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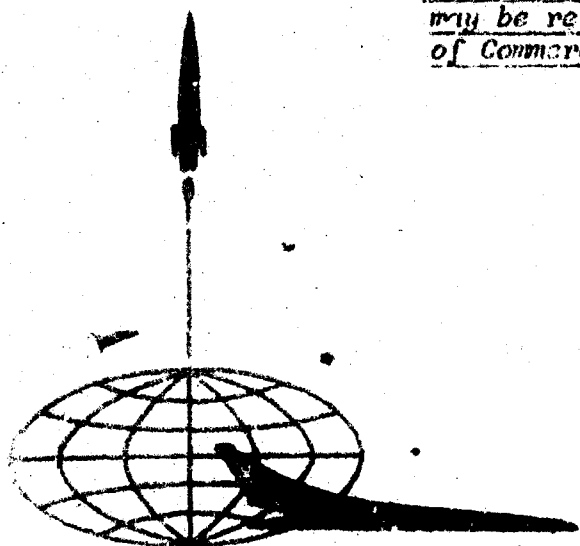
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C B E FACTORS

Monthly Survey No. 37

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CBE FACTORS

Monthly Survey No. 37

ATD Work Assignment No. 50

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FOREWORD

This report is the thirty-seventh 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:

AP8031944

SOURCE CODE: UR/0062/68/000/009/2033/2036

AUTHOR: Abduvakhabov, A. A.; Katsnel'son, A. B.; Mikhaylov, S. S.; Godovikov, N. N.; Avdeyeva, V. A.; Kabachnik, M. I.; Rozengart, V. I.; Sitkevich, R. V.; Smusin, Ya. S.

ORG: Institute of Heteroorganic Compounds, Academy of Sciences SSSR (Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR); First Leningrad Medical Institute im. I. P. Pavlov (Pervyy Leningradskiy meditsinskiy institut)

TITLE: Inhibition of acetylcholinesterase by O-alkyl S-n-butyl methylthiophosphonates

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 9, 1968, 2033-2036

TOPIC TAGS: acetylcholinesterase, kinetic chemical reaction rate, sorption/thiophosphonate ester

ABSTRACT: The rate constants of the inhibition of butyrylcholinesterase (BuChE) and acetylcholinesterase (AcChE) from the stroma of bull erythrocytes by O-alkyl S-n-butyl methylthiophosphonates (I) are shown in Table 1. A comparison of the changes of k_2 for AcChE and BuChE with

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UDC: 542.978+547.9+661.718.1

ACC NR:

AP8031944

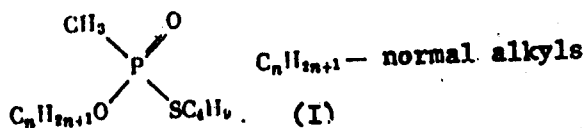


Table 1. Rate constants (k_2) of the reaction of I with AcChE and BuChE at pH 7.5, 25°C and toxicity (LD_{50}) for mice

$$\begin{array}{c} \text{CH}_3 \\ \diagup \\ \text{P} \\ \diagdown \\ \text{C}_n\text{H}_{2n+1}\text{O} \end{array} \quad \begin{array}{c} \text{O} \\ \diagup \\ \text{P} \\ \diagdown \\ \text{SC}_4\text{H}_9 \end{array}$$

n	$k_2, 1/(\text{M}\cdot\text{min})$		LD_{50} for mice, mg/kg
	BuChE	AcChE	
1	$(5.8 \pm 0.3) \cdot 10^1$	$(2.59 \pm 0.19) \cdot 10^2$	2.2 ± 0.3
2	$(5.2 \pm 0.6) \cdot 10^1$	$(1.17 \pm 0.04) \cdot 10^2$	1.5 ± 0.2
3	$(4.5 \pm 0.25) \cdot 10^2$	$(5.5 \pm 0.14) \cdot 10^2$	2.0 ± 0.4
4	$(1.17 \pm 0.03) \cdot 10^4$	$(1.36 \pm 0.05) \cdot 10^3$	1.2 ± 0.1
5	$(1.58 \pm 0.06) \cdot 10^4$	$(6.76 \pm 0.3) \cdot 10^2$	1.5 ± 0.1
6	$(5.03 \pm 0.49) \cdot 10^4$	$(4.18 \pm 0.24) \cdot 10^2$	3.0 ± 0.3
7	$(1.05 \pm 0.043) \cdot 10^5$	$(4.54 \pm 0.18) \cdot 10^2$	8.6 ± 0.7
8	$(3.65 \pm 0.24) \cdot 10^5$	$(4.1 \pm 0.23) \cdot 10^2$	15 ± 1.5
9	$(6.98 \pm 0.58) \cdot 10^5$	$(6.18 \pm 0.20) \cdot 10^2$	85.0 ± 12.1
10	$(5.2 \pm 0.34) \cdot 10^5$	$(2.9 \pm 0.14) \cdot 10^2$	112.0 ± 42.5

lengthening of the alkyl radical $\text{C}_n\text{H}_{2n+1}$ suggests that there is only

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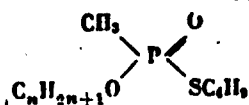
ACC NR: AP8031944

one hydrophobic segment on the surface of AcChE (unlike BuChE) beyond the esterase center, and the length of the segment corresponds to the butyl radical. Also shown in Table 1 are LD₅₀ data of I for white mice (sc 0.1 ml/10 g body wt, 24 hr exposure). Five to ten min after poisoning, the animals displayed motor stimulation with clonic-tonic spasms, urination and defecation, salivation, ataxia of the posterior extremities, pronounced exophthalmos, myosis and pronounced hyperemia of the sclera, lacrimation and moistness of the hair. Death was usually in 30--60 min. Autopsy revealed venous plethora of the internal organs, ecchymoses beneath the pleura and pericardium, a fluid condition of the blood in the cardiac cavities, emphysema of the lungs, bronchorrhea with constriction of the bronchial lumen, pronounced plethora of the brain and cerebral membranes, a cramped, bead-like intestine, fluid contents in the lumen of the large intestine, and pronounced *rigor mortis*. There is no correspondence of LD₅₀ to anti-ChE activity of I. Results of experiments on mice *in vivo* and *in vitro* are shown in Table 2. In the *in vivo* series, 1/2 LD₅₀ of I was administered subcutaneously, and decapitation was performed 90 min later. In the *in vitro* series, I was added to brain homogenate. The constancy of inhibition in the *in vivo* series is in full agreement with notions of the anti-ChE mechanism of organophosphorus compounds. The low toxicity of compounds with long alkoxy groups is probably due to sorption of the inhibitor molecules

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ACC NR: AP8031944

Table 2. Activity of mouse brain AcChE *in vivo* and *in vitro* when I was administered in equitoxic doses (0.5 LD₅₀)



<i>n</i>	Dose, mg/kg	Inhibition of brain AcChE <i>in vivo</i> , %	<i>k</i> ₂ , 1/(M·min) <i>in vitro</i>
Control	—	0	—
1	1,1	86,8	(3,3±0,23)·10 ²
4	0,6	83,9	(2,48±0,016)·10 ⁴
7	4,3	68,3	(5,4±0,39)·10 ³
9	42,5	67,0	(2,4±0,03)·10 ²

on the hydrophobic surfaces of non-specific proteins. Orig. art. has: 1 figure and 2 tables. [WA-50; CBE No. 37] [FT]

SUL CODE: 07/ SUBM DATE: 22Feb68/ ORIG REF: 007/ OTH REF: 002

Card 4/4

ACC NR:

AP8030560

SOURCE CODE: UR/0079/68/038/008/1794/1798

AUTHOR: Abramov, V. S.; Tarasov, L. A.; Fatykhova, F. G.

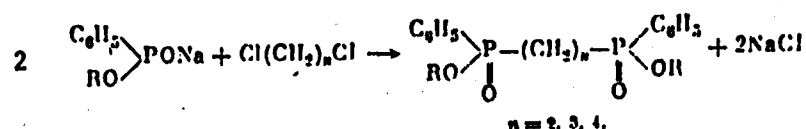
ORG: none

TITLE: Reactions of sodium salts of monoesters of phenylphosphinous acid with some dihalogen derivatives. I. Synthesis of esters of alkylene-bisphenyl-diphosphinic acid

SOURCE: Zhurnal obshchey khimii, v. 38, no. 8, 1968, 1794-1798

TOPIC TAGS: phosphinic acid, phosphinous acid/phosphate ester

ABSTRACT: Compounds I—IV were synthesized from dichloroethane and the corresponding sodium monoalkyl phenylphosphonites by the Michaelis-Becker reaction. Compound V was synthesized by heating 1,3-dichloropropane in



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UDC: 546.181.1+547.431.2

ACC NR:

AP8030560

Table 1. Esters of alkylene-bisphenyl-diphosphinic acids
 $\text{C}_6\text{H}_5(\text{RO})\text{P}(\text{O})-\text{R}'-\text{P}(\text{O})(\text{RO})\text{C}_6\text{H}_5$

Compd no.	R	R'	% Yield	Form	Mp
I	C ₂ H ₅	—CH ₂ CH ₂ —	10.0	A	101—102° (n-hexane)
II	iso-C ₃ H ₇		24.6	B	68—69
			24.2	A	146—147 (benzene-n-heptane)
III	C ₄ H ₉		28.8	B	113—114 (n-heptane)
IV	iso-C ₄ H ₉	40.5		87—88 (n-heptane)	
V	iso-C ₃ H ₇	—CH ₂ CH ₂ CH ₂ —	41.7		94—95 (n-heptane)
VI	iso-C ₃ H ₇		35.4	A	86—87 (dioxane)
VII	iso-C ₄ H ₉	—CH ₂ CH ₂ CH ₂ CH ₂ —	18.0		83—84 (n-hexane)
			26.7	B	76.5—77.5 (n-hexane)
			43.6		88—89 (n-heptane)

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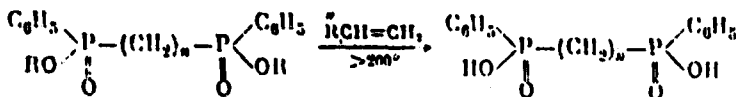
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ACC NR:

AP8030560

sodium monoisopropyl phenylphosphonite and was isolated as propylene-1,3-bisphenyl-diphosphinic acid. Compounds VI and VII were synthesized similarly from 1,4-dichlorobutane and sodium monoisopropyl and sodium monoisobutyl phenylphosphonites, respectively. Besides I-VII and NaCl, the side products sodium diphenyl subphosphinate and sodium acid phenylphosphonite were formed. When I and VI were heated above 200°C, olefins



were eliminated and the corresponding acids were formed. Orig. art. has: 1 table.

[WA-50; CBE No. 37][FT]

SUB CODE: 07/ SUBM DATE: 20Dec67/ ORIG REF: 002/ OTH REF: 003

Card

3/3

ACC NR:

AP8030553

SOURCE CODE: UR/0079/68/038/008/1770/1771

AUTHOR: Alekseyev, V. V.

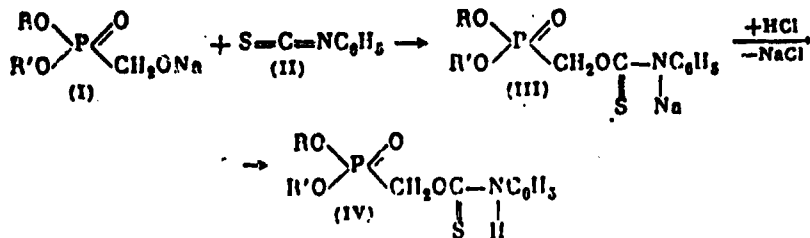
ORG: Melitopol' Pedagogic Institute (Melitopol'skiy pedagogicheskiy institut)

TITLE: Phenylthiocarbamic esters of mixed dialkyl esters of hydroxymethylphosphonic acids

SOURCE: Zhurnal obshchey khimii, v. 38, no. 8, 1968, 1770-1771

TOPIC TAGS: phosphonic acid, phosphonate ester, thiocarbamate ester, organic phosphorus compound, organic nitrogen compound, organic sulfur compound

ABSTRACT: The title compounds were synthesized by the reaction:



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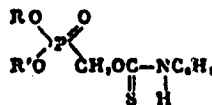
UDC: 547.26'118+547.496.1

- 4 -

ACC NR: AP8030553

The reaction proceeds in absolute ether with heat evolution without the separation of the intermediate. Compounds IV are colorless or yellow crystals or oily liquids. They are soluble in ether, benzene, alcohol,

Table 1.



No	R	R'	Yield, %	Mp, °C
I	C ₂ H ₅	C ₂ H ₅	60	68—69.9°
II	C ₂ H ₅	iso-C ₃ H ₇	29	75.6—77.5
III	C ₂ H ₅	C ₄ H ₉	34.5	47.9—49.3
IV	C ₂ H ₅	iso-C ₄ H ₉	30.2	68.8—70.2
V	C ₂ H ₅	C ₈ H ₁₇	15.3	oil *

* d_4^{20} 1.1660, n_D^{20} 1.4390.

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ACC NR: AP8030553

and acetone. They are insoluble in water, hexane, and octane. The yield and mp of compounds IV are given in the table.

[WA-50; CBE No. 37] [PS]

SUB CODE: 07/ SUBM DATE: 25Sep67/ ORIG REF: 004

Card 3/3

ACC NR:

AF8030544

SOURCE CODE: UR/0079/68/038/008/1687/1691

AUTHOR: Alekseyeva, L. V.; Burde, N. L.; Lundin, B. N.

ORG: Institute of Chemistry, Urals Branch, Academy of Sciences SSSR
(Institut khimii Ural'skogo filiala Akademii nauk SSSR)TITLE: Synthesis and study of compounds with potential biologic activity
III. synthesis of some halogenated derivatives of glutamic acid

SOURCE: Zhurnal obshchey khimii, v. 38, no. 2, 1968, 1687-1691

TOPIC TAGS: glutamic acid, halogenated organic compound, biologically
active compound

ABSTRACT: β -Chloro-DL-glutamic acid (I) and N-acetyl- β -fluoro-DL-glutamic acid (II), a potential antimetabolite, were synthesized from the new compound diethyl N-acetyl- β -chloroglutamate (III) (mp 134—135°C), which was prepared in 84% yield by dissolving diethyl N-acetyl- β -hydroxyglutamate (IV) in freshly distilled SOCl_2 and allowing the solution to stand for 20 hr. Compound III was also prepared by slowly adding IV

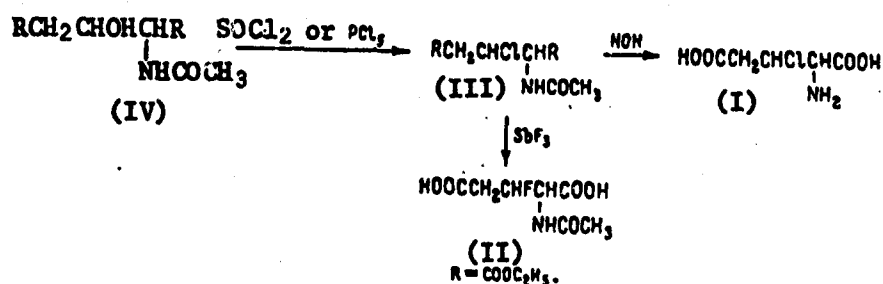
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UDC: 547.221+661.723-16

ACC NR:

AP8030544



in chloroform to PCl_5 in chloroform and stirring the reaction mass at 8°C for 2 hr. Compound I (mp 143—145°C) was obtained in 29.2% yield when IV was heated in 20% HCl for 3 hr and hydrolyzed with water. Compound II (mp 50—52°C) was prepared in 43% yield by heating III with freshly sublimed SbF_3 for 6 hr at 100°C. H_2S was passed through the cooled, water-diluted, filtered mixture to remove all traces of Sb_2S_3 . Compound II was recovered from acetone with ether and dried. Attempts to recover β -fluoroglutamic acid from the reaction of diethyl N-acetyl- β -(p-toluenesulfonyl) hydroxyglutamate with KF and from the reaction of IV with 2-chloro-1,1,2-trifluoroethylethylamine proved unsuccessful.

[WA-50; CBE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: 18Jul67/ ORIG REF: 005/ OTH REF: 011

- 6 -

Card

2/2

ACC NR: AP8030368

SOURCE CODE: UR/0366/68/004/009/1572/1576

AUTHOR: Anishchenko, A. F.; Volodkovich, S. D.; Mel'nikov, N. N.

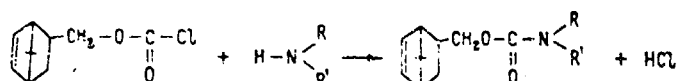
ORG: All-Union Scientific Research Institute of Chemicals for Plant Protection (Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh sredstv zashchity rasteniy)

TITLE: Organic insecticides and fungicides. CXXIV. Synthesis of bicyclo[2.2.1]-5-heptenyl-2-methyl N-alkyl- and N,N-dialkylcarbamates

SOURCE: Zhurnal organicheskoy khimii, v. 4, no. 9, 1968, 1572-1576

TOPIC TAGS: organic insecticide, carbamic acid derivative, organic nitrogen compound

ABSTRACT: To study the relation between the chemical structure and pesticidal activity, a series of new carbamates was synthesized according to the reaction:



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UDC: 547.495

ACC NR: AP8030368

The reaction takes place at temperatures below 0°C in diethyl ether with excess amine as the HCl acceptor. The new compounds are characterized

Bicyclo[2.2.1]-5-heptenyl-2-methyl N-alkyl- and N,N-dialkylcarbamates

No.	Name	% Yield	Bp, °C (mm)	d ₄ ²⁰	n _D ²⁰
I	Bicyclo[2.2.1]-5-heptenyl-2-methyl carbamate	86	Mp 100-101°	—	—
	Bicyclo[2.2.1]-5-heptenyl-2-methyl-:				
II	-N-methylcarbamate	60	89-90 (0.1)	1.0982	1.5000
III	-N-ethylcarbamate	80	95-96 (0.1)	1.0739	1.4910
IV	-N-allylcarbamate	79	104-105 (0.03)	1.0680	1.4883
V	-N-propylcarbamate	75	101-102 (0.1)	1.0489	1.4868
VI	-N-isopropylcarbamate	65	92-94 (0.1)	1.0484	1.4867
VII	-N-butylcarbamate	85	100 (0.03)	1.0386	1.4875

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ACC NR: AP8030368

VIII	-N-isobutylcarbamate	89	96 (0.03)	1.0315	1.4837
IX	-N-amylcarbamate	80	105-106 (0.03)	1.0237	1.4846
X	-N-isoamylcarbamate	85	100-101 (0.03)	1.0181	1.4834
XI	-N-hexylcarbamate	90	119° (0.03)	1.0060	1.4825
XII	-N-isohexylcarbamate	75	113 (0.03)	1.0098	1.4838
XIII	-N-octylcarbamate	71	99-100 (0.04)	0.9868	1.4806
XIV	-N,N-dimethylcarbamate	84	69 (0.1)	1.0569	1.4855
XV	-N,N-diethylcarbamate	79	69-70 (0.1)	1.0197	1.4800
XVI	-N,N-diallylcarbamate	84	65-66 (0.06)	1.0267	1.4930
XVII	-N,N-dipropylcarbamate	75	75-76 (0.13)	0.9918	1.4757
XVIII	-N,N-diisopropylcarbamate	79	94-95 (0.13)	0.9906	1.4740
XIX	-N,N-dibutylcarbamate	92	85-86 (0.05)	0.9620	1.4742
XX	-N,N-diisobutylcarbamate	84	100-101 (0.05)	0.9592	1.4723

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ACC NR: AP8030368

XXI	-N,N-diisoamylcarbamate	77	103-104 (0.09)	0.9457	1.4717
XXII	-N,N-dioctylcarbamate	70	145-146 (0.07)	0.9267	1.4723

in the table. Toxicological studies of the new compounds revealed that their pesticidal activity increased with increasing number of C atoms in the N-alkyl to four, then the activity decreased with increasing number of C atoms in the N-alkyl. The replacement of hydrogen atom at the nitrogen atom with an alkyl markedly decreases the pesticidal activity of the carbamates. [WA-50; CBE No. 37][PS]

SUB CODE: 07/ SUBM DATE: 24Jul67/ ORIG REF: 007/ OTH REF: 008

Card 4/4

ACC NR: AP8031934

SOURCE CODE: UR/0020/68/182/001/0101/0104

AUTHOR: Arbuzov, B. A. (Academician); Vizel', A. O.; Ivanovskaya, K. M.; Studentsova, I. A.; Garayev, R. S.

ORG: Institute of Organic and Physical Chemistry im. A. Ye. Arbuzov, Academy of Sciences SSSR (Institut organicheskoy i fizicheskoy khimii Akademii nauk SSSR); Kazan State Medical Institute im. S. V. Kurashev (Kazanskiy gosudarstvennyy meditsinskiy institut)

TITLE: Synthesis and new biological effects of organophosphorus compounds with low toxicity

SDURCE: AN SSSR. Doklady, v. 182, no. 1, 1968, 101-104

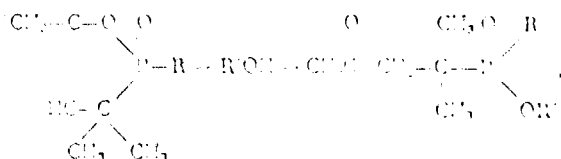
TOPIC TAGS: aliphatic phosphorus compound, hypothermia, cholinesterase

ABSTRACT: Methyl hydrogen 1,1-dimethyl-3-oxobutylphosphonate (I) and 1,1-dimethyl-3-oxobutylethylphosphinic acid (II) were synthesized by direct hydrolysis of 2-methoxy-2-oxo-3,3,5-trimethyl-1,2-oxa-4-phospholene and 2-ethyl-2-oxo-3,3,5-trimethyl-1,2-oxa-4-phospholene, respectively.

Card 1/6

UDC: 547.76:661.718.1:541.69

ACC NR: AP8031934



Dimethyl 1,1-dimethyl-3-oxobutylphosphonate (III) and methyl ethyl 1,1-dimethyl-3-oxobutylphosphonate (IV) were synthesized by heating 2-methoxy-2-oxo-3,3,5-trimethyl-1,2-oxa-4-phospholene with MeOH and EtOH,

Table 1
Oxidation
CH₃-O-C(=O)-P(=O)(OR)₂
R

Compound			% Yield	bp, °C (p in mm)	n _D ²⁰	d ₄ ²⁰
No.	R	R'				
I	OMe	H	59.5	Mp 87-88	--	--
II	Et	H	89.0	Mp 112-3	--	--
III	OMe	Me	85.6	60-61 (0.2)	1.4468	1.1126
IV	OMe	Et	65.8	73-74 (0.5)	1.4467	1.0896

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ACC NR: AP8031934

Table 1. (Cont.)

V	OEt	Et	49.3	134-5 (10)	1.4400	1.0478
VI	OEt	Bu	41.6	76-78 (.02)	1.4429	1.0235
VII	Et	Me	78.5	79-80 (0.1)	1.4642	1.0705
VIII	Et	Et	72.2	73-75 (.02)	1.4602	1.0351

respectively, to 150-170°C. Diethyl 1,1-dimethyl-3-oxobutylphosphonate (V) and ethyl butyl 1,1-dimethyl-3-oxobutylphosphonate (VI) were prepared by heating 2-ethoxy-2-oxo-3,3,5-trimethyl-1,2-oxa-4-phospholene with EtOH and BuOH, respectively. Methyl 1,1-dimethyl-3-oxobutylethylphosphinate (VII) and ethyl 1,1-dimethyl-3-oxobutylethylphosphinate (VIII) were obtained by heating 2-ethyl-2-oxo-3,3,5-trimethyl-1,2-oxa-4-phospholene with MeOH and EtOH, respectively. Results of biological tests of I-VIII in mice are shown in Tables 2 and 3. Intoxication was characterized by general depression with the mice assuming a "lateral position," by seizures of clonic-tonic spasms (VI), or peritoneal irritation (I and II). In a concentration of 10^{-3} mol/l, I, II, V, and VI strongly inhibited movement of the intestine. Compounds III-VIII are antagonists of the cholinesterase inhibitors Octamethyl and Fosfakol,

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ACC NR: AP8031934

Table 2

Compound	LD ₅₀ , ip mg/kg	MTD	Duration of lateral position during MTD, min.
I	400±30	200	--
II	520±35	300	--
III	3000±155	2000	337 169
IV	1450±80	1000	123 31
V	1050±45	750	120 23
VI	440±25	300	--
VII	3200±145	2000	--
VIII	1450±70	1000	--

Table 3

Compd	Decrease in body temperature At 2 hr after MTD, °C	Animals surviving during 0.5 MTD, %	
		ID ₁₀₀ of Octamethyl	LD ₁₀₀ of Fosfakol
I	1.2	0	0
II	0	0	0

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ACC NR: AP8031934

Table 3. (Cont.)

III	11.6	100	90
IV	9.8	100	30
V	11.8	80	60
VI	9.5	80	0
VII	7.1	100	100
VIII	7.8	90	40

as shown in Table 3. The toxicity of the reversible cholinesterase inhibitors eserine and proserine is reduced 50% by I—VIII. Compounds I—VIII do not display cholinolytic action on segments of rabbit small intestine and even increase the toxicity of acetylcholine, nicotine, and arecholine 100—150%. Analysis of the mechanism of antagonism of I—VIII with Fosfakol showed that *in vitro* III and VII in a concentration of 10^{-3} mol/l exert neither a protective, nor reactivating effect on cholinesterases. Yet *in vivo*, when 1/2 MTD of I—VIII was administered prophylactically and therapeutically, the cholinesterase activity of mouse brain poisoned with LD_{50} of Fosfakol turned out to be 25—30% higher than in the control experiment. There is no correlation between depth of hypothermia and decrease in motor activity. Compounds III and

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ACC NR: AP8031934

VII increased the animals' resistance to physical cooling. When 1/2 MTD of III and VII was administered, oxygen consumption decreased by 45% for III ($\Delta t = 6.5^{\circ}C$) and by 35% for VII ($\Delta t = 35^{\circ}C$). Orig. art. has: 2 tables. [WA-50; CBE No. 37] [FT]

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ACC NR: AP8029419

SOURCE CODE: UR/0409/68/000/004/0719/0721

AUTHOR: Avidon, V. V.; Shchukina, M. N.

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

TITLE: New derivatives of imidazo [5,1-b] benzothiazole

SOURCE: Khimiya geterotsiklicheskiy soedineniy, no. 4, 1968, 719-721

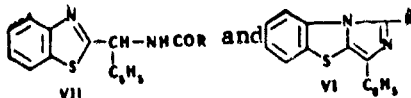
TOPIC TAGS: thiazole compound, cyclization

ABSTRACT: 1-Formyl-3-phenylimidazo[5,1-b]-benzothiazole (I) was boiled with $\text{NH}_2\text{OH}\cdot\text{HCl}$, sodium formate, and 99% formic acid to produce 1-cyano-3-phenylimidazo-[5,1-b]benzothiazole (II) (75% yield, mp 202.5—203°C). Compound II (mp 201—202°C) was also prepared in 69% yield by heating 1-bromo-3-phenylimidazo-[5,1-b] benzothiazole (III) with KCN and Me_2SO for 3 hr at 160°C. 3-Phenylimidazo[5,1-b] benzothiazole-1-carboxylic acid amide (IV) was obtained in 98% yield (mp 266—267°C) by dissolving II in concentrated H_2SO_4 . 3-Phenylimidazo[5,1-b] benzothiazole-1-carboxylic acid thioamide (V) (99.5% yield, mp 199.5—200.5°C) was prepared by passing dry H_2S through a suspension of II in pyridine and triethyl amine. The new 1-alkyl-3-phenylimidazo[5,1-b] benzothiazoles (VI) were

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UDC: 547.789.6'781

ACC NR: AP8029419



R	VII		Mp, °C (Crystallization solvent)	% Yield
	Mp, °C	% Yield		
C_2H_5	154—157	60.0	104—105 (MeOH)	68.0
C_3H_7	139—141	70.5	152.5—153.5 (EtOH)	98.5
$i\text{-C}_4\text{H}_9$	145—147	65.6	117—118 (60% EtOH)	86.1
C_6H_{11}	121—122	74.5	101.5—102.0 (hexane)	100.0
C_6H_{13}	108—109	86.3	85.0—90.0 (acetonitrile)	93.2

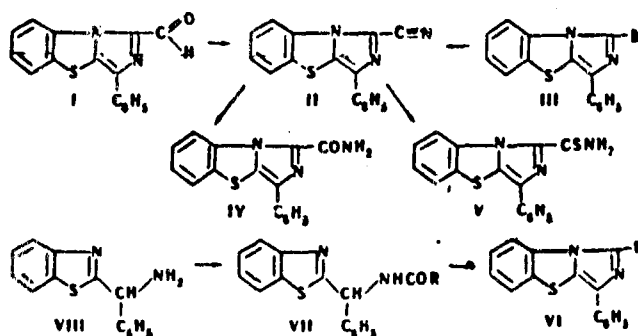
Card 2/4

ACC NR: AP8029419

Table (Cont.)

C ₆ H ₅ CH ₂	166-168	79.5	141.5-142.5 (MeOH)	100.0
CF ₃	170-170.5	67.4	169-169.5 (80% EtOH)	99.5

synthesized by cyclization of 2-(α -acylamino-benzyl) benzothiazoles (VII), which were prepared by adding the acyl chloride in ether to 2-(α -amino-benzyl)-benzothiazole (VIII) in ether-pyridine solution.



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ACC NR: AP8029419

1-Trifluoromethyl-3-phenylimidazo[5,1-b]benzothiazole (VI) was synthesized by cyclization of 2-(α -trifluoroacetamidobenzyl)benzothiazole (VII), which was prepared by adding trifluoroacetic anhydride to VIII. Orig. art. has: 1 table. [WA-50; CBE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: 11Jul66/ ORIG REF: 002/ OTH REF: 001

Card 4/4

ACC NR:

AP8030554

SOURCE CODE: UR/0079/68/038/008/1772/1776

AUTHOR: Babkina, E. I.; Vereshchinskiy, I. V.

ORG: Branch of the Scientific Research Physicochemical Institute im. L. Ya. Karpov (Filial fiziko-khímicheskiiy nauchno-issledovatel'skiy institut)

TITLE: Radiation-induced chemical synthesis of organophosphorus compounds. I. Products of radiation-induced chemical synthesis from mixtures of phosphorus trichloride with hydrocarbons

SOURCE: Zhurnal obshchey khimii, v. 38, no. 8, 1968, 1772-1776

TOPIC TAGS: organic phosphorus compound, radiation chemistry, chlorinated organic compound, phosphite ester

ABSTRACT: Under the conditions specified in Table 1, the radiation-induced reaction of hydrocarbons with PCl_3 proceeds according to the following scheme:

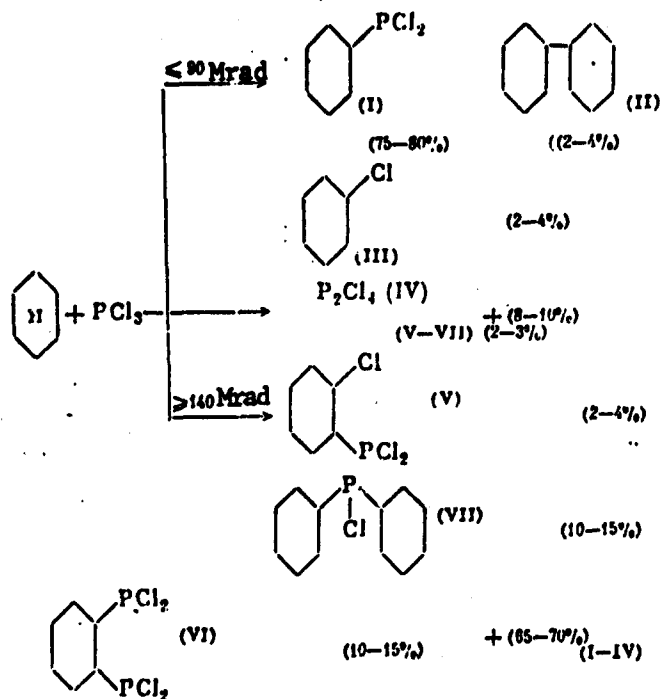
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UDC: 541.15+661.718.1+547.51

ACC NR:

AP8030554



Card

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Table 1. Conditions of the synthesis of alkylchlorophosphines and composition of the converted part

No.	Starting compound	Molar ratio of the starting compounds		Dose rate (rad/sec)	Integral dose (Mrad)	Degree of conversion by hydrocarbon taken (%)	Composition of the converted part (%)	
							Mixture of I-IV compounds	Mixture of V-VII compounds
1	Cyclohexane + PCl ₃	1.0	1.1	400	140	41.0	68.5	32.0
		1.0	1.1	150	140	33.0	68.5	32.0
		1.0	2.3	150	140	22.0	70.5	29.0
2	Hexane + PCl ₃	1.0	1.1	200	100	17.0	82.0	(VIII-IX) 17.5
3	Cyclohexyldichlorophosphine + Cyclohexane	1.0	1.5	200	110	40.0	(VII and X) 85.5	Unidentified 14.5

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Irradiation of the hydrocarbon-PCl₃ mixture was conducted in the

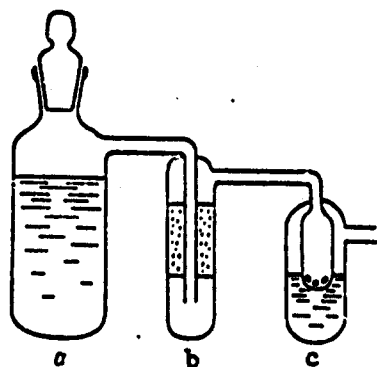


Fig. 1. Diagram of an irradiation unit

a--Vessel with reaction mixture subject to radiation; b--a trap with activated carbon; c--beaker containing 15% NaOH for the absorption of HCl formed

Table 2. Alkylchlorophosphines

No.	Bp, °C (mm)	d ₄ ²⁰	n _D ²⁰
I	50.5-51.0° (0.4)	1.2230	1.5278

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ACC NR: AP8030554

Table 2. (Cont.)

V	95.0-99.0 (0.6)	1.3502	1.5472
VI	130-135 (0.5)	1.4582	1.5865
VII	102-108 (0.5)	1.0923	1.5345
VIII	86-90 (0.3)	0.957	1.4802
IX	111-120 (0.5)	1.3205	1.5402
X	Mp 23°	—	—

special experimental unit shown in Fig. 1. Identification and structure of the compounds synthesized was made by mass spectral and chromatographic analyses. Physical constants of the compounds identified are given in Table 2. Orig. art. has: 2 tables and 5 figures.

[WA-50; CBE No. 37] [PS]

SUB CODE: 07/ SUBM DATE: 14Aug67/ ORIG REF: 003/ OTH REF: 004

Card 5/5

ACC NR: AP8031274 SOURCE CODE: UR/0079/68/038/009/2085/2087

AUTHOR: Bachinskiy, T. P.; Zemlyanskiy, N. I.

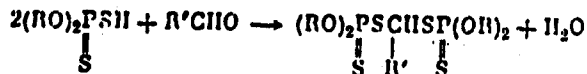
ORG: L'vov State University im. I. Franko (L'vovskiy gosudarstvennyy universitet)

TITLE: Reactions of O,O-dialkyl(aryl)dithiophosphoric acids with aldehydes and ketones. II. Reactions of O, O-dialkyldithiophosphoric acids with aliphatic

SOURCE: Zhurnal obshchey khimii, v. 38, no. 9, 1968, 2085-2087

TOPIC TAGS: aliphatic phosphorus compound, aliphatic sulfur compound, thiophosphate ester

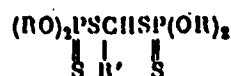
ABSTRACT: On heating for 40 hr at 50°C in a sealed tube in paraform in the presence of an alkoxide, O,O-dialkyldithiophosphoric acids reacted



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UDC: 547.26'18
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ACC NR: AP8031274



No.	R	R'	% Yield	d_4^{20}	n_D^{20}
I	C_2H_5	H	66.75	1.2162	1.5110
II	C_3H_7	H	51.60	1.1569	1.5282
III	$\text{iso-C}_3\text{H}_7$	H	60.57	1.1360	1.5206
IV	C_2H_5	ClH_2	73.58	*	—
V	C_3H_7	ClH_2	52.06	1.1395	1.5259
VI	$\text{iso-C}_3\text{H}_7$	ClH_2	53.37	1.1358	1.5251
VII	C_2H_5	C_3H_7	73.17	**	—
VIII	C_3H_7	C_3H_7	73.80	1.1099	1.5161
IX	$\text{iso-C}_3\text{H}_7$	C_3H_7	78.64	1.1079	1.5148

* Mp 62—62.5°

** Mp 60—61°

with aliphatic aldehydes in a 2:1 molar ratio to form the bis(dithio-phosphates characterized in the table. [WA-50; CBE No. 37] [PS]

SUB CODE: 07/ SUBM DATE: 09Sep67/ ORIG REF: 008/ OTH REF: 005

Card 2/2

ACC NR: AP8030366

SOURCE CODE: UR/0394/68/006/009/0052/0054

AUTHOR: Baskakov, Yu. A.; Volovnik, L. L.; Mel'nikov, N. N.; Mikhno, T. G.; Stonov, L. D.; Faddeyeva, M. I.

