 200 m². Although the
results were not absolutely conclusive and further studies were
recommended, they are judged to be very promising and suggest that at
even lower air temperatures (-25° and -30°C), these emulsions would
be 3-4 times as effective as they were at -12° and -15°C. Orig. art.
has: 1 formula. [WA-50; CBE No. 39][ER]

SUB CODE: 04/ SUBM DATE: none

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ACC NR: AT8031224

SOURCE CODE: UR/2599/68/000/070/0136/0143

AUTHOR: Prokh, L. Z.

ORG: none

TITLE: Microstructure of the fogs at Kiev

SOURCE: Kiev. Ukrainskiy nauchno-issledovatel'skiy gidrometeorologicheskii institut. Trudy, no. 70, 1968. Issledovaniya protsessov oblako- i osadkoobrazovaniya (Study of the processes of cloud formation and precipitation), 136-143

TOPIC TAGS: microclimatology, fog microstructure, fog drop dimension, wind direction, wind speed

ABSTRACT: Preliminary, but indicative, results obtained in a study of the microstructure of fogs occurring in the Kiev region are reported. The basic information consisted of 400 microphotographs of 197 trapped fog samples taken from a slide, and 200 microphotographs of 92 samples collected on slides set at a height of about 2 m above the ground while the fog drops settled inertially onto the horizontal surfaces of the slides. The fog structure over the Kiev area is compared with that over the Zhovtnevy region, a steppe terrain (Prokh, L. Z., *Trudy*

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UDC: 551.574.1(061.6)+551.576.1+551.577.1

ACC NR: AT8031224

UkrNIGMI, no. 42, 1962). Fog drops smaller than 4 μ were not taken into account in the study; of the remaining drops, 62% (at Kiev) were 6-8 μ in diameter, i.e., were somewhat larger than those occurring in the Zhovtnevy fogs. In stable fogs, the fraction of larger drops increased with increases in wind speed. The tendency noted over the Zhovtnevy area for small drops to prevail during the evening and nighttime hours and the larger drops during the daylight hours was not as evident at Kiev. The differences in drop-size spectra were shown to be functions of stages in fog development, with the broader spectra being generally characteristic of stable fogs. More drops were found in warm fogs than in cold fogs. Investigations of the differences in the spectra during winds of different directions showed that at Kiev the fog drops were smaller in north and northwest winds; these, in turn, were larger than those sampled during southeasterly winds. The study indicates that, on the whole, the spectra of relatively large drops ($r = 3-10 \mu$) are the main features of stable fogs, especially those occurring in the daytime. Droplets of $r = 3-6 \mu$ predominate in the fogs occurring in the warm section of lows and those of $r = 3-4 \mu$, in nighttime radiation fogs. Drop-size spectra, investigated in relation to wind directions at Kiev, were almost identical for all winds; the most decisive factors were found to be the stage of fog development, air temperature, and the type and degree of stability of the fog. In the second phase of

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ACC NR: AY6031224

the study dealing with the inertial settling of fog drops onto a horizontal surface 2 m above the ground, it was found that the average radius of these drops was about 4 μ . On the whole, the sizes of the drops settling on the horizontal surface were much larger than those collected in the air. Analyses of the relationship of drop-size spectra to wind direction indicate that wind speed is a more significant factor than is wind direction. Orig. art. has: 5 figures and 3 tables. [WA-50; CBE No. 39][ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 006

Card 3/3

ACC NR: AM8032807

AUTHOR: Reshetov, V. D.

ORG: none

TITLE: Investigation of the geostrophic departure of atmospheric motions

SOURCE: Issledovaniye ageostrofichnosti atmosferykh dvizheniy. Moskva. Gidrometeoizdat, 1968. 130 p. (Glavnoye upravleniye gidrometeorologicheskoy sluzhby pri Sovet Ministrov SSSR. Tsentral'naya aerologicheskaya observatoriya. Trudy, no. 87, 1968)

TOPIC TAGS: atmospheric physics, atmospheric wind field, ageostrophic wind, geostrophic departure, atmospheric circulation

ABSTRACT: This monograph is intended for a wide circle of scientists, engineers, and aviation specialists concerned with the physics and dynamics of the atmosphere, including meteorologists and climatologists engaged in research or practice of synoptic meteorology, and aviators involved with civil or military aviation meteorology. Specifically, the paper deals with many aspects of studies relating to deviations of winds from the geostrophic (gradient) as related to the divergence (convergence) phenomena of air flows and to cyclogenesis and anti-cyclogenesis. Statistical averaging was used to analyze the data;

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ACC NR: AM8032807

the results gave some of the mean characteristics of the atmospheric processes which were statistically averaged as being about 70% accurate. The deviations of the wind from the gradient wind are subdivided and discussed by velocity and direction in the free atmosphere in cyclones and anticyclones during various stages of their evolution. Data are presented on the character of the geostrophic departures in both high and light winds, as well as the relationships of highly ageostrophic winds to atmospheric stratification. Special studies are made of geostrophic departures found near inversion layers in the tropopause and in upper-level troughs and ridges. Data are also presented on convergence and divergence zones in the atmosphere during the evolutions of lows and highs. [WA-50; CBE No. 39] [ER]

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ACC NR: AT8032187

SOURCE CODE: UR/3133/67/000/012/0111/0115

AUTHOR: Romushkevich, V. I.