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

TITLE: Study of herbicides of the Atsilat group

SOURCE: Khimiya v sel'skom khozyaystve, v. 6, no. 9, 1968, 52-54

TOPIC TAGS: hydroxylamine, soil type, wheat/herbicide

ABSTRACT: The herbicidal properties of Atsilat (O-acetyl-N-carbisopropoxy-N-phenylhydroxylamine) (I), Khloratsilat-1 (O-butyryl-N-carbisopropoxy-N-3-chlorophenylhydroxylamine) (II), Khloratsilat-2 (O-isovaleryl-N-carbisopropoxy-N-3-chlorophenylhydroxylamine) (III), Khloratsilat-3 (O-acetyl-N-carbisopropoxy-N-3-chlorophenylhydroxylamine) (IV), and N-OksikhlorIFK (N-hydroxyisopropyl-N-3-chlorophenyl carbamate) (V) were studied in tests on soddy podzol soil (Moscow Region) and on rich black soil (Kharkov Region). When introduced into the podzol soil prior to sowing, the compounds completely destroyed oats, buckwheat, wheat, wild

Card 1/2

UDC: 632.954

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Table 1. Rate constants of inhibition of AcChE and BuChE by substances of the type



Compd No.	R	AcChE k_2+ , $1/(M\text{-min}) \times 10^7$	BuChE k_2+ , $1/(M\text{-min}) \times 10^8$	$\frac{k_2+\text{AcChE}}{k_2+\text{BuChE}}$	σ
IIa	<i>p</i> -OCH ₃	2.9	3.3	1:11	-0.268
IIb	<i>p</i> -CH ₃	2.4	6.1	1:26	-0.170
IIc	<i>m</i> -CH ₃	3.2	6.4	1:20	-0.069
IIId	H	2.5	6.8	1:27	0
IIe	<i>m</i> -OCH ₃	4.5	11.4	1:25	0.115
IIIf	<i>p</i> -Cl	2.2	7.0	1:33	0.230
IIg	<i>m</i> -Cl	2.9	7.4	1:25	0.373

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Table 2. Rate constants of inhibition of AcChE and BuChE by substances of the type



Compd No.	R	AcChE		BuChE		$\frac{k_2\text{AcChE}}{k_2\text{BuChE}}$	$\sigma^* \cdot 10^{-4}$	σ
		k_2 , $1/(M\text{-min}) \times 10^3$	k_2^0 , $1/(M\text{-min}) \times 10^3$	k_2 , $1/(M\text{-min}) \times 10^5$	k_2^0 , $1/(M\text{-min}) \times 10^5$			
Ia	<i>p</i> -OCH ₃	60.2	26.0	3.0	6.2	1:6	5.20	-0.268
Ib	<i>p</i> -CH ₃	18.4	12.0	5.5	2.9	1:20	2.20	-0.170
Ic	<i>m</i> -CH ₃	2.8	5.4	2.8	2.9	1:20	1.20	-0.069
Id	H	6.6	4.8	3.5	3.0	1:53	0.20	0
Ie	<i>m</i> -OCH ₃	9.8	2.2	4.3	3.9	1:44	0.34	0.115
If	<i>p</i> -Cl	6.4	6.1	7.2	7.1	1:112	0.16	0.230
Ig	<i>m</i> -Cl	2.0	1.8	5.8	5.76	1:290	0.06	0.373

versus σ (Hammett) (see Fig. 1). A similar relationship is observed for the overall constants k_2 (see Fig. 2). It is of extreme interest that when the electronegativity of R increases, $k_2\text{AcChE}$ decreases, yet for BuChE the opposite tendency is observed: as the substituent electronegativity increases, the difference between $k_2\text{AcChE}$ and $k_2\text{BuChE}$ also increases. Thus, compounds with highly electronegative R display highly pronounced selectivity with respect to BuChE. At present it is difficult to explain so different an effect of R on the ability of I to inhibit AcChE and BuChE. Apparently, it is related to differences in the structure of the active centers of these enzymes; i.e., to those differences upon which

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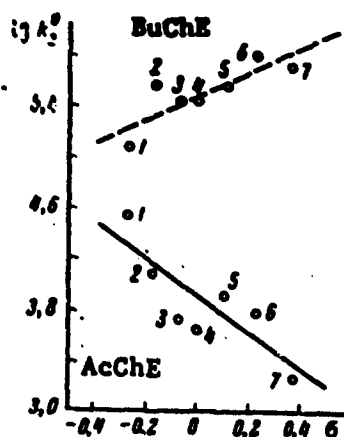


Fig. 1. Relation of the rate constants of inhibition of AcChE and BuChE by O,O-diethyl S-[β -(arylmethylamino)ethyl] thiophosphates in the form of a free base (k_2^0) to σ Hammet constants of substituents in the benzene ring

the sorption of the inhibitor on the active surface of the enzyme depends. It may be assumed, for example, that in the case of AcChE, a poorly dissociating ion pair (a "tight" ion pair) is formed on the anionic point of the enzyme, thus corresponding to the formation of an insoluble (or poorly soluble) surface compound. In this case the electron-acceptor R substituents, lowering the basicity of the amine, will also decrease the stability of such a surface salt and thus decrease k_2 . If in the

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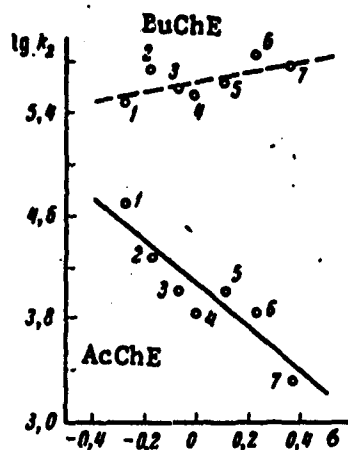


Fig. 2. Relation of the rate constants of inhibition of AcChE and BuChE by O,O-diethyl S-[β -(arylmethylamino)ethyl] thiophosphates (k) to σ Hammet constants of substituents in the benzene ring. Numbering of points corresponds to numbering of substituents in Table 2

case of BuChE such a surface compound is not formed, but there is observed only ion-dipole interaction (ion-dipole association), then the R substituents which increase the dipole moment of the amine must strengthen this interaction and thus increase k_2 . Such substituents are electron-acceptor substituents and their effect is opposite in the cases of AcChE and BuChE. Another possible hypothesis is based on the assumption that at the anionic point of AcChE there is, besides the negatively

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ACC NR: AP8031950

charged group, also a group which can be a proton donor in the formation of a hydrogen bond, e.g., open NH-group of a peptide chain. Possibly, at the anionic point there is no such group, or it is blocked in some manner (e.g., owing to a different conformation or the formation of a different stable H bond). Then the effect of R substituents in the case of AcChE will correspond to their effect on basicity, and k_2 must decrease with increasing σ . But in the case of BuChE, where there is only ion-dipole association, the relationships will, as shown above, be reversed. In any case, the observed phenomena suggest that the anionic point of BuChE has a simpler structure than the anionic point of AcChE. The obtained data also suggest that the change in anti-ChE activity in Ia—Ig, both with respect to AcChE and BuChE, is related mainly to polar effects of the R substituents, which alter the sorption of the substance on the active surface of the enzyme. Compounds II_a—II_g, which have a positively charged N atom in the β -position of the thioester group, are very strong inhibitors for AcChE, although somewhat less active than for BuChE (see Table 1). The values of the rate constants of the reaction of these substances with AcChE (and with BuChE) depend but little on the nature and position of R. This is apparently due to the presence in the alkyl thio group of a full positive charge which plays a decisive role in the inhibitor's ion-ion interaction with the active surface. The anti-ChE activity of I and II exceeds the activity of the corresponding thiocholine phosphates by more than an order. Apparently, purely

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ACC NR: AP8031950

sorption phenomena play a significant role: the hydrophobic aryl group is adsorbed on the hydrophobic segment of the enzyme more stably than only the methyl groups of the choline radical. Orig. art. has: 2 tables and 2 figures. [WA-50; CBE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: 21Feb68/ ORIG REF: 004/ OTH REF: 001

Card 7/7

ACC NR: AP8031958

SOURCE CODE: UK/0062/68/000/009/2161/2162

AUTHOR: Brestkin, A. P.; Brik, I. L.; Ginetsinskaya, L. I.; Godovikov, N. N.; Kabachnik, M. I.; Teplov, N. Ye.

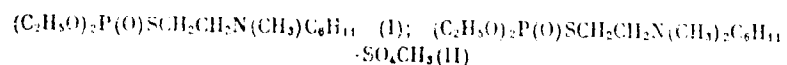
ORG: Institute of Heteroorganic Compounds, Academy of Sciences SSSR (Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR); Institute of Evolutionary Physiology and Biochemistry im. I. M. Sechenov, Academy of Sciences SSSR (Institut evolyutsionnoy fiziologii i biokhimii Akademii nauk SSSR)

TITLE: Selective inhibition of butyrylcholinesterase

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 9, 1968, 2161-2162

TOPIC TAGS: cholinesterase, organic phosphorus compound, thiophosphate ester, cholinesterase inhibitor, butyrylcholinesterase

ABSTRACT: Studies of the mechanism of anticholinesterase activity of organic phosphorus compounds revealed that compound I (bp 104—105°C/0.01 mm) and compound II (n_D^{20} 1.5012):



III

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UDC: 541.69+542.978+547.9

ACC NR: AP8031958

have a distinct selective antibutyrylcholinesterase activity. For I the ratio of the constant of III inhibition to that of acetylcholinesterase inhibition was $2.37 \times 10^8 / 7.35 \times 10^5 = 310$; for II the ratio was $7.91 \times 10^8 / 3.33 \times 10^6 = 240$. [WA-50; CBE No. 37][PS]

SUB CODE: 07/ SUBM DATE: 06Jun68/ ORIG REF: 004

Card

2/2

ACC NR: AP8031951

SOURCE CODE: UR/0062/68/000/009/2122/2123

AUTHOR: Brestkin, A. P.; Brik, N. L.; Ginetsinskaya, L. I.; Godovikov, N. N.; Kabachnik, M. I.; Teplov, N. Ye.

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

TITLE: Acetylcholinesterase inhibition by O-ethyl S-aryloxyethyl thiophosphonates

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 9, 1968, 2122-2123

TOPIC TAGS: cholinesterase, organic phosphorus compound, cholinesterase inhibitor, acetylcholinesterase, butyrylcholinesterase, phosphonate ester, thiophosphonate ester

ABSTRACT: The effect of R in the aryl group on the antiacetylcholinesterase activity of O-ethyl S-aryloxyethyl thiophosphonates was studied by measuring the inhibition reaction rate constant (k_2) in 0.01N KCl at pH 7.5 and 25°C. The specimens of acetylcholinesterase (ACE) were obtained from ox blood erythrocytes. The results are tabulated along with the earlier obtained data on the inhibition of butyrylcholinesterase

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UDC: 542.978+547.9+661.718.1

ACC NR: AP8031951

(BCE) by the same compounds. The relation between the Hammett constant

Table 1. Rate constants of the inhibition of ACE and BCE

by $\begin{array}{c} \text{CH}_3 \\ \diagup \\ \text{P} \\ \diagdown \\ \text{C}_6\text{H}_5\text{O} \end{array} \begin{array}{c} \text{O} \\ \diagup \\ \text{S} \\ \diagdown \\ \text{CH}_2\text{CH}_2\text{O-C}_6\text{H}_4\text{R} \end{array}$ and R_f of these compounds

No.	R	k_2 ACE 10^4 $1 \cdot \text{M}^{-1} \cdot \text{min}^{-1}$	k_2 BCE 10^4 $1 \cdot \text{M}^{-1} \cdot \text{min}^{-1}$	$\frac{k_2 \text{ ACE}}{k_2 \text{ BCE}}$	R_f		σ
					Hexane:ace- tone = 2:1	Chloro- form: metha- nol = 10:1	
1	H	2.5	6.0	1.24	0.47	0.72	0
2	m-CH ₃	1.9	7.2	1.38	0.50	0.69	-0.069
3	p-CH ₃	1.7	3.6	1.57	0.47	0.66	-0.170
4	m-OCCH ₃	4.0	3.9	1.08	0.42	0.67	0.115
5	p-OCCH ₃	2.9	1.9	1.07	0.39	0.64	-0.268
6	m-Cl	8.2	8.6	1.1	0.49	0.74	0.373
7	p-Cl	8.0	9.4	1.12	0.49	0.73	0.230
8	p-Br	5.6	5.4	1.08	0.50	0.69	0.232
9	p-t-C ₄ H ₉	1.6	13.0	1.8	0.53	0.73	-0.197
10	m-NO ₂	53.9	3.1	1.005	0.40	0.68	0.710
11	p-NO ₂	65.5	3.9	1.096	0.36	0.69	0.778
12	m-OH	10.5	1.5	1.015	0.24	0.61	0.127
13	p-OH	54.6	0.7	1.013	0.19	0.58	-0.370

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ACC NR: AP8031951

(σ) of R in the aryl group and K_2 are reported in Fig. 1. The

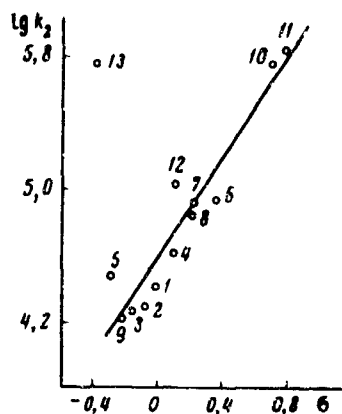
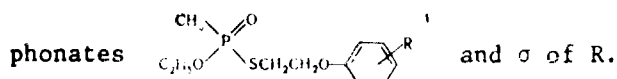


Fig. 1. Relation between K_2 of the phos-



The numbers at the points correspond to the numbers of the compounds in the table.

antiacetylcholinesterase activity of the phosphonates is determined by the polarity of the R radical in the aryl group. The marked difference in the anticholinesterase activity of the phosphonates with respect to ACE and BCE is attributed to the presence of large hydrophobic areas in the anion center region on the surface of BCE molecule as compared with those on the surface of ACE. The hydrophobic centers act as the

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ACC NR: AP8031951

inhibitor adsorption centers. The rate of the inhibitor adsorption determines the rate of the inhibition. [WA-50; CBE No. 37][PS]

SUB CODE: 07/ SUBM DATE: 21Feb68/ ORIG REF: 004

Card

4/4

ACC NR: AP8029406

SOURCE CODE: UR/0218/68/033/004/0817/0822

AUTHOR: Brestkin, A. P.; Fruyentova, T. A.

ORG: Institute of Evolutionary Physiology and Biochemistry im. I. M. Sechenov, Leningrad (Institut evolyutsionnoy fiziologii i biokhimii); Khabarovsk State Medical Institute (Khabarovskiy gosudarstvennyy meditsinskiy institut)

TITLE: The effect of salts on the cholinesterase hydrolysis of acetylcholine at various pH

SOURCE: Biokhimiya, v. 33, no. 4, 1968, 817-822

TOPIC TAGS: inorganic salt, cholinesterase, acetylcholine, hydrogen ion concentration

ABSTRACT: A study was made of the effect of NaCl, KCl, MgCl₂, CaCl₂, SrCl₂, BaCl₂, NaF, NaBr, NaNO₃, Na₂SO₄, and Cs₂SO₄ on the rate of enzymatic hydrolysis of acetylcholine (ACh) at pH 5.0—9.0 and 25°C. The values of the pH optimum for CaCl₂, BaCl₂, KCl, NaCl, NaBr, Na₂SO₄, and NaF are shown in Fig. 1. As shown, NaF increased pH_{opt} by one unit. At pH 9.0 the anionic group of cholinesterase (ChE) is completely ionized, and all salts except NaF display maximum inhibiting effect, while at pH 5.0 the

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UDC: 577.15.04

ACC NR: AP8029406

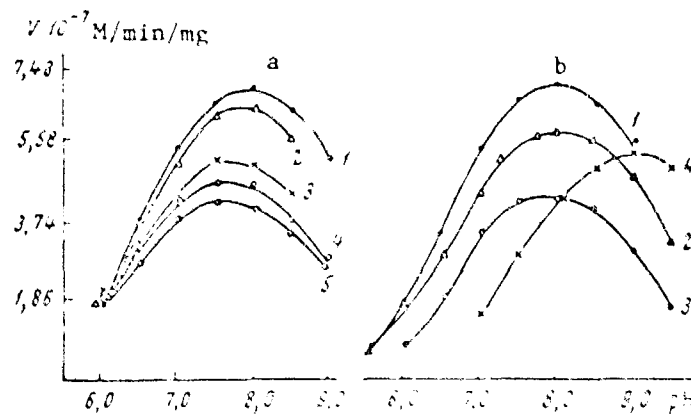


Fig. 1. The effect of various cations (a) and anions (b) on the form of the relation of v_1 to pH : ($[S]=1 \times 10^{-5}$ M)

a: 1—without addition of salts, 2—0.01 M CaCl₂, 3—0.01 M BaCl₂, 4—0.05 M KCl, 5—0.10 M NaCl;
b: 1—without addition of salts, 2—0.05 M NaBr, 3—0.05 M Na₂SO₄, 4—0.01 M NaCl

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ACC NR: AP8029406

opposite is true. The exceptional behavior of NaF is possibly explained as the formation of a small amount of HF in acidic and neutral media, the acid apparently inhibiting the enzymatic reaction. The effect of NaCl, Cs₂SO₄, and NaNO₃ on the hydrolysis of ACh at pH 5.0 is shown in Fig. 2.

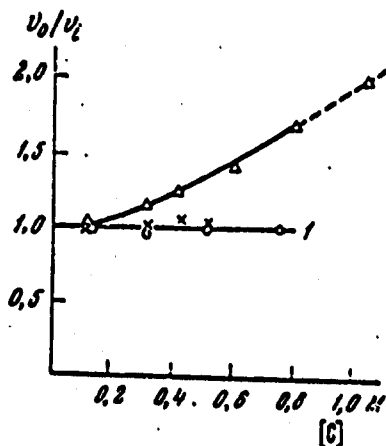


Fig. 2. The effect of salts of monovalent cations on the rate of cholinesterase hydrolysis of ACh ([S]=1·10⁻³ M) 1 - NaCl (x--x) and Cs₂SO₄ (o--o), 2 - NaNO₃

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ACC NR: AP8029406

I₅₀ (the concentration of the salt at which the enzymatic reaction rate decreases by 50%) for NaNO₃ was 0.16 M at pH 7.5 and more than 1.0 M at pH 5.0. The activating effect of the salts of bivalent metals depended upon the nature of the anion, as shown in Fig. 3. The effect of the bivalent cations is very similar to the effect of the tetramethylammonium cation (TMA). The activating effect of ACh is accurately described by the equation:

$$v_0 = \frac{V[S]}{K_m + [S] \left(\frac{1+b[S]}{1+a[S]} \right)}$$

and the activating effect of TMA by the equation: $v_i = \frac{V[S]}{K_m \left(1 + \frac{[A]}{K_i} \right) + [S] \left(\frac{1+b[S]+d[S]}{1+a[S]+c[S]} \right)}$, where [S] is the sub-

strate concentration, [A] is the concentration of TMA, K_i is the inhibition constant; a,b,c,d are constants, where a>b and c>d, K_m is the Michaelis constant, and V is the maximum rate of the enzymatic reaction for complete substrate-saturation of the enzyme. In the first equation the activating effect of the substrate is expressed by the coefficient $Z_0 = \frac{1+b[S]}{1+a[S]}$, which

is calculated by the formula $Z_0 = \frac{V}{v_0} - \frac{K_m}{[S]}$. Some representative

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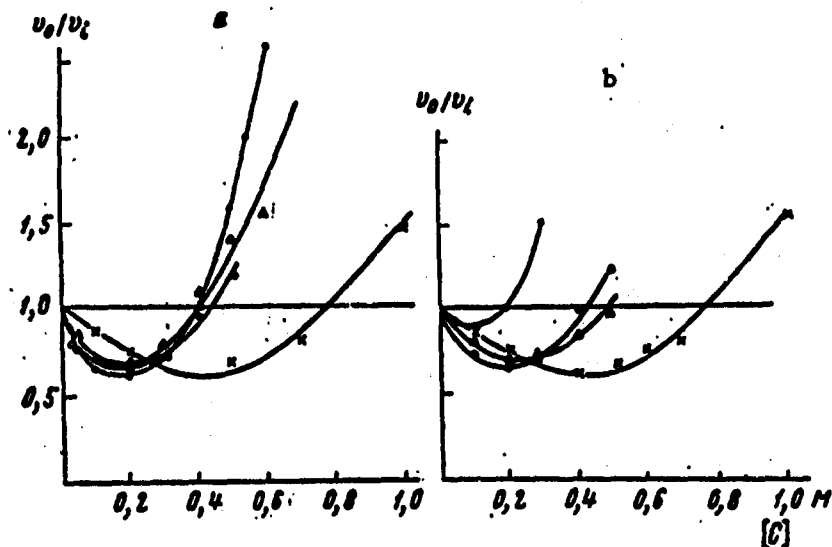


Fig. 3. The effect of $MgCl_2$, $CaCl_2$, $SrCl_2$, $BaCl_2$ (a) and $Mg(NO_3)_2$ and $Sr(NO_3)_2$ (b) on the rate of enzymatic hydrolysis of ACh at pH 5.0 and ACh concentration $1 \times 10^{-2} M$

a: ●-●- $CaCl_2$, ▲-▲- $BaCl_2$, ○-○- $SrCl_2$, x-x- $MgCl_2$
 b: ●-●- $Sr(NO_3)_2$, ○-○- $SrCl_2$, ▲-▲- $Mg(NO_3)_2$, x-x- $MgCl_2$

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parameters are given in Tables 1 and 2.

Table 1. Kinetic parameters of cholinesterase hydrolysis of ACh at pH 5.0

Salt	Salt Concentration	$K_m \cdot 10^3$ M	$V \cdot 10^7$ M/min/g	a, M^{-1}	b, M^{-1}	a/b
$MgCl_2$	0.3	2.4	1.7	22.0	3.5 ^b	6.0
$SrCl_2$	0.2	2.7	1.4	9.0	2.3	4.35
$BaCl_2$	0.2	2.4	1.1	20.0	5.0	4.0
No Salt	0	1.5	1.06	20.0	4.0	5.0

Table 2. Relation of v to [S] at pH 5.0
 $[E]_0 = 0.5 \text{ ng/ml}$

[S], M	No salt			0.3 M $MgCl_2$		
	$v, 10^7, M/min/g$		Z_0	$v, 10^7, M/min/g$		Z_1
	exptl	calcd		exptl	calcd	
0.001	0.42	0.40	1.01	0.63	0.6	1.3

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Table 2. (Cont.)

0,00125	0,5	0,47	0,9	0,67	0,59	0,7
0,00167	0,52	0,54	1,1	0,72	0,65	0,92
0,0025	0,59	0,64	1,2	0,82	0,63	0,90
0,005	0,72	0,82	1,1	1,2	1,15	0,96
0,01	0,93	1,0	1,02	1,46	1,54	0,92
0,015	1,22	1,18	0,79	1,82	1,95	0,78
0,03	1,43	1,33	0,89	2,12	2,3	0,73
0,04	1,8	1,56	0,82	2,4	2,6	0,60
0,05	1,71	1,7	0,59	2,8	2,75	0,55
0,06	1,8	1,75	0,58	3,14	3,06	0,51
0,1	2,5	2,36	0,41	4,05	3,8	0,41
0,15	—	—	—	5,0	4,4	0,34
0,2	3,0	2,9	0,35	—	—	—

The values of a and b in Table 1 were found from experimental plots (linear) in coordinates of Z versus $1 - Z[S]$. Since activating capacity is quantitatively expressed by the ratio a/b, it is possible to conclude that the activating effect of cations of ACh on ChE in the presence of 0.3 M $MgCl_2$ is considerably higher (a/b=6.0) than in the absence of salts (a/b=5.0). Orig. art. has: 3 figures and 2 tables.

[WA-50; CBE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: 25Dec67/ ORIG REF: 004/ OTH REF: 007

Card 7/7

ACC NR: AP8031943

AUTHOR: Brestkin, A. P.; Volkova, R. I.; Godovikov, N. N.; Kabachnik, M. I.

ORG: Institute of Heteroorganic Compounds, Academy of Sciences SSSR (Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR); Institute of Evolutionary Physiology and Biochemistry im. I. M. Sechenov, Academy of Sciences SSSR (Institut evolyutsionnoy fiziologii i biokhimii Akademii nauk SSSR)

TITLE: Anticholinesterase properties of O-ethyl S-(β -alkylmercaptoethyl) methylthiophosphonates and their methyl sulfomethoxides

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 9, 1968, 2028-2032

TOPIC TAGS: cholinesterase, kinetic chemical reaction rate, sorption, thiophosphonate ester

ABSTRACT: The rate constants (k_2) of the bimolecular reaction of O-ethyl S-(β -alkylmercaptoethyl) methylthiophosphonates (Ia—If) and their methyl sulfomethoxides (IIa—IIf) with butyrylcholinesterase (BuChE) from horse serum with a specific activity of $1.0\mu M$ AcCh/min·mg and acetylcholinesterase (AcChE) from lyophilized stroma of bull erythrocytes with a specific activity of $0.16\mu M$ AcCh/min·mg are shown in Tables 2 and 3.

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UDC: 541.69+661.718.1

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The values of k_2 were determined by potentiometric titration. Also shown in Tables 2 and 3 are the rate constants of alkaline hydrolysis of Ia—If and IIa—IIIf. The virtual constancy of k_{hydr} for Ia—If and

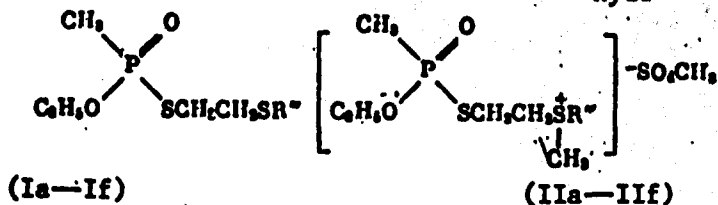


Table 1. O-Ethyl S-(β -alkylmercaptoethyl) methylthiophosphonates (Ia—If) and their methyl sulfomethoxides (IIa—IIIf)

Compd.	R ^{'''}	Bp, °C (p in mm)	n_D^{20}	d_4^{20}
Ia	CH ₃	110—112 (1,5)	1,5211	1,1665
Ib	C ₂ H ₅	98—99 (1)	1,5181	1,1429
Ic	n-C ₄ H ₉	132—133 (1)	1,5082	1,0963
Id	n-C ₆ H ₁₃	137—138 (1)	1,5037	1,0650
Ie	n-C ₈ H ₁₇	170—171 (1)	1,4998	1,0341
If	n-C ₁₀ H ₂₁	192—195 (1)	1,4880	1,0097
IIa	CH ₃	—	1,5255	—
IIb	C ₂ H ₅	—	1,5210	—
IIc	n-C ₄ H ₉	—	1,5212	—
IId	n-C ₆ H ₁₃	—	1,4944	—
IIe	n-C ₈ H ₁₇	—	1,4898	—
IIIf	n-C ₁₀ H ₂₁	—	1,5002	—

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Table 2. Rate constants (k_2) of the reaction of IIa—IIIf with BuChE and AcChE (25°C, pH 7.5) and rate constants of alkaline hydrolysis (k_{hydr})

Compd.	R ^{'''}	BuChE k_2 , l/ (M-min) × 10 ⁶	AcChE k_2 , l/ (M-min) × 10 ⁷	Khydr, l/(M-min)
IIa	CH ₃	1,01 ± 0,16	5,8 ± 0,2	17,4 ± 1,8
IIb	C ₂ H ₅	3,68 ± 0,20	25,3 ± 2,0	17,3 ± 1,6
IIc	n-C ₄ H ₉	11,0 ± 0,6	22,0 ± 2,8	20,1 ± 2,8
IId	n-C ₆ H ₁₃	89,0 ± 9,4	114,0 ± 7,9	21,4 ± 2,5
IIe	n-C ₈ H ₁₇	101,0 ± 13,6	46,0 ± 7,5	25,1 ± 2,8
IIIf	n-C ₁₀ H ₂₁	180 ± 10	40,0 ± 9,0	19,2 ± 2,7

Table 3. Rate constants (k_2) of the reaction of Ia—If with BuChE and AcChE (at 25°C and pH 7.5) and rate constants of alkaline hydrolysis (k_{hydr})

R ^{'''}	BuChE k_2 , l/ (M-min) × 10 ⁵	AcChE k_2 , l/ (M-min) × 10 ⁵	Khydr, l/(M-min)
CH ₃	3,2 ± 0,85	4,00 ± 0,93	0,291 ± 0,06
C ₂ H ₅	6,8 ± 0,7	6,0 ± 0,2	0,277 ± 0,04
n-C ₄ H ₉	78,0 ± 2,6	9,0 ± 0,4	0,313 ± 0,05
n-C ₆ H ₁₃	130 ± 9	40,3 ± 4,5	0,276 ± 0,110
n-C ₈ H ₁₇	300 ± 12	33,0 ± 8,5	0,290 ± 0,01
n-C ₁₀ H ₂₁	400 ± 4	20,0 ± 7,0	0,267 ± 0,01

Card

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IIa—IIf indicates constant electrophilic reactivity within each group. Thus, the change in the anti-ChE activity of Ia—If and IIa—IIf is apparently determined by the change in the ability of the thioester substituents to be adsorbed on the corresponding hydrophobic segments of the active surface of the cholinesterases. The symbatic nature of the curves in Figs. 1 and 2 indicates that the R substituents are adsorbed on the same hydrophobic segments of the cholinesterases, beyond the anionic center. The length of these segments is apparently different

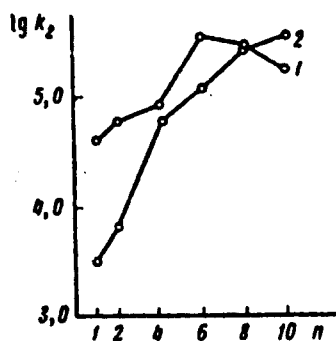


Fig. 1. The relation of rate constants of inhibition of BuChE (1) and AcChE (2) by Ia—If to size of the alkyl radical

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ACC NR:

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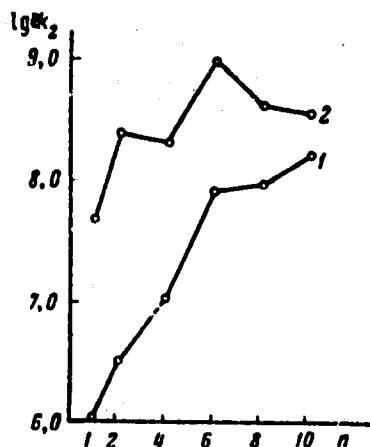


Fig. 2. The relation of rate constants of inhibition of BuChE (1) and AcChE (2) by IIa—IIf to size of the alkyl radical

for BuChE and AcChE, as indicated by the presence of an activity maximum at $R = C_6H_{13}$ in the case of AcChE and the continuous increase of k_2 in the case of BuChE. The effect of "hydrophobic reactions" on the rate of inhibition of various cholinesterases also varies. In the inhibition of more specific AcChE these reactions are apparently less important than for the less specific BuChE. The inhibition of AcChE is

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ACC NR: AP8031943

more markedly affected by the β -thioester substituent of the positively charged onium group or dipole group C-S-C. Thus, in almost all cases, k_2 for AcChE exceeds k_2 for BuChE (see Figs. 1 and 2). Thus, in thiol derivatives of methylthiophosphonic acid, lengthening of the thioester group containing S in the β position results in a considerable increase in anticholinesterase activity when sulfide and sulfonium atoms are present. This is apparently because the effect of the sorption of the hydrocarbon radicals located at the heteroatom is also imposed upon the reaction of the sulfonium cation or C-S-C dipole with the anionic center of the cholinesterases. The sorption occurs on the hydrophobic segments beyond the anionic center, and more markedly in the case of BuChE than in the case of AcChE. Orig. art. has: 3 tables and 2 figures.

[WA-50; CBE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: 12May68/ ORIG REF: 008/ OTH REF: 004

Card 6/6

ACC NR: AP8031407 SOURCE CODE: UR/0433/68/000/009/0029/0029

AUTHOR: Burd, V. S. (L'vov); Kushnir, Ya. I. (L'vov); Ostashevskiy, I. Ya. (L'vov); Yankovskiy, Ye. D. (L'vov)

ORG: State Special Design Bureau for Machines for Chemical Protection of Plants, L'vov (Gosudarstvennoye spetsial'noye konstruktorskoye byuro po mashinam dlya khimicheskoy zashchity rasteniy)

TITLE: Physical properties of liquid pesticides and herbicides

SOURCE: Zashchita rasteniy, no. 9, 1968, 29

TOPIC TAGS: pesticide, fluid viscosity measurement, fluid density measurement, surface tension

ABSTRACT: Some newly published data are shown in Table 1.

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ACC NR:

AP8031407

Table 1

Compound, its concentration (%)	Viscosity in arbitrary Engler degrees	Density (kg/m ³)	Surface tension (g/m)
Bordeaux mixture liquid, 1	1.073	1011	57.94
" 3	1.082	1022	57.94
" 5	1.368	1041	60.0
Carbolinaum, 4 + 4,6-dinitro- -o-cresol, 0.5	1.006	998	53.14
Carbolinaum, 8 + 4,6-dinitro- -o-cresol, 0.5	1.045	997	53.14
Sevin, 0.2 + ethereal sulfonate, 0.12	1.015	1004	44.31
" 0.8	1.013	1002	44.31
DDT, 0.4	1.037	1002	63.93
DDT, 1.6	1.091	1011	63.93
Chlorophos, 0.2	0.993	1000	53.14
" 0.4	0.991	1000	49.22
" 0.8	0.990	1009	44.33
" 8	0.988	1019	43.43
Copper oxychloride, 0.5	0.975	1004	53.14
" 2	1.012	1011	58.04
4,6-Dinitro-o-cresol, 0.5	0.966	1020	50.69
" 1	0.972	1040	38.43

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ACC NR:

AP8031407

Table 1. (Cont.)

Polychloropinene, 2	0.990	999	35.98
Water + sulfite-EtOH slops 4:3	1.102	1079	39.2
" 5:3	1.071	1069	41.65
" 2:1	1.044	1059	41.65
" 5:2	1.013	1051	44.1
Water + KCl 15:4	0.993	1141	49.0
Water + sulfite-EtOH slops + KCl 15:6:4	1.219	1150	44.0
Water + sulfite-EtOH slops + KCl + boric acid 15:6:4:0.5	1.209	1150	44.0
Water + superphosphate + sulfite- -EtOH slops 15:10:6	1.257	1240	40.58
Water + superphosphate + sulfite- -EtOH slops + KCl 15:10:6:4	1.420	1310	53.9
Water + superphosphate + sulfite- -EtOH slops + KCl H ₃ BO ₃ 15:10:6:4:0.5	1.541	1320	53.9
Water + bis(dimethylthiocarbonyl disulfide) + Bordeaux mixture emulsion + polyethylene glycol 5:2:1.5:0.035	1.38	1149	44.12
The same 7:2:1.5:0.035	1.18	1111	49.42

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ACC NR:

AP8031407

Orig. art. has: 1 table.

[WA-50; CBE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: none

Card

4/4

ACC NR:

AP8031276

SOURCE CODE: UR/0079/68/038/009/2091/2096

AUTHOR: Davydova, L. P.; Kaboshina, L. N.; Obol'nikova, Ye. A.;
Kustanovich, I. M.; Samokhvalov, G. I.

ORG: All-Union Scientific Research Vitamin Institute (Vsesoyuznyy
nauchno-issledovatel'skiy vitamin institut)

TITLE: Synthetic study of polyene compounds. XXIX. Intramolecular
conversions of σ -ketoalkylphosphonium salts during an attempt to convert
them into phosphoranes

SOURCE: Zhurnal obshchey khimii, v. 38, no. 9, 1968, 2091-2096

TOPIC TAGS: alkylphosphonium salt, aliphatic phosphorus compound,
halogenated organic compound

ABSTRACT: At 65°C in benzene solution PR_3 reacts with I or Ia to form
the phosphonium salts II and III which on treatment with sodium tetra-
phenylborate yielded the phosphonium salts IV and V:

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UDC: 547.241

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ACC NR: AP8031276

Compd No.	R	% Yield	Mp, °C
IIa	C ₆ H ₅	85.6	204-206°
IIb	-C ₄ H ₉	80.1	66-68
IIc	C ₂ H ₅	63.5	150-152
IIIa	C ₆ H ₅	65.2	222-228
IIIb	C ₄ H ₉	94.6	61-63
IVa	C ₆ H ₅	97.7	180-181
IVb	-C ₄ H ₉	94.7	170-171
IVc	C ₆ H ₁₁	95.4	218-220
Vb	-C ₄ H ₉	96.5	159-160
VI	-C ₄ H ₉	74.5	Bp, °C (mm) 136-138° (6 · 10 ⁻² mm)
VIII	C ₆ H ₅	56.4	98-99

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ACC NR: AP8031276

dimethylformamide, compound IIa undergoes transformation to form VIII.
The compounds synthesized are characterized in the table. Orig. art.
has: 1 figure. [WA-50; CBE No. 37][PS]

SUB CODE: 07/ SUBM DATE: 20Nov67/ ORIG REF: 003/ OTH REF: 009

Card 5/5

ACC NR: AP8030556

SOURCE CODE: UR/0079/68/038/008/1779/1784

AUTHOR: Derkach, G. I.; Liptuga, N. I.

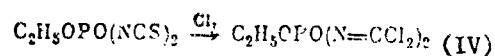
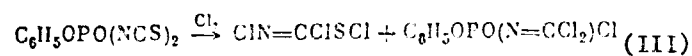
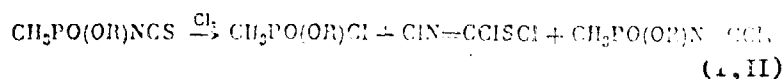
ORG: Institute of Organic Chemistry, Academy of Sciences UkrSSR (Institut organicheskoy khimii Akademii nauk UkrSSR)

TITLE: Derivatives of isothiocyanates of phosphorus acids

SOURCE: Zhurnal obshchey khimii, v. 38, no. 8, 1968, 1779-1784

TOPIC TAGS: thiocyanate, phosphoric acid, chlorination, phosphonic acid

ABSTRACT: Compounds I--V were synthesized by chlorination of isothiocyanates, as shown.



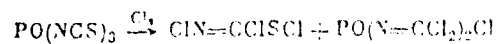
Card 1/4

UDC: 547.26'118

ACC NR: AP8030556

Table 1. Derivatives of isothiocyanates of phosphorus acids XX'X"PO

Compd.	X	X'	X''	% Yield	Bp (p in mm)	d_4^{20}	n_D^{20}
I	CH ₃	C ₂ H ₅ O	N - CCl ₂	53	111 - 114° (0.1)	1.3815	1.5303
II	CH ₃	n-C ₄ H ₉ O	N - CCl ₂	42	121 - 124 (0.1) mp 36 - 38°	—	1.5550
III	C ₂ H ₅ O	Cl	N - CCl ₂	41	110 - 115 (0.1)	1.5234	1.5595
IV	C ₂ H ₅ O	N - CCl ₂	N - CCl ₂	59	72 - 73 (0.1)	1.5398	1.5243
V	Cl	N - CCl ₂	N - CCl ₂	80	75 - 78 (0.07)	1.7095	1.5496
VI	C ₂ H ₅ O	Cl	NCO	50	105 - 108 (0.2)	1.4304	1.5330
VII	CH ₃	C ₂ H ₅ O	NCO	68	—	—	—
VIII	CH ₃	n-C ₄ H ₉ O	NCO	50	110 - 112 (0.2)	—	—
IX	Cl	NCO	NCO	42	—	—	—
X	CH ₃	Cl	NHCO-NHC ₂ H ₅	92	mp 116 - 118°	—	—
XI	CCl ₂	NHCO-NHC ₂ H ₅	NHCO-NHC ₂ H ₅	88	mp 202 - 203°	—	—

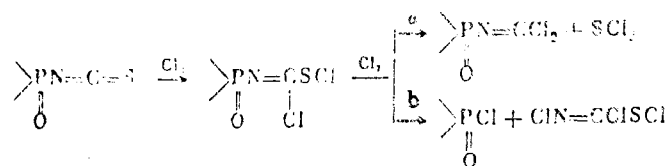


The reaction mechanism is apparently the following:

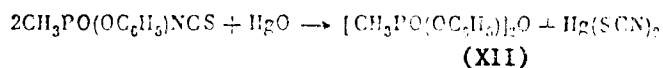
Card

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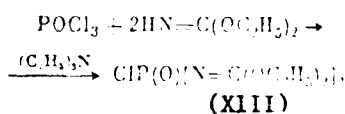
ACC NR: AP8030556



The phosphorus acid mono- and diisocyanates VI--IX were obtained by adding HCl to a boiling benzene solution of III, I, II, and V, respectively. The phenylcarbamides X and XI were obtained by adding a solution of aniline in ether to the corresponding isocyanates in ether at 0°C, mixing for 1 hr at 20°C, and filtering X and XI after 12 hr. Diphenyl dimethylpyrophosphate (XII) was obtained in 92% yield (mp 126--128°C) by allowing phenyl methylisothiocyanatophosphonate to react with HgO.



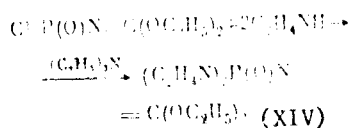
Compounds XIII (68% yield, mp 49--51°C) was synthesized by adding a solution of diethyl iminocarbonate and Et₃N in ether to POCl₃ in ether in the cold and filtering XIII at 20°C after 10 hr. Compound XIV (62%



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ACC NR: AP8030556

yield, mp 14--15°C) was synthesized by adding diethyl N-dichlorophosphonyliminocarbonate in ether to a solution of C₂H₄NH and Et₃N in ether



at 0°C. After mixing for 30 min and being left to stand for 3 hr at 20°C, XIV was filtered and crystallized at -5°C. Orig. art. has: 3 tables.

[WA-50; CBE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: 10Aug67/ ORIG REF: 009/ OTH REF: 006

Card

4/4

ACC NR:

AP8030557

SOURCE CODE: UR/0079/68/038/008/1784/1788

AUTHOR: Derkach, G. I.; Slyusarenko, Ye. I.

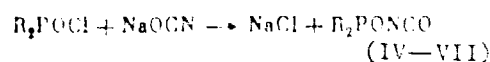
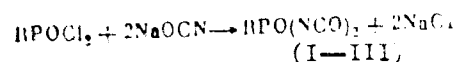
ORG: Institute of Organic Chemistry, Academy of Sciences UkrSSR (Institut organicheskoy khimii Akademii nauk UkrSSR)

TITLE: Derivatives of isocyanates of alkylphosphonic and dialkylphosphinic acids

SOURCE: Zhurnal obshchey khimii, v. 38, no. 8, 1968, 1784-1788

TOPIC TAGS: organic isocyanate compound phosphonic acid, phosphinic acid, phosphorylation, urea compound

ABSTRACT: Compounds I—III and IV—VII were prepared as shown:



Card

1/5

UDC: 547.26'118

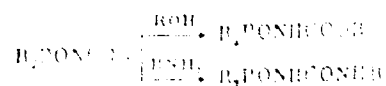
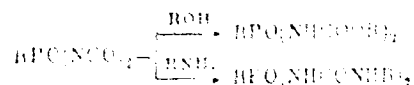
ACC NR:

AP8030557

Table 1. Phosphorus isocyanates

Compd	R	R'	% Yield	Bp (p in mm)	d ₄ ²⁰	n _D ²⁰
I	CH ₃ Cl	NCO	50	128-129 (7)	1.0133	1.4170
II	CHCl ₂	NCO	38	126-127 (15)	1.0206	1.4204
III	CCl ₃	NCO	30	Mp: 82-87°	—	—
IV	CH ₃	CH ₃	60	58-60 (0.02)	1.2001	1.4810
V	C ₂ H ₅	C ₂ H ₅	35	56-58 (0.02)	1.1880	1.4725
VI	iso-C ₃ H ₇	iso-C ₃ H ₇	24	54-56 (0.02)	1.0571	1.4005
VII	C ₄ H ₉	C ₄ H ₉	56	84-85 (0.02)	1.0519	1.4439

The phosphorylated methanes and ureas characterized in Tables 2 and 3 were prepared by the following reactions:



Card

ACC NR: AP8030557

Table 2. Derivatives of diisocyanates of alkylphosphonic acids



R	R'	Mp
CH ₃ Cl	CH ₃ O	172-174*
CH ₃ Cl	C ₂ H ₅ O	157-158
CH ₃ Cl	isoC ₃ H ₇ O	142-144
CH ₃ Cl	C ₄ H ₉ NH	186-188**
CHCl ₂	CH ₃ O	175-176
CHCl ₂	C ₂ H ₅ O	135-137
CHCl ₂	isoC ₃ H ₇ O	168-170
CHCl ₂	C ₄ H ₉ NH	192-194**
CCl ₄	CH ₃ O	165-166
CCl ₄	C ₂ H ₅ O	142-144
CCl ₄	isoC ₃ H ₇ O	Liquid
CCl ₄	C ₄ H ₉ NH	186-188**
CH ₃	C ₂ H ₅ O	84-86
CH ₃	C ₃ H ₇ O	87-89
CH ₃	C ₄ H ₉ O	91-94
CH ₃	C ₅ H ₁₁ O	78-81
CH ₃	C ₆ H ₁₃ O	90-92
CH ₃	C ₆ H ₅ CH(C ₂ H ₅)CH ₃ O	Liquid

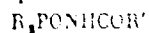
* High yields

** Decomp.

Card 3/5

ACC NR: AP8030557

Table 3. Derivatives of isocyanates of dialkylphosphinic acids



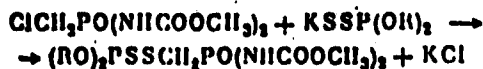
R	R'	Mp
CH ₃	CH ₃ O	152-154*
CH ₃	C ₂ H ₅ O	145-146
CH ₃	isoC ₃ H ₇ O	174-175
CH ₃	C ₄ H ₉ NH	197-199**
C ₂ H ₅	CH ₃ O	137-139
C ₂ H ₅	C ₂ H ₅ O	119-121
C ₂ H ₅	isoC ₃ H ₇ O	126-128
C ₂ H ₅	C ₄ H ₉ NH	127-128**
C ₂ H ₅	p-C ₆ H ₄ NH	170-173
isoC ₃ H ₇	CH ₃ O	122-124
isoC ₃ H ₇	C ₂ H ₅ O	115-117
isoC ₃ H ₇	isoC ₃ H ₇ O	138-140
isoC ₃ H ₇	C ₄ H ₉ NH	173-175**
C ₄ H ₉	CH ₃ O	129-131
C ₄ H ₉	C ₂ H ₅ O	64-66
C ₄ H ₉	isoC ₃ H ₇ O	68-70
C ₄ H ₉	C ₄ H ₉ NH	132-135**

** Decomp.

Card

ACC NR: AP8030557

Dimethyl S-methylene-C-dicarbomethoxydiamidophosphonyl dithiophosphate (mp 115—117°C) and diisopropyl S-methylene-C-dicarbomethoxydiamidophosphonyl dithiophosphate (mp 74—76°C) were prepared in high yields as shown:



The authors thank A. V. Kirsanov for help and advice. Orig. art. has: 3 tables. [WA-50; CBE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: 20Oct67/ ORIG REF: 002

Card 5/5

ACC NR: AT8027062 SOURCE CODE: UR/3374/67/000/015/0079/0080

AUTHOR: Dmitriyeva, L. Ye.; Ivin, S. Z.; Karavanov, K. V.

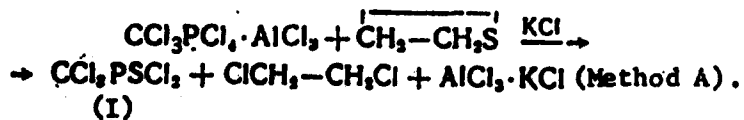
ORG: none

TITLE: Trichloromethylthiophosphonyl dichloride

SOURCE: Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov i osobo chistykh khimicheskikh veshchestv. Metody polucheniya khimicheskikh reaktivov i preparatov, no. 15, 1967, 79-80

TOPIC TAGS: phosphonic acid, sulfur compound, chlorine compound, thiophosphonic acid derivative

ABSTRACT: The new title compound (I) was synthesized by two procedures. Procedure A: 14.7 g ethylene sulfide (from KSCN and ethylene oxide) was added to 63 g $\text{CCl}_3\text{PCl}_4 \cdot \text{AlCl}_3$ (from PCl_3 , AlCl_3 , and CCl_4) and 11.2 g freshly calcined KCl cooled to minus 2—3°C.



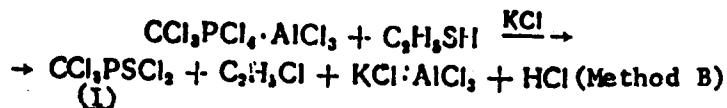
Card 1/2

UDC: 543.847

- 40 -

ACC NR: AT8027062

After the reaction mixture was heated for 30 min at 80°C, product I (40% yield, bp(10 mm) 95°C, mp 120°C) was distilled. Procedure B: 9.3 g ethylmercaptan was added to 63 g $\text{CCl}_3\text{PCl}_4 \cdot \text{AlCl}_3$ and 11.2 g KCl at room temp. After the reaction mixture was heated for 30 min to 50°C, the



product I (75% yield) was distilled off in vacuo (10 mm).

[WA-50; CBE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: Nov65/ ORIG REF: 002/ OTH REF: 001

Card 2/2

ACC NR: AT8027065 SOURCE CODE: UR/3374/67/000/015/0148/0149

AUTHOR: Dmitriyeva, L. Ye.; Karavanov, K. V.; Ivin, S. Z.

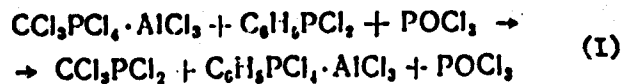
ORG: none

TITLE: Trichloromethyldichlorophosphine

SOURCE: Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov i osobo chistykh khimicheskikh veshchestv. Metody polucheniya khimicheskikh reaktivov i preparatov, no. 15, 1967, 148-149

TOPIC TAGS: phosphorus compound, chlorinated aliphatic compound/
phosphine derivative

ABSTRACT: The title compound (I) was synthesized in 60% yield by the addition of 18.9 g redistilled phenyldichlorophosphine (from benzene, PCl_3 , and Al) to 42.5 g trichloromethyltetrachlorophosphorane $\cdot \text{AlCl}_3$ (from PCl_3 , AlCl_3 , and CCl_4) and 15.3 g redistilled POCl_3 . The reaction



Card 1/2

UDC: 547.416.07

ACC NR:

AT8027065

mixture was heated to 60°C for 1—1.5 hr, and the products were distilled (20 mm) in a stream of N. The semicrystalline, transparent product I (Bp₂₀ 65—67°C, mp 41°C) is easily oxidized by air.

[WA-50; CBE No. 37][FT]

SUB CODE: 07/ SUBM DATE: Nov65/ ORIG REF: 001/ OTH REF: 004

Card

2/2

ACC NR:

AP8030570

SOURCE CODE: UR/0079/68/038/008/1907/1907

AUTHOR: Drozd, G. I.; Ivin, S. Z.

ORG: none

TITLE: Reactions of alkyl difluorophosphite with halogens

SOURCE: Zhurnal obshchey khimii, v. 38, no. 8, 1968, 1907

TOPIC TAGS: halogenated organic compound, chlorinated organic compound, brominated organic compound, fluorinated organic compound, phosphite ester, phosphine oxide derivative

ABSTRACT: At -40 to -80°C in toluene solution, alkyl difluorophosphites reacted with halogens to form halogenated difluorophosphine oxides. Bromodifluorophosphine oxide (bp 31—32°C/765 mm) was obtained (87%) by the reaction of butyl difluorophosphite with Br at -70 to -80°C. At -40 to -50°C, isoamyl difluorophosphite was allowed to react with Cl in mixture with nitrogen to form (45%) chlorodifluorophosphine oxide (bp 3—4°C/765 mm).

[WA-50; CBE No. 37][PS]

SUB CODE: 07/ SUBM DATE: 17Jan68/ OTH REF: 003

Card

1/1

UDC: 546.185

ACC NR: AP8030569

SOURCE CODE: UR/0079/68/038/008/1906/1907

AUTHOR: Drozd, G. I.; Ivin, S. Z.; Sheluchenko, V. V.

ORG: none

TITLE: Structure of the 1:1 adduct of diethylamide of methylfluorophosphonous acid with diacetyl

SOURCE: Zhurnal obshchey khimii, v. 38, no. 8, 1968, 1906-1907

TOPIC TAGS: fluorinated organic compound, organic phosphorus compound, ketone, phosphonite ester

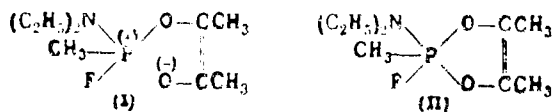
ABSTRACT: At 0-5°C in the presence of methylene chloride, the diethylamide of methylfluorophosphonous acid reacted with diacetyl to form an adduct ($n_D^{20} 1.4389$ and $d_4^{20} 1.1074$) the structure of which was studied by NMR spectra. Analysis of the spectra and their comparison with those

Card 1/2

UDC: 547.26118

ACC NR: AP8030569

of similar compounds indicate that from the two possible structures, the adduct has structure II:



[WA-50; CBE No. 37] [PS]

SUB COLL: 07/ SUBM DATE: 17Jan68/ OTH REF: 003

Card 2/2

ACC NR:

AP8031952

SOURCE CODE: UR/0062/68/000/009/2133/2134

AUTHOR: Fedorova, O. N.; Alimov, P. I.

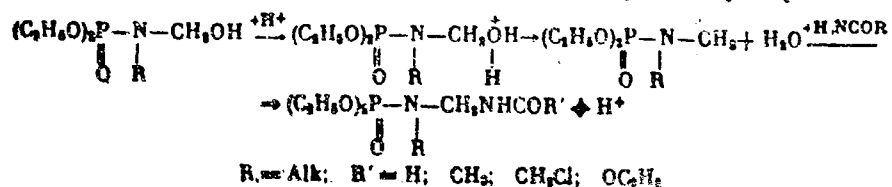
ORG: Institute of Organic and Physical Chemistry im. A. Ye. Arbuzov, Academy of Sciences SSSR (Institut organicheskoy i fizicheskoy khimii Akademii nauk SSSR)

TITLE: Condensation of O,O-diethyl N-alkyl-N-alkyl-N-hydroxymethylamino-phosphates with carboxylic acids

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 9, 1968, 2133-2134

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

ABSTRACT: In the presence of catalytic amounts of HCl in benzene solution at 50°C, O,O-diethyl N-alkyl-N-hydroxymethylamidophosphates was



Card

1/3

UDC: 542.953.2+542.951.1+661.718.1

ACC NR:

AP8031952

Table 1. O,O-diethyl N-alkyl-N-acylaminoethylamidophosphate

Formula	Bp, °C (mm)	n_D^{20}	d_4^{20}	Yield, %
$(\text{C}_2\text{H}_5\text{O})_2\text{P}-\text{N}-\text{CH}_2\text{NHCHO}$	128-129 (0.5)	1,4490	1,1329	49
$(\text{C}_2\text{H}_5\text{O})_2\text{P}-\text{N}-\text{CH}_2\text{NHCOCH}_3$	133-138 (0.5)	1,4500	1,1210	40
$(\text{C}_2\text{H}_5\text{O})_2\text{P}-\text{N}-\text{CH}_2\text{NHCOCH}_2\text{CH}_3$	130-131 (1)	1,4500	1,1356	51
$(\text{C}_2\text{H}_5\text{O})_2\text{P}-\text{N}-\text{CH}_2\text{NHCOCH}_2\text{CH}_2\text{CH}_3$	126-128 (0.5)	1,4448	1,1229	41
$(\text{C}_2\text{H}_5\text{O})_2\text{P}-\text{N}-\text{CH}_2\text{NHCOCH}_2\text{CH}_2\text{CH}_2\text{CH}_3$	133-134 (0.5)	Mp 43	—	51
$(\text{C}_2\text{H}_5\text{O})_2\text{P}-\text{N}-\text{CH}_2\text{NHCOCH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$	138-140 (0.5)	1,4520	1,0761	50
$(\text{C}_2\text{H}_5\text{O})_2\text{P}-\text{N}-\text{CH}_2\text{NHCOCH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_3$	138-139 (0.5)	1,4530	1,0661	43
$(\text{C}_2\text{H}_5\text{O})_2\text{P}-\text{N}-\text{CH}_2\text{NHCOCH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{Cl}$	144-145 (0.5)	Mp 56-57°	—	63

Card

2/3

ACC NR: AP8031952

Table 1. (Cont.)

$(C_6H_5O)_2P-N-CH_2NHCOCH_2Cl$	—	Mp	—	60
$(C_6H_5O)_2P-N-CH_2NHCOOC_2H_5$	118—120 (0,5)	1,4450	1,1395	37
$(C_6H_5O)_2P-N-CH_2NHCOOC_2H_5$	123—128 (0,5)	1,4448	1,1229	41
$(C_6H_5O)_2P-N-CH_2NHCOOC_2H_5$	133—135 (0,5)	1,4450	1,1045	39
$(C_6H_5O)_2P-N-CH_2NHCOOC_2H_5$	142—144 (0,5)	1,4455	1,0347	40
$(C_6H_5O)_2P-N-CH_2NHCOOC_2H_5$	148—150 (0,5)	1,4470	1,0582	37

allowed to react with carboxylic acids to form O,O-diethyl N-alkyl-N-acylaminomethylamidophosphates. They are characterized in the table.

[WA-50; CBE No. 37] [PS]

SUB CODE: 07/ SUBM DATE: 05Mar68/ ORIG REF: 002

Card 3/3

ACC NR: AP8031273

SOURCE CODE: UR/0079/68/038/009/2082/2085

AUTHOR: Gefter, Ye. L.; Gorbunov, V. N.; Filippenko, D. M.

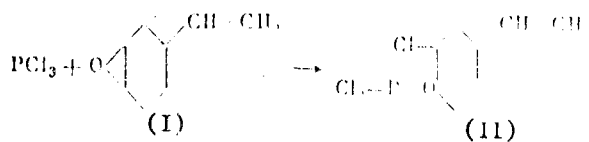
ORG: Scientific Research Institute of Plastics (Nauchno-issledovatel'skiy institut plasticheskikh mass)

TITLE: Reactions of 4-vinyl-1,2-epoxycyclohexane. I. The reaction of 4-vinyl-1,2-epoxycyclohexane with phosphorus trichloride

SOURCE: Zhurnal obshchey khimii, v. 38, no. 9, 1968. 2082-2085

TOPIC TAGS: phosphorous acid, phosphorus chloride, cyclic alcohol

ABSTRACT: The reaction of 1 mole of 4-vinyl-1,2-epoxycyclohexane (I) (from peracetic acid and 4-vinylcyclohex-1-ene) with 1 mole of PCl_3 in argon yielded 4-vinyl-2-chlorocyclohexylphosphorous acid dichloride (II) (63.7% yield, bp_1 96—98°C, n_D^{20} 1.5256, d_4^{20} 1.3069). Bis(4-vinyl-2-chlorocyclohexylphosphorous acid dichloride (II) (63.7% yield,

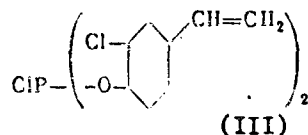


Card 1/3

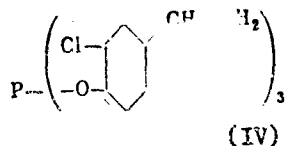
UDC: 547.26'118

ACC NR: AP8031273

bp₁ 154—156°C, n_D²⁰ 1.5231, d₄³⁰ 1.2131) was synthesized by allowing 2 moles of I to react with 1 mole of PCl₃. Compounds II and III are



transparent, colorless, fuming (in air) mobile liquids with a pungent odor. Water-insoluble tris(4-vinyl-2-chlorocyclohexyl) phosphite (IV) (~100% yield, decomposes above 200°C, n_D²⁰ 1.5220, d₄²⁰ 1.1638) was synthesized by allowing 3 moles of I to react with 1 mole of PCl₃.



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ACC NR: AP8031273

4-Vinyl-2-chlorocyclohexan-1-ol (V) (79.5% yield, bp₂ 90—92°C, n_D²⁰ 1.4995, d₄²⁰ 1.1102) was obtained by acid hydrolysis of IV.
[WA-50; CBE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: 15Sep67/ ORIG REF: 011

Card

ACC NR:

AP8031331

SOURCE CODE: UR/G464/68/000/004/0460/0465

AUTHOR: Geyta, L. S.; Abolin', I. A.; Gayle, R. L.; Vanag, G. Ya.
(Deceased)

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

TITLE: C-Acylation of 1,3-indandione and 1,3-perinaphthindandione

SOURCE: AN LatSSR. Izvestiya. Seriya khimicheskaya, no. 4, 1968, 460-465

TOPIC TAGS: ketone, naphthalene derivative, hydrazine derivative

ABSTRACT: 2-Propionylindan-1,3-dione (I) (38% yield, mp 102°C) was prepared by adding 1,3-indandione in CHCl_3 to a heated solution of propionyl chloride and AlCl_3 in CHCl_3 . Partial resinification and formation of bindone accompanied the reaction. Only bindone was formed in the reaction of indandione with butyryl chloride and chloroacetyl chloride. Yellow crystalline 2-acetylperinaphthindan-1,3-dione (IIa), 2-propionylperinaphthindan-1,3-dione (IIb), and 3-butyrylperinaphthindan-1,3-dione (IIc) were synthesized by adding perinaphthindandione in CHCl_3 to a heated solution (50°C) of acyl chloride and anhydrous AlCl_3 in CHCl_3 .

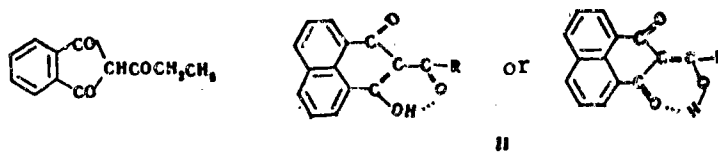
Card

1/3

UDC: 547.67+547.665=542.951

ACC NR:

AP8031331

a) $\text{R}=\text{CH}_3$, b) $\text{R}=\text{C}_2\text{H}_5$, c) $\text{R}=\text{C}_3\text{H}_7$

More acyl chloride was added dropwise at 70°C, and IIa—IIc were filtered from their acidulated aqueous solution. Red crystalline 2-acylperinaphthindan-1,3-dione 2,4-dinitrophenylhydrazones (IIIa—IIIc) were

Table 1. 2-Acylperinaphthindan-1,3-diones

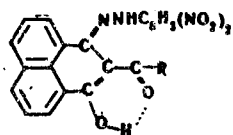
Comps	Mp, °C	% Yield
IIa	170-171	72
IIb	137-138	60
IIc	127	40
IIIa	276	40
IIIb	271	38
IIIc	253	27

Card

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ACC NR: AP8031331

prepared by adding IIa--IIc in CHCl_3 to an $\text{EtOH-H}_2\text{SO}_4$ solution of



a) $\text{R}=\text{CH}_3$, b) $\text{R}=\text{C}_2\text{H}_5$, c) $\text{R}=\text{C}_3\text{H}_7$

2,4-dinitrophenylhydrazine. The structures of IIa--IIc were confirmed by UV and IR spectra. Orig. art. has: 3 tables.

[WA-50; CBE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: 06Feb67/ ORIG REF: 011/ OTH REF: 009

Card 3/3

ACC NR: AP8031942

SOURCE CODE: UR/0062/68/000/009/2019/2023

AUTHOR: Gilyarov, V. A.; Maksudov, A. M.; Korolev, B. A.; Stepanov, B. I.; Kabachnik, M. I.

ORG: Institute of Heteroorganic Compounds, Academy of Sciences SSSR (Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR); Moscow Chemical Technology Institute im. D. I. Mendeleev (Moskovskiy khimiko-tekhnologicheskii institut)

TITLE: Study of bonding in N-methylphosphamidines--systems with a tetrahedral phosphorus atom

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 9, 1968, 2019-2023

TOPIC TAGS: substituted amide, aromatic phosphorus compound, kinetic chemical reaction rate, potentiometric titration

ABSTRACT: The rate constants of the methylation of P,P-diethyl N-methyl-N-aryl-N'-phenylphosphamidines (Ib) with MeI in tetrahydrofuran are shown in Table 1. The parameters of the correlation equations for P,P-diethyl-N-methyl-N-phenyl-N'-arylphosphamidines (Ia) (first series) and Ib

Card

1/6

UDC: 541.124+541.6+661.715.1

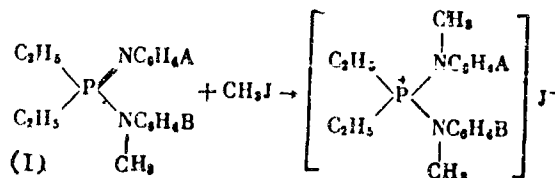


Table 1. Rate constants of methylation of phosphamidines $(\text{C}_2\text{H}_5)_2\text{P}[-\text{NC}_6\text{H}_4][\text{N}(\text{CH}_3)\text{C}_6\text{H}_4\text{B}]$

B	Initial concentration mM		$k \cdot 10^2, \text{ l}/(\text{M} \cdot \text{min})$	$k \cdot 10^2, \text{ l}/(\text{M} \cdot \text{min})$	B	Initial concentration mM		$k \cdot 10^2, \text{ l}/(\text{M} \cdot \text{min})$	$k \cdot 10^2, \text{ l}/(\text{M} \cdot \text{min})$
	Ib	MeI				Ib	MeI		
<i>p</i> -O	74,0	105,2	3,38	3,54	<i>p</i> -Br	85,0	255,0	1,02	1,08
	80,8	107,9	3,69			84,2	252,6	1,15	
<i>p</i> -CH ₃	69,6	69,6	2,46	2,41	<i>m</i> -F	82,3	246,9	0,96	0,98
	69,5	69,5	2,36			127,2	246,9	1,01	
<i>m</i> -CH ₃	69,5	69,5	2,48	2,59	<i>m</i> -Cl	100,8	302,3	1,18	1,11
	73,4	146,8	2,70			80,5	241,4	1,04	
H	70,0	70,0	1,74	1,75	<i>p</i> -CF ₃	128,2	384,6	0,81	0,79
	83,6	137,5	1,76			106,4	319,2	0,77	
<i>p</i> -Cl	78,6	251,7	1,28	1,32	<i>p</i> -CN	220,6	631,8	0,22	0,25
	83,6	268,0	1,37			230,9	692,7	0,28	

Card 2/6

(second series) are shown in Table 2. The rate constants satisfy the

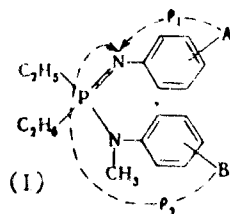


Table 2. Correlation parameters of $\log k - \sigma$

Constants of substituents	Series	$\log k$	ρ	r	S	S_r
σ	First (B - H)	-1,75	-2,491	0,983	0,121	0,116
	Second (A - H)	-1,71	-0,936	0,960	0,126	0,139
σ^-	First (B - H)	-1,72	-1,806	0,975	0,097	0,094
	Second (A - H)	-1,69	-0,818	0,976	0,076	0,095

Card 3/6

ACC NR: AP803142

nucleophilic equation $\log k = \log k^\circ + \rho(\sigma_A^- + 0.44\sigma_B^-)$ somewhat better than the Hammett equation $\log k = \log k^\circ + \rho(\sigma_A + 0.40\sigma_B)$. Basicity data for Ia and Ib in MeNO₂, determined by potentiometric titration with 0.125 M HClO₄ are shown in Tables 3 and 4. Again, the correlation is

Table 3. Values of pK_a(MeNO₂) of phosphamidines
(C₂H₅)₂P(=NC₆H₄ANN(CH₃)C₆H₄B)

A	B	pK _a (CH ₃ NO ₂)	A	B	pK _a (CH ₃ NO ₂)
<i>p</i> -CH ₃ O	H	20.06	H	<i>p</i> -CH ₃ O	19.69
<i>p</i> -CH ₃	H	20.01	H	<i>p</i> -CH ₃	19.71
<i>m</i> -CH ₃	H	19.69	H	<i>m</i> -CH ₃	19.44
H	H	19.32	H	H	19.32
<i>p</i> -F	H	19.19	H	<i>p</i> -Cl	18.80
<i>p</i> -Cl	H	18.50	H	<i>p</i> -Br	18.50
<i>m</i> -F	H	18.35	H	<i>m</i> -F	18.57
<i>m</i> -Cl	H	18.17	H	<i>m</i> -Cl	18.81
<i>p</i> -CF ₃	H	17.63	H	<i>p</i> -CF ₃	18.68
<i>p</i> -NO ₂	H	17.06	H	<i>p</i> -CN	16.19
<i>p</i> -CN	H	16.77			
<i>p</i> -NO ₂	H	16.02			

Card 4/6

ACC NR: AP8031942

Table 4. Correlation parameters of pK_a— σ

Constants of substituents	Series	pK _a	ρ	r	s	B _p
σ	First (B=H)	19.35	+3.036	0.986	0.233	0.197
	Second (A=H)	19.30	+1.363	0.975	0.127	0.140
σ^-	First (B=H)	19.32	+2.728	0.991	0.186	0.117
	Second (A=H)	19.50	+1.151	0.978	0.100	0.086

best in the equation with nucleophilic constants. A comparison of the data of Tables 1 and 3 indicates that the tetrahedral P atom in Ia and Ib transmits the polar effects of substituents A and B without any change

Table 5. Correlation parameters of log k— σ and pK_a— σ corresponding to substances with meta-substituent:

Series	Correlation	log k	pK _a	ρ	r	s	σ_{eff} (p CN)	σ_{eff} (p NO ₂)
First (A=H)	log k	5	1.74	-2.097	0.999	0.024	0.85	1.08
	pK _a	5	19.39	+1.301	0.997	0.095	0.79	1.02
Second (B=H)	log k	5	1.70	-0.800	0.953	0.071	1.13	—
	pK _a	5	19.33	+1.302	0.999	0.016	0.82	—

Card

ACC NR. AP8031942

in the correlation of the inductive and resonance components, but the effects are weakened by 50—60%. Direct polar bonding between substituent in the imine N in Ia and Ib is indicated in the data of Table 5. Orig. art. has: 5 tables. [WA-50; CBE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: 24Apr68/ ORIG REF: 004/ CTH REF: 003

Card 6/6

ACC NR: AT8027067 SOURCE CODE: UR/3374/67/000/015/0160/0161

AUTHOR: Globus, R. L.; Yarovenko, Ye. Ya.; Boldyreva, A. P.; Lastovskiy, R. P. (Professor)

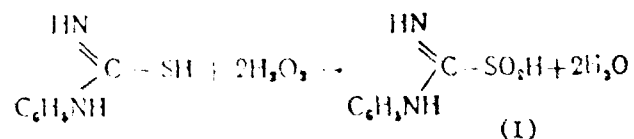
ORG: IREA

TITLE: N-phenylformamidinesulfinic acid

SOURCE: Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov i osobo chistykh khimicheskikh veshchestv. Metody polucheniya khimicheskikh reaktivov i preparatov, no. 15, 1967, 160-161

TOPIC TAGS: sulfinic acid, urea compound/biologically active compound

ABSTRACT: The physiologically active, previously undescribed title compound (I) was synthesized by the addition of 3 ml 31.2% H_2O_2 at 0—5°C to 2 g N-phenylthiourea in the presence of 0.005 g sodium molybdate in 10 ml H_2O .



Card 1/2

UDC: 547.425.5.07

ACC NR: AT8027067

After 1 hour the white precipitated I (41.4% yield, mp 132—133°C) was filtered and dried at 60°C. [WA-50; CBE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: Nov65/ ORIG REF: 001

Card 2/2

ACC NR: AT8027061

SOURCE CODE: UR/3374/67/000/015/0075/0076

AUTHOR: Globus, R. L.; Yarovenko, Ye. Ya.; Medvedeva, S. P.; Lastovakiy, R. P. (Professor)

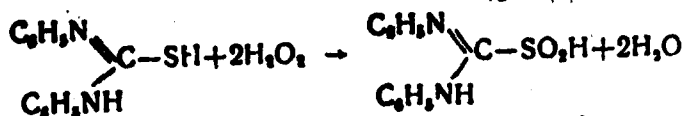
ORG: IREA

TITLE: N,N'-diphenylformamidinesulfinic acid dihydrate

SOURCE: Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov i osobo chistykh khimicheskikh veshchestv. Metody polucheniya khimicheskikh reaktivov i preparatov, no. 15, 1967, 75-76

TOPIC TAGS: sulfinic acid, urea compound, biologically active compound

ABSTRACT: The physiologically active, new title compound (I) was synthesized by the addition of 0.025 g sodium molybdate to 5 g N,N'-diphenylthiourea in 80 ml dioxane, cooled to 15°C, followed by the addition of 6 ml 28.2% H₂O₂. The reaction mixture was cooled to 5°C and the



Card 1/2

UDC: 547.425.5.07
- 52 -

ACC NR: AT8027061

precipitated I (61.6% yield, mp 183—184°C) was filtered and dried at 60°C.
[WA-50; CBE No. 37] [FI]

SUB CODE: 07/ SUBM DATE: Nov65/ ORIG REF: 001

Card 2/2

ACC NR: AT8027064 SOURCE CODE: UR/3374/67/G00/015/0098/0099

AUTHOR: Globus, R. L.; Yaravenko, Ye. Ya; Medvedeva, S. P.; Lastovskiy, R. P. (Professor)

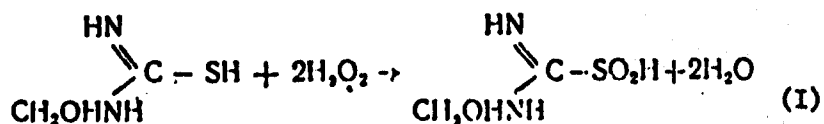
ORG: IREA

TITLE: N-monomethylolformamidinesulfinic acid

SOURCE: Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov i osobo chistykh khimicheskikh veshchestv. Metody polucheniya khimicheskikh reaktivov i preparatov, no. 15, 1967, 98-99

TOPIC TAGS: sulfinic acid, urea compound/biologically active compound

ABSTRACT: The physiologically active, new title compound (I) was synthesized by the addition of 6 ml 31.2% H₂O₂ to a suspension of 3 g monomethylolthiourea in 6 ml EtOH cooled to 3°C. After 30 min the white,



Card 1/2

UDC: 547.542.07

ACC NR: AT8027064

crystalline, EtOH-soluble product I (20% yield, mp 97—93°C) was
filtered and dried at 50°C. [WA-50; CBE No. 37][FT]

SUB CODE: 07/ SUBM DATE: Nov65

Card 2/2

ACC NR: AP8030256 SOURCE CODE: UR/0297/68/013/009/0801/0809

AUTHOR: Gol'dberg, L. Ye.; Sokolov, I. K.; Kolesnikova, L. P.