ORG: Kiev State University (Kiyevskiy gosudarstvennyy universitet)

TITLE: Frequency of the most intense dust storms in the Ukraine

SOURCE: AN UkrSSR. Mezhdovedomstvennyy geofizicheskiy komitet. Informatsionnyy byulleten', no. 12, 1967. Meteorologiya i gidrologiya (Meteorology and hydrology), 111-115

TOPIC TAGS: microclimatology, atmospheric wind field, dust storm, dust storm wind

ABSTRACT: Data are reported on the frequency of dust storms in the Ukraine, during which wind speeds exceed 14 m/sec. A small-scale sketch map (see Fig. 1) portrays by isolines the probability of the occurrence of storm winds in the republic. Three areas are shown in which the probability of frequent dust storms is very high: the eastern steppe region, the large central plains area, including the Crimean steppe area, and the southwestern region in the southern part of the Odessa area. Storm winds capable of causing dust storms occur at any time of year but they are most frequent in March, April, and in

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UDC: 551.5

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ACC NR: AT8032187

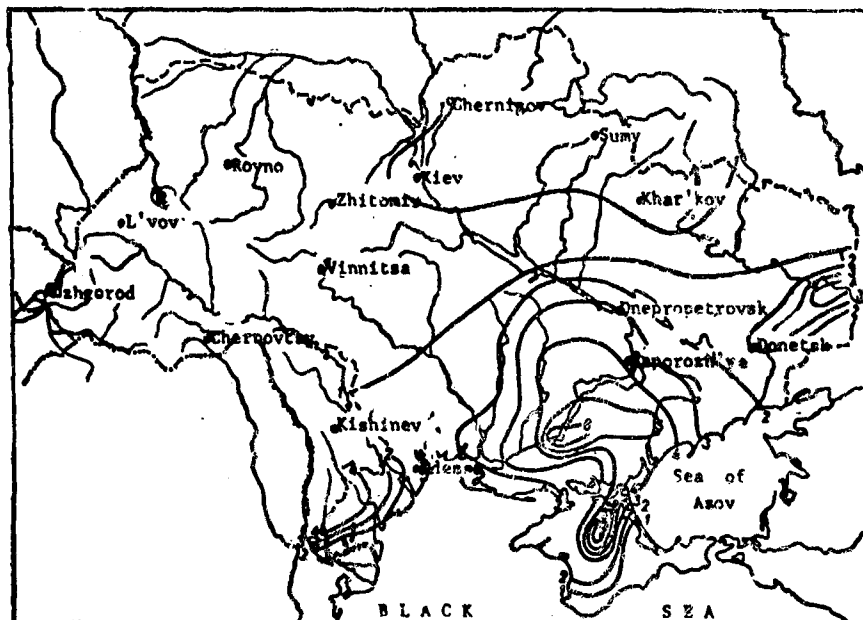


Fig. 1. Sketch of intense dust storm frequency in the Ukraine (in days) for the 1945—1960 period

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ACC NR: AT8032187

the summer months; they are least frequent in January. Of the total number of dust storms occurring during the period studied, 88% occurred during east winds, 22% in northeast winds, and 3% during southeast winds. Only 9% of the dust storms occurred during west winds. Orig. art. has: 1 figure and 2 tables. [WA-50; CBE No. 39] [ER]

SUB CODE: 04/ SUBM DATE: none

Card 3/3

ACC NR: AP8031487

SOURCE CODE: UR/0089/68/025/003/0242/0243

AUTHOR: Vilenskiy, V. D.; Kuzenkov, A. F.

ORG: none

TITLE: Use of radioactive isotopes to study motions in the atmosphere

SOURCE: Atomnaya energiya, v. 25, no. 3, 1968, 242-243

TOPIC TAGS: atmospheric circulation, air pollution, atmospheric motion, radioactive isotope, troposphere, radioactive aerosol, aerosol, radioactive strontium, radioactive lead, radioactive fallout

ABSTRACT: Simultaneous determinations of Sr^{90} and Pb^{210} at various heights in the upper troposphere are analyzed to determine the role of large-scale vertical movements of air in atmospheric transfer. Samples were taken in 1963 from a plane at heights of from 9 to 12 km over the Moscow and Tbilisi areas. The data indicate that Sr^{90} concentrations increased with height over Tbilisi, and in the spring exceeded by 10-20 times those measured during the autumn, i.e., are in general agreement with data reported by V. N. Lavrenchik [*Global'noye vypadeniye produktov yadernykh vzryvov (Global fallout of nuclear explosion products)*, M. Atomizdat, 1965] on the vertical distribution of fission products and the seasonal variations in their concentrations in the atmosphere.

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UDC: 621.039.85

ACC NR: AP8031487

The concentrations of Pb^{210} reported over the Tbilisi and Moscow regions, however, exceeded those reported for other regions sampled at approximately the same heights. Peirson, Cambray, and Splicer (*Tellus*, vol. 18, no. 427, 1966) attributed this anomalously high concentration in part to the 1962 nuclear tests. The sharp increase in the ratio of Sr^{90} and Pb^{210} with increased height observed in the upper troposphere, as well as the reduced ratio in the Tbilisi region, suggests that the contribution of Pb^{210} produced in the 1962 explosion to the overall balance was exceedingly insignificant. A very sharp decrease with height in the Pb^{210} concentration, noted in the spring of 1963, was reported by Peirson et al. over a coastal region. The relatively high values recorded in the present study over continental areas tend to negate the position that continental areas have little effect on Pb^{210} content at heights above 5-7 km. Wide, slow-moving, cold high-pressure ridges with katabatic winds at the 300- and 100-mb level in the windward flow west of the measurement point were characteristic of the period (20 May-7 July) during which the samples were taken. Analyses of the thermobaric fields indicated that in about 80% of the instances a warm low with anabatic winds was located at $h = 9-12$ km west of the observation point, suggesting that large-scale atmospheric motions moving upward from the lower layers were rich in Pb^{210} and poor in Sr^{90} . Orig. art. has: 1 table. [WA-50; CBE No. 39] [ER]

Card

SUB CODE: 04,18/ SUBM DATE: 14Dec67/ ORIG REF: 007/ OTH REF: 002
2/2

ACC NR: AT8032180

SOURCE CODE: UR/3133/67/000/012/0019/0022

AUTHOR: Volevakha, V. A.

ORG: Ukrainian Scientific Research Hydrometeorological Institute
(Ukrainskiy nauchno-issledovatel'skiy gidrometeorologicheskii institut)

TITLE: Possibility for the development of thermal convection during
"sukhovoy" [hot dry winds] periods

SOURCE: AN UkrSSR. Mezhdudomstvennyy geofizicheskiy komitet.
Informatsionnyy byulleten', no. 12, 1967. Meteorologiya i gidrologiya
(Meteorology and hydrology), 19-22

TOPIC TAGS: atmospheric circulation, atmospheric wind field, local
wind, thermal convection, atmospheric turbulence, air pollution

ABSTRACT: A brief review is presented of research which has been
carried out on the causes and types of atmospheric convection. Specifi-
cally, the study reports on the results obtained in analyzing conditions
prevailing over the Ukraine during the long summer periods when the
"sukhovoy" winds develop, i.e., hot, dry weather when solar heat
produces strong convective currents and thermals. Analyses of observa-
tions made during these periods by the staff of the Ukrainian Scientific
Research Hydrometeorological Institute showed that on only 38 of the 100

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UDC: 551.5

ACC NR: AT8032180

days when "sukhovoy" (daytime measurements) were observed was $Ri < 1$
in the lower 1000-m layer of the troposphere. Calculations were also
made of the potential instability energy, using aerological diagrams
on which atmospheric and stratification data had been plotted for all
days on which the "sukhovoy" winds were observed (156 instances, with
instability magnitudes varying from 93—1463 joule/kg). On at least
20% of these days the potential energy reserves in the unstable air
exceeded 1000 joules/kg, and the velocity of the convective flows
ranged from 2.9 to 12.8 m/sec. The author concludes that intense solar
heat radiation is not the sole cause of the development of convective
currents, and that low humidity and unstable atmospheric stratification
also play an important part in the process. Orig. art. has: 2 tables
and 3 formulas. [WA-50; CBE No. 39] [ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 007/ OTH REF: 001

Card 2/2

ACC NR: AP8037158

SOURCE CODE: UR/0362/68/004/010/1026/1041

AUTHOR: Volkov, Yu. A.; Kukharets, V. P.; Tsvang, L. R.

ORG: Institute of Physics of the Atmosphere, Academy of Sciences SSSR
(Institut fiziki atmosfery, Akademiya nauk SSSR)

TITLE: Turbulence in the boundary layer of the atmosphere above steppe and sea surfaces

SOURCE: AN SSSR. Izvestiya. Fizika atmosfery i okeana, v. 4, no. 10, 1968, 1026-1041

TOPIC TAGS: atmospheric thermodynamics, atmospheric radiation, atmospheric wind field, boundary layer turbulence, heat flux, cloud cover, heat radiation, heat advection

ABSTRACT: Measurements of turbulent and radiational flux characteristics at different altitudes (within the boundary layer of the atmosphere) were made over steppe and sea surfaces in order to determine the principal characteristics of heat exchange between the atmosphere and the underlying surfaces and the principal laws of the variation of turbulence structure with height. The measurements were made in July—August 1966 from on board a LI-2 aircraft equipped with apparatus