ORG: Department of Chemotherapy /Head—Prof. V. A. Shorin/, Scientific
Research Institute on Finding New Antibiotics, AMN SSSR, Moscow (Otdel
khimioterapii Nauchno-issledovatel'skogo instituta po izyskaniyu novykh
antibiotikov AMN SSSR)

TITLE: Pharmacological study of the antibiotic lincomycin

SOURCE: Antibiotiki, v. 13, no. 9, 1968, 801-809

TOPIC TAGS: blood pressure, muscle relaxant, drug dosage, response

ABSTRACT: Original article appears in Biological Factors

Card 1/1

UDC: 615.332(Lyncomycinum).015

AUTHOR: Golyshin, N. M.; Ukrainets, N. S.; Mel'nikov, N. N.; Ignatova, N. P.; Shvetsov-Shilovskiy, N. I.; Supin, G. S.; Dvukherstov, M. G.

ORG: VNII of Chemicals for Plant Protection (VNII khimicheskikh sredstv zashchity rasteniy)

TITLE: Fungicidal properties of some acyl- and diacylphenylhydrazines

SOURCE: Khimiya v sel'skom khozyaystve, no.6, no. 9, 1968, 26-27

TOPIC TAGS: fungicide, hydrazine derivative, chlorinated organic compound

ABSTRACT: The relative fungicidal activity of β -acylphenylhydrazines and α,β -diacylphenylhydrazines and the correlation of the fungicidal properties with polarographic data were studied. Fungicidal activity of β -acylphenylhydrazines was studied by determining the ration of LD₅₀ of the standard (phygon, 2,3-dichloro-1,4-naphthoquinone) to the LD₅₀ of the β -acylphenylhydrazines for various fungi shown in the table. Polarographic study revealed that the biologically active β -acylphenylhydrazine hydrolyze in aqueous solutions at pH>8. The biologically

Card 1/2

UDC: 632.952

ACC NR: AP8030361

Compound	Ratio of LD ₅₀ of the standard to that of β -acylphenylhydrazide				
	<i>Botrytis cinerea</i>	<i>Fusicladium moniliforme</i>	<i>Venturia inaequalis</i>	<i>Aspergillus niger</i>	<i>Xanthomonas</i>
β -Acetylphenylhydrazine . . .	4.90	0.50	2.80	3.44	1.59
β -Propionylphenylhydrazine . . .	2.05	0.35	0.75	1.59	2.56
β -Butyrylphenylhydrazine . . .	2.60	0.29	1.90	1.25	1.75
β -iso-Butyrylphenylhydrazine . . .	0.085	0.058	1.1	0.08	0.2
β -Pentanoylphenylhydrazine . . .	4.30	2.20	1.35	2.28	3.00
β -iso-Pentanoylphenylhydrazine . . .	0.85	0.76	0.1	6.15	0.2
β -Butyryl-p-chlorophenylhydrazine . . .	1.25	0.6	5.00	1.93	1.13
β -iso-Butyryl-p-chlorophenylhydrazine . . .	1.63	0.6	3.85	7.25	0.6
β -Pentanoyl-p-chlorophenylhydrazine . . .	1.78	0.6	2.82	5.8	3.00
β -iso-Pentanoyl-p-chlorophenylhydrazine . . .	0.8	0.8	5.00	5.8	0.6
β -Acetyl-3,4-dichlorophenylhydrazine . . .	1.33	2.4	2.60	29.0	0.6
β -Propionyl-3,4-dichlorophenylhydrazine . . .	1.05	0.6	2.38	1.45	0.6
Phygon (standard)	1.0	1.0	1.0	1.0	1.0

inactive α,β -diacylphenylhydrazines do not hydrolyze.

SUB CODE: 07/ SUBM DATE: 24Jun67/ ORIG REF: 003 [WA-50; CBE No. 37][PS]

Card

2/2

AUTHOR: Grapov, A. F.; Lebedeva, N. V.; Mal'nikov, N. N.

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

TITLE: Synthesis and herbicidal activity of some amides of O-arylmethyl-, dichloromethyl-, and trichloromethylphosphonic

SOURCE: Zhurnal obshchey khimii, v. 38, no. 8, 1968, 1751-1754

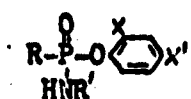
TOPIC TAGS: substituted amide, phosphonic acid/ herbicide

ABSTRACT: O-2-Chlorophenyl N-ethylamidomethylphosphonate (I) (48.7% yield, bp(0.15 mm) 133—133.5°C), O-2-chlorophenyl N-isopropylamidomethylphosphonate (II) (69% yield, mp 74—75.5°C), and O-2-chlorophenyl N-sec-butylamidomethylphosphonate (III) (67% yield, mp 49.5—51°C) were synthesized by adding 33% alkylamine to O-2-chlorophenyl methylphosphonyl chloride (IV) in CHCl_3 at 5—8°C. After 1.5 hr the mixture was heated to

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UDC: 547.241+632.954

ACC NR: AP8030547



(I: $\text{X}=\text{Cl}$, $\text{X}'=\text{H}$, $\text{R}=\text{Me}$, $\text{R}'=\text{Et}$; II: $\text{X}=\text{Cl}$, $\text{X}'=\text{H}$, $\text{R}=\text{Me}$, $\text{R}'=\text{iso-Pr}$; III: $\text{X}=\text{Cl}$, $\text{X}'=\text{H}$, $\text{R}=\text{Me}$, $\text{R}'=\text{sec-Bu}$; V: $\text{X}=\text{H}$, $\text{X}'=\text{Cl}$, $\text{R}=\text{Cl}_3\text{C}$, $\text{R}'=\text{iso-Pr}$; VII: $\text{X}=\text{H}$, $\text{X}'=\text{Cl}$, $\text{R}=\text{Cl}_2\text{CH}$, $\text{R}'=\text{iso-Pr}$)

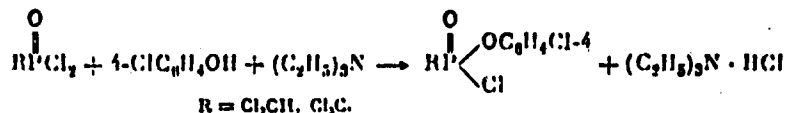
30°C, and after 15 hr the product was washed, dried, and distilled in vacuo. O-4-Chlorophenyl N-isopropylamidotrchloromethylphosphonate (V) (60.8% yield, mp 144—145°C) was synthesized similarly from O-4-chlorophenyl trichloromethylphosphonyl chloride (VI). O-4-Chlorophenyl N-isopropylamidodichloromethylphosphonate (VII) (90.5% yield, mp 99.5 to 100.5°C) was prepared by adding 4-chlorophenol in CHCl_3 to dichloromethylphosphonyl dichloride and Et_3N in CHCl_3 at -16 to -13°C, mixing, and warming for 2 hr to 20°C. Et_3N was added at -5°C, iso-PrNH_2 in CHCl_3 was added at 2—4°C, and after 12 hr the product was washed and dried. Compound IV (34.7% yield, bp (0.22 mm) 106—107°C) was obtained by heating a mixture of methylphosphonyl dichloride and 2-chlorophenol for 5 hr at 150°C and distilling IV in vacuo. Compound VI (17% yield, bp(0.44 mm) 140—141°C) was prepared by adding a solution of p-chlorophenol and Et_3N in ether to trichloromethylphosphonyl dichloride in ether

Card 2/3

ACC NR:

AP8030547

at 8—11°C. After 12 hr, VI was distilled three times. Compounds V and



VII (4-chlorophenyl) display greater herbicidal activity than I—III (2-chlorophenyl), but V and VII (probably because of steric factors) are less active than the previously described 0-4-chlorophenyl N-isopropyl-amidochloromethylphosphonate. [WA-50; C&E No. 37] [FT]

SUB CODE: 07/ SUBM DATE: 25Sep67/ ORIG REF: 004

Card

3/3

ACC NR:

AP8030434

SOURCE CODE: UR/0062/68/000/008/1797/1802

AUTHOR: Grechkin, N. P.; Shagidullin, R. R.; Gubanova, G. S.

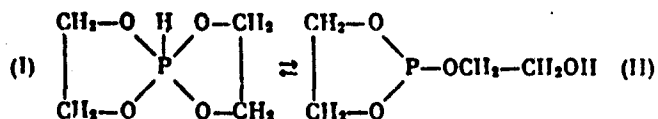
ORG: Institute of Organic and Physical Chemistry im. A. Ye. Arbuzov, Academy of Sciences SSSR (Institut organicheskoy i fizicheskoy khimii Akademii nauk SSSR)

TITLE: The reactions of ethylene glycol and alkanolamines with full esters and amides of phosphorous acid

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 8, 1968, 1797—1802

TOPIC TAGS: ethylene glycol, alkanolamine, substituted amide, phosphorous acid

ABSTRACT: 1,4,6,9-Tetraoxa-5-phosphaspiro [4.4] nonane (I) (mp 48 to 49°C) was synthesized by heating a mixture of ethylene glycol and ethylene glycol phosphorous acid diethylamide to 125°C. A newly reported equilibrium transition to 2-hydroxyethyl ethylene glycol phosphite (II) occurred when the temperature was varied:



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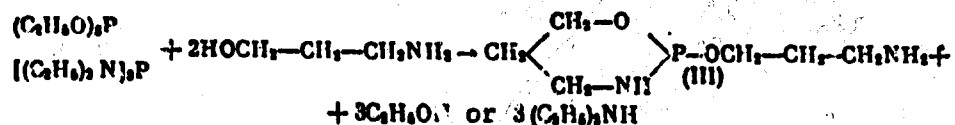
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UDC: 542.91+661.718.1+547.422

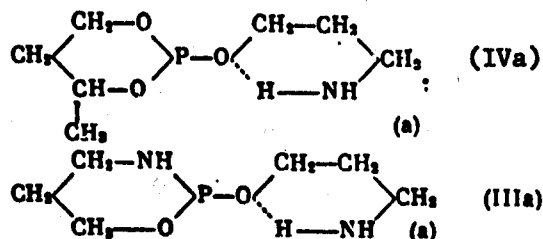
ACC NR:

AP2030434

1-(γ -Aminopropoxy)-2-aza-6-oxaphosphorinane (III) (bp (0.05 mm) 80—83°C) was synthesized by heating a mixture of propanolamine and phosphorous acid hexaethyltriamide to 140°C in N. 1-(γ -Aminopropoxy)-2,6-dioxa-3-



methylphosphorinane (IV) (bp(0.1 mm) 76—77.5°C) was prepared similarly by heating a mixture of propanolamine and 1-methylpropylene glycol phosphorous acid diethylamide in N. IR spectra of III and IV indicated the presence of an intramolecular hydrogen bond, preventing the formation of a spirane structure. The presence of hydrogen bonding in 1-(β -aminoethoxy)-2-aza-5-



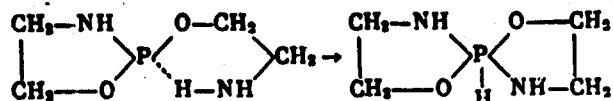
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ACC NR:

AP8030434

oxaphospholane, a hypothetical intermediate of the reaction of ethanolamine with triethyl phosphite, appears to favor the previously reported spirane



structure 4,6-dioxa-1,9-diaza-5-phoshaspiro[4.4] nonane, as shown above. [WA-50; CBE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: 25Dec67/ ORIG REF: 003/ OTH REF: 003

Card

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ACC NR:

AP8031330

SOURCE CODE: UR/0464/68/000/004/0453/0459

AUTHOR: Grinshteyn, V. Ya.; Sherin', L. A.; Blum, R. K.; Ratenberg, N. S.

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

TITLE: Synthesis and study of potential antidepressants. II. Synthesis, biochemical and pharmacological study of some β -hydroxyethylhydrazides and β -hydroxyethylhydrazines

SOURCE: AN LatSSR. Izvestiya. Seriya khimicheskaya, no. 4, 1968, 453-459

TOPIC TAGS: hydrazine compound, oxidase, drug dosage response

ABSTRACT: Glycine β -hydroxyethylhydrazide (I), glycolyl β -hydroxyethylhydrazide (II), mandelyl β -hydroxyethylhydrazide (III), α -cyanopropionyl β -hydroxyethylhydrazide (IV), and cinnamyl β -hydroxyethylhydrazide (V) were synthesized by allowing β -hydroxyethylhydrazine to react with the corresponding esters. 1-(β -Hydroxyethyl)-2-isopropylhydrazine (VI), 1-(β -hydroxyethyl)-2-benzylhydrazine (VII),

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UDC: 547.298.61+547.234.2+577.150.4

ACC NR:

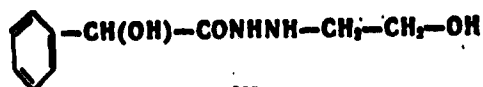
AP8031330



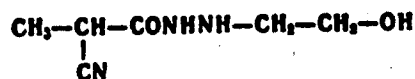
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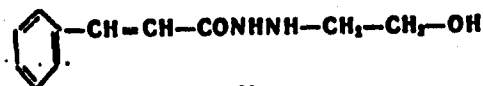
II



III



IV



V

Card

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Table 1. Acyl β -hydroxyethylhydrazides

No.	Mp, °C	Reaction Conditions			Yield
		Reaction solvent	Temp., °C	Duration	
II	Syrup 143*	Abs. EtOH	80	2 hr	62
III	109	Abs. EtOH	80	3 hr	75
IV	185--186	—	Room	3 days	45
Ia	230 (Varies)	Abs. EtOH	80	2 hr	6
I	Syrup 106**	Abs. EtOH	80	2 hr	90
V	Syrup	—	Room	6 days	75

*Sulfate; **Oxalate

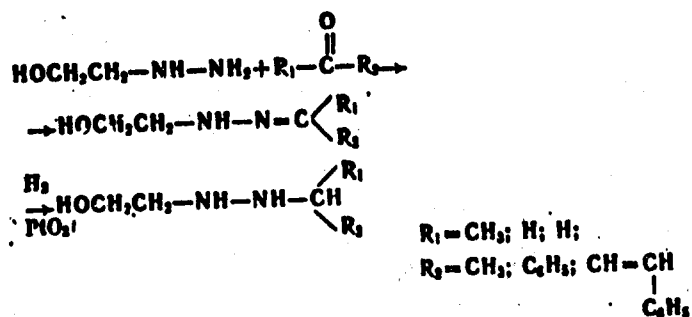
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ACC NR:

AP8031330

and 1-(β -hydroxyethyl)-2-(γ -phenylpropyl) hydrazine (VIII) were synthesized by the following reaction sequence:



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ACC NR: AP8031330

Table 2. β -Hydroxyethylhydrazines

No.	Mp, °C	Reaction duration, hr	% Yield
VI	Syrup 152-153* (Varies)	45	75
VII	Syrup 200-205* (Varies)	15	82
VIII	Syrup 181-182* (Varies)	25 73	

*oxalate

Results of studies of the effect of I—VIII on monoamino oxidase activity are shown in Table 3. LD₅₀ of the sulfate of I in white mice was found to be ip 200(1310—290) mg/kg, LD₅₀ of the oxalate of II—ip 92(61.0—140) mg/kg, and LD₅₀ of III—ip 640(422—832) mg/kg. The

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ACC NR: AP8031330

Table 3. Effect of β -hydroxyethylhydrazine derivatives on MAO activity of rat liver in experiments *in vitro* and of rat brain in experiments *in vivo* (substrate--tyramine)

Compd No.	Inhibition of MAO in % for compound concentration 10 ⁻³ mol	I ₅₀	Inhibition of MAO in % for 100mg/kg dosage
I	72	8.10 ⁻⁴	55-60 50-55* 50-55*** 50-55*,***
Ia	Not active		
II			
III	68	4.10 ⁻⁴	55-60 30-35*
IV	55	6.5.10 ⁻⁴	50-55
V	19	> 10 ⁻³	17-19**
VI	15	> 10 ⁻³	
VII	74	4.5.10 ⁻⁴	65-70
VIII	58	3.10 ⁻⁴	
	50	10 ⁻³	45-50

Notes. *Substrate--serotonin. **Animals were decapitated 12 hr after administration. ***50mg/kg.

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ACC NR:

AP8031330

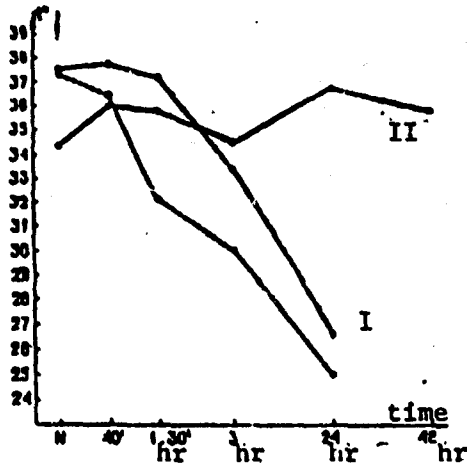


Fig. 1. Effect of reserpine on temperature in rectum of control and experimental groups of white mice.

-- I 200 mg/kg 24 hr before administration of reserpine 5 mg/kg;
— II 200 mg/kg 24 hr before administration of reserpine 5 mg/kg;
--- reserpine 5 mg/kg.

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ACC NR:

AP8031330

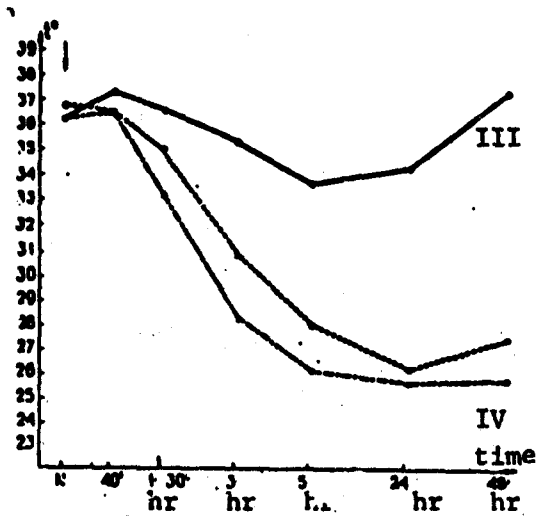


Fig. 2. Effect of reserpine on temperature in rectum of control and experimental groups of white mice.

-- IV 200 mg/kg 24 hr before administration of reserpine 5 mg/kg;
— III 200 mg/kg 24 hr before administration of reserpine 5 mg/kg;
--- reserpine 5 mg/kg.

Card

8/10

ACC NR:

AP8031330

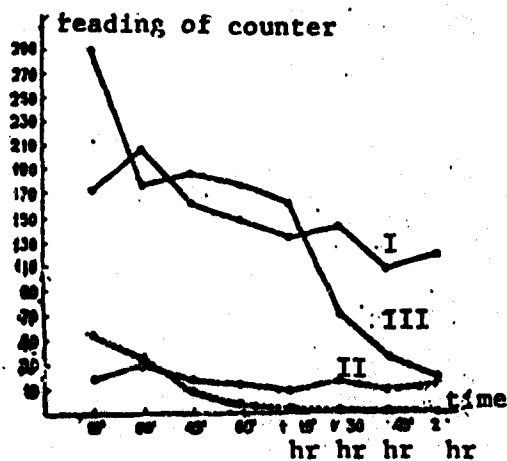


Fig. 3. Effect of reserpine on motor activity of control and experimental groups of white mice. Animals were placed in an actometer 5 min after administration of reserpine.

- II 200 mg/kg 24 hr before administration of reserpine 5 mg/kg;
- ... III 200 mg/kg 24 hr before administration of reserpine 5 mg/kg;
- I 200 mg/kg 24 hr before administration of reserpine 5 mg/kg;
- reserpine 5 mg/kg.

Card 9/10

ACC NR:

AP8031330

antidepressive activity of I—IV was evaluated by their ability to affect the hypothermal and sedative effects of reserpine. These data are shown in Figs. 1—3. Orig. art. has: 4 tables and 3 figures.

[WA-50; CBE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: 31Dec66/ ORIG REF: 002

Card

10/10

ACC NR:

AP8030568

SOURCE CODE: UR/0079/68/038/008/1905/1906

AUTHOR: Gurevich, P. A.; Shelepova, N. I.; Razumov, A. I.

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

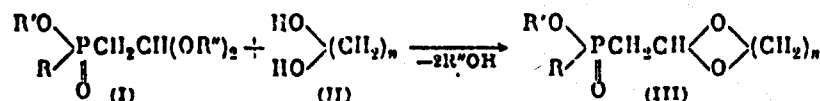
TITLE: Synthesis of cyclic polymethylene acetals of phosphinylacetaldehyde

SOURCE: Zhurnal obshchey khimii, v. 38, no. 8, 1968, 1905-1906

TOPIC TAGS: acetal, organic phosphorus compound, phosphinate ester

ABSTRACT: At 175-180°C in nitrogen atmosphere, compound I reacted with

Table 1



N	R'	R	n	% Yield	Bp, °C (mm)	d ₄ ²⁰	n _D ²⁰
1	C ₂ H ₅	C ₂ H ₅ O	4	50.4	100-103° (0.07)	1.0906	1.4503

Card

1/2

UDC: 547.841+547.26'118

ACC NR:

AP8030568

Table 1 (Cont.)

2	C ₂ H ₅	CH ₃ C ₆ H ₄ -p	4	21.6	168-170 (0.09)	1.1471	1.5145
3	C ₂ H ₅	C ₆ H ₅ O	5	39.0	108-110 (0.07)	1.0921	1.4510
4	C ₂ H ₅	CH ₃ C ₆ H ₄ -p	5	24.5	190-193 (0.06)	1.0991	1.5032

an equimolar amount of II to form the acetals III characterized in the table. [WA-50; CBE No. 37][PS]

SUB CODE: 07/ SUBM DATE: 25Feb68/ ORIG REF: 002

Card

2/2

ACC NR:

AP8030567

SOURCE CODE: UR/0079/68/038/008/1904/1905

AUTHOR: Ignat'yeva, G. V., Arbisman, Ya. S.; Kondrat'yev, Yu. A.; Bal'chenko, R. K.; Ivin, S. Z.

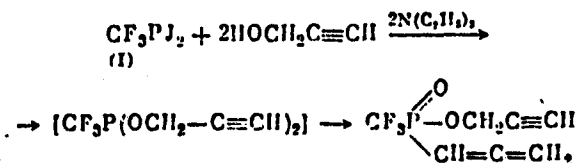
ORG: none

TITLE: Rearrangement of propargyl esters of trivalent phosphorus acids containing trifluoromethyl group

SOURCE: Zhurnal obshchey khimii, v. 33, no. 8, 1968, 1904-1905

TOPIC TAGS: alkylphosphine, fluorinated organic compound, phosphinate ester, propargyl compound

ABSTRACT: At low temperatures in the presence of triethylamine, trifluoromethyldiiodophosphine (I) reacted with two moles of propargyl alcohol to form O-propargyl trifluoromethylallylphosphinate (bp 53 to 58°C/9×10⁻³ mm, d₄²⁰ 1.2910, n_D²⁰ 1.4400). The reaction of I with an



Card

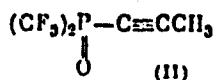
1/2

UDC: 547.341

ACC NR:

AP8030567

equimolar mixture of ethanol and propargyl alcohol yielded O-ethyl



trifluoromethylallylphosphinate, bp 67°C (1mm), d₄²⁰ 1.3100, n_D²⁰ 1.4240. The reaction of bis(trifluoromethyl)iodophosphine with propargyl alcohol yielded compound II (bp 65-66°C/19 mm, d₄²⁰ 1.3711, n_D²⁰ 1.3730).

[WA-50; CBE No. 37] [PS]

SUB CODE: 07/ SUBM DATE: 26Feb68/ ORIG REF: 002

Card

2/2

- 65 -

ACC NR: AP8030436

SOURCE CODE: UR/0062/68/000/008/1860/1862

AUTHOR: Il'ina, M. K.; Shermergorn, I. M.

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

TITLE: Synthesis and properties of bis(N-alkyl(aryl)aminomethyl)phosphinic acids

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 8, 1968, 1860-1862

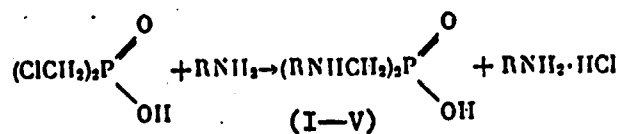
TOPIC TAGS: phosphinic acid, substituted amide

ABSTRACT: Bis(N-phenylaminomethyl)phosphinic acid (I) (63% yield, mp 180—181°C), bis(N-benzylaminomethyl)phosphinic acid hydrochloride (II) (72% yield, mp 220—222°C), bis(N-allylaminomethyl)phosphinic acid hydrochloride (III) (34% yield, mp 200—202°C), bis(N-propylaminomethyl)phosphinic acid hydrochloride (IV) (47.6% yield, mp 238—239°C), and bis(N-butylaminomethyl)phosphinic acid hydrochloride (V) (37% yield, mp 240—242°C) were synthesized by heating a mixture of bischloromethylphosphinic acid and an excess of the corresponding amine for 10 hr at 110°C. Compounds I—V are capable of polymerization because of their

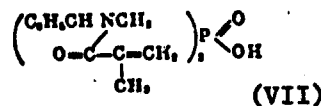
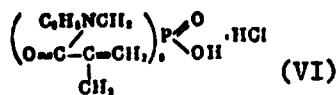
Card 1/2

UDC: 542.91+661.718.1

ACC NR: AP8030436



mobile amino H.



Bis(N-phenylaminomethyl)phosphinic acid dimethacrylamide hydrochloride (VI) (69% yield, mp 70—71°C) and bis(N-benzylaminomethyl)phosphinic acid dimethacrylamide (VII) (64% yield, mp 146—147°C) were obtained by mixing a solution of methacrylyl chloride in CHCl_3 with an alkaline solution of I or II for 1 hr at 0°C. [WA-50; CBE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: 14Mar68/ ORIG REF: 001

ACC NR: AP8031270

SOURCE CODE: UR/0079/68/038/009/2069/2071

AUTHOR: Ivin, S. Z.; Pastushkov, V. N.; Kondrat'yev, Yu. A.; Ogloblin, K. F.; Tarasov, V. V.

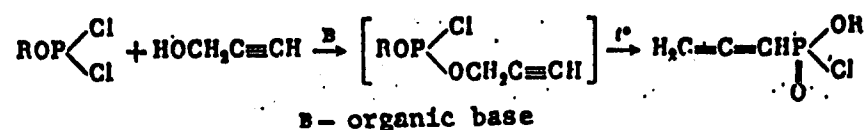
ORG: none

TITLE: Acetylene-allene rearrangement of alkyl propargyl chlorophosphites

SOURCE: Zhurnal obshchey khimii, v. 38, no. 9, 1968, 2069-2071

TOPIC TAGS: chlorinated organic compound, phosphite ester, phosphonate ester, aliphatic phosphorus compound, acetylene compound

ABSTRACT: A series of alkyl allenylchlorophosphonates (shown in the table) was synthesized by the reaction:



The reaction mixture in ether was prepared in an inert atmosphere at -40 to -50°C and left standing overnight at room temperature. IR spectra of

Card

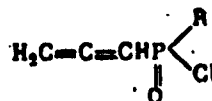
1/3

UDC: 547.341

ACC NR: AP8031270

the reaction products showed the presence of P=O, C=C=C, and P-O-C bonds. The phosphonates were heated for 2-4 hr at 100-150°C in sealed ampules in nitrogen atmosphere. IR spectra of the products of the thermal

Table 1.



N	R	Bp, °C (mm)	n_D^{20}	d_4^{20}
1	OC ₂ H ₅	72-74° (2)	1.4781	1.2301
2	OC ₃ H ₇	96-97 (1.5)	1.4790	1.1710
3	OC ₄ H ₉	98-100 (1)	1.4748	1.1520
4	Cl	73-4 (3)	1.5232	1.4105

Card

2/3

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ACC NR: AP8031270

treatment showed that the alkyl allenylchlorophosphonates are stable and do not undergo the prototropic rearrangement. The phosphonate esters are characterized in the table. [WA-50; CBE No. 37] [PS]

SUB CODE: 07/ SUBM DATE: 28Nov67/ ORIG REF: 005/ OTH REF: 003

Card 3/3

ACC NR: AP8031948 SOURCE CODE: UR/0062/68/000/009/2058/2061

AUTHOR: Kabachnik, M. I.; Dyatlova, N. M.; Medved', T. Ya.; Medyntsev, V. V.; Polikarpov, Yu. M.; Tsareva, Z. I.

ORG: Institute of Heteoorganic Compounds, Academy of Sciences SSSR (Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR); Institute of Chemical Reagents and High Purity Chemicals (Institut khimicheskikh reaktivov i osobo chistykh khimicheskikh veshchestv)

TITLE: Methylbis(dihydroxyphosphinylmethyl)phosphine oxide--a new type of organophosphorus complexons

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 9, 1968, 2058-2061

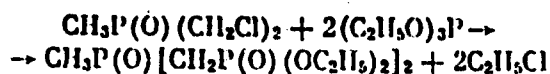
TOPIC TAGS: phosphorus oxide, aliphatic phosphorus compound, dissociation constant, potentiometric titration, stability constant

ABSTRACT: Methylbis(diethoxyphosphinylmethyl)phosphine oxide (I) (85% yield, mp 99—101°C) was prepared by the condensation of methylbis(chloromethyl)phosphine oxide with triethyl phosphite at 160°C. Colorless, glassy, hygroscopic methylbis(dihydroxyphosphinylmethyl)phosphine oxide

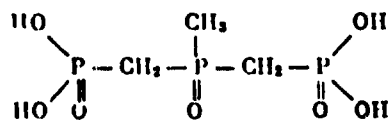
Card 1/4

UDC: 541.49+661.718.1

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(II) (70% yield) was synthesized by acid hydrolysis of I. The complex-forming properties of I were studied by potentiometric titration. The



titration curves are shown in Fig. 1. The dissociation constants, calculated from these data, were found to be: $\text{p}K_1 \sim 0.5$, $\text{p}K_2 \sim 1.5$, $\text{p}K_3 = 6.13 \pm 0.03$, $\text{p}K_4 = 8.14 \pm 0.03$. By comparison, for triphosphoric acid $\text{H}_5\text{P}_3\text{O}_{10}$: $\text{p}K_3 \sim 2.2$, $\text{p}K_4 = 5.93$, $\text{p}K_5 = 8.82$. In Fig. 1, the titration curves for Mg, Ca, Sr, Mn, Fe, Co, Ni, Cu, and Zn are identical

Card 2/4

ACC NR: AP8031948

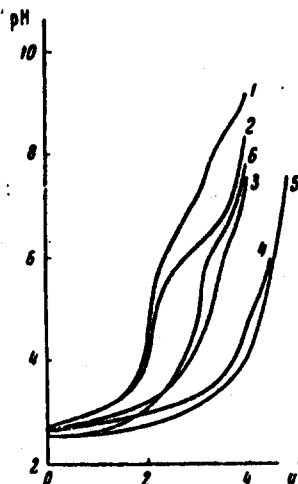


Fig. 1. Titration curves of 1×10^{-3} M II: 1—free oxide and in the presence of cations: 2 — $1 \cdot 10^{-3}$ M Co (II); 3 — $1 \cdot 10^{-3}$ M Be (II); 4 — $2 \cdot 10^{-3}$ M Be (II); 5 — $1 \cdot 10^{-3}$ M Th (IV); 6 — $5 \cdot 10^{-4}$ M Th (IV)

to curve 2. Curves for Al, Yt, In, Zr(ZrO^{2+}), U(UO_2^{2+}), and Fe (III) are identical to curves 3—6. The stability constants of the complexes

$$\beta_{ijk} = [\text{M}_i(\text{H}_j\text{L})_k] [\text{M}]^{-i} [\text{H}_j\text{L}]^{-k}$$

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ACC NR: AP8031948

Table 1. Stability constants of complexes

Metal	$\lg\beta_{11}$	$\lg\beta_{111}$	$\lg\beta_{112}$	$\lg\beta_{112}^*$	Metal	$\lg\beta_{11}$	$\lg\beta_{111}$	$\lg\beta_{112}$	$\lg\beta_{112}^*$
Be (II)	12,4			15,2	Zn (II)	5,72	4,03	10,24	9,1
Mg (II)	4,53	3,65			Al (III)	12,9		17,2	
Ca (II)	3,98	3,45			Yt (III)	10,9	6,0	15,9	
Sr (II)	3,26	2,55			In (III)	15,4		18,1	
Mn (II)	5,06	3,95	8,78	8,5	ZrO ²⁺	14,1		18,0	
Fe (II)	5,21	3,98	9,19	8,3	Th (IV)	17,3		24,0	
Co (II)	5,26	3,91	9,33	8,4	UO ₂ ²⁺	14,8		19,2	
Ni (II)	5,04	3,61	10,02	8,1	Fe (III)	16,4		21,6	
Cu (II)	6,83	4,95	11,67	11,2	Ga (III)	15,2		18,0	

are shown in Table 1. Orig. art. has: 1 figure and 1 table.

[WA-50; CBE No. 37][FT]

SUB CODE: 07/ SUBM DATE: 20May68/ ORIG REF: 008/ OTH REF: 002

Card 4/4

ACC NR: AP8031406

SOURCE CODE: UR/0433/68/000/009/0024/0024

AUTHOR: Khalidov, A. B. (Candidate of biological sciences)

ORG: Biology Institute, Kazan (Biologicheskii institut)

TITLE: A mixture of 40% TMTD, 10% copper trichlorophenoxide, 20% γ -isomer of hexachlorocyclohexane, and 30% filler for combating wire worms and root borers

SOURCE: Zashchita rasteniy, no. 9, 1968, 24

TOPIC TAGS: organic insecticide, insecticide application, carbamic acid derivative

ABSTRACT: The effectiveness of the insecticide "Fentiuram" (a mixture of 40% TMTD, 10% copper trichlorophenoxide, 20% of the γ -isomer of hexachlorocyclohexane, and 30% of a filler) against larva of the click beetle and *Elasmopalus lignosellus* was studied by treating the seeds of corn and sugar beets with the insecticide powder in doses of 0.6 and 1.0 kg /centner seeds. The number of worms found in the ground within a specified area in various vegetation periods was compared with the number found in the ground of a control area. The results (for the use of 1 kg insecticide per centner of seeds) are given in the table:

Card 1/2

UDC: 632.951

Table 1.

Insecti- cide	Number of worms per m ²			Damaged seedl- ings (%)	Crop (cent- ner/ha)
	May	June	Sep- tember		
Sugar beets					
Fenturam	17.7	9.8	4.8	34.2	140.0
Control	17.7	15.5	6.3	67.5	130.0
Corn					
Fenturam	25.8	=	4.9	2.5	164.8
Control	25.8	=	9.5	10.4	132.5

The application of the insecticide decreases the number of worms in the ground and increases the crop of sugar beets and corn.

[WA-50; CBE No. 37] [PS]

SUB CODE: 07/ SUBM DATE: none

Card

2/2

ACC NR:

AP8031271

SOURCE CODE: UR/0079/68/038/009/2071/2074

AUTHOR: Khayrullin, V. K.; Vasyanina, M. A.; Pudovik, A. N.

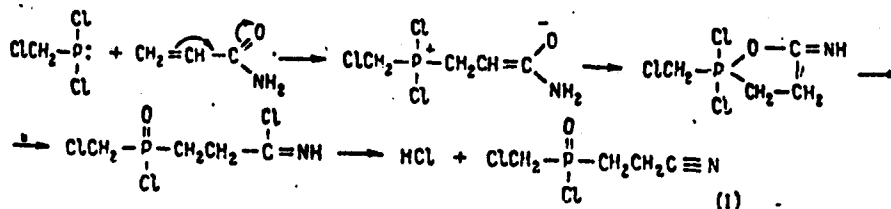
ORG: Institute of Organic and Physical Chemistry im. A. Ye. Arbusov Academy of Sciences SSSR (Institut organicheskoy i fizicheskoy khimii Akademii nauk SSSR)

TITLE: Reaction of chloromethyldichlorophosphine with acrylamide

SOURCE: Zhurnal obshchey khimii, v. 38, no. 9, 1968, 2071-2074

TOPIC TAGS: acrylamide, chlorinated organic compound, alkylphosphine, phosphite ester, phosphine derivative, phosphinate ester, aliphatic phosphorus compound

ABSTRACT: At 40—170°C in CO₂ atmosphere, chloromethyldichlorophosphine reacted with acrylamide to form (20%) the chloride I, bp 138°C (0.005 mm):



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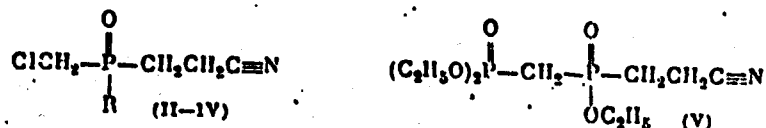
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UDC: 547.241
- 71 -

ACC NR:

AP8031271

In the presence of triethylamine in benzene solution at -3°C to room temperature, chloride I reacted with alcohols and mercaptans to form (67.1%) II, bp 142°C (0.001 mm); III, bp $158-159^{\circ}\text{C}$ (0.001 mm); and IV,



(II) R = $\text{C}_2\text{H}_5\text{O}$, (III) R = $\text{C}_2\text{H}_5\text{S}$, (IV) R = $(\text{C}_2\text{H}_5)_2\text{N}$.

bp 162°C (0.001 mm). Compound V, bp 176°C (0.001 mm) was obtained (57.7%) by heating the ethyl ester of I with triethyl phosphite at $230-250^{\circ}\text{C}$.