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UDC: 551.551.5:551.551.8

ACC NR: AP8037158

for measuring the fluctuations of the velocity component w' and the temperature T' , a tape recorder for registering these fluctuations, apparatus for statistical analysis of the fluctuations as they were measured, radiational balance meters for measuring radiation fluxes, and apparatus for measuring profiles of atmospheric temperature $\bar{T}(z)$ and humidity $\bar{e}(z)$. The location of the equipment in the aircraft is shown in a diagram. The procedures for measuring the aforementioned values are described in detail. The profiles of the magnitude $\delta_T^2(z)$, $\sigma_w^2(z)$, $C_T^2(z)$, $\epsilon(z)$ and $q(z)$ are presented; q is the turbulent heat flux, σ^2 is dispersion, C^2 is the structural characteristics of temperature and wind fluctuations and $\epsilon = (C_w^2/C^2_0)^{3/2}$. The differences in the characteristics of turbulence over sea and steppe, the characteristics of turbulence and temperature gradients, the results of measurements of heat advection and the spectra of turbulent heat fluxes are discussed. The principal characteristics of turbulence in the boundary layer of the atmosphere depend substantially upon the type of underlying surface. In summer the intensity of turbulent fluctuations and the magnitudes of turbulent fluxes above the steppe are considerably larger than above the sea. The magnitudes of turbulent heat fluxes above a uniform underlying surface (steppe) depend substantially on the presence of cloud cover. In cloudy weather the heat fluxes are

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ACC NR: AP8037158

considerably less than in clear weather although the intensity of w' and T' fluctuations decreases insignificantly. The association between turbulent fluxes of heat and the gradient of potential temperature is very complex. The representation of this relationship with the aid of the coefficient of turbulent heat exchange K_T for the atmospheric boundary layer requires supplementary investigation of the problem of the dependence of K_T upon stratification, character of the temperature of the surface, cloud cover, etc. Turbulent radiational and advective heat fluxes have impacts of similar orders of magnitude on the warming of the atmospheric boundary layer above the steppe in the daytime. At altitudes from 250 m and above the turbulent heat transport is accomplished by inhomogeneities larger than 200 m. Orig. art. has: 12 figures and 6 formulas. [WA-50; CBE No. 39][729]

SUB CODE: 04/ SUBM DATE: 25Dec67/ ORIG REF: 007/ OTH REF: 002

Card 3/3

ACC NR: AT8031021

SOURCE CODE: UR/2667/68/000/054/0066/0074

AUTHOR: Zenin, M. T.

ORG: none

TITLE: Influence of physico-geographic conditions on the concentration of industrial effluents in atmospheric air

SOURCE: Moscow. Nauchno-issledovatel'skiy institut aeroklimatologii. Trudy, no. 54, (4), 1968. Voprosy gidrometeorologii Sibiri (Problems of hydrometeorology of Siberia), 66-74

TOPIC TAGS: air pollution, industrial air pollution, local physiography, microclimatology

ABSTRACT: A multi-discipline microclimatic and sanitary hygienic investigation was made in 1962-1964 of the air pollution at 15 points around an unnamed Western Siberian city (radius of 20 km, 160-m relief in the city and 60 m in the total area), weather observations were made at the times the air samples were taken (subsequent chemical analysis). The measurement points were located in varying physico-geographic and sanitary-hygienic conditions, and at varying distances of the sampling points from the polluting sources, the relief of the area, population

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UDC: 551.510.42

- 300 -

ACC NR: AT8031021

density, amount of forest cover etc., were taken into account. A total of +25,000 samples were taken, with about 3000 being taken under smoke plumes. Terrain characteristics studied included the proximity of hilly terrain to the valley of a river. The effects of winds on the air pollution were established on the basis of the classification of weather station protection given in *Spravochnik po klimatu SSSR. Veter (Handbook on the Climate of the USSR. Winds)*, No. 20, 1966. The "protection" parameter $w' = \frac{\bar{V}_T}{\bar{V}_H}$ was calculated from the mean annual wind velocity at

the point (\bar{V}_T) and the "background" wind velocity for the area studied \bar{V}_H , and was assumed to be 3.8 m/sec. The wind velocity amplitude

$A_V = \frac{\bar{V}_{13}}{\bar{V}_1}$ is the ratio of the mean July wind speed for 13 hr (\bar{V}_{13}) and

1 hr (\bar{V}_1). These two parameters, demonstrated to describe adequately the degree of influence of local conditions on wind speed, were found to have an inversely proportional relation in the city areas and in the dissected terrain. The frequency of the most "dangerous" wind directions was also determined. Regression equations and the microclimatic coefficient were obtained empirically for a 200-km² area of the city, and the amount of total pollution by statistical analysis of all air samples.

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ACC NR: AT8031021

Other values are tabulated: degree of tree cover, altitude of station, relief characteristics, and type of station shelter. Orig. art. has: 4 figures and 5 tables. [WA-50; CBE No. 39] [ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 007/ OTH REF: 001

Card 3/3

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ACC NR: AP8031324

SOURCE CODE: UR/0025/68/000/009/0127/0127

AUTHOR: none

ORG: none

TITLE: Ultrasonic siren for dispersing fog

SOURCE: Nauka i zhizn', no. 9, 1968, 127

TOPIC TAGS: weather modification, fog dispersal, ultrasonic siren

ABSTRACT: Polish engineers have proposed a simple and effective ultrasonic method of dispersing fog along shipping lanes and at airports. The equipment, called "ultrasonic sirens" consists of two turbines which operate on compressed air to produce sound vibrations in the 16-22 Hz frequency range. There is a phase shift of 180°. A parabolic reflector directs the "standing wave," concentrating the sound intensity. The apparatus weighs 20 kg and disperses fog for distances of 300-400 meters. Orig. art. has: 1 figure.

[WA-50; CBE No. 39][ER]

SUB CODE: 04, 14/ SUBM DATE: none

Card 1/1

ACC NR: AN9002170

SOURCE CODE: PO/9059/68/000/51-/0010/0010

AUTHOR: none

ORG: none

TITLE: Pendulum on a TV tower

SOURCE: Laczosc, no. 51-52, 22-29 Dec 68, p. 10, cols. 4-5

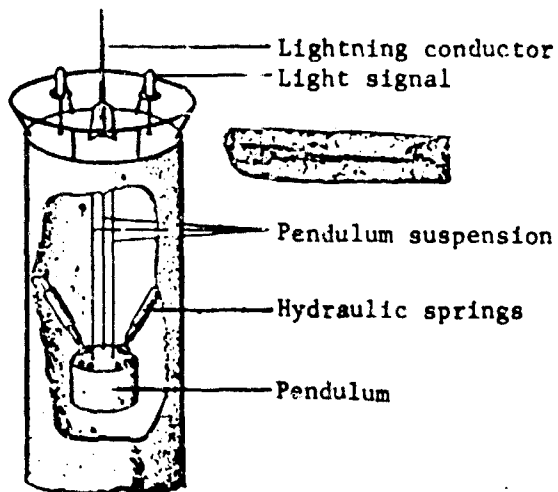
TOPIC TAGS: structural engineering, atmospheric wind field, radio tower, television tower, hydraulic system, pendulum motion, gust load damping

ABSTRACT: An original device, a shock absorbing pendulum, shown in the photo, has been designed by engineers from Dresden, East Germany, and is installed in the 262-m TV tower in Dresden to counteract swaying induced by high winds. The heavy pendulum is suspended from the roof of the top story of the tower, and is connected to the sides by means of two hydraulic springs. As the tower sways, the heavy pendulum effects oscillations of natural frequency and amplitude which differ from the oscillation frequency and amplitude of the tower. As a result, friction develops in the springs, and absorbs the energy induced by the wind on the high tower. In terms of physics, wind energy is converted to the oscillation energy of the

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ACC NR: AN9002170



System of the shock
absorbing pendulum
on the TV tower in
Dresden, East Germany

pendulum. These oscillations, unlike the oscillations of the tower,
do not affect the operation of radio and television transmitters.
Orig. art. has: 1 figure.

[WA-50; CBE No. 39] [EB]

SUB CODE: 04, 09/ SUBM DATE: none

Card 2/2

IV. GENERAL

ACC NR: AP9001542

SOURCE CODE: UR/0451/68/000/006/0020/0026

AUTHOR: Glukhov, S. A.

ORG: All-Union Scientific Research Institute of Medical Machine Construction, Moscow (Vsesoyuznyy nauchno issledovatel'skiy institut meditsinskogo priboroyeniya)

TITLE: Theory and calculation of an ejection sprayer

SOURCE: Meditsinskaya tekhnika, no. 6, 1968, 20-26

TOPIC TAGS: biologic aerosol, bacterial aerosol, spray nozzle, medical equipment

ABSTRACT: A series of equations for calculating the effectiveness of a nozzle for inhalation therapy is given. The article presents both theoretical and operational calculations for air pressure and feed, effects of nozzle constructions, the calculation of the average diameter of aerosol particles, behavior of the liquid to be aerosolized (in this case water), hydraulic loss, feed rates, and other factors. Orig. art. has: 12 equations. [WA-50; CBE No. 39] [LP]

SUB CODE: 06/ SUBM DATE: 12Apr68/ ORIG REF: 005/ OTH REF: 002

Card 1/1

UDC: 615.453.24:615.471

ACC NR: AP8033970

SOURCE CODE: UR/0016/68/000/010/0135/0138

AUTHOR: Karpukhin, G. I.; Slobodenyuk, V. K.; Slobodenyuk, A. V.