[WA-50; CBE No. 37] [PS]

SUB CODE: 07/ SUBM DATE: 23Oct67/ ORIG REF: 011/ OTH REF: 012

Card

2/2

ACC NR:

AP8030363

SOURCE CODE: UR/0394/68/006/009/0031/0033

AUTHOR: Khrushcheva, I. V.

ORG: VIZR

TITLE: The effect of Chlorophos and Hexachlorane on terminal oxidases of wheat

SOURCE: Khimiya v sel'skom khozyaystve, v. 6, no. 9, 1968, 31-33

TOPIC TAGS: oxidase, wheat, chlorophos

ABSTRACT: This article appears in Biological Factors

Card

1/1

UDC: 632.951:581.19

ACC NR:

AP8030365

SOURCE CODE: UR/0394/68/006/009/0048/0050

AUTHOR: Kolesnikov, V. A.

ORG: Scientific Research Institute of Vegetable Growing (Nauchno-
issledovatel'skiy institut ovoshchnogo khozyaystva)

TITLE: Phytotoxicity of sodium trichloroacetate for vegetable crops

SOURCE: Khimiya v sel'skom khozyaystve, v. 6, no. 9, 1968, 48-50

TOPIC TAGS: weed killer, toxicity, sodium compound/herbicide

ABSTRACT: Field experiments were performed at the Institute's experi-
mental farm (Moscow region) in 1964—1966 to explore the possibility of
using sodium trichloroacetate (TCA) against couch grass prior to sowing
certain vegetable crops. The toxicity of TCA (30 kg/hectare) for
vegetable crops was studied when TCA was introduced after fall plowing

Card

1/4

UDC: 632.954

ACC NR:

AP8030365

Table 1. The effect of herbicides on yield of carrots

Variations of experiment	Yield in 1965	Yield in 1966
	% of control value	% of control value
1. Control (without herbicides)	100	—
2. TCA in fall	97,3	—
3. Control (without herbicides)	100	100
4. TCA before spring plowing	92,4	92,4
5. Control without TCA + propazine	100	—
6. TCA in fall + propazine	105,2	—
7. Control without TCA + propazine	100	100
8. TCA before spring plowing + propazine	88,3	91,5

Table 2. The effect of herbicides on the yield of red beets

Variations of experiment	Yield in 1965	Yield in 1966
	% of control value	% of control value
1. Control (without herbicides)	100	—
2. TCA in the fall	94,7	—

Card

2/4

ACC NR:

AP8030365

Table 2. (Cont.)

3. Control (without herbicides)	100	100
4. TCA before spring plowing	85,9	93,0
5. Control without TCA + alipur	100	—
6. TCA in fall + alipur	85,3	—
7. Control without TCA + alipur	100	100
8. TCA before spring plowing + alipur	84,5	88,2

Table 3. The effect of herbicides on yield of cabbage

Variations of experiment	Yield in 1965	Yield in 1966
	% of control value	% of control value
1. Control (without herbicides)	100	—
2. TCA in the fall	108,2	—
3. Control (without herbicides)	100	100
4. TCA before spring plowing	90,8	75,1
5. Control without TCA + daktal	100	—
6. TCA in the fall + daktal	104,8	—
7. Control without TCA + daktal	100	100
8. TCA before spring plowing + daktal	95,7	80,6

Card

3/4

ACC NR: AP8030365

(Oct. 28, 1964) and before spring plowing (April 26, 1965). The results are summarized in Tables 1, 2, and 3. Orig. art. has: 3 tables. [WA-50; CBE No. 37][FT]

SUB CODE: 07/ SUBM DATE: 03Jan67/ ORIG REF: 006

Card 4/4

ACC NR: AP8029418 SOURCE CODE: UR/0409/68/000/004/0706/0708

AUTHOR: Komaritsa, I. D.; Grishchuk, A. P.

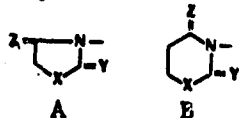
ORG: L'vov Medical Institute (L'vovskiy meditsinskiy institut)

TITLE: 4-Thionazolidines, their derivatives and analogs. VI. The condensation of isorhodanine with amino compounds

SOURCE: Khimiya geterotsiklicheskikh soyedineniy, no. 4, 1968, 706-708

TOPIC TAGS: thiazole compound, organic imine compound, hydrazine derivative, fungicide

ABSTRACT: In 4-azolidones (A) and their six-membered analogs (B) (X=S; Y=O; Z=O) the keto group may be easily replaced by a thione group, and the 4 position is thus strongly activated for nucleophilic substitution. The 4-oxime of thiazolidine-2,4-dione(I)

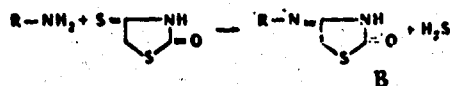


(48% yield, Mp 152-3°), the 4-isonicotinoyl hydrazone of thiazolidine-2,4-dione (II) (50% yield, Mp 171-4°), and the substituted compounds of 4-imino-2-thiazolidone (III—XVIII) were obtained by the condensation of 4-thionethiazolid-2-one (isorhodanine) with aromatic and aliphatic

Card 1/3

UDC: 547.789.1.3:542.953

ACC NR: AP8029418



amines and hydrazine derivatives.

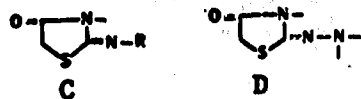
Table 1. Condensation products of isorhodanine with amines

Compd	Starting amine	Mp, °C	Condensation time, min	% Yield
III	Aminoethanol	156	20	40
IV	Thiosemicarbazide	193	180	53
V	Phenylhydrazine	149	3	41
VI	o-Aminophenol	178	40	44
VII	m-Aminophenol	236	45	55
VIII	p-Aminophenol	213	60	30
IX	o-Toluidine	150	50	53
X	p-Toluidine	234	10	59
XI	o-Anisidine	163	30	50
XII	p-Anisidine	232	10	55
XIII	p-Phenetidine	222	2	52
XIV	m-Bromoaniline	189	15	43
XV	o-Aminobenzoic acid	190	240	18
XVI	p-Aminobenzoic acid	200	60	26
XVII	m-Aminobenzoic acid	243	60	38
XVIII	2-Aminonaphthalene	252	30	70

Card 2/3

ACC NR: AP8029418

Compounds I—XVIII, being isomers of the anti-tubercular, fungicidal, and anti-thyroidal 2-arylimino-4-thiazolidones (C) and 2-hydrazones of thiazolidine-2,4-diones (D), are of pharmacological interest.



Orig. art. has: 1 table.

[WA-50; CBE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: 09Jul66/ ORIG REF: 007/ OTH REF: 003

Card 3/3

ACC NR: AP8029414

SOURCE CODE: UR/0409/68/000/004/0668/0672

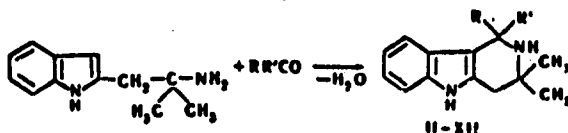
AUTHOR: Komzolova, N. N.; Kucherova, N. F.; Zagorevskiy, V. A.

ORG: Institute of Pharmacology and Chemotherapy, AMN SSSR, Moscow
(Institut farmakologii i khimioterapii AMN SSSR)TITLE: Indole derivatives. XXVI. New synthesis and an investigation of the reduction of 1,2,3,4-tetrahydro- γ -carbolines

SOURCE: Khimiya geterotsiklicheskih soyedineniy, no. 4, 1968, 668-672

TOPIC TAGS: dehydration, chemical reduction/indole derivative

ABSTRACT: Compounds II—VI were obtained by cyclodehydration by allowing 2-(2'-aminoisobutyl)indole(I) to react with aldehydes in an acetate buffer at pH 4.7 and room temperature. Compounds VII—XII were synthesized in high yields by treating the hydrochloride of I at room temperature (or during boiling) with aldehydes and ketones in a water-alcohol-benzene medium in the presence of catalytic quantities of HCl.



Card 1/5

UDC: 547.759.3:542.936+542.942.4

ACC NR: AP8029414

II - X R' = H	VII R = C ₆ H ₄ OH-4
II R = H	VIII R = C ₆ H ₄ OCH ₃ -4
III R = CH ₃	IX R = C ₆ H ₃ (O ₂ CH ₃)-3,4
IV R = C ₂ H ₅	X R = C ₆ H ₄ N(CH ₃)-4
V R = C ₆ H ₅	XI R = R' = CH ₃
VI R = CH=CH-C ₆ H ₅	XII R = CH ₃ ; R' = C ₂ H ₅

Table 1.

Compd	R	Mp, °C	% Yield	Hydrochlorides
				Mp, °C
II*	H	193-194,5	90	204-205 (from EtCl)
III	CH ₃	157-159	74	
IV	C ₂ H ₅	124-125,5	92	221-222

Card

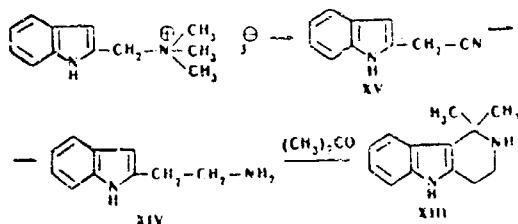
2/5

ACC NR: AP8029414

Table 1. (Cont.)

V	C ₆ H ₅	114--115	94	243--244
VI	CH ₂ -CH C ₆ H ₅	163--164	90	192--193

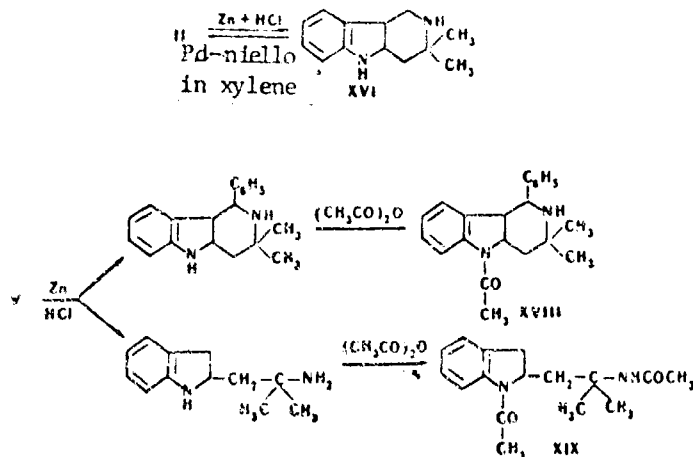
Compound XIII was synthesized in 54% yield by boiling a solution of 2-dimethylaminomethylindole methiodide and KCN in dimethylformamide, adding the reaction product XV to LiAlH₄ in ether, boiling, extracting XIV, and treating XIV with EtOH, acetone, and 3 drops HCl with boiling.



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ACC NR: AP8029414

Compounds II and V were reduced with zinc dust in HCl with an addition of HgCl₂ to yield the products shown.



Compound XIII under the same conditions was reduced to 4,4-dimethyl-1,2,3,4,4a,9a-hexahydro-γ-carboline (XVII). The structure of XVI

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ACC NR: AP8029414

and XVII was confirmed by dehydration over Pd-black in boiling xylene.
Orig. art. has: 1 table. [WA-50; CBE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: 09Jul66/ ORIG REF: 003/ OTH REF: 004

Card 5/5

ACC NR: AP8030559

SOURCE CODE: UR/0079/68/038/008/1791/1794

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

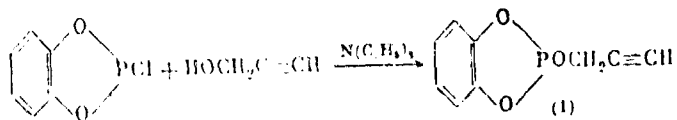
ORG: none

TITLE: Studies in a series of phosphorus-containing compounds with acetylenic and allenyl groups. IV. Synthesis and thermal rearrangement of the propargyl ester of pyrocatechylphosphorous acid

SOURCE: Zhurnal obshchey khimii, v. 38, no. 8, 1968, 1791-1794

TOPIC TAGS: phosphorous acid, propargyl compound, pyrocatechol, allene

ABSTRACT: Propargyl pyrocatechyl phosphite (I) (81% yield, mp 44--45°C) was prepared at -40°C as shown:



Pyrocatechyl allenylphosphonate (II) (75% yield, mp 52--53°C) was prepared by boiling I in benzene for 10 hr, and pyrocatechyl 1-propynylphosphonate

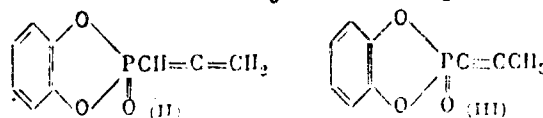
Card 1/4

UDC: 541.127:547.341

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ACC NR: AP8030559

(III) (40% yield, mp 100—101°C) was obtained by boiling I in toluene for 5 hr with a catalytic admixture of Et₃N. From Fig. 1 it is evident that



(I)→(II) is a first-order reaction, indicating an intramolecular rearrangement mechanism. The rate constants range from 2.76×10^{-3} to

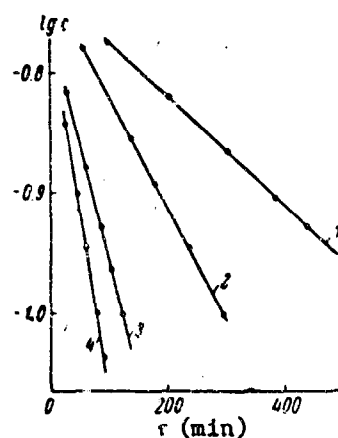


Fig. 1. Relation of the logarithm of the concentration of propargyl pyrocatechyl phosphite (I) to time. Solvent: benzene.

1 — 56°, 2 — 65°, 3 — 70°, 4 — 75°.

Card 2/4

ACC NR: AP8030559

$9.42 \times 10^{-3} \text{ min}^{-1}$, and the activation energy was found to be

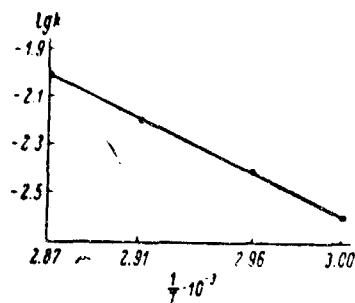


Fig. 2. Relation of the rate constant of the rearrangement (I)→(II) to temperature.

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ACC NR: AP8030559

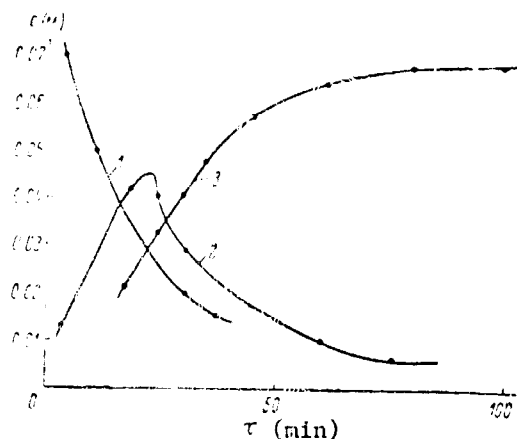


Fig. 3. Relation of the concentrations of compounds I—III to time in the process (I)→(II)→(III) at 99°C.

1 - Change in concentration of (I); 2 - change in concentration of (II); 3 - change in concentration of (III).

16.6 kg-cal/mol. From Fig. 3 it is clear that (I)→(II)→(III) is a typical sequential reaction. Orig. art. has: 3 figures.

[WA-50; CBE No. 37][FT]

SUB CODE: 07/ SUBM DATE: 04Sep67/ ORIG REF: 005/ OTH REF: 002

Card 4/4

AC NR: AT8027066 SOURCE CODE: UR/3374/67/000/015/0150/0150

AUTHOR: Kondrat'yeva, G. V.; Zav'yalov, S. I.

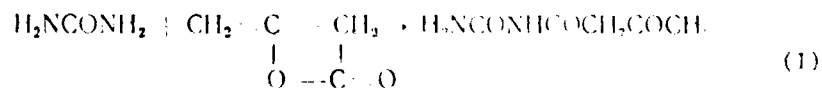
ORG: IOKh AN SSSR

TITLE: Acetoacetic acid ureide

SOURCE: Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov i osobo chistyykh khimicheskikh veshchestv. Metody polucheniya khimicheskikh reaktivov i preparatov, no. 15, 1967, 150

TOPIC TAGS: organic acid, urea compound

ABSTRACT: The new title compound (I) was obtained by the addition of 15 ml diketene to a suspension of 7.9 g urea in 65 ml anhydrous toluene, followed by the addition of 2.5 ml anhydrous pyridine as a catalyst.



The precipitated I (74% yield, mp 139—141°C) was washed with toluene,

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UDC: 547.495.6.07

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ACC NR: AT8027066

ether, water, and methanol. After recrystallization from aqueous ethanol, 9.5 g I was recovered (mp 146—147°C). [WA-50; CBE No. 37][FT]

SUB CODE: C7/ SUBM DATE: Jul65

Card 2/2

ACC NR: AP8030369 SOURCE CODE: UR/0366/68/004/009/1583/1588

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

ORG: none

TITLE: Herbicidal derivatives of hydroxylamine. XVI. O-Carbamyl derivatives of N-alkyl-N-acylhydroxylamines

SOURCE: Zhurnal organicheskoy khimii, v. 4, no. 9, 1968, 1583-1588

TOPIC TAGS: hydroxylamine, carbamide, electronegativity, herbicide

ABSTRACT: N-Alkyl-N-acyl-O-alkylcarbamyhydroxylamines, were synthesized by adding N-alkyl-N-acylhydroxylamine in benzene to freshly distilled alkyl isocyanate in benzene, boiling for 3 hr, and distilling I and II in vacuo. N-Alkyl-N-acyl-O-arylcarbamyhydroxylamines (III—IX) were synthesized by adding N-alkyl-N-acylhydroxylamine to freshly distilled aryl isocyanate in benzene, mixing for 1 hr, and distilling III—IX in vacuo. When heated to



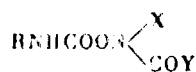
Card 1/4

UDC: 547.555+632.954

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ACC NR: AP8030369

Table 1. Properties of O-carbamyl-N-alkyl-N-acylhydroxylamines

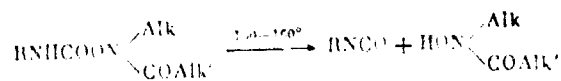


Compd. No.	R	X	Y	% Yield	Mp*
I	CH ₃	CH ₃	CH ₃	69.5	73-74°
II	tert-C ₄ H ₉	CH ₃	CH ₃	77.0	99-100
III	o-ClC ₆ H ₄	CH ₃	CH ₃	77.5	175-175.5
IV	m-ClC ₆ H ₄	CH ₃	CH ₃	88.0	131-132
V	p-ClC ₆ H ₄	CH ₃	CH ₃	89.0	145-145.5
VI	3,4-Cl ₂ C ₆ H ₃	CH ₃	CH ₃	77.5	175-175.5
VII	p-NO ₂ C ₆ H ₄	CH ₃	CH ₃	89.0	310 decomp
VIII	p-ClC ₆ H ₄	CH ₃	C ₂ H ₅	73.5	102-102.5
IX	p-ClC ₆ H ₄	C ₂ H ₅	C ₂ H ₅	72.0	94-95

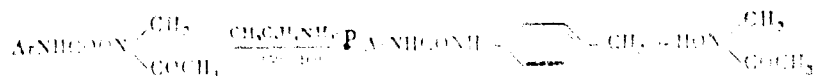
Card 2/4

ACC NR: AP8030369

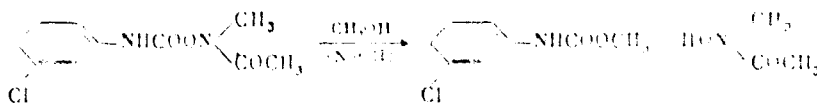
90-100°C, I dissociated into MeNCO (35% yield, mp 73-74°C) and N-methyl-N-acetylhydroxylamine (31.4% yield, bp (0.17 mm) 67-70°C) When heated



In toluidine to 150-160°C, IV decomposed into N-p-tolyl-N'-chlorophenylurea and N-methyl-N-acetylhydroxylamine. The reaction of IV with MeOH went to



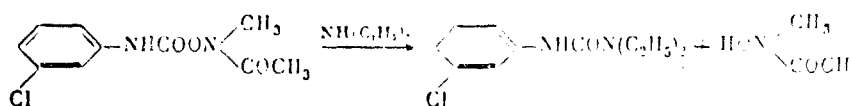
completion in 36 hr without NaOH and in 6 hr in the presence of NaOH, owing to formation of the more nucleophilic methoxide ion. The reaction



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ACC NR: AP8030369

of IV with aniline required boiling for 20 hr, while the reaction of IV with a five-fold excess of the more basic diethylamine required only 2 hours of boiling. These reactions indicate the strong effect of the electro-



negative acyl group in herbicidal O-carbamyl-N-acyl-N-alkylhydroxylamines on the mobility of the carbamyl group. Orig. art. has: 1 table.

[WA-50; CPE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: 15Oct67/ ORIG REF: 001/ OTH REF: 009

Card 4/4

ACC NF AP8030551 SOURCE CODE: UR/0079/68/038/008/1763/1766

AUTHOR: Kotovich, B. P.; Zemlyanskiy, N. I.

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

TITLE: Trithiophosphates. II. Reactions of O-alkyl trithiophosphate potassium salts with phenols. Mixed dithiophosphates. Disulfides

SOURCE: Zhurnal obshchey khimii, v. 38, no.8, 1968, 1763-1766

TOPIC TAGS: potassium compound, phosphorus compound, organic sulfur compound, dithiophosphate ester, thiophosphate ester

ABSTRACT: At temperatures below 20°C in benzene solution in the presence of HCl, O-alkyl potassium trithiophosphate was allowed to react with phenols to form O-alkyl O-aryl potassium dithiophosphate characterized in Table 1. They are colorless crystals soluble in water, alcohol, and acetone. The alkylation of O-alkyl O-aryl dithiophosphate potassium salts with alkyl halides in aqueous solutions yielded the O-alkyl O-aryl(alkyl) S-alkyl dithiophosphates characterized in Table 2. Diesters of dithiophosphoric acids and their potassium salts were oxidized

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UDC: 547.185

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ACC NR: AP8030551

Table 1.
(RO)(ArO)P(S)SK

No.	R	Ar	Yield, %	Mp, °C
1	C ₂ H ₅	C ₆ H ₅	20	166-168°
2	C ₂ H ₅	n-CH ₂ C ₆ H ₄	28	165-167
3	CH ₃	C ₆ H ₅	18	176-178

Table 2.
(RO)(R'O)P(S)(SR'')

No.	R	R'	R''	Yield, %	d ₄ ²⁰	n _D ²⁰
I	C ₂ H ₅	C ₂ H ₅	C ₂ H ₅	75	1.1754	1.5550
II	C ₂ H ₅	n-CH ₂ C ₆ H ₄	C ₂ H ₅	80	1.1367	1.5518

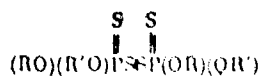
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ACC NR: AP8030551

Table 2. (Cont.)

III	C ₂ H ₅	n-CH ₂ C ₆ H ₄	CH ₂ CN	85	1.2262	1.5645
IV	C ₂ H ₅	C ₂ H ₅	n-C ₃ H ₇	67	1.0642	1.5022
V	C ₂ H ₅	C ₂ H ₅	CH ₂ CN	60	1.1372	1.5094
VI	C ₂ H ₅	C ₂ H ₅	CH ₂ CN	96	1.0981	1.4990
VII	C ₂ H ₅	C ₂ H ₅	C ₂ H ₅ CH ₂	91	1.0991	1.5128
VIII	CH ₃	CH ₂ CHCH ₃	C ₂ H ₅	78	1.1524	1.5236

Table 3.



No.	R	R'	Yield, %	d ₄ ²⁰	n _D ²⁰
IX	C ₂ H ₅	C ₂ H ₅	52	1.3000	1.6108
X	CH ₃	C ₂ H ₅	70	1.3200	1.5785
XI	C ₂ H ₅	C ₁₀ H ₁₁	38	1.0670	1.5206
XII	C ₂ H ₅	C ₃ H ₇	33	1.1998	1.5165

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ACC NR: AP8030551

with iodine in alkaline medium to form bis[O,O-dialkyl(aryl)thiophosphoryl] disulfides, yellow viscous liquids insoluble in water and soluble in alcohols, acetone, ether, and benzene. They are characterized in Table 3. Orig. art. has: 3 tables. [WA-50; CBE No. 37] [PS]

SUB CODE: 07/ SUBM DATE: 12Sep67/ ORIG REF: 004/ OTH REF: 001

Card 4/4

ACC NR: AP8030307 SOURCE CODE: UR/0468/67/001/006/0065/0072

AUTHOR: Kovalenko, S. P.

ORG: Institute of Botany, AN USSR, Kiev (Institut botaniki AN USSR)

TITLE: Certain problems and perspectives in chemical mutagenesis

SOURCE: Tsitologiya i genetika, v. 1, no. 6, 1967, 65-72

TOPIC TAGS: mutation, mutant, chemical mutagen, genetics, molecular biology

ABSTRACT: This article reviews the current state and future directions of research on chemical mutagenesis and is based primarily on western sources. Chemical mutagens are classified according to their chemical properties and structure: 1) alkylating agents (mustards, nitrogen mustards, esters of sulfuric and alkane sulfonic acids, sulfuric alkan-sulfonic epoxides, ethylenamines, diazocompounds, and lactones); 2) nitrosocompounds (nitrous acid, nitrosamines, nitrosamides, nitroso-guanidines); 3) hydroxylamines; 4) peroxides; 5) aldehydes; 6) anti-metabolites (among them the structural analogs of nucleic acid components); 7) certain metallic salts (manganese, aluminum and others); 8) acridine dyes; and 9) other substances. Most active and widely employed agents are 30-40 compounds in the first two groups of alkylating

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ACC NR: AP8030307

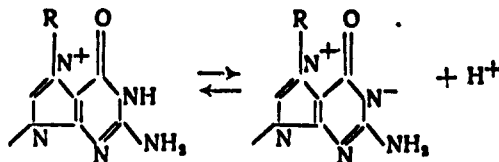
agents and nitrosocompounds. This does not mean that compounds from other groups are less promising, but simply, that they have been less studied. The effect of a given compound or compounds depends on 1) the nature of the genetic material, 2) the chemical action of the mutagen on the genetic material, 3) relation of mutagen activity to chemical structure of its molecules, and 4) unique structures and function of the genetic material, affects the specificity of mutagenic action. The genetic substrate is the nucleic acid molecule (DNA--most organisms, RNA--for certain viruses). Experiments have shown that changes in the DNA molecule lead to observable hereditary changes in the offspring of that organism. Bacteria include altered DNA, usually isolated from mutated bacteria which have been treated with nitrous acid in their genetic makeup. The problem of molecular mechanism is more complex and the best known action mechanism is that of the alkylating agents. The majority of alkylating agents react with one type of nucleotide. Mustard, nitrogen mustard, ethylmethanesulfonate, dimethyl- and diethylsulfate, mileran, ethyleneoxide and propylene diepoxybutane alkylate the N₇ of guanine, the N₁ and N₃ of adenine and the N₁ of cytosine and phosphate groups. Ethyleneimine derivatives also alkylate the N₇ of guanine. The mechanism of this is still not understood. Diazomethane alkylates not only the N₇ of guanine but also the N₁ of adenine and cytosine, the N₁ of thymine, uracil and the O₆ of guanine. Alkylation of N₁ atoms proceeds with formation of hydrogen bonds with nucleotides of the complementary strand of the DNA molecule, which distributes normal functional

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ACC NR: AP8030307

activity in the molecule, yielding "impossible" complimentary pairings of nucleotides for replication of DNA and in the synthesis of mRNA. Therefore alkylation of the N₁ atom of each DNA base produces a deletion in that part of the molecule. Alkylation of guanine at the N₇ produces slight dissociation of NH-groups:

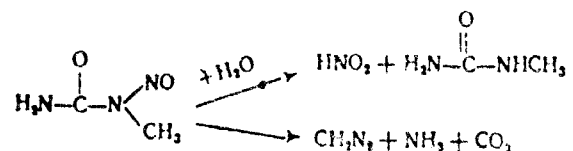


As a result of this, there is an increased possibility for formation of groups capable of complimentary pairing with thymine. Alkylation at the N₇ of guanine strongly suppresses glycosidic linkages, and seven-alkylguanine uncouples at that part of the DNA molecule. This produces deletions in the DNA molecule and suppresses nucleotide synthesis. Short term treatment with diazosalts retain the structural configuration of the DNA strand at the expense of reactivity with nitro-containing compounds. Also treatment with such compounds can produce two or more possible reactions which must be accounted for when determining the action mechanism of chemical mutagens. For example:

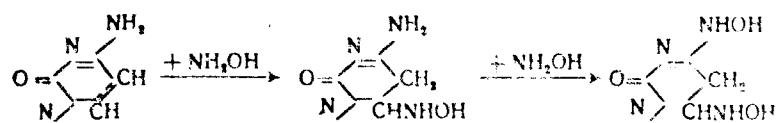
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ACC NR: AP8030307



The action mechanism of hydroxylamine and its derivatives have been studied by many scientists and there is a large literature on the subject. The inactivation of the polypeptide chain is thought to proceed in its initial stages as follows:



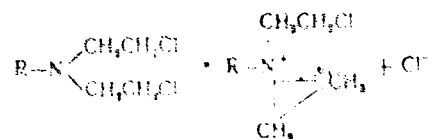
It is possible that the reaction products from the cytosine-hydroxylamine reaction can pair with adenine. Another frequently studied structural analog is the analog of thymine--5-bromouracil. Its structure is close to that of thymine but it is more fully substituted, and when incorporated in place of thymine it does not decrease the viability of bacteriophages. Possibly, its mutagenic effect results from its inclusion into the DNA molecule and its unreliable pairing (with guanine instead of

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ACC NR: AP8030307

adenine) with resulting tautomerization or dissociation. Among problems facing geneticists in the future is the determination of the relationship between mutagenic activity and molecular structure of the mutagen. One must also determine mutagen effects altered by several factors such as solubility in water, cellular permeability to the mutagen, nuclear permeability, toxic effect, reaction capacity, characteristic of reaction products (in reactions of nucleic acids etc.). Short treatment of analyzing the alkylating capacity of a nitrogenous base is then presented. The alkylating capacity of a base, having the general formula

$\text{R}-\text{N}(\text{CH}_2\text{CH}_2\text{Cl})_2$ increases where R is the electron donor. In this case, electron density increases about the nitrogen atom, it becomes more nucleophilic and its chloroethyl groups are more subject to attack; as a result, the following compound is obtained:

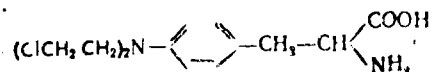


This form is unstable. The presence on the nitrogen of a positive charge weakens the bonds between carbons of the cyclic compound. The introduction of a radical, such as methyl, strengthens, and introduction of a

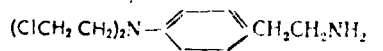
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ACC NR: AP8030307

electron acceptor group (carboxyl, phenyl) weakens the reaction capacity of this class of compounds. Sarcocollin



produces 5% lethal mutations in the X-chromosome of *Drosophila*. If this molecule loses a carboxyl group



the resultant compound produces an average of 14% lethal mutations. Upon removing an amino group from compound F mutagenic activity decreases. Compound G produces 2% lethal mutations. The relationship of structure to mutagenic action has been studied in several series of ethyleneimine derivatives. The mutagenic activity of ethyleneimines is related to its cellular penetration strength. Determining action mechanisms and events following contact of chromosomes with mutagens depends on a fuller understanding of chromosome structure and chemistry, which is another goal for future genetics research. Mutagens affect different parts of chromosome differently. Studies of the effects of phage T on chromosomes show that some parts of the chromosome are much more sensitive to mutagens than others. Many scientists have attempted to compare the joining areas of a chromosome in which the mutation frequency at one locus is one hundred times higher than that at another locus.

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ACC NR: AP8030307

Activity of any mutagen also depends upon: 1) the age of the organism, 2) type of differentiation in given cell, and 3) the concentration of one or another metabolite in a cell. It is possible that other factors, as yet unstudied, also influence mutagen effectiveness. Orig. art. has: 7 formulas. [WA-50; CBE No. 37] [LP]

SUB CODE: 06/ SUBM DATE: 08Apr67/ ORIG REF: 005/ OTH REF: 046

Card 7/7

ACC NR:

AP8030565

SOURCE CODE: UR/0079/68/038/008/1881/1884

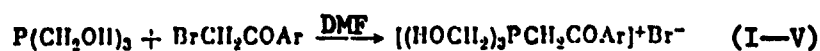
AUTHOR: Kozlov, E. S.; Sedlov, A. I.; Kirsanov, A. V.

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

TITLE: 1-Phospha-3,5-dioxa-4-arylbicyclo[2.2.1]heptanes

SOURCE: Zhurnal obshchey khimii, v. 38, no. 8, 1968, 1881-1884

TOPIC TAGS: alkylphosphonium salt, cyclization, heptane

ABSTRACT: Colorless, prismatic, water-soluble aroylmethyltrimethylol-phosphonium bromides (I—V) were synthesized by adding trimethylol-phosphine to the corresponding α -bromomethyl aryl ketones in dimethylformamide.

Card

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UDC: 547.72

ACC NR:

AP8030565

Table 1

Aroylmethyltrimethylolphosphonium bromides
 $[(HOCH_2)_3PCH_2COC_6H_4R]^+ Br^- \quad (I—V)$

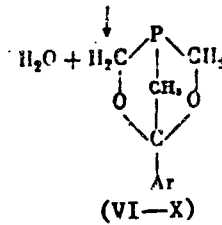
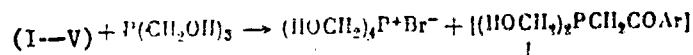
No.	R	% Yield	Mp
I	H	92	100—101° (acetone)
II	p-Cl ₂	93	88—90 (iso-PrOH)
III	p-Br	88	124—125 (MeCN)
IV	p-Cl ₂ O	75	115—116 (MeCN)
V	p-NO ₂	94	118—120 (MeCN)

When I—V were treated with trimethylolphosphine, transphosphonation and cyclization occurred, with the formation of stable, crystalline, unpleasantly smelling 1-phospha-3,5-dioxa-4-arylbicyclo[2.2.1]heptanes (VI—X).

Card

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ACC NR: AP8030565

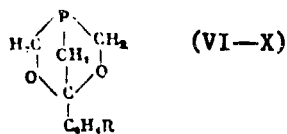


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ACC NR: AP8030565

Table 2

1-Phospha-3,5-dioxa-4-arylbicyclo[2.2.1]heptanes



No.	R	Yield %	Mp
VI	H	63	72-74° (ether)
VII	p-CH ₃	69	84-86° (ether)
VIII	p-Br	63	128-129° (ether)
IX	p-CH ₃ O	58	71-73° (iso-PrOH)
X	p-NO ₂	88	154-155° (iso-PrOH)

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ACC NR: AP8030505

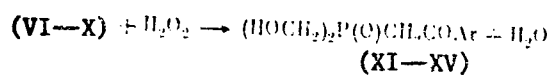


Table 3

Oxides of aroylmethyldimethylolphosphines
(HOCH₂)₂P(O)CH₂CO₂H₂R (XI-XV)

No.	R	% Yield	Mp
XI	H	53	114-115° (dioxane)
XII	p-CH ₃	60	103-104 (acetone)
XIII	p-Br	20	131-133 (MeCN)
XIV	p-CH ₃ O	21	164-166 (ClC ₂ H ₄ Cl)
XV	p-NO ₂	30	160-162 (iso-PROH)

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ACC NR: AP8030565

Water-soluble oxides of aroylmethyldimethylolphosphines (XI-XV) were formed when 7% H₂O₂ was added to VI-X in MeOH at 0°C. Orig. art. has: 3 tables. [WA-50; CBE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: 18Sep67/ ORIG REF: 002/ OTH REF: 006

Card 6/6

ACC NR:

AP8030639

SOURCE CODE: UR/0419/68/000/003/0113/0116

AUTHOR: Kozlov, N. S.; Pak, V. D.; Yelin, Ye. S.