ORG: Sverdlovsk Institute of Virus Infections (Sverdlovskiy institut virusnykh infektsiy)

TITLE: Experimental basis for aerosol disinfection during virus diseases. Report 1. A method of quantitative determination of virus on surfaces contaminated by aerosol

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 10, 1968, 135-138

TOPIC TAGS: viral aerosol, aerosol chamber, biologic decontamination

ABSTRACT: This article appears in Biological Factors

Card 1/1

UDC: 616.988-084.48+576.858.07

ACC NR: AP8034770

SOURCE CODE: UR/0346/68/000/010/0102/0105

AUTHOR: Khor'kov, I. A. (Aspirant)

ORG: All-Union Scientific Research Institute of Veterinary Sanitation (Vsesoyuznyy nauchno-issledovatel'skiy institut veterinarnoy sanitarii)

TITLE: Aerosol disinfection of commercial installations of bioindustry concerns

SOURCE: Veterinariya, no. 10, 1968, 102-105

TOPIC TAGS: hoof and mouth disease, biologic decontamination

ABSTRACT: Reliable disinfection of livestock barns and air infected with foot-and-mouth-disease virus is accomplished with aerosols of 20% formaldehyde in a dose of 40 ml/1 m³, or 20% acetic acid in a dose of 50 ml/m³, with 3-hr exposures, a temperature not below 14°C, and relative humidity between 60 and 82%. Animals and people can return to locations disinfected with acetic acid after 2-3 hr of ventilation, while in the case of formaldehyde aerosols ammonium hydroxide must be sprayed to neutralize the formaldehyde odor and two

Card 1/2

UDC: 619:616.988.43-084.484

ACC NR: AP8034770

days of ventilation must be provided. The industrial strain of foot-and-mouth-disease virus, variant A₂₂, was used. PVAN sprayers or a TAN sprayer (built by V. S. Yarnykh), delivering 50-60 μ aerosols, were used. Orig. art. has: 2 tables. [WA-50; CBE No. 39][JS]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AP9001068

SOURCE CODE: GE/0047/68/000/011/0509/0512

AUTHOR: Kunkel, P. (Engineer)

ORG: none

TITLE: Ensuring constant readiness of personal protective equipment by quality test procedures

SOURCE: Militartechnik, no. 11, 1968, 509-512

TOPIC TAGS: impermeable protective clothing, gas mask, test

ABSTRACT: The need for retesting of personal protective equipment is discussed. The most important test procedures are: testing the gas mask filter for breath impermeability, testing the gas mask hood and the IP 46 M gas mask for impermeability, testing protective clothing for light opaqueness, and visual testing. The IP 46 M gas mask and apparatus for testing it are shown in Figure 1, where 1 is the gas mask hood, 2 is the canister, 3 is the breath bag, 4 is a pressure escape valve, 5 is a cap, 6 is rubber tubing, 7 is a manometer, 8 is a clamp, 9 is a bellows, 10 is a sandglass, 11 is a rubber stopper with a T tube, and 12 is a delivery tube. An example is cited to illustrate the need for continual testing. An impermeability test was performed on 100 mask hoods which had been used for several years and had been conditioned several times. After testing,

Card 1/3

ACC NR: AP9001068

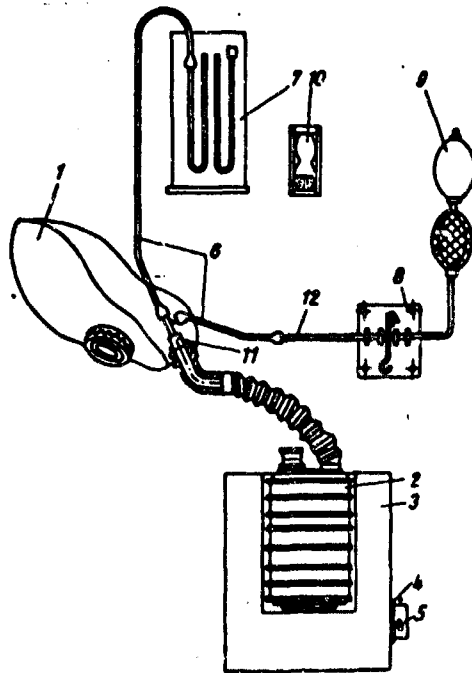


Fig. 1.

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ACC NR: AP9001068

It was found that 10% were not impermeable and had to be rejected. Previously unobserved leaks were found in the rubber. Only after patching could the masks be used again. Orig. art. has: 6 figures.

[WA-50; CBE No. 39] [FT]

SUB CODE: 15/ SUBM DATE: none

Card 3/3

ACC NR: AP8037046

SOURCE CODE: UR/0240/68/000/011/0042/0044

AUTHOR: Rechmenskiy, S. S. (Professor)

ORG: Kiev Institute of Postgraduate Medicine (Kivevskiy institut usovershenstvovaniya vrachey)

TITLE: A bacteria trap

SOURCE: Gigiyena i sanitariya, no. 11, 1968, 42-44

TOPIC TAGS: biologic warfare agent filter, aerobiology, biologic aerosol

ABSTRACT: This article appears in Biological Factors

Card 1/1

UDC: 614.718+613.155]-078

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ACC NR: AP9003662

SOURCE CODE: UR/0433/68/000/011/0026/0026

AUTHOR: Zabulenis, I. I.

ORG: none

TITLE: Construction of standard warehouses

SOURCE: Zashchita rasteniy, no. 11, 1928, 26

TOPIC TAGS: CW agent storage, CW handling equipment

ABSTRACT: In 1966, the Plunge Industrial Administration for Agriculture together with the Republic Plant Protection Station worked up plans for a standard warehouse for toxic chemicals. The warehouse has four sections. The first is for storing individual means of protection (coveralls, boots, respirators) in ventilated closets. Toxic chemicals are in the second section, with highly toxic compounds being stored in covered containers. The third section is for storing treated grain. The fourth section is a concrete area (5 x 7 m) for treating seeds. There are 400 such warehouses in Lithuania. Estimated cost is 1921 rubles each. The

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ACC NR: AP9003662



figure shows a standard warehouse in "Geluv" kolkhoz in Shirvintskiy Rayon. [WA-50; CBE No. 39] [BC]

SUB CODE: 15/ SUBM DATE: none

Card 2/2

ACC NR: AP9004051

SOURCE CODE: UR/0017/68/000/012/0949/0049

AUTHOR: none

ORG: none

TITLE: Pure air for structures

SOURCE: Voyennyye znaniya, no. 12, 1968, 49 (inside back cover)

TOPIC TAGS: chemical protective shelter, CBR protective equipment, air purification equipment

ABSTRACT: A diagram of a simple filter-absorber is shown in Figure 1. A scheme for a bicycle-driven blower for supplying air is shown in Figure 2.

Card 1/6

ACC NR: AP9004051

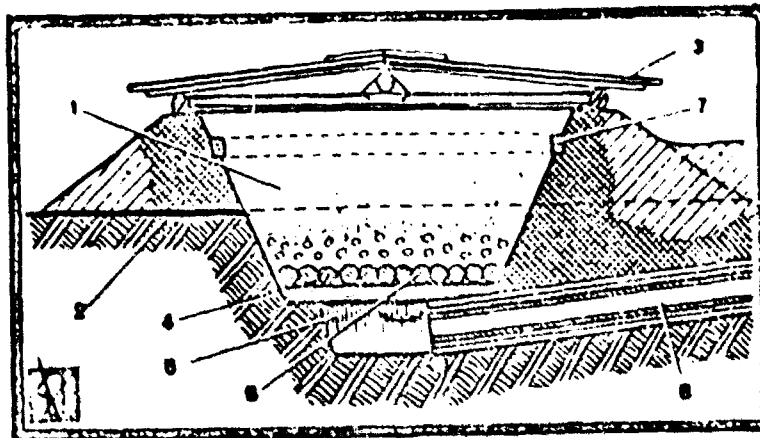


Fig. 1. Filter-absorber.

1 - Filtering material; 2 - filter housing; 3 - roof; 4 and 6 - support grating; 5 - collectors; 7 - wood beams; 8 - air flow.

Card 2/6

ACC NR: AP9004051

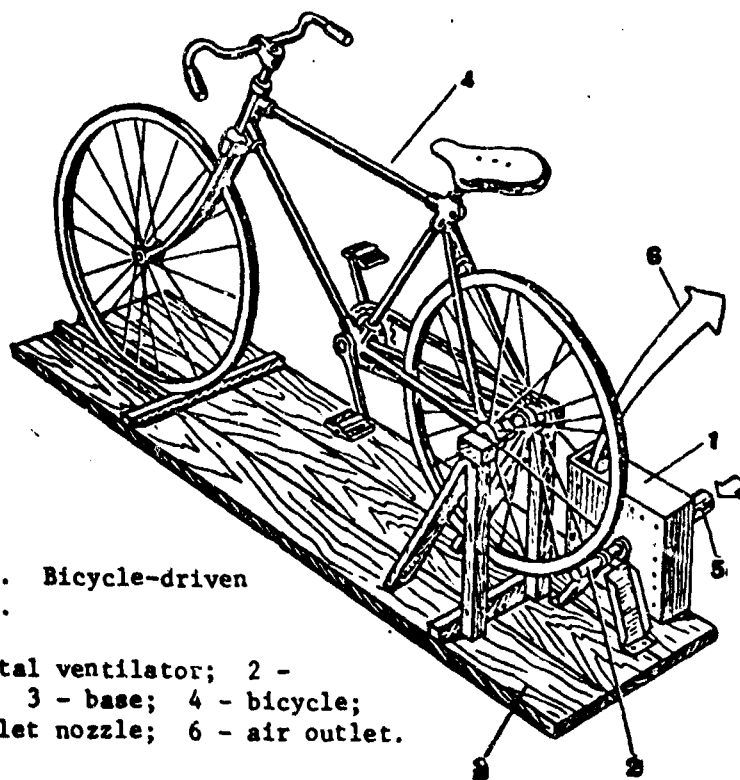


Fig. 2. Bicycle-driven blower.