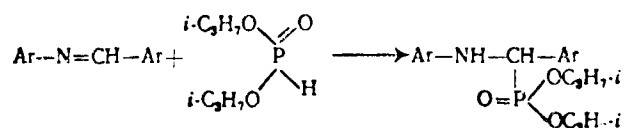
ORG: Institute of Physico-Organic Chemistry, Academy of Sciences BSSR
(Institut fiziko-organicheskoy khimii Akademii nauk BSSR); Perm' Agricultural Institute (Permskiy sel'skokhozyaystvennyy institut)

TITLE: Preparation of aminophosphonates and study of their stability in an alkaline medium

SOURCE: AN BSSR. Vestsi. Seryya khimichnykh navuk, no. 3, 1968, 113-116

TOPIC TERMS: schiff base, aromatic amine, chemical stability

ABSTRACT: Crystalline, water-insoluble diisopropyl aryl(arylamino)methylphosphonates (I—XI) were prepared by adding diisopropyl phosphite to the corresponding Schiff base in EtOH in the presence of HCl. Compounds



Card

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UDC: 547.574+547.241

ACC NR:

AP8030639

Table 1. Diisopropyl aryl(arylamino)methylphosphonates

No.	R	R'	R ²	R ³	R ⁴	Yield, %	Mp, °C
I	H	H	H	H	H	69,9	106-108
II	CH ₃	H	H	H	H	88,3	98-100
III	H	CH ₃	H	H	H	63,8	118-119
IV	NO ₂	H	H	H	H	87,9	162-164
V	H	NO ₂	H	H	H	78,9	118-119
VI	H	Cl	H	H	H	61,8	141-133
VII	H	H	Cl	H	H	61,0	96-97
VIII	H	H	Cl	OH	H	71,2	117,5-119

Card

2/3

ACC NR: AP8030639

Table 1. (Cont.)

IX	Cl	H	H	OH	H	82,2	129-130
X	OCH ₃	H	H	H	H	69,1	98,5-99
XI	H	H	H	H	C ₂ H ₅	46,3	106-108

VII, IX, and X were obtained without heating. The reaction proceeds better in EtOH than in dioxane or benzene probably because methyleneimines are more easily solvated and polarized in EtOH. In a water-alcohol solution of KOH, compounds I, VI, and VII remained stable when left to stand for a month at room temperature or when heated for 5 hr at 50°C. In a water-dioxane solution of NaOH, I and II remained stable when heated for 24 hr at 90°C. In an alcohol solution of KOH, compounds I, VI, and VII partially resinified when heated for 5 hr at 50°C or when left to stand for a month at room temperature. Orig. art. has: 1 table.

[WA-50; CBE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: 27Jul67/ ORIG REF: 002

Card 3/3

ACC NR: AP8031624 SOURCE CODE: UR/0020/68/182/002/0347/0349

AUTHOR: Krivun, S. V.

ORG: Donets Branch, All-Union Scientific Research Institute of Chemical Reagents and High Purity Chemicals (Donetskiy filial Vsesoyuznogo nauchno-issledovatel'skogo instituta khimicheskikh reaktivov i osobo chistykh khimicheskikh veshchestv)

TITLE: Pyranylphosphonium salts and pyranilidenephosphoranes

SOURCE: AN SSSR. Doklady, v. 182, no. 2, 1968, 347-349

TOPIC TAGS: aromatic phosphorus compound, heterocyclic oxygen compound, organic salt

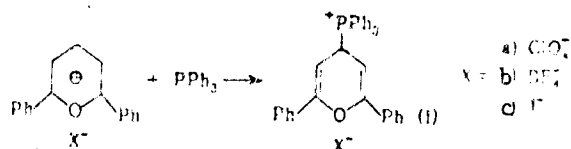
ABSTRACT: Yellow crystalline 2,6-diphenylpyranyltriphenylphosphonium perchlorate (Ia) (99% yield, mp 163.5°C) was synthesized by adding EtOAc to a hot mixture of 2,6-diphenylpyrilium perchlorate and PPh₃ in nitromethane. 2,6-Diphenylpyranyltriphenylphosphonium fluoroborate (Ib), iodide (Ic), benzopyranyltriphenylphosphonium perchlorate (II), xanthyltriphenylphosphonium perchlorate (III), and other salts were similarly synthesized. Black 2,6-diphenylpyranilidenetriphenylphosphorane (IV) was synthesized by adding PhLi in ether (-30°C) to Ia in ether (-65°C). A

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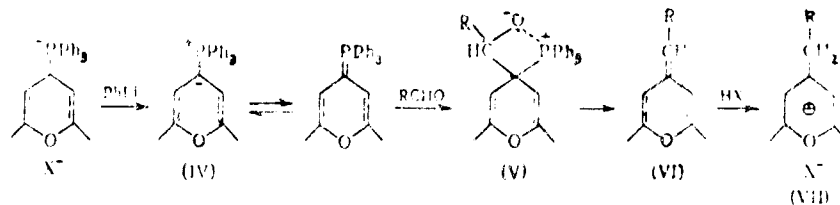
UDC: 547.813

- 94 -

ACC NR: AP8031624



yellow, ether-insoluble betaine (V), which was converted to the corresponding pyran (VI) on boiling in tetrahydrofuran, was formed when PhCHO, piperonal, or MeCHO was added to IV. The reaction of IV with



PhCHO yielded 2,6-diphenyl-4-benzylidenepyran (VIa) (40.4% yield, mp 140°C), the reaction of IV with piperonal yielded 2,6-diphenyl-4-piperonylidenepyran (VIb) (30.0% yield, mp 118—119°C), and 2,6-diphenyl-4-ethylidenepyran (VIc) (42.3% yield, mp 158—159°C) was formed by the reaction of IV with MeCHO. The reaction of VIa with HClO_4

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ACC NR: AP8031624

yielded 2,6-diphenyl-4-benzylpyrilium perchlorate (VIIa) (mp 219°C from HOAc). Presented by Academician A. N. Nesmeyanov, 5 Feb 1968.
[WA-50; CBE No. 37] [17]

SUB CODE: 07/ SUBM DATE: 01Feb68/ ORIG REF: 002/ OTH REF: 003

Card 3/3

ACC NR:

AP8030849

SOURCE CODE: UR/0073/68/034/009/0964/0967

AUTHOR: Lyalikov, Yu. S.; Kitovskaya, M. I.

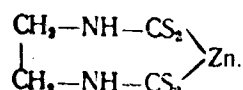
ORG: Institute of Chemistry, MoldSSR (Institut khimii MoldSSR)

TITLE: Phase analysis of Zineb

SOURCE: Ukrainskiy khimicheskiy zhurnal, v. 34, no. 9, 1968, 964-967

TOPIC TAGS: insecticide, fungicide, zinc compound, colorimetric analysis, thiocarbamate, dithiocarbamate

ABSTRACT: A method is described for the determination of zinc ethylene-bisdithiocarbamate (I) in the commercial fungicide



and insecticide Zineb. The commercial product contains Zn in the form of water-soluble compounds, pyridine-soluble (compound I); and acid soluble compounds (ZnS and ZnO) which are also formed during the Zineb production. The total amount of Zn in the sample is determined by ashing the sample at 750--800°C, dissolving the ash in 0.1N HCl, extracting Zn by dithizone solution in CCl₄, and determining the Zn content in the

Card

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UDC: 543

ACC NR:

AP8030849

extract colorimetrically. Zn in the water-, pyridine-, and acid-soluble compounds is determined by dissolving the sample in water, removing by filtration the undissolved precipitate, dissolving the precipitate in pyridine, removing by filtration the pyridine-insoluble residue, and dissolving the residue in HCl solution. Zn in the water, pyridine, and acid solutions is determined by known colorimetric methods. Results of the analysis of Zineb samples are shown in the table.

Table 1. Analysis of Zineb specimens

Specimen No.	Zn content, %				Zineb in the sample	Zineb by the total Zn content
	Total	Water-soluble	Acid-soluble	Zineb by difference		
1	17.5	0.1	1.5	15.9	67.3	74.0
	17.4	0.1	1.5	15.8	66.8	73.6
2	18.5	0.1	1.6	16.8	71.1	78.3
	18.3	0.1	1.5	16.7	70.6	77.4
3	21.0	—	14.0	7.0	29.6	88.8
	21.0	—	13.8	7.2	30.5	88.8
4	20.2	0.2	2.0	17.4	73.6	85.4
	20.3	0.2	2.6	17.5	74.0	85.9
5	21.1	0.5	5.1	15.5	65.6	89.2
	21.0	0.5	5.1	15.4	65.1	88.8

Orig. art. has: 4 tables.

[WA-50; CBE No. 37] [PS]

SUB CODE: 07/ SUBM DATE: 14May68/ ORIG REF: 004/ OTH REF: 003

Card

2/2

ACC NR: AP8029607

SOURCE CODE: UR/0249/68/024/005/0012/0014

AUTHOR: Mamedov, Sh.; Mamedov, E. Sh.; Agarcnov, A. B.; Avarasyan, M.A.; Eminova, Z. T.

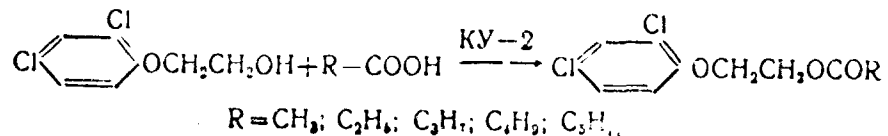
ORG: INKhP

TITLE: Synthesis of esters of 2,4-dichlorophenoxyethanol

SOURCE: AN AzerbSSR. Doklady, v. 24, no. 5, 1968, 12-14

TOPIC TAGS: chlorinated organic compound, alkaryl ether, dichlorophenoxyethanol derivative

ABSTRACT: In a search for new physiologically active compounds and to study the relationship between the structure and physiological activity, five new esters of 2,4-dichlorophenoxyethanol (I) were synthesized by the esterification of I with carboxylic acids at 80-85°C in the presence of the cation-exchanger KU-2. The reaction proceeds in

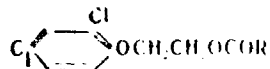


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ACC NR: AP8029607

benzene solution with a constant removal of H₂O or in toluene in the

Table 1



No.	R	Bp. °C/mm	n_D^{20}	d_4^{20}	Yield
I	CH ₃	152-1.5	1.5008	1.3316	61.0
II	C ₂ H ₅	161-2.2	1.5240	1.2824	61.0
III	C ₃ H ₇	182-5.0	1.5221	1.2476	87.0
IV	C ₄ H ₉	178-3	1.5327	1.2192	74.0
V	C ₅ H ₁₁	184-1	1.5145	1.1918	66.6

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ACC NR: AP8029607

presence of catalytic amounts of sulfuric acid. The new esters are characterized in the table. Presented by Academician of the AN AzerbSSR R. G. Ismaylov. [WA-50; CBE No. 37][PS]

SUB CODE: 07/ SUBM DATE: 26Sep67/ ORIG REF: 004/ OTH REF: 001

Card 3/3

ACC NR: AP8030548

SOURCE CODE: UR/0079/68/038/008/1754/1756

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

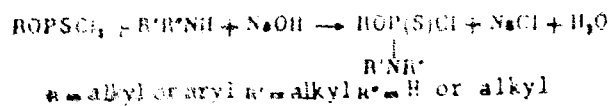
ORG: All-Union Scientific Research Institute of Chemicals for Plant Protection (Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh sredstv zashchity rasteniy)

TITLE: Amides of O-alkyl- and O-arylchlorothiophosphoric acids

SOURCE: Zhurnal obshchey khimii, v. 38, no. 8, 1968, 1754-1756

TOPIC TAGS: chlorinated organic compound, phosphate ester, thiophosphate ester

ABSTRACT: A series of the title amides was synthesized by a new method which involves the reaction:



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UR: 567.185

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The reaction takes place at -5 to -15°C in the presence of an equimolar

Table 1.

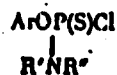


N	Compound	Yield, %	Bp, °C (mm)	d ₄ ²⁰	n _D ²⁰
1	(C ₁₁ H ₂₃ O)(C ₂ H ₅ NH)PSCI	69.7	68*(0.5)	1.2810	1.5099
2	(C ₁₁ H ₂₃ O)(C ₃ H ₇ NH)PSCI	71.2	77 (0.45)	1.2041	1.5045
3	(C ₃ H ₇ O)(C ₂ H ₅ NH)PSCI	90.1	89 (0.3)	1.1372	1.4950
4	(C ₃ H ₇ O)(iso-C ₂ H ₅ NH)PSCI	87.9	90 (0.4)	1.1331	1.4935
5	(C ₃ H ₇ O)(C ₃ H ₇ NH)PSCI	81.9	96 (0.8)	1.1491	1.4925
6	(C ₃ H ₇ O)(iso-C ₃ H ₇ NH)PSCI	80.8	88 (0.45)	1.1403	1.4910
7	(2-ClC ₂ H ₄ O)(C ₂ H ₅ NH)PSCI	50.9	105 (0.6)	1.3812	1.5200
8	(2-ClC ₂ H ₄ O)(C ₃ H ₇ NH)PSCI	51.2	107 (0.6)	1.3385	1.5215
9	(2-ClC ₂ H ₄ O)(C ₂ H ₅ NH)PSCI	64.3	96 (0.2)	1.2921	1.5170
10	(2-ClC ₂ H ₄ O)(iso-C ₂ H ₅ NH)PSCI	61.8	98 (0.3)	1.2791	1.5139
11	(2-ClC ₂ H ₄ O)(C ₃ H ₇ NH)PSCI	71.8	118 (0.45)	1.2471	1.5120
12	(2-ClC ₂ H ₄ O)(iso-C ₃ H ₇ NH)PSCI	68.9	105 (0.25)	1.2499	1.5130

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ACC NR: AP8030548

Table 2.



N	Compound	Yield, %	Bp, °C (mm)	d ₄ ²⁰	n _D ²⁰
1	(C ₈ H ₁₇ O)(C ₂ H ₅ NH)PSCI	60.2	105-107*(0.2)*	—	—
2	(C ₈ H ₁₇ O)(C ₃ H ₇ NH)PSCI	74.9	123-125 (0.26)	1.2649	1.5670
3	(C ₈ H ₁₇ O)(C ₂ H ₅ NH)PSCI	80.5	118-120 (0.15)	1.2310	1.5508
4	(C ₈ H ₁₇ O)(iso-C ₂ H ₅ NH)PSCI	66.4	110-112 (0.35)	1.2351	1.5575
5	(C ₈ H ₁₇ O)(C ₃ H ₇ NH)PSCI	75.7	132-135 (0.3)	1.2244	1.5550
6	(C ₈ H ₁₇ O)(iso-C ₃ H ₇ NH)PSCI	65.2	115-119 (0.15)	1.1992	1.5514
7	(C ₈ H ₁₇ O)(C ₂ H ₅) ₂ NPSCI	71.2	104-107 (0.28)	1.2651	1.5640
8	(C ₈ H ₁₇ O)(C ₃ H ₇) ₂ NPSCI	83.5	113-116 (0.25)	1.2048	1.5523
9	(4-ClC ₂ H ₄ O)(C ₂ H ₅ NH)PSCI	71.4	130-132 (0.15)	1.3206	1.5685
10	(2,4-Cl ₂ C ₂ H ₄ O)(C ₂ H ₅ NH)PSCI	62.3	132-135 (0.15)	1.4048	1.5780
11	(2,4,5-Cl ₃ C ₂ H ₄ O)(C ₂ H ₅ NH)PSCI	69.7	138-140 (0.18)	1.4992	1.5875

* Mp 22-23°.

amount of 20% aqueous NaOH solution. The amides are characterized in tables 1 and 2. Orig. art. has: 2 tables. [WA-50; CBE No. 37] [PS]

SUB CODE: 07/ SUBM DATE: 10Aug67/ ORIG REF: 001/ OTH REF: 008

Card 3/3

ACC NR: AP8030549

SOURCE CODE: UR/0079/68/038/008/1756/1758

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

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

TITLE: Salts of O-alkyl amidothiophosphate esters

SOURCE: Zhurnal obshchey khimii, v. 38, no. 3, 1968, 1756-1758

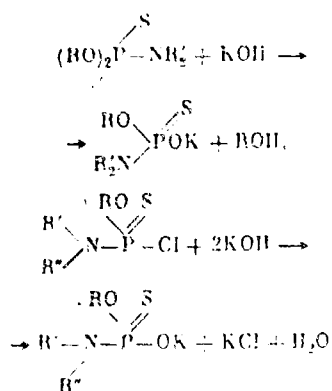
TOPIC TAGS: organic amide, phosphate ester, thiophosphate ester, potassium compound

ABSTRACT: Potassium salts of amidothiophosphate esters are used in the production of physiologically active compounds. There are two known methods of the preparation of potassium salts of amidothiophosphate ester:

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UDC: 547.185

ACC NR: AP3030549



The 12 potassium salts of mixed amidothiophosphate esters (shown in the table) were obtained by the reaction of O-alkyl N,N-dialkylamidothiophosphoric chlorides with KOH at 20-70°C in an aqueous-alcohol

No.	Compound	% Yield	Mp, °C
1	(C ₂ H ₅ O)(CH ₃)NIPSO ₂ K	67.3	78-80°
2	(C ₂ H ₅ O)(C ₂ H ₅)NIPSO ₂ K	76.4	124-126
3	(C ₂ H ₅ O)(C ₂ H ₅)NIPSO ₂ K	73.1	108-110
4	(C ₂ H ₅ O)(isoc ₂ H ₅)NIPSO ₂ K	83.4	138-140
5	(C ₂ H ₅) ₂ (C ₂ H ₅)NIPSO ₂ K	78.7	188-190

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ACC NR: AP8030549

6	(C ₂ H ₅ O)(tscC ₄ H ₉ NH)PSOK	87	172-174
7	(C ₂ H ₅ O)(CH ₃) ₂ NPSOK	69.2	169-170
8	(C ₂ H ₅ O)(C ₂ H ₅) ₂ NPSOK	75.4	163-165
9	(CH ₃ O)(CH ₃ NH)PSOK	55.2	88-90
10	(CH ₃ O)(C ₂ H ₅ NH)PSOK	69.2	156-158
11	(C ₂ H ₅ O)(iscC ₄ H ₉ NH)PSOK	72	130-132
12	(C ₂ H ₅ O)(iscC ₄ H ₉ NH)PSOK	75.2	164-166

solution. The yield and mp of the salts are given in the table.
[WA-50; CBE No. 37][PS]

SUB CODE: 07/ SUBM DATE: 01Sep67/ OTH REF: 005

Card 3/3

ACC NR: AP8031279 SOURCE CODE: UR/0079/68/038/009/2124/2124

AUTHOR: Mashlyakovskiy, L. N.; Ionin, B. I.; Okhrimenko, I. S.;
Petrov, A. A.

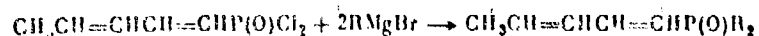
ORG: Leningrad Technological Institute im. Lensovet (Leningradskiy
tekhnologicheskiy institut)

TITLE: Unsaturated phosphonic acids and their derivatives. VI. Syn-
thesis of tertiary phosphine oxides with 1,3-butadiene radicals

SOURCE: Zhurnal obshchey khimii, v. 38, no. 9, 1968, 2124

TOPIC TAGS: phosphonic acid, phosphonate ester, phosphine oxide, alkyl-
phosphine oxide

ABSTRACT: With the exception of diethyl-1,3-pentadienephosphine oxide
(mp 47-48°C), which was obtained in a 57% yield, the reaction of unsat-
urated phosphonic dichlorides with alkylmagnesium bromide:



leads only to the formation of resinous products. A two-stage reaction

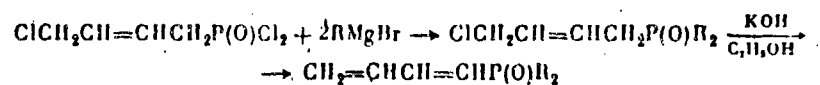
Card 1/2

UDC: 547.341

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ACC NR: AP8031279

of unsaturated phosphonic dichlorides with alkylmagnesium bromide:



yielded diphenyl-1,3-pentadienephosphine oxide (mp 154—155°C),
diethyl-2-methyl-1,3-butadienephosphine oxide (bp 106—107°C/1.5 mm),
and diphenyl-1,3-butadienephosphine oxide (mp 105—107°C) in yields
of 30, 47, and 22%, respectively. [WA-50; CBE No. 37] [PS]

SUB CODE: 07/ SUBM DATE: 25Apr68

Card 2/2

ACC NR: AP8031946 SOURCE CODE: UR/0062/68/000/009/2042/2050

AUTHOR: Mastryukova, T. A.; Shipov, A. E.; Gorbenko, E. B.; Shabanova,
M. P.; Savchenko, K. N.; Kagan, Yu. S.; Kabachnik, M. I.

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

TITLE: A new type of selectively acting organophosphorus insecticides
and acaricides

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 9, 1968, 2042-
2050

TOPIC TAGS: organic phosphorus insecticide, phosphate ester, sorption,
white mouse

ABSTRACT: Compounds Sh-124, Sh-125, Sh-116, Sh-117, Sh-148, Sh-127,
Sh-159, Sh-164, Sh-135, Sh-119, Sh-150, EG-6, EG-9, and EG-7 (see
Table 1) were synthesized by heating chloroacetyl derivatives of the
corresponding amino acids with potassium dialkyldithiophosphate in
alcohol at 60—70°C for 2.5 hr. Compounds EG-4, EG-5, Sh-120, Sh-122,
Sh-140, Sh-141, Sh-162, Sh-166, Sh-138, Sh-126, Sh-154, Sh-157, EG-8,
EG-10, and EG-11 were similarly synthesized from chloroacetyl derivatives

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UDC: 541.69+661.718.1+615.777/79

ACC NR:

AP8031946

Table 1. (Cont.)

Sh-104	C ₂ H ₅	****	90,0	123-124	0,87	0,32
Sh-135	C ₂ H ₅	i-C ₄ H ₉	94,4	66,5-68,5	0,12	Non-toxic
Sh-119	C ₂ H ₅	CH ₂ C ₆ H ₅	91,7	91,5-92	0,30	.
Sh-150	C ₂ H ₅	C ₆ H ₅ SO ₂	85,2	92-92,5	0,057	.
EG-6	i-C ₃ H ₇	H	80,0	77,5-78		
EG-9	i-C ₃ H ₇	CH ₃	80,0	67-68	0,20	.
EG-7	i-C ₃ H ₇	i-C ₄ H ₉	90,0	Oil		
Thiophos					0,001-0,008	0,005-0,015

* Second day. ** Fifth day. *** β -Alanine derivative (II).
**** Isovaline derivative (III)

of amino acid ethyl esters and potassium dialkyldithiophosphate, and Sh-155, EG-33, EG-35, Sh-156, EG-29, and EG-31 were synthesized from chloroacetyl derivatives of amino acid ethyl esters and sodium diethylthiophosphate. Compounds Sh-130, Sh-133, Sh-149, Sh-134, Sh-160, Sh-136, Sh-132, Sh-152, EG-15, and EG-16 were synthesized by adding dicyclohexylcarbodiimide in EtOAc to Sh-116, Sh-117, Sh-148, Sh-127,

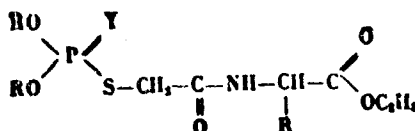
Card

4/9

ACC NR:

AP8031946

Table 2



Lab code	R	R'	Y	Z Yield	Mp, °C	CK ₅₀	
						Green bug*	Spider mite**
EG-4	CH ₃	H	S	31,0	68-69	0,006	0,034
EG-5	CH ₃	CH ₃	S	71,0	82-83	0,012	0,012
Sh-120	C ₂ H ₅	H	S	88,2	58,5-60	0,015	0,015
Sh-122	C ₂ H ₅	CH ₃	S	88,2	55-56	0,018	0,005
Sh-140	C ₂ H ₅	***	S	95,0	Oil	0,0075	0,20
Sh-141	C ₂ H ₅	i-C ₃ H ₇	S	83,2	53,5-54,5	0,17	0,0027
Sh-162	C ₂ H ₅	n-C ₃ H ₇	S	90,0	Oil	0,28	0,0072
Sh-166	C ₂ H ₅	****	S	81,3	50,5-51,5	0,057	0,004
Sh-138	C ₂ H ₅	i-C ₄ H ₉	S	85,2	31-32	0,30	0,015
Sh-126	C ₂ H ₅	CH ₂ C ₆ H ₅	S	90,9	46-47	0,30	0,04

Card

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ACC NR: AP8031946

Table 2. (Cont.)

Sh-154	C ₆ H ₆	C ₂ H ₅ SCH ₃	S	78,0	45,5-46	0,0058	0,045
Sh-157	C ₆ H ₆	CH ₃ CH ₂ OH	S	81,0	47-48	7,0	0,12
EG-8	<i>i</i> -C ₆ H ₅	H	S	52,0	29-30	0,13	Non-toxic
EG-10	<i>i</i> -C ₆ H ₅	CH ₃	S	85,0	35-37	0,02	0,60
EG-11	<i>i</i> -C ₆ H ₅	CH ₂ C ₆ H ₅	S	74,0	59-61		
Sh-155	C ₂ H ₅	H	O	57,7	34-35		
EG-33	C ₂ H ₅	CH ₃	O	40,0	46-47	0,025	0,065
EG-35	C ₂ H ₅	***	O	35,0	Macro		
Sh-156	C ₆ H ₆	<i>i</i> -C ₆ H ₅	O	50,0	35,5-36,5		
EG-29	C ₆ H ₆	<i>i</i> -C ₆ H ₅	O	75,0	41-42		
EG-31	C ₆ H ₆	C ₂ H ₅ SCH ₃	O	76,0	38-40	0,038	0,005
		Thiophos				0,001-0,008	0,005-0,01

* Second day.

** Fifth day.

*** β-Alanine derivative (formula II).

**** Isovaline derivative (formula III).

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ACC NR: AP8031946

Sh-159, Sh-135, Sh-119, Sh-150, EG-9, and EG-7, respectively, and *p*-nitrophenol in EtOAc at 0°C. Dry MeNH₂ was passed through a CHCl₃ solution of the reaction residue and the precipitate was crystallized from CHCl₃ and hexane. Also shown in Tables 1-3 are data concerning

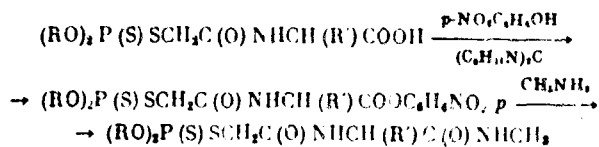
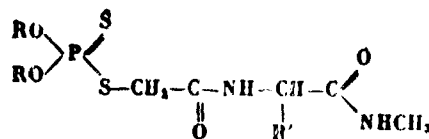


Table 3



Lab code	R	R'	Yield %	Mp, °C	CK ₅₀	
					Green-bug *	Spider mite **
Sh-130	C ₆ H ₅	H	64,6	87-88,5	0,027	0,013
Sh-133	C ₂ H ₅	CH ₃	71,0	114-115	0,052	0,0015

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ACC NR:

AP8031946

Table 3. (Cont.)

Sh-149	C ₂ H ₅	***	72,5	101—102	0,0027	0,0027****
Sh-134	C ₂ H ₅	<i>i</i> -C ₃ H ₇	74,1	137—138	0,01	0,025
Sh-160	C ₂ H ₅	<i>n</i> -C ₃ H ₇	74,1	112—113	3,0	0,012
Sh-136	C ₂ H ₅	<i>i</i> -C ₄ H ₉	76,0	88—89	0,45	0,085
Sh-132	C ₂ H ₅	CH ₂ C ₆ H ₅	76,2	131,5—132	0,20	Non-toxic
Sh-152	C ₂ H ₅	C ₂ H ₅ SCH ₂	57,5	106,5—107,5	0,07	0,046****
EG-15	<i>i</i> -C ₃ H ₇	CH ₃	72,0	114—115	0,4	Non-toxic
EG-16	<i>i</i> -C ₃ H ₇	<i>i</i> -C ₃ H ₇	78,0	135—136	0,27	.
Thiophos					0,001—0,008	0,005—0,015

* Second day. ** Fifth day. *** β -Alanine derivative (formula II). **** Third day.

the contact insecticidal and acaricidal activity of the compounds when sprayed on greenbugs and spider mites. LD₅₀ (per os in white mice) of the compounds in Table 1 ranges from 1200 to 2000 mg/kg and higher. LD₅₀ of the dithio compounds in Table 2 ranges from 500 to 1000 mg/kg.

Card

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ACC NR:

AP8031946

For Sh-122, LD₅₀ is 1000 mg/kg, but for EG-33, LD₅₀ is 290 mg/kg. LD₅₀ of the compounds in Table 3 ranges from 50 to 250 mg/kg. LD₅₀ of Sh-133 is 120 mg/kg. Since in all these compounds, all the changes occur only in the side chain, far from the phosphorylating center as such (the group (EtO)₂P(S)SCH₂C(O)NH remains unchanged), the selectivity of the compounds should be attributed to changes in sorption conditions which depend on the complementarity of the enzyme surfaces (cholinesterase or detoxicating enzymes). Orig. art. has: 3 tables.

[WA-50; CBE No. 37][FT]

SUB CODE: 07/ SUBM DATE: 05Feb68/ ORIG REF: 003/ OTH REF: 010

Card

9/9

- 106 -

ACC NR:

AP8031949

SOURCE CODE: UR/0062/68/000/009/2062/2070

AUTHOR: Medved', T. Ya.; Polikarpov, Yu. M.; Pisareva, S. A.; Matrosov, Ye. I.; Kabachnik, M. I.

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

TITLE: Phosphine oxides and phosphorus acids containing several $=P(O)_2$ groups in the molecule

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 9, 1968, 2062-2070

TOPIC TAGS: phosphinic acid, aliphatic phosphorus compound, aromatic phosphorus compound, aliphatic ester

ABSTRACT: Pentaphenyldimethylenetriphosphine oxide (I) (60% yield, mp 201—203°C), methyl bis(diethoxyphosphinylmethyl)phosphine oxide (II) (85% yield, mp 99—101°C), ethyl bis(diphenylphosphinylmethyl)phosphinate (III) (70% yield, mp 211.5—212°C), ethyl bis(phenylethoxyphosphinylmethyl)phosphinate (IV) (62.5% yield, mp 118—120°C), and ethyl bis(diethoxyphosphinylmethyl)phosphinate (V) (57% yield bp₃ 208—210°C, n_D^{20} 1.4580, d_4^{20} 1.2061) were synthesized by the following reaction:

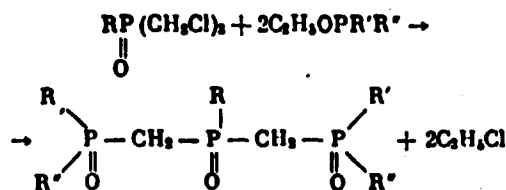
Card

1/4

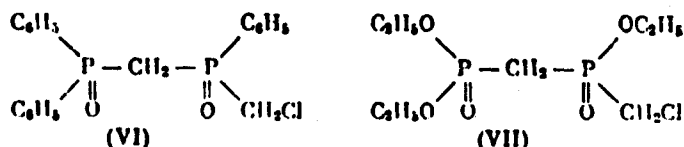
UDC: 542.91+661.718.1

ACC NR:

AP8031949



Chloromethyltriphenylmethylenediphosphine oxide (VI) (30% yield, 231—233°C) and ethyl chloromethyldiethoxyphosphinylmethylphosphinate (VII) (78.7% yield, bp₁ 178—180°C, n_D^{20} 1.4620, d_4^{20} 1.2585) were isolated as intermediates in the synthesis of I and V, respectively.



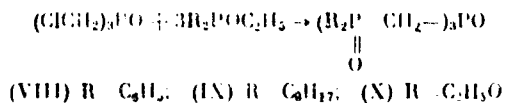
Tris(diphenylphosphinylmethyl)phosphine oxide (VIII) (68% yield, mp 238—239°C), tris(dioctylphosphinylmethyl)phosphine oxide (IX) (42% yield, mp 64—65°C), and tris(diethoxyphosphinylmethyl)phosphine oxide (X) (33% yield, mp 167.5—168°C) were synthesized by the following reaction:

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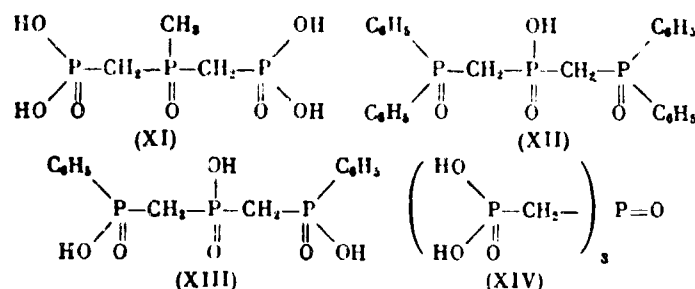
Card

2/4

ACC NR: AP8031949



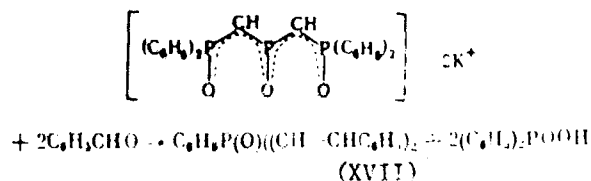
Methylbis(dihydroxyphosphinylmethyl)phosphine oxide (XI) (70% yield), bis(diphenylphosphinylmethyl)phosphinic acid (XII) (66.5% yield, mp 258—260°C), bis(phenylhydroxyphosphinylmethyl)phosphinic acid (XIII) (85% yield, mp 256—258°C), and tris(dihydroxyphosphinylmethyl)phosphine oxide (XIV) (43% yield) were obtained by acid hydrolysis of II, III, IV, and X, respectively. Compounds XI and XIV were converted to their



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ACC NR: AP8031949

p-toluidine salts: XV (68% yield, mp 181—183°C) and XVI (60% yield, mp 203—204°C), respectively. By metallation of I, potassium derivatives were obtained whose anions have a mesomeric structure with the charge



distributed between the O atoms and the C of the methenyl groups. Phenyl-distyrylphosphine oxide (XVII) (30% yield, mp 189—190°C) and diphenylphosphinic acid (30% yield) were obtained by the reaction of the di-K derivative of I with PhCHO. Orig. art. has: 1 figure and 1 table.

[WA-50; CBE No. 37][FT]

SUB CODE: 07/ SUBM DATE: 22Feb68/ ORIG REF: 012/ OTH REF: 010

Card

4/4

ACC NR: AP8031277

SOURCE CODE: UR/0079/68/038/009/2096/2099

AUTHOR: Mel'nikov, N. N.; Khaskin, B. A.; Petruchenko, N. B.

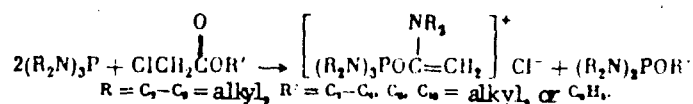
ORG: All-Union Scientific Research Institute of Chemicals for Plant Protection (Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh sredstv zashchity rasteniy)

TITLE: Organic insecticides and fungicides. Reaction of hexaalkyltri-
amidophosphines and tertiary aliphatic phosphines with esters and amides
of chloroacetic acid

SOURCE: Zhurnal obshchey khimii, v. 38, no. 9, 1968, 2096-2099

TOPIC TAGS: organic insecticide, alkylphosphine, organic phosphorus
insecticide, organic amide, acetamide

ABSTRACT: At 60—100°C in a sealed ampul in dry nitrogen atmosphere,
hexaalkyltriamidophosphines reacted with alkyl chloroacetates to form
stable quasiphosphonium salts and alkyl tetraalkyldiamidophosphites:



Card

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UDC: 615.777/776

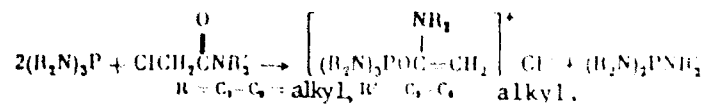
ACC NR:

AP8031277

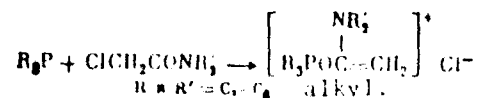
which are characterized in the table. Their structure was confirmed by
IR spectra and by parallel synthesis. The same phosphonium salts are

R	R'	Yield, %	Mp, °C
C ₂ H ₅	C ₂ H ₅	82	97—98
C ₃ H ₇	C ₃ H ₇	55	125—126
iso-C ₄ H ₉	C ₄ H ₉	25	n _D ²⁰ 1.4960

formed in the reaction of hexaalkyltriamidophosphines with chloroacet-
amides:



and by the reaction of trialkylphosphines with chloroacetamides:



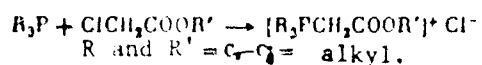
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ACC NR: AP8031277

Unlike the amides, the esters of chloroacetic acid alkylate the phosphines with the formation of carbalkoxymethyltrialkylphosphonium salts:



[WA-50; CBE No. 37] [PS]

SUB CODE: 07/ SUBM DATE: 24Jul67/ ORIG REF: 008/ OTH REF: 003

Card 3/3

ACC NR: AP8031278

SOURCE CODE: UR/0079/68/038/009/2099/2101

AUTHOR: Mel'nikov, N. N.; Mikhaylova, O. B.; Grapov, A. F.

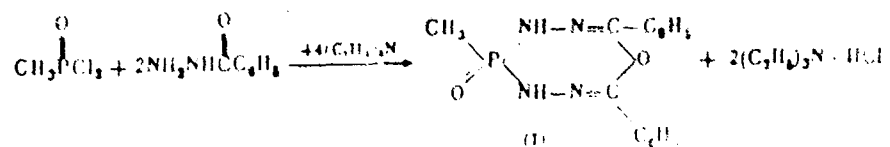
ORG: All-Union Scientific Research Institute of Chemicals for Plant Protection (Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh sredstv zashchity rasteniy)

TITLE: Reaction of alkyl(aryl)phosphonyl dichlorides with benzoylhydrazine

SOURCE: Zhurnal obshchey khimii, v. 38, no. 9, 1968, 2099-2101

TOPIC TAGS: chlorinated organic compound, aliphatic phosphorus compound, hydrazine compound, phosphonic acid derivative

ABSTRACT: At 110°C in toluene solution in the presence of four moles of triethylamine, alkyl(aryl)phosphonyl dichloride reacted with benzoylhydrazine to form compounds I:

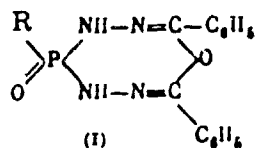


Card 1/1

UDC: 547.241
- 110 -

ACC NR: AP8031278

which are characterized in the table:

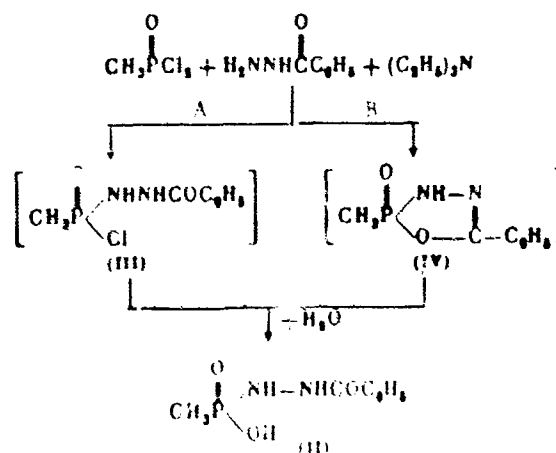


R	Yield, %	mp, °C
Ia CH ₃	88	212—213
Ib iso-C ₃ H ₇	72.3	180
Ic C ₆ H ₅	93.7	245—246

In the presence of one mole of triethylamine the reaction proceeds with the formation of compound II (mp 195—197°C), by one of the two possible mechanisms:

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ACC NR: AP8031278



The intermediate products could not be isolated, probably due to the hydrolysis of compound III. This indicates that the reaction proceeds by mechanism A. [WA-50; CBE No. 37] [PS]

SUB CODE: 07/ SUBM DATE: 25Sep68/ ORIG REF: 001/ OTH REF: 001

Card

1/3

- 111 -

ACC NR: AP8030546

SOURCE CODE: UR/0079/68/038/008/1745/1751

AUTHOR: Mel'nikov, N. N.; Vasil'yev, A. F.; Khaskin, B. A.; Taturina, N. N.; Ivanova, T. M.

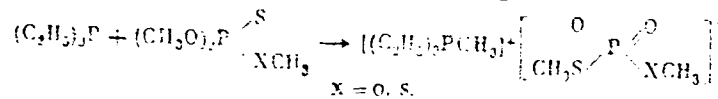
ORG: All-Union Scientific Research Institute of Chemicals for Plant Protection (Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh sredstv zashchity rasteniy)

TITLE: Organic insectofungicides. The kinetics of the reaction of esters of thio- and dithiophosphorus acids with tertiary aliphatic phosphines

SOURCE: Zhurnal obshchey khimii, v. 38, no. 8, 1968, 1745-1751

TOPIC TAGS: kinetic chemical reaction rate, phosphate ester, spectrophotometry

ABSTRACT: The rate constants, entropy factors, and activation energies of the alkylation of Et_3P with trimethyl thio- and dithiophosphates in n-heptane at 25 and 40°C were calculated from the data shown in Figs. 1 and 2. The molar concentration values in Figs. 1 and 2 were determined



Card 1/5

UDC: 615.777/779

ACC NR: AP8030546

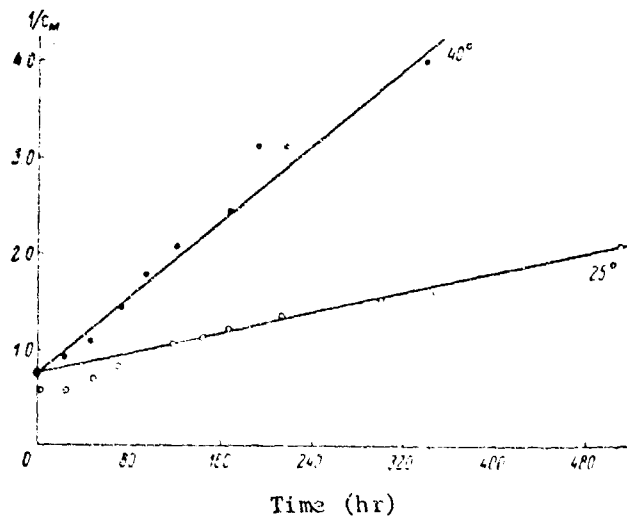


Fig. 1. Time changes of the reciprocal of the molar concentration of trimethyl thiophosphate during alkylation of Et_3P in heptane

Card 2/5

ACC NR: AP8030546

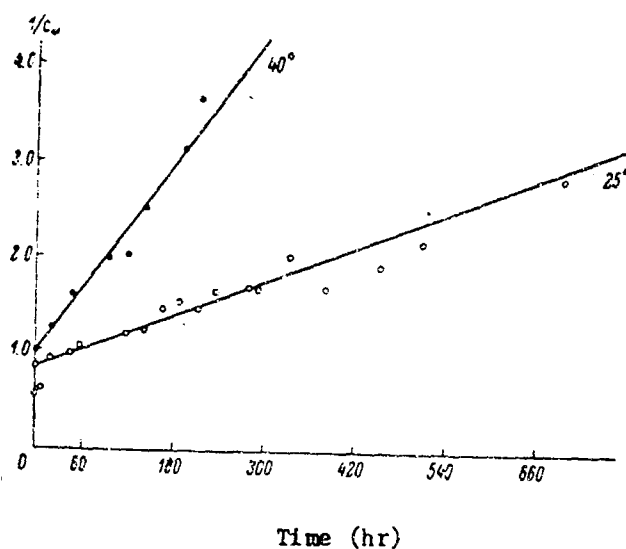


Fig. 2. Time changes of the reciprocal of the molar concentration of trimethyl dithiophosphate during alkylation of Et_3P in heptane

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ACC NR: AP8030546

from Raman spectrophotometric measurements of the intensity of the P = S valence vibrations. For the reaction of trimethyl thiophosphate with Et_3P : $K^{25} = 2.3 \times 10^{-3} \text{ l/mol-hr}$; $S_{k25} = 0.2 \times 10^{-3} \text{ l/(mol-hr)}$; $K^{40} = 9.4 \times 10^{-3} \text{ l/(mol-hr)}$; $S_{k40} = 0.6 \times 10^{-3} \text{ l/(mol-hr)}$; $\Delta E\# = 17 \pm 3 \text{ kg-cal/mol}$, and $\Delta S\# = 46 \pm 8 \text{ cal/(deg-mol)}$. For the reaction of trimethyl dithiophosphate with Et_3P : $K^{25} = 3.3 \times 10^{-3} \text{ l/(mol-hr)}$; $S_{k25} = 0.1 \times 10^{-3} \text{ l/(mol-hr)}$; $K^{40} = 10.5 \times 10^{-3} \text{ l/(mol-hr)}$; $S_{k40} = 0.5 \times 10^{-3} \text{ l/(mol-hr)}$; $\Delta E\# = 14 \pm 4 \text{ kg-cal/mol}$, and $\Delta S\# = 36 \pm 5 \text{ cal/(deg-mol)}$. In Table 1 are shown the rate constants of the alkylation of amines and phosphines at 25°C with methyl thio- and dithiophosphates in non-polar solvents. Thus,

Table 1

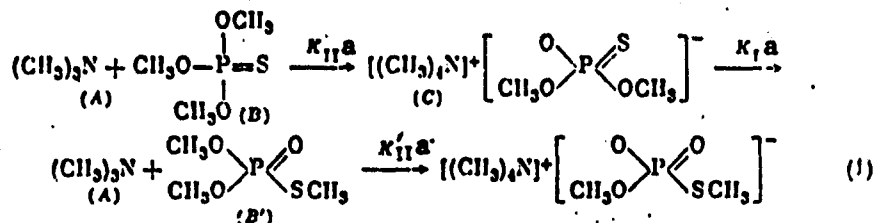
Compd.	Thiophosphate Dithiophosphate	
	$K^{25} [\text{l/mol-hr}] \times 10^3$	
$(\text{C}_2\text{H}_5)_3\text{N}$	0.9	1.4
$(\text{C}_2\text{H}_5)_3\text{P}$	2.3	3.3

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ACC NR:

AP8030546

the alkylation of tertiary phosphines proceeds approximately 2.5 times more rapidly than that of tertiary amines, and for phosphines K^{25} dithio/ K^{25} thio = 1.5 and for amines K^{25} thio = 1.6. The values of K_{II}^a , K_I^a , and K'_{II}^a in the following reactions for the alkylation of Et_3P with trimethyl thiophosphate in MeCN at 25°C were found to be 0.043 l/(mol-hr), 1 l/(mol-hr), and 0.113 l/(mol-hr), respectively. Thus, the alkylation



proceeds much more rapidly in MeCN than in n-heptane. Orig. art. has: 4 figures and 2 tables. [WA-50; CBE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: 16Jun67/ ORIG REF: 010/ OTH REF: 006

Card

5/5

ACC NR:

AP8029428

SOURCE CODE: UR/0409/68/000/004/0751/0755

AUTHOR: Mel'nikova, I. A.; Baskakov, Yu. A.

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

TITLE: Herbicidal derivatives of hydroxylamine. X. Reactions of chloro-sym-triazines with hydroxylamine and its N-substituted derivatives

SOURCE: Khimiya geterotsiklicheskikh sovedineniy, no. 4, 1968, 751-755

TOPIC TAGS: polycondensation, hydrogen bonding, hydroxylamine, organic azine compound

ABSTRACT: 2-Chloro-4-diethylamino-6-N-phenylhydroxylamino-sym-triazine (I) was synthesized in 46% yield by adding 2,4-dichloro-6-diethylamino-sym-triazine in dioxane to an aqueous solution of PhNHOH, dioxane, and NaOAc·3H₂O in N, heating for 3 hr at 40-45°C, and precipitating I (mp 98-99°C) from pentane. 2-Chloro-4-di-n-propylamino-6-N-phenylhydroxylamino-sym-triazine (II) was obtained in 54% yield by adding PhNHOH to an aqueous solution of 2,4-dichloro-6-di-n-propylamino-sym-triazine, dioxane, and NaOAc·3H₂O, heating for 3 hr at 40-45°C, and filtering the muddy-green crystals from pentane and recrystallizing

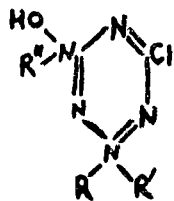
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UDC: 547.873:542.952.6:630.57

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ACC NR: AP8029428



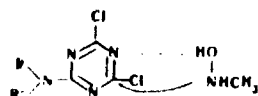
(I: R=R'=Et, R''=Ph; II: R=R'=Pr, R''=Ph; III: R=iso-Pr, R'=H, R''=Me; IV: R=Et, R'=H, R''=Me; V: R=iso-Pr, R'=R''=H)

II (mp 103—103.5°C) from petroleum ether. 2-Chloro-4-isopropylamino-6-N-methylhydroxylamino-sym-triazine (III) was prepared in 70% yield by adding 2,4-dichloro-6-isopropylamino-sym-triazine in dioxane to a NaHCO₃-neutralized aqueous solution of MeNHOH·HCl at 0°C. After 1 hr the lilac-colored III was filtered and washed with petroleum ether. Compound III liberates HCl from 40 to 150°C and decomposes at 265—275°C. 2-Chloro-4-ethylamino-6-N-methylhydroxylamino-sym-triazine (IV) was obtained in 50% yield from 2,4-dichloro-6-ethylamino-sym-triazine, proceeding as for III, and filtering IV from benzene. Compound IV liberates HCl from 70 to 170°C and resinifies at 300°C. 2-Chloro-4-isopropylamino-6-hydroxylamino-sym-triazine (V) was synthesized in 40% yield from 2,4-dichloro-6-isopropylamino-sym-triazine, proceeding as for III. Compound V foams at 115—120°C and liberates HCl at

Card 2/3

ACC NR: AP8029428

120—140°C. The formation of I—V proceeds by a nucleophilic attack of amine N and by the interaction of the free hydroxyl with the heterocyclic N with the formation of an intermolecular hydrogen bond. The behavior



of III—V from 40 to 150°C is due to HCl - catalyzed thermal linear polycondensation. In the presence of small amounts of H₃PO₄, the



condensation proceeds at room temperature. Orig. art. has: 1 figure.

[WA-50; CBE No. 37]{FT}

SUB CODE: 07/ SUBM DATE: 09Jul66/ ORIG REF: 004/ OTH REF: 006

Card

3/3

ACC NR:

AP8030500

SOURCE CODE: UR/0426/68/021/006/0509/0514

AUTHOR: Midzhoyan, A. L.; Afrikyan, V. G.; Nonezyan, N. G.; Pirdzhanov, L. Sh.; Adshibikyan, A. S.; Pogosyan, A. V.

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

TITLE: Studies in the realm of the synthesis of benzodioxane derivatives III. Some amides and amines of the benzodioxane series as possible adrenolytic substances

SOURCE: Armyanskiy khimicheskij zhurnal, v. 21, no. 6, 1968, 509-514

TOPIC TAGS: dioxane, amine salt, adrenolytic drug

ABSTRACT: 2-(Alkyl-, benzyl-, and p-alkoxybenzylammonomethyl)-1,4-benzodioxanes (I—XIII) were synthesized to study their sympatholytic and adrenolytic properties in tests on narcotized cats and rats. Compounds I—XIII were obtained by boiling the corresponding amides (XIV—XXVI) with LiAlH_4 for 8—10 hr and distilling I—XIII in vacuo. Compounds XIV—XIX were synthesized by adding alkylamine to a solution of 1,4-benzodioxane-2-carboxylic acidchloride (XXVII) in benzene, and XX and XXI—XXVI were prepared by boiling benzylamine and the corresponding

Card

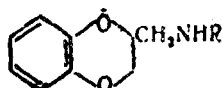
1/4

UDC: 541.69

ACC NR:

AP8030500

Table 1.



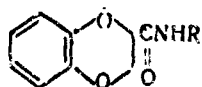
No.	R	Yield	Mp, °C/mm	Mp of salts, °C		
				HCl	MeI	EtI
I	CH ₃	78,0	127--130/3	152--161	131--133	177--180
II	C ₂ H ₅	80,9	120--122/3	165--167	124--125	155--157
III	C ₃ H ₇	82,9	130--133/3	187--188	165--167	184--186
IV	iso-C ₃ H ₇	76,8	141--143/3	184--186	115--116	211--212
V	C ₄ H ₉	84,2	145--147/5	212--214	119--122	189--190
VI	iso-C ₄ H ₉	72,0	153--155/3	155--157	196--198	205--206
VII	C ₆ H ₅ CH ₂	84,3	176--177/2	185--186	195--196	176--178
VIII	CH ₃ OC ₆ H ₄ CH ₂	75,3	220--222/2	170--172	198--200	202--204
IX	C ₆ H ₄ OC ₆ H ₄ CH ₂	78,9	226--228/2	178--179	151--152	181--182
X	C ₆ H ₄ OC ₆ H ₄ CH ₂	82,8	232--233/2	160--161	174--176	150--152
XI	iso-C ₃ H ₇ OC ₆ H ₄ CH ₂	69,2	227--228/2	166--167	185--187	203--204
XII	C ₆ H ₄ OC ₆ H ₄ CH ₂	85,5	240--241/2	165--166	184--185	195--196
XIII	iso-C ₃ H ₇ OC ₆ H ₄ CH ₂	81,2	235--236/2	175--176	193--199	200--210

Card

2/4

ACC NR: AP8030500

Table 2.



No.	R	% yield	Mp, °C
XIV	CH ₃	98,2	111-112
XV	C ₂ H ₅	93,5	71-73
XVI	C ₃ H ₇	94,5	50-51
XVII	iso-C ₃ H ₇	92,0	70-72
XVIII	C ₄ H ₉	93,0	45-47
XIX	iso-C ₄ H ₉	91,4	58-61
XX	C ₆ H ₅ CH ₂	89,9	129-130
XXI	CH ₂ OC ₆ H ₄ CH ₃	76,9	123-124
XXII	C ₆ H ₄ OC ₆ H ₄ CH ₃	75,6	92-93
XXIII	C ₆ H ₄ OC ₆ H ₄ CH ₂	74,1	89-90
XXIV	iso-C ₆ H ₄ OC ₆ H ₄ CH ₂	72,9	85-86
XXV	C ₆ H ₄ OC ₆ H ₄ CH ₃	66,7	94-95
XXVI	iso-C ₆ H ₄ OC ₆ H ₄ CH ₂	76,4	73-74

Card 3/4

ACC NR: AP8030500

p-alkoxybenzylamines with XXVII in benzene for 5-6 hr. Compounds I-XIII (iv 5-20 mg/kg) displayed considerable adrenolytic activity, sharply reduced hypertension, the tonus of the cat nictitating membrane, and contraction of the isolated rat *vas deferens* after administration of adrenalin (iv 5 mg/kg) and stimulation with electric current. Compounds X-XII and the methiodide salts of III-V displayed maximum adrenolytic activity. Quaternary salts displayed briefly acting sympatholytic properties, and hydrochlorides showed no activity. Orig. art. has: 2 tables.

[WA-50; CBF No. 37] [FT]

SUB CODE: 07/ SUBM DATE: 03May67/ ORIG REF: 002. CTR REF: 003

Card 4/4

ACC NR: AP8030433

SOURCE CODE: UR/0062/68/000/008/1792/1797

AUTHOR: Minich, D.; Rizpolozhenskiy, N. I.; Akamsin, V. D.

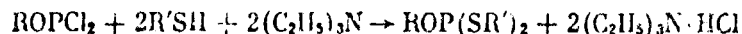
ORG: Institute of Organic and Physical Chemistry im. A. Ye. Arbuzov, Academy of Sciences SSSR (Institut organicheskoy i fizicheskoy khimii Akademii nauk SSSR)

TITLE: Esters of thio acids of trivalent phosphorus. VI. O-alkyl S,S-dialkyl dithiophosphites

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 8, 1968, 1792-1797

TOPIC TAGS: phosphorous acid, organic phosphorus compound, organic sulfur compound, phosphite ester, thiophosphate ester

ABSTRACT: At -10 to -15°C in petroleum ether, alkyl dichlorophosphites reacted with mercaptans to form the O-alkyl S,S-dialkyl dithiophosphites (I)



characterized in Table 1. At 140—150°C, compounds I add S or Se to form O-alkyl S,S-dialkyl trithiophosphates or O-alkyl S,S-dialkyl dithioselenophosphates (III). Oxidation of compounds I with N₂O₄ gave O-alkyl

Card 1/4

UDC: 542.91+661.718.1

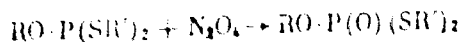
ACC NR: AP8030433

Table 1.

RO·P(SR')₂

R	R'	Bp, °C (mm)	²⁰ _n ^D	²⁰ _d ⁴	Yield, %
CH ₃	C ₂ H ₅	48-50(0.045)	1.5415	1.0971	68.4
CH ₃	C ₃ H ₇	59.5-60(0.07)	1.5302	1.0560	72.5
CH ₃	iso-C ₃ H ₇	45-46(0.045)	1.5190	1.0520	74.0
CH ₃	C ₄ H ₉	80.5-81(0.065)	1.5210	1.0263	67.2
CH ₃	iso-C ₄ H ₉	81-85(0.045)	1.5180	1.0203	65.3
C ₂ H ₅	C ₂ H ₅	93-93.5(0.04)	1.5160	1.0086	76.1
C ₂ H ₅	C ₃ H ₇	72-73(0.04)	1.5245	1.0299	85.2
C ₂ H ₅	C ₄ H ₉	81.5-82(0.045)	1.5165	1.0077	81.6

S,S-dialkyl dithiophosphates (IV):



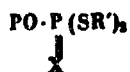
Compounds II, III, and IV are characterized in Table 2. On boiling with

Card

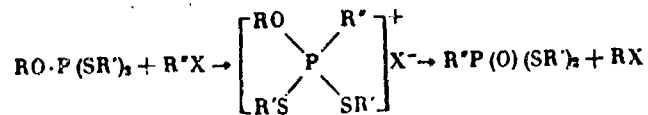
2/4

ACC NR: AP8030433

Table 2.



R	R'	X	Bp, °C (mm)	n_D^{20}	d_4^{20}	Yield, %
CH ₃	C ₂ H ₅	S	61-62(0,045)	1,5743	1,1916	69,8
CH ₃	C ₂ H ₅	S	76,5-77,5(0,04)	1,5550	1,1391	82,5
CH ₃	iso-C ₂ H ₅	S	67-68(0,04)	1,5435	1,1150	82,0
CH ₃	C ₂ H ₅	S	87,5-89(0,06)	1,5417	1,0939	89,0
CH ₃	iso-C ₂ H ₅	S	84-84,5(0,045)	1,5373	1,0890	85,8
C ₂ H ₅	C ₂ H ₅	S	100-101(0,05)	1,5472	1,1098	79,2
CH ₃	C ₂ H ₅	O	62,5-63(0,055)	1,5225	1,1831	71,3
CH ₃	C ₂ H ₅	O	82,5-83,5(0,065)	1,5035	1,0823	82,9
C ₂ H ₅	C ₂ H ₅	Se	109-110(0,04)	1,5558	1,2212	75,2
C ₂ H ₅	C ₂ H ₅	Se	108-109(0,04)	1,5535	1,2212	85,0



Card 3/4

ACC NR: AP8030433

Table 3.



R	R'	Bp, °C (mm)	n_D^{20}	d_4^{20}	Yield, %
CH ₃	C ₂ H ₅	63,5-64(0,045)	1,5160	1,1502	66
CH ₃	C ₂ H ₅	60-61(0,04)	1,5285	1,0893	75
CH ₃	C ₂ H ₅	82,5-83,5(0,01)	1,5160	1,0560	68
C ₂ H ₅ , CH ₃	C ₂ H ₅	117-118(0,065)	1,5963	1,1681	70
C ₂ H ₅ , CH ₃	C ₂ H ₅	132-133(0,04)	1,5720	1,1241	67

alkyl halides, compounds I were converted into the S,S-dialkyl dithio-phosphonates characterized in Table 3. Orig. art. has: 1 figure and 4 tables. [WA-50; CBE No. 37] [PS]

SUB CODE: 07/ SUBM DATE: 25Dec67/ ORIG REF: 011/ OTH REF: 003

Card 4/4

ACC NR:

AP8030555

SOURCE CODE: UR/0079/68/038/008/1776/1779

AUTHOR: Myshkin, A. Ye.; Yevdakov, V. P.

ORG: none

TITLE: Oxidation of diphenyldiethylamino phosphine in decane solution

SOURCE: Zhurnal obshchey khimii, v. 38, no. 8, 1968, 1776-1779

TOPIC TAGS: oxidation rate, organic phosphorus compound, organic nitrogen compound, phosphine oxide derivative

ABSTRACT: The cubic crystals formed in a solution of diphenyldiethylaminophosphine (I) in decane on standing for several days were identified by elemental analysis and IR spectra as diphenyldiethylaminophosphine oxide (II) which is the product of the spontaneous oxidation of I in decane solution. The spontaneous oxidation of I was studied by obtaining UV spectra of I solutions in water, decane, butanol, and dimethylformamide. The spectra were measured immediately after the preparation of the solutions and after standing for various periods. The change with time in the spectra of I in decane and the presence of absorption maximums characteristic for the phosphoryl group indicate that in decane solution I is rapidly oxidized to form II. At room temperature the oxidation of I in butanol and in dimethylformamide proceeds markedly slower than in decane

Cord

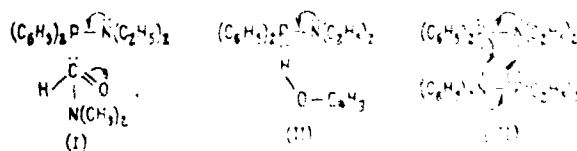
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UDC: 542.943:547.241

ACC NR:

AP8030555

solution. In these polar solvents oxidation of I proceeds at 120-130°C. The low oxidation rate of I in the pure state and in polar solvents is attributed to the existence of coordination complexes I-III:



while in nonpolar solvents the molecules of I are isolated by the solvent molecules. Orig. art. has: 3 figures. [WA-50; CBF No. 37] (18)

SUB CODE: 07/ SUBM DATE: 06Jul67/ ORIG REF: 001/ OTH REF: 001/

Cord

2/2

AUTHOR: Neymysheva, A. A.; Knunyants, I. L. (Academician)

ORG: none

TITLE: Spectral characteristics and reactivity of acyl, phosphoryl, phosphinyl, and sulfonyl halides

SOURCE: AN SSSR. Doklady, v. 181, no. 4, 1968, 888-891

TOPIC TAGS: halide, nmr spectroscopy, phosphorus chloride

ABSTRACT: NMR spectra of ^{31}P and ^{19}F and NQR spectra of ^{35}Cl in various halogenated compounds and the hydrolysis kinetics of these compounds were studied to evaluate the effect of spatial and electron factors on their reactivity. In compounds RC(O)X the substituent bond affects mainly the polarity of the $\text{C}=\text{O}$ group and the basicity of the carbonyl O.

Table 1.
 RC(O)X

R	X=OH		X=Cl		
	pK_a	$\nu_{\text{C=O}}, \text{cm}^{-1}$ (in CCl_4)	$\nu_{\text{Cl}^{\ominus}}, \text{Mc}$	$\Delta\nu_{\text{C=O}}$ ($\text{C}_6\text{H}_5\text{C}\equiv\text{Cl}$)	k, sec^{-1} (-20°C , aq Me_2CO)
CH_3	4.76	1807	28,96	13,7	$1,09 \cdot 10^{-3}$

Card

1/6

UDC: 541.67+543.422.4

ACC NR: AP8029113

Table 1. (Cont.)

CICH_2	2,87	1821	30,44	—	$2,03 \cdot 10^{-3}$
C_6H_5	4,17	1773	20,03	—	$4,17 \cdot 10^{-3}$
$\text{CH}_2=\text{CH}$	4,26	1762	—	14,5	$3,7 \cdot 10^{-3}$
Cl	—	1813	35,01	—	1,02
CH_2O	—	1787	34,22	14,4	$1,2 \cdot 10^{-3}$
CH_2S	—	1766	—	13,3	—
$(\text{CH}_2)_2\text{N}$	—	1745	31,8	30,1	$\sim 1 \cdot 10^{-3}$

In compounds RPOX_2 it affects mainly the basicity of the phosphoryl O.

Table 2.
 RPOX_2

R	X=Cl			X= OC_2H_5 (δ^{\oplus})	
	$\delta_{\text{P=O}} \cdot 10^6$	$\nu_{\text{Cl}^{\ominus}}, \text{Mc}$	$k, \text{M}^{-1} \text{sec}^{-1}$ (aq Me_2CO)	k_{assoc}^{29} ($\text{C}_6\text{H}_5\text{O}^{\ominus}$)	$\nu_{\text{P=O}}, \text{cm}^{-1}$
CH_3	—44,5	20,58 (1)	224	381	1237
CICH_2	—38	27,03 (1)	—	230	1268
C_6H_5	—34	20,70 (1)	—	—	—
$\text{CH}_2=\text{CH}$	—	20,30 (1)	—	—	—
Cl	—2,0	28,96 (1)	very fast	—	—
F	0,0	29,76 (1)	—	—	—
$\text{C}_2\text{H}_5\text{O}$	—6,4	27,10 (1)	4,8	350	1271
$(\text{C}_2\text{H}_5)_2\text{N}$	—	{ 26,10 (1) 27,03 (1)	—	518	1251

Card

2/6

ACC NR: AP8029113

In compounds RSO_2Cl it has little effect since S acts as an electron acceptor.

Table 3.

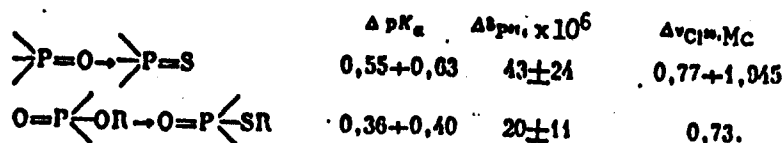
RSO_2Cl

R	ν_{SO} , cm^{-1}	ν_{Cl} , Mc	HCl/ RSO_2Cl in mols/l atm 0.1-1.5	k° , sec^{-1} (aq dioxane)
CH_3	1382	33,23	0,022	14,8
C_6H_5	1385	32,58	0,021	19,2
$\text{CH}_2=\text{CH}$	—	32,82	—	—
Cl	1417	37,72	0,010 (0°)	—
F	1455	39,35	—	—
OC_2H_5	1410	35,60	0,019	7100
$(\text{CH}_3)_3\text{N}$	—	32,12	—	—

For phosphoryl and sulfonyl chlorides an observed decrease in reactivity is due to the filled 3d level of P and S from p--d bonding which hinders a nucleophilic attack. When Cl is replaced by F in POCl_3 and RPOCl_2 , the 31P signal shifts to strong fields and the 35Cl IQR frequency falls, indicating an increase in electron density on P. Acid chlorofluorides hydrolyze hundreds of times faster than acid dichlorides. The following data were obtained for S substitution of O:

Card 3/6

ACC NR: AP8029113



Replacing O with S in PO compounds increases hydrolytic stability by factors of thousands. The importance of the degree of polarization in hydrolysis kinetics is illustrated by the fact that in alkaline hydrolysis the rate constant of fluorophosphonates increases hundred fold. The decrease in the hydrolysis rate of phosphinyl and thiophosphinyl compounds with increasing polarity of solvents is due to an increase in their solvation, resulting in a decrease in activation entropy.

Table 4.

Solvent	$(\text{C}_2\text{H}_5)_2\text{POCl}$			$(\text{C}_2\text{H}_5)_2\text{PSCl}$		
	k° , min^{-1}	E_{act} , kcal/mol	$\lg A$	k° , min^{-1}	E_{act} , kcal/mol	$\lg A$
Isopropyl alcohol	1445	9,84	8,04	2,30	13,2	7,97
Acetone	551	7,40	5,74	0,83	8,45	5,03
Acetonitrile	233	0,01	4,17	0,49	9,03	3,93

Card 4/6

ACC NR: AP8029113

The curves in Fig. 1 are explained by the fact that PSCl_3 has a greater electron density deficit on P than does POCl_3 and forms a more stable

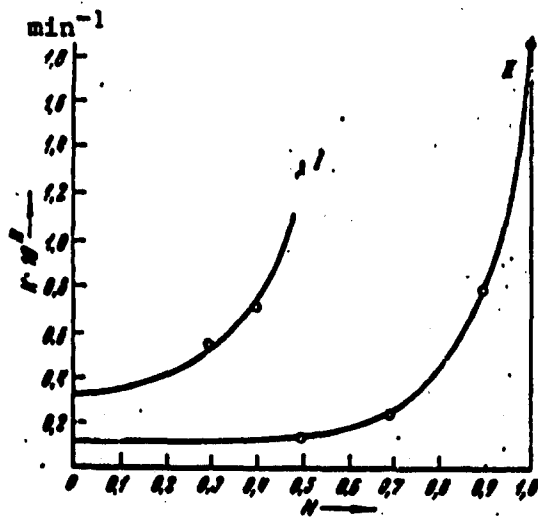


Fig. 1. Alcoholysis rate constant (conc. MeOH 0.5 M) of POCl_3 and PSCl_3 (conc. 0.05 M) in a dioxane-toluene mixture. N is the mol fraction of toluene. I is POCl_3 , at 10°C , $n=5$; II is PSCl_3 , at 20°C , $n=3$

Card 5/6

ACC NR: AP8029113

solvate with dioxane. Orig. art. has: 1 figure and 4 tables.
[WA-50; CBE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: 18Mar68/ ORIG REF: 005/ OTH REF: 015

Card 6/6

ACC NR:

AP8030572

SOURCE CODE: UR/0079/68/038/008/1909/1909

AUTHOR: Nifant'yev, E. Ye.; Furchenko, I. V.; Sokurenko, A. M.

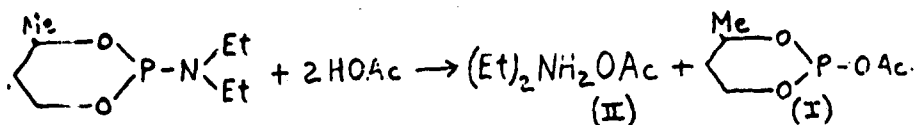
ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet)

TITLE: New data concerning the reaction of amides of trivalent phosphorus acids with carboxylic acids

SOURCE: Zhurnal obshchey khimii, v. 38, no. 8, 1968, 1909

TOPIC TAGS: substituted amide, phosphorous acid, carboxylic acid

ABSTRACT: 1,3-Butylene acetyl phosphite (I) (50% yield, bp(7mm) 110 to 111°C) and diethylammonium acetate (II) (85% yield, mp 56°C) were prepared by allowing 1,3-butylene phosphorous acid diethylamide to react with



acetic acid. 1,3-Butylene phosphorous acid piperidide and HOAc reacted

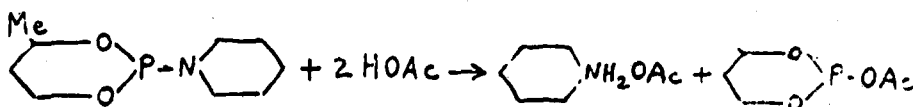
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UDC: 547.26'118

ACC NR:

AP8030572



similarly. With formic acid the reaction yields ammonium formates, acid phosphites, and CO. [WA-50; CBE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: 07Mar68/ ORIG REF: 003/ OTH REF: 001

Card

2/2

ACC NR: AP8030545

SOURCE CODE: UR'0079/68/038/008/1697/1700

AUTHOR: Petrova, L. A.; Bel'tsova, N. N.; Remizov, A. L.; Vasil'yeva, L.M.

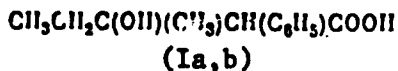
ORG: Institute of Experimental Medicine, Academy of Medical Sciences
SSSR (Institut eksperimental'noy meditsiny Akademii meditsinskikh nauk
SSSR)

TITLE: Substances related to mevalonic acid III. 2-Phenyl-5-deoxy-
mevalonic acid

SOURCE: Zhurnal obshchey khimii, v. 38, no. 8, 1968, 1697-1700

TOPIC TAGS: aliphatic hydroxy carboxylic acid, biosynthesis,
cholesterol

ABSTRACT: A mixture of the diastereoisomers of 2-phenyl-5-deoxymevalonic
acid (2-phenyl-3-methyl-3-hydroxypentanoic acid) (Ia and Ib), a possible
antimetabolite of mevalonic acid in the biosynthesis of cholesterol, was
obtained in 78% yield by an improved version of the Ivanov reaction.

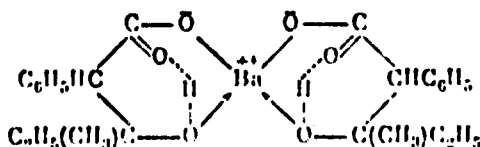


Card 1/3

UDC: 541.63:547.47

ACC NR: AP8030545

A solution of Me Et ketone in benzene was added at 10°C to the Ivanov
reagent (Mg, iso-PrCl, and phenylacetic acid), the mixture was boiled for
10 hr and treated with HCl and ice. The benzene layer was repeatedly
treated with saturated NaHCO₃ to pH8, the cooled aqueous solution was
acidified with HCl to pH2, and the resulting oil was extracted and dried.
The first diastereoisomer (Ia) (mp 86-88°C) was obtained in 81% yield by
alkaline hydrolysis of dibenzylethylenediammonium 2-phenyl-5-deoxyme-
valonate (prepared in 74.5% yield, mp 147-148°C). The second dia-
stereoisomer (Ib) (82.5% yield, mp 105-106°C) was obtained similarly from
the corresponding salt (prepared in 9.5% yield, mp 131.5-132°C). The
sodium salts of Ia (70% yield, mp 171-172°C) and Ib (73% yield, mp 166 to
168°C) were prepared by allowing Ia and Ib to react with a saturated
NaHCO₃ solution. The barium salts of Ia (mp 186-187°C) and of Ib
(mp 178-179°C) were prepared by heating Ia and Ib with freshly pre-
cipitated BaCO₃ in H₂O at 65°C for 4 hr, filtering, and evaporating the
aqueous solution in vacuo. When these salts were treated with EtOH and



Card 2/3

ACC NR: AP8030345

dried at 60°C (12 mm), an amorphous, ether-soluble product was obtained, probably of unstable chelate structure. Orig. art. has: 1 table.

[WA-50; CBE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: 22Sep67/ ORIG REF: 003/ OTH REF: 004

Card 3/3

ACC NR: AP8029422 SOURCE CODE: UR/0409/68/000/004/0729/0731

AUTHOR: Flevachuk, N. Ye.; Baranov, S. N.