1 - Metal ventilator; 2 - drive; 3 - base; 4 - bicycle; 5 - inlet nozzle; 6 - air outlet.

Card 3/6 .

ACC NR: AP9004051

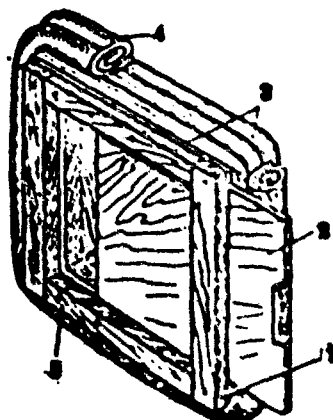


Fig. 3. Hermetic slide plate.

1 - Housing; 2 - linen slide plate; 3 - packing; 4 - sleeve; 5 - frame.

Card 4/6

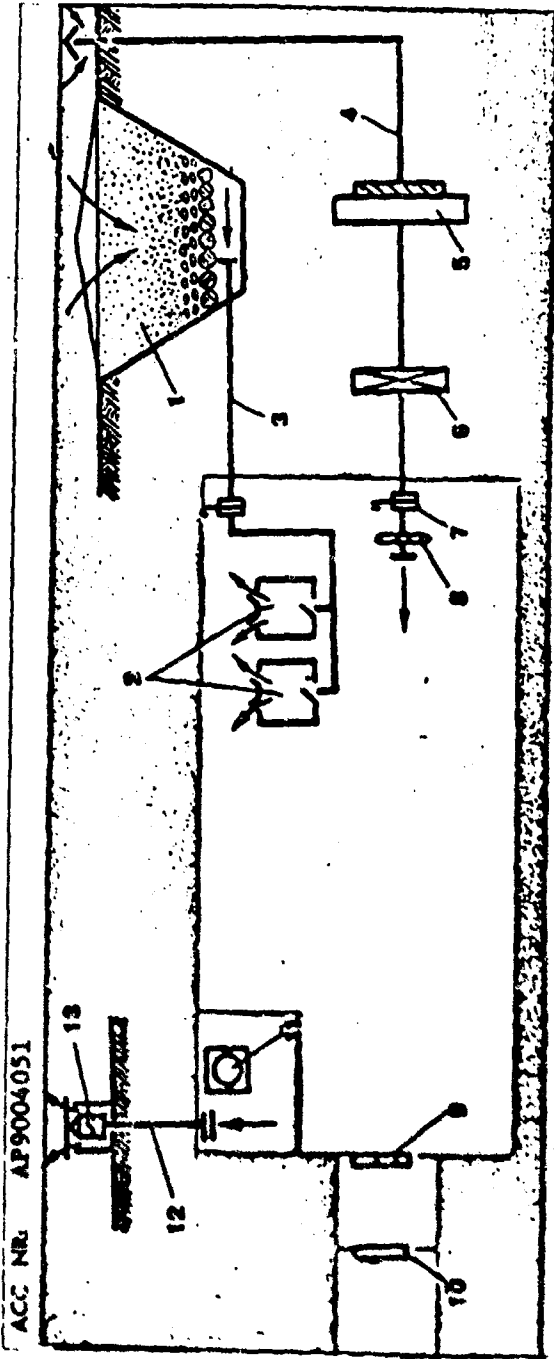


Fig. 4. Layout of filtering-ventilating equipment in a shelter.

- 1 - Simple filter-absorber; 2 - ventilating installation with bicycle ventilator or bellows; 3 - air intake duct for the "filter ventilation" regime; 4 - air duct for the "pure ventilation" regime; 5 - protective section; 6 - dust filter; 7 - slide plate; 8 - main ventilation unit; 9 - hermetic door; 10 - protective door with hermetic molding; 11 - bathroom; 12 - exhaust; 13 - stacks with protective devices.

ACC NR: AP9004051

A hermetic slide plate for shutting off the air flow is shown in Figure 3. Figure 4 presents a layout of filtering-ventilating equipment in a shelter. [WA-50; CBE No. 39] [BC]

SUB CODE: 15/ SUBM DATE: none

Card 6/6

APPENDIX I. SOURCES

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AN KazSSR. Vestnik. (Academy of Sciences of the Kazakh SSR. Herald)

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Voprosy pitaniya (Problems of Nutrition)

Voprosy virusologii (Problems of Virology)

Voyennyye znaniya (Military Science)

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APPENDIX II. AUTHORS

- Abramov, V. S. 1
 Afrikyan, V. G. 85
 Aitov, M. B. 261
 Akatov, A. K. 154
 Aleksanyan, R. A. 85
 Alekseyev, V. V. 134
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