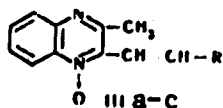
ORG: L'vov Medical Institute (L'vovskiy meditsinskiy institut)

TITLE: Electrophilic substitution in 2,3-dimethylquinoxaline and its N-oxide

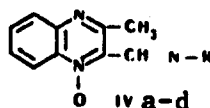
SOURCE: Khimiya geterotsiklicheskih soyedineniy, no. 4, 1968, 729-731

TOPIC TAGS: organic nitroso compound, diazonium salt, quinoxaline derivative

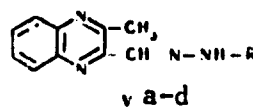
ABSTRACT: The reactions of 2,3-dimethylquinoxaline (I) and its N-oxide (II) with aromatic aldehydes and nitroso and diazo compounds yielded



IIIa R = C₆H₅
IIIb R = p-ClC₆H₄
IIIc R = p-NO₂C₆H₄



IVa R = p-(CH₃)₂NC₆H₄
IVb R = p-(C₂H₅)₂NC₆H₄
IVc R = p-COOHC₆H₄-NH
IVd R = p-C₂H₅OOCC₆H₄-NH



Va R = C₆H₅
Vb R = p-NO₂C₆H₄
Vc R = p-COOHC₆H₄
Vd R = p-C₂H₅OOCC₆H₄

Card 1/3

UDC: 547.8, 543.422, 542, 953.2

ACC NR: AP8029422

compounds III, IV, and V characterized in the table. The reaction of II



Quinoxaline derivatives

Compd	Mp, °C	λ_{max} (m μ) (ref)	% Yield
IIIa	177	245 (4.00); 315 (3.78)	60
IIIb	174	247 (4.12); 285 (3.92); 340 (3.77)	65
IIIc	196	240 (4.15); 275 (3.34); 315 (3.71)	55
IVa	160	245 (3.98); 265 (4.01); 315 (3.88); 445 (3.75)	60
IVb	134	245 (3.94); 265 (3.95); 315 (3.88); 445 (4.03)	68
IVc	268	305 (3.65); 335 (3.65); 405 (3.86); 410 (4.23); 516 (4.00)	58
IVd	188	420 (4.45); 520 (4.34)	62
Va	197	415 (3.82); 600 (3.71)	55
Vb	247	426 (4.50); 490 (3.82)	50
Vc	>270	305 (4.03); 335 (3.92); 412 (4.01); 510 (4.04)	60

Card 2/3

ACC NR: AP8029422

Vd	205	250 (3.99); 310 (3.96); 335 (3.84); 390 (4.22); 416 (4.52); 520 (4.14)	64
----	-----	--	----

with aromatic aldehydes and the reactions of I and II with nitroso compounds proceed on boiling the reaction mixture in methanol in the presence of sodium methoxide. The reactions of I and II with diazonium salts takes place in glacial acetic acid in the presence of HCl. The introduction of the N-oxide group increases the reactivity of quinoxalines. [WA-50; CBE No. 37][PS]

SUB CODE: 07/ SUBM DATE: 02Feb66/ ORIG REF: 004/ OTH REF: 001

Card 3/3

ACC NR: AP8030550

SOURCE CODE: UR/0079/68/038/008/1758/1762

AUTHOR: Protsenk, L. D.; Skul'skaya, N. Ya.

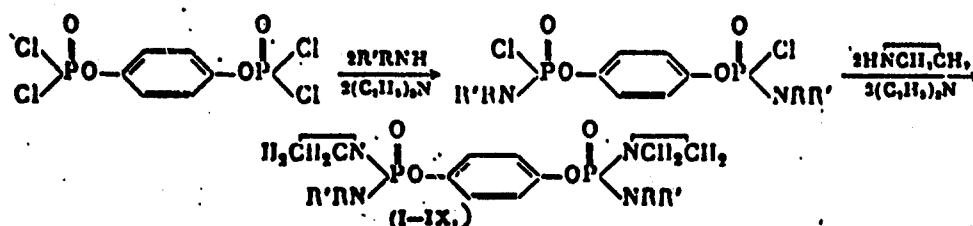
ORG: none

TITLE: Diethylenediaryl(dialkyl)- and triethylenearyl(alkyl)tetramide of p-phenylenediphosphoric acid

SOURCE: Zhurnal obshchey khimii, v. 38, no. 8, 1968, 1758-1762

TOPIC TAGS: substituted amide, phosphoramidate, organic phosphorus compound

ABSTRACT: A series of the title compounds was synthesized by the reactions:

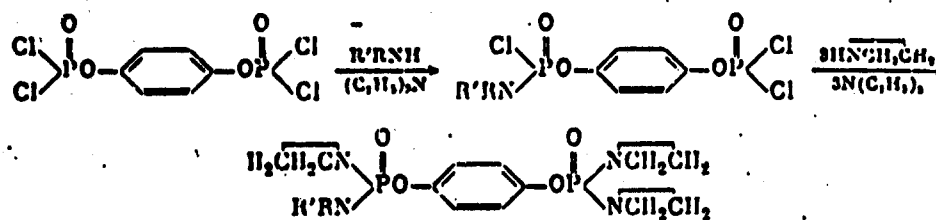


(I) R = C₂H₅, R' = H; (II) R = o-CH₃C₆H₄, R' = H; (III) R = m-CH₃C₆H₄, R' = H;
 (IV) R = p-CH₃C₆H₄, R' = H; (V) R = p-BrC₆H₄, R' = H; (VI) R = p-OC₂H₅, R' = H;
 (VII) R = p-ClC₆H₄, R' = H; (VIII) R = p-FC₆H₄, R' = H; (IX) R = C₆H₅, R' = C₆H₅.

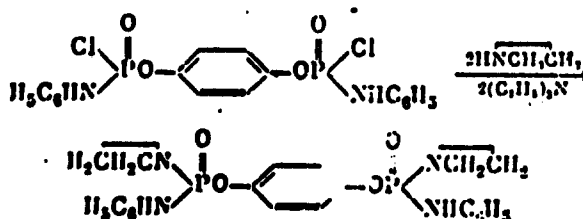
Card 1/4

UDC: 547.185

ACC NR: AP8030550



The first stage of the reaction proceeds in dry benzene at room temperature with standing overnight. In the second stage, ethylenimine is added at a small rate to keep the temperature below 10°C. The structure



Card 2/4

Table 1.

N	R	R'	Yield %	Mp, °C
I	C ₆ H ₅	H	43.8	132-133°
II	o-CH ₃ C ₆ H ₄	H	30.2	108-110
III	m-CH ₃ C ₆ H ₄	H	34.5	110-112
IV	p-CH ₃ C ₆ H ₄	H	60.5	129-130
V	p-BrC ₆ H ₄	H	31.7	130-132
VI	p-C ₆ H ₄	H	38.0	143-145
VII	p-ClC ₆ H ₄	H	34.3	166-167
VIII	p-FC ₆ H ₄	H	44.5	155 (decomp)
IX	C ₆ H ₅	C ₆ H ₅	21.2	133-135

X	C ₆ H ₅	H	43.8	106-108
XI	C ₆ H ₅	C ₆ H ₅	36.0	107-108
XII	CH ₃ CH ₂ Cl	CH ₃ CH ₂ Cl	51.81	87-89

Card

3/4

of the new compounds was confirmed by IR spectra and by parallel synthesis of compound I. The compounds synthesized are characterized in the table. Orig. art. has: 2 figures. [WA -50; CBE No. 37] [PS]

SUB CODE: 07/ SUBM DATE: 24Aug67/ ORIG REF: 002/ OTH REF: 002

ACC NR:

AF8030571

SOURCE CODE: UR/0079/68/038/008/1908/1908

AUTHOR: Pudovik, A. N.; Fayzullin, E. M.

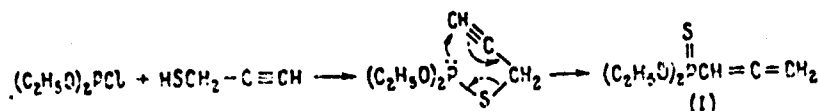
ORG: Kazan State University im. V. I. Ul'yanov-Lenin (Kazanskiy gosudarstvennyy universitet)

TITLE: Thermal rearrangement of the thiopropargyl ester of phosphorous acid

SOURCE: Zhurnal obshchey khimii, v. 38, no. 8, 1968, 1908

TOPIC TAGS: propargyl compound, phosphorous acid, organic phosphorus compound, thiophosphite ester

ABSTRACT: At 10°C in ether solution, thiopropargyl alcohol reacted with diethyl chlorophosphite to form (35%) compound I (bp 59—60°C/1 mm):



Card

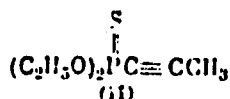
1/2

UDC: 547.26'118:542.952

ACC NR:

AF8030571

At 50°C in the presence of catalytic amounts of sodium alkoxide, compound I undergoes prototropic rearrangement to form (60%) compound II (bp 77—78°C/1 mm):



[WA-50; CBE No 37] [PS]

SUB CODE: 07/ SUBM DATE: 08Jan68

Card

2/2

ACC NR: AP8030558

SOURCE CODE: UR/0079/68/038/008/1788/1791

AUTHOR: Pudovik, A. N.; Nikitina, V. I.; Shakirova, A. M.; Danilov, N. A.

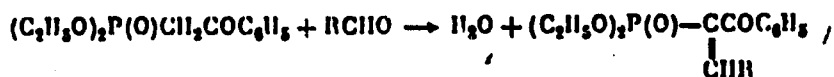
ORG: none

TITLE: The reaction of esters of acetophenonephosphinic acid with aldehydes

SOURCE: Zhurnal obshchey khimii, v. 38, no. 8, 1968, 1788-1791

TOPIC TAGS: phosphinic acid, aromatic aldehyde, aliphatic aldehyde

ABSTRACT: Compounds I—IV were obtained by allowing diethoxyphosphonacetophenone to react with benzaldehyde, p-chlorobenzaldehyde, cinnamaldehyde, and furfural in the presence of piperidine acetate.



In the reaction of diethoxyphosphonacetophenone with p-nitrobenzaldehyde, two products were obtained: V and p-nitrobenzylidenacetophenone (VI)

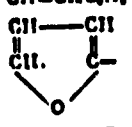
Card 1/3

UDC: 547.341

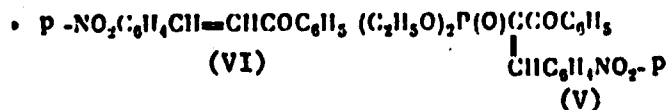
ACC NR: AP8030558

Table 1.



No.	R	Yield %	Bp (p in mm)	n_D^{20}
I	C ₆ H ₅	73.6	194—196° (1)	1.5748
II	C ₆ H ₄ Cl-P	53.0	227—229 (4)	1.5830
III	CH=CHC ₆ H ₅	59.0	209—211 (3)	1.6170
IV		77.1	180—182 (1)	1.5715
V	C ₆ H ₄ NO ₂ -P	44.4	Mp 89.5—91°	—

(7.9% yield, mp 162—164°C).



Card 2/3

ACC NR:

AP8030558

Only β,β,β -trichloroethylidenacetophenone (VII) (79.2% yield, mp 102—103°C) was obtained in the reaction of diethoxyphosphonacetophenone with trichloroacetaldehyde. When diphenoxyphosphonacetophenone was heated with trichloroacetaldehyde and p-nitrobenzaldehyde, only VII (58.6% yield) and VI (71.1% yield), respectively, were obtained.

[WA-50; CBE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: 19Oct67/ ORIG REF: 003

Card

3/3

ACC NR:

AP8031272

SOURCE CODE: UR/0079/68/038/009/2074/2078

AUTHOR: Pudovik, A. N.; Shulyndina, O. S.

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: Addition of dialkyl phosphites to acetylenic aldehydes and ketones

SOURCE: Zhurnal obshchey khimii, v. 38, no. 9, 1968, 2074-2078

TOPIC TAGS: acetylene compound, aliphatic phosphorus compound, aromatic phosphorus compound, phosphonate ester, chlorinated organic compound

ABSTRACT: In the presence of sodium alkoxides, dialkyl phosphites add to acetylenic aldehydes and ketones to form dialkyl α -hydroxyalkyl(aryl)-propargylphosphonates:



Card

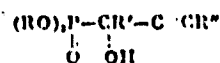
1/3

UDC: 547.341

- 132 -

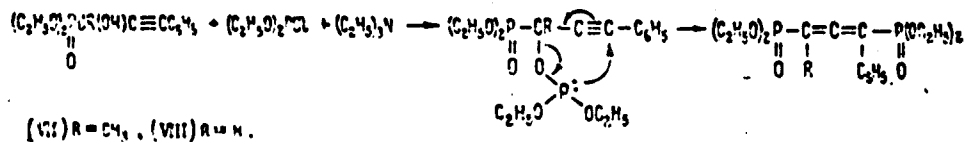
ACC NR: AP8031272

which are characterized in the table. The presence of the triple bond



No.	R	R'	R''	% Yield	mp
I	CH ₃	H	C ₆ H ₅	87	113.0°
II	C ₂ H ₅	H	C ₆ H ₅	66	73.5
III	CH ₃	CH ₃	CH ₃	67	85.5
IV	C ₂ H ₅	CH ₃	CH ₃	12	45.0
V	CH ₃	CH ₃	C ₆ H ₅	37	120.5
VI	C ₂ H ₅	CH ₃	C ₆ H ₅	63	85.0

and CH group was confirmed by IR spectra. The reaction of dialkyl α-hydroxyalkyl(aryl)propargylphosphonates with dialkyl chlorophosphites proceeds with acetylene-allene rearrangement to form the diphosphonallene derivatives VII, bp 179—181°C (0.01 mm) and VIII, bp 164—168°C (0.04 mm):



Card 2/3

ACC NR: AP8031272

The reaction proceeds in ether solution in the presence of triethylamine. [WA-50; CBE No. 37] [PS]

SUB CODE: 07/ SUBM DATE: 27Nov67/ ORIG REF: 004

Card 3/3

ACC NR: AP8031959

SOURCE CODE: UR/0062/68/000/009/2163/2163

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

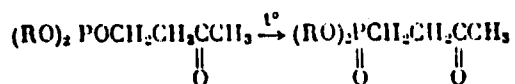
ORG: Institute of Organic and Physical Chemistry im. A. Ye. Arbuzov, Academy of Sciences SSSR (Institut organicheskoy i fizicheskoy khimii Akademii nauk SSSR)

TITLE: Thermal rearrangement of dialkyl 3-ketobutylphosphites

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 9, 1968, 2163

TOPIC TAGS: aliphatic phosphorus compound, alkyl phosphite, phosphite ester, phosphonate ester

ABSTRACT: On heating for 5—10 hr at 160—200°C in a sealed tube in nitrogen atmosphere, the title compounds undergo rearrangement to form phosphonates:



The thermal rearrangement of diethyl 3-ketobutylphosphite and of dibutyl 3-ketobutylphosphite yielded (68%) diethyl γ -ketobutylphosphonate

Card 1/2

UDC: 542.952.1+661.718.1

ACC NR: AP8031959

(bp 75—78°C/0.02 mm) and (62%) dibutyl γ -ketobutylphosphonate
(bp 110—112°C/0.05 mm). [WA-50; CBE No. 37][PS]

SUB CODE: 07/ SUBM DATE: 10Jun68/ ORIG REF: 001/ OTH REF: 001

Card 2/2

ACC NR:

AP8031000

SOURCE CODE: UR/0195/68/009/004/0898/0902

AUTHOR: Samigulin, F. K.; Kafengauz, I. M.; Kafengauz, A. P.

ORG: Vladimir Scientific Research Institute of Synthetic Resins
(Vladimirskiy nauchno-issledovatel'skiy institut sinteticheskikh smol)

TITLE: Catalysis of the transesterification reaction of dialkyl phosphites

SOURCE: Kinetika i kataliz, v. 9, no. 4, 1968, 898-902

TOPIC TAGS: acid catalysis, alkyl phosphite, esterification

ABSTRACT: Dimethyl phosphite (DMP) was allowed to react with polyoxypropylene glycol (PO) at 130°C in a stream of argon. At regular intervals, the degree of completion of the reaction was evaluated from the ratio of the weight of volatile reaction products to theoretical MeOH, and the acidity of the DMP and reaction products was determined by titration with 0.01 N alcoholic KOH. Data from these measurements are shown in Figures 1-4. The reaction was found to be of the second order (first order with respect to DMP and with respect to PO). In the following equation K_0 is the rate constant of the non-catalyzed reaction; K_c is the rate constant for a single catalyst concentration; C is the concentration of acid catalyst (monomethyl phosphite), mole/l; n is the exponent expressing

Card

1/5

UDC: 541.64+678.85.183

ACC NR:

AP8031000

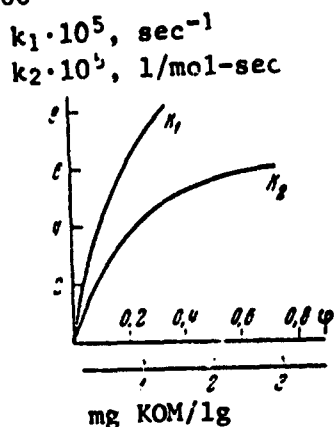


Fig. 1. Relation of the rate constant of transesterification, calculated by an equation of the first (K_1) and second (K_2) order, to acidity of the reaction medium and degree of completion of the reaction at 130°C.

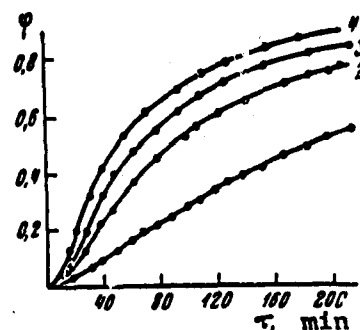


Fig. 2. Effect of initial acidity of the reaction medium on the reaction rate of transesterification at 130°C:

1 - 0.10; 2 - 3.45; 3 - 8.40; 4 - 19.0 mg KOH/1 g):

Card

2/5

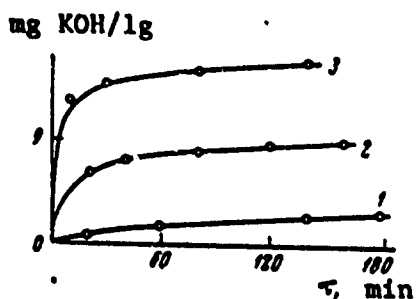


Fig. 3. Increase in acidity of the reaction medium for experiments with various initial acidity (mg KOH/1 g):

1 - 0.10; 2 - 3.45; 3 - 8.40.

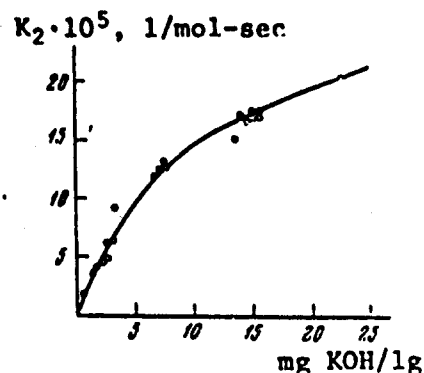


Fig. 4. Relation of the rate constant of transesterification to acidity of the reaction medium at 130°C

Card 3/5

ACC NR: AP8031000

the change in slope of the curve.

$$K_2 = K_0 + K_c [c]^n, \quad (1)$$

When K_0 ,

$$K_c = \frac{k_2}{[c]^n}. \quad (2)$$

In Table 1, the constancy of K_c indicates that the replacement of one MeO in DMP has little effect on the reactivity of the remaining MeO. The

Table 1. Rate constants of transesterification of DMP with PO at 130°C

Measured values	Exponent in equation (2)	Degree of completion of transesterification						
		0.29	0.30	0.40	0.50	0.60	0.70	0.80
$\begin{array}{c} \text{O} \\ \\ \text{HO}-\text{P}-\text{OCH}_3 (0,178 \cdot 10^{-2} \text{ mole/l}) \\ \\ \text{H} \end{array}$	1,0	2,5	3,2	4,1	4,4	5,0	5,3	—
$K_2 \cdot 10^5, 1/\text{mole-sec}$		3,8	4,2	4,6	5,0	6,2	6,3	—
$K_c \cdot 10^5, 1/\text{mole-sec}$		1,5	1,3	1,1	1,1	1,2	1,2	—

Card 4/5

ACC NR:

AP8031000

Table 1. (Cont.)

$\begin{array}{c} \text{O} \\ \\ \text{HO}-\text{P}-\text{OCH}_3(6,22 \cdot 10^{-2} \text{ mole/l}) \\ \\ \text{H} \end{array}$	0,87	11,4	12,3	12,7	12,8	13,0	13,2	13,2
$K_2 \cdot 10^3, \text{ l/mole-sec}$		10,2	11,4	12,0	11,3	13,2	12,5	12,1
$K_c \cdot 10^3, \text{ l/mole-sec}$		1,2	1,2	1,3	1,2	1,3	1,2	1,1
$\begin{array}{c} \text{O} \\ \\ \text{HO}-\text{P}-\text{OCH}_3(15,0 \cdot 10^{-2} \text{ mole/l}) \\ \\ \text{H} \end{array}$	0,80	24,1	25,4	26,6	27,0	27,3	27,8	27,8
$K_2 \cdot 10^3, \text{ l/mole-sec}$		15,4	17,2	17,0	17,9	17,2	17,8	17,6
$K_c \cdot 10^3, \text{ l/mole-sec}$		1,2	1,3	1,2	1,2	1,2	1,2	1,2
$\begin{array}{c} \text{O} \\ \\ \text{HO}-\text{P}-\text{OCH}_3(25,0 \cdot 10^{-2} \text{ mole/l}) \\ \\ \text{H} \end{array}$	0,75	36,6	38,5	39,7	41,2	41,4	42,3	42,3
$K_2 \cdot 10^3, \text{ l/mole-sec}$		20,5	21,0	19,9	20,2	21,0	22,0	20,4
$K_c \cdot 10^3, \text{ l/mole-sec}$		1,2	1,2	1,2	1,2	1,2	1,2	1,3

smooth transesterification of DMP is due to the catalytic effect of acid formed as a result of side reactions. The authors thank Academician M. I. Kabachnik for valuable advice in carrying out this work. Orig. art. has: 4 figures and 1 table. [FT]

SUB CODE: 07/ SUBM DATE: 07Feb67/ ORIG REF: 004/ OTH REF: 004
5/5

Card

ACC NR:

AP8030552

SOURCE CODE: UR/0079/68/038/008/1766/1769

AUTHOR: Samigullin, F. K.; Kafengauz, I. M.; Gefter, Ye. L.; Kafengauz, A. P.

ORG: Vladimir Scientific Research Institute of Synthetic Resins
(Vladimirskiy nauchno-issledovatel'skiy institut sinteticheskikh smol)

TITLE: Reaction of dimethyl phosphite with phenyl isocyanate without catalysts

SOURCE: Zhurnal obshchey khimii, v. 38, no. 8, 1968, 1766-1769

TOPIC TAGS: reaction mechanism, organic isocyanate compound, phosphorous acid, phosphite ester

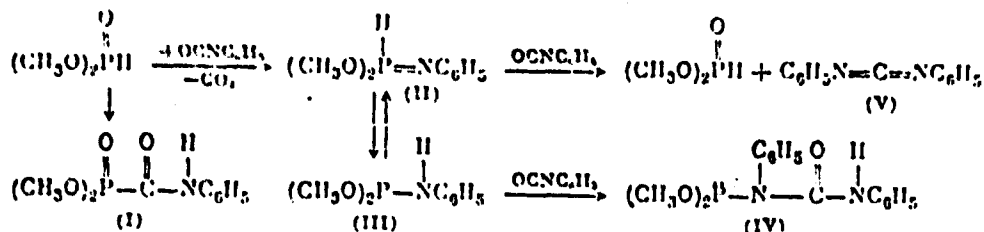
ABSTRACT: Based on chemical analysis data and on IR spectra of the reaction products formed in the title reaction in argon atmosphere at 80°C, the following reaction mechanism is suggested:

Card

1/2

UDC: 547.241
- 137 -

ACC NR: AP8030552



At 80% conversion of phenyl isocyanate, the yield of individual products was: 20—25% I, 9.5% V, 12% IV. Thirty percent of the reacted phenyl isocyanate is probably converted into products of the linear polymerization of phenyl isocyanate. Orig. art. has: 2 figures.

[WA-50; CBE No. 37][PS]

SUB CODE: 07/ SUBM DATE: 28Sep67/ ORIG REF: 004/ OTH REF: 002

Card 2/2

ACC NR: AP8026827

SOURCE CODE: UR/0394/68/006/008/0020/0021

AUTHOR: Semenova, S. A.; Siforova, T. A.

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

TITLE: Selective toxicity of organophosphorus pesticides

SOURCE: Khimiya v sel'skom khozyaystve, v. 6, no. 8, 1968, 20-21

TOPIC TAGS: phosphorus compound, pesticide, insect control, mercaptan, tick

ABSTRACT: This article appears in Biological Factors

Card 1/1

UDC: 632.95:661.718.1

ACC NR:

AP8030564

SOURCE CODE: UR/0079/68/038/008/1867/1873

AUTHOR: Shokol, V. A.; Gamaleya, V. F.; Derkach, G. I.

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

TITLE: Acyl methyldichlorophosphazides and their derivatives

SOURCE: Zhurnal obshchey khimii, v. 38, no. 8, 1968, 1867-1873

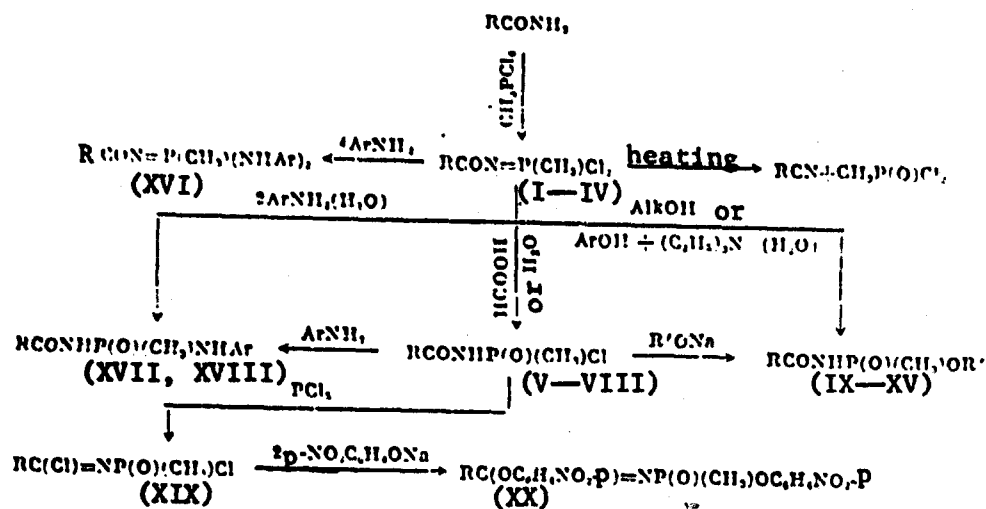
TOPIC TAGS: azide, phosphorus compound, phosphonic acid, aniline

ABSTRACT: Compounds I—IV and V—VIII were synthesized by the reactions shown. Compounds IX, XIII, and XIV were prepared (Method A) by heating I, III, and IV, respectively, in MeOH. Compound XI was obtained (method B) by adding phenol, Et₃N, and H₂O to I in benzene. Compounds IX and XIV were synthesized (method C) by adding V and VIII, respectively, to MeONa, and X and XV were prepared by adding V and VIII, respectively, to EtONa. Compounds XI and XII were prepared (method D) by adding sodium p-nitrophenoxide and phenol, respectively, in Et₃N to V in dioxane and boiling for 1 hr. When heated to ~ 200°C, I and II decomposed, forming 75%

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UDC: 547.241



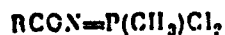
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ACC NR:

AP8030564

Table 1. Acyl methyldichlorophosphozides



No.	R	% Yield	Mp
I	CCl_3^*	96	81-84°
II	CF_3^{**}	97	—
III	C_6H_5	35	—
IV	$\text{p-NO}_2\text{C}_6\text{H}_4$	71	100-105

* Mp 120-125° (0.1 mm).

** Mp 58-60° (1 mm), d_4^{20} 1.5889, n_D^{20} 1.4389.

Table 2. Acylamidomethylphosphonyl chlorides



No.	R	Method % Yield	Mp
V	CCl_3	A, 75 B, 69	102-103°
VI	CF_3	A, 83	98-100
VII	C_6H_5	A, 35	112-113
VIII	$\text{p-NO}_2\text{C}_6\text{H}_4$	A, 72	104-105

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ACC NR: AP8030564

Table 3. Acylamidomethylphosphonates
 $RCONHP(O)(CH_3)OR'$

No.	R	R'	Method, % Yield	Mp °C
IX	CCl ₃	CH ₃	A, 56; C, 74	118--120
X	CCl ₃	C ₂ H ₅	C, 55; D, 50	78--80
XI	CCl ₃	C ₆ H ₅	B, 39; D, 50	95--97
XII	CCl ₃	p-NO ₂ C ₆ H ₄	D, 59	179--181
XIII	C ₆ H ₅	CH ₃	A, 37	170--172
XIV	p-NO ₂ C ₆ H ₄	CH ₃	A, 21; C, 30	164--166
XV	p-NO ₂ C ₆ H ₄	C ₂ H ₅	C, 35	126--128

and 86% decomposition products, respectively. Trichloroacetyl methyl-dianilidophosphazide (XVI) (70% yield, prisms, mp 184--186°C from MeOH) was formed when 4 moles of PhNH₂ reacted with 1 mole of I in anhydrous benzene. Trichloroacetylamidomethylphosphonic acid p-chloroanilide (XVII) (42% yield, needles, mp 200--202°C) was formed when 2 moles of p-chloroaniline reacted with 1 mole of I in benzene with subsequent hydrolysis. Compound XVII (80% yield, mp 201--202°C, needles from EtOH) and trichloroacetylamidomethylphosphonanilide (XVIII) (80% yield, mp 180--182°C, needles) were obtained by adding the corresponding aromatic amine to V in benzene. N-Methylchlorophosphyloiminotrichloroacetyl chloride (XIX)

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ACC NR: AP8030564

(98% yield, mp 92--94°C, prisms from petroleum ether was formed when V and PCl₅ were heated at 120°C. p-Nitrophenyl N-methyl-p-nitrophenoxyphosphyloiminotrichloroacetate (XX) (mp 150--151°C, needles from EtOH) was obtained in 68% yield when sodium p-nitrophenoxide was heated with XIX in dioxane at 80--100°C for 5 hr. Orig. art. has: 5 tables.

[WA-50; CBE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: 06Sep67/ ORIG REF: 016/ OTH REF: 002

ACC NR:

AP8029053

SOURCE CODE: UR/0450/68/002/008/0008/0013

AUTHOR: Shvedov, V. I.; Alekseyev, V. V.; Grinev, A. N.

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

TITLE: Synthesis of aroylindole derivatives.

SOURCE: Khimiko-farmatsevticheskiy zhurnal, v. 2, no. 8, 1968, 8-13

TOPIC TAGS: indole derivative, organic nitrogen compound, chlorinated organic compound, hydrazine compound

ABSTRACT: In a search for new biologically active compounds, the synthesis and properties of aroylindole derivatives was studied. A series of new arylhydrazones I—XXI was synthesized according to the reaction:

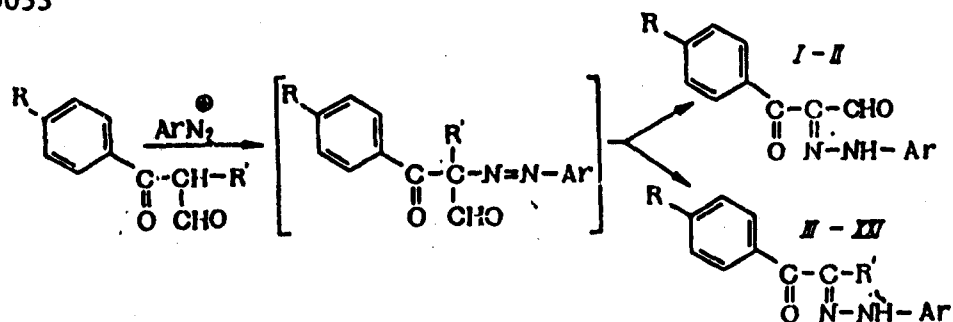
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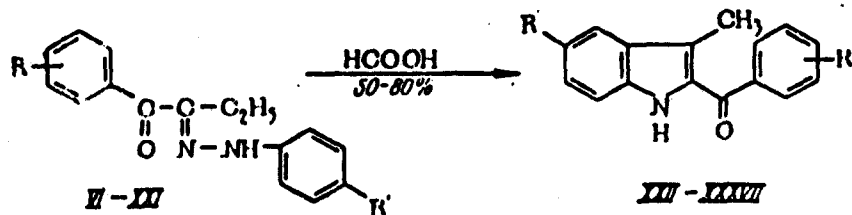
UDC: 615.31:547.754].012.1

ACC NR:

AP8029053



On heating with formic acid, arylhydrazones of 1-aryl-1,2-butanedione (VI-XXI) undergo cyclization to form 1-aryl-3-methylindole derivatives XXII—XXXVII:

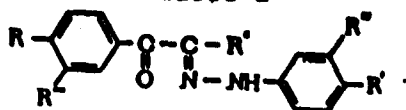


The structure of the new compounds was established by IR and UV spectra and their characteristics are given in Tables 1 and 2. In an alkaline

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Table 1



Compound	R	R'	R''	Yield, %	Mp, °C
I	H	H	CHO	71.0	99-100
II	H	CH ₃	CHO	78.1	115-6
III	H	H	CH ₃	70.0	144-5
IV	H	CH ₃	CH ₃	68.5	154-5
V	H	Cl	CH ₃	80.5	192
VI	H	H	C ₆ H ₅	59.5	115-6
VII	H	CH ₃	C ₆ H ₅	61.7	141-2
VIII	H	Cl	C ₆ H ₅	51.3	148-9

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Table 1 (Cont.)

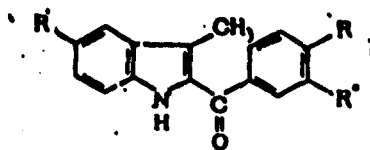
IX	H	CH ₂ O	C ₆ H ₅	62.5	142-3
X	CH ₂ O	H	C ₆ H ₅	69.5	137-8
XI	CH ₂ O	CH ₃	C ₆ H ₅	59.3	160-1
XII	CH ₂ O	CH ₂ O	C ₆ H ₅	50.0	144-5
XIII	CH ₂ O	Cl	C ₆ H ₅	66.0	149-50
XIV	CH ₃	H	C ₆ H ₅	52.2	147-8
XV	CH ₃	CH ₃	C ₆ H ₅	67.1	134-5
XVI	CH ₃	CH ₂ O	C ₆ H ₅	29.2	133-4
XVII	Cl	CH ₃	C ₆ H ₅	43.8	145-6
XVIII	Cl	H	C ₆ H ₅	50.0	150-1
XIX	Cl	Cl	C ₆ H ₅	44.1	133-4
XX ^a	Cl	H	C ₆ H ₅	4 ^a	142-3
XXI ^b	CH ₂ O	CH ₃	C ₆ H ₅	40.5	129-30

^a R'' = Cl.
^b R'' = CH₂O.
 I-XIX R'' = R''' = H.

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ACC NR: AP8029053

Table 2



Compound	R	R'	R''	Yield, %	Mp, °C
XXII	H	H	H	80.7	140-140.5
XXIII	H	CH ₃	H	95.0	131-2
XXIV	H	CH ₃ O	H	33.1	157-8
XXV	H	Cl	H	58.1	180-1
XXVI	CH ₃ O	H	H	93.6	155-6

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ACC NR: AP8029053

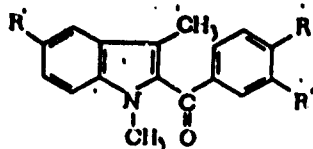
Table 2 (Cont.)

XXVII	CH ₃ O	CH ₃	H	80.0	154-5
XXVIII	CH ₃ O	Cl	H	57.1	173-173.5
XXIX	CH ₃ O	CH ₃ O	H	46.1	161-2
XXX	CH ₃ O	H	CH ₃ O	46.5	162-3
XXXI	CH ₃ O	CH ₃	CH ₃ O	74.5	193-4
XXXII	Cl	H	H	83	167-167.5
XXXIII	Cl	CH ₃	H	77.6	179-80
XXXIV	Cl	Cl	H	79.3	210-1
XXXV	CH ₃	H	H	83.5	150-1
XXXVI	CH ₃	Cl	H	78.0	183-4
XXXVII	Cl	CH ₃ O	H	48.2	177-8

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Table 3



Compound	R	R'	R''	Yield, %	mp, °C
XXXVIII	H	H	H	95,9	55-6
XXXIX	H	CH ₃	H	95	69-70
XL	H	Cl	H	94	85-6
XLI	CH ₃	CH ₃	H	90,5	83-83,5
XLII	CH ₃ O	CH ₃	CH ₃ O	98,3	133-4

medium, compounds XXII, XXIII, XXV, XXXI, and XXXVI reacted with dimethyl sulfate to form the derivatives XXXVIII—XLII, which are characterized in Table 3. Orig. art. has: 3 tables.

[WA-50; CBE No. 37] [PS]

SUB CODE: 07/ SUBM DATE: 25Jan66/ ORIG REF: 004/ OTH REF: 001

Card

7/7

ACC NR:

AP8030370

SOURCE CODE: UR/0366/68/004/009/1661/1664

AUTHOR: Sineokov, A. P.; Kholodenko, G. E.; Etlis, V. S.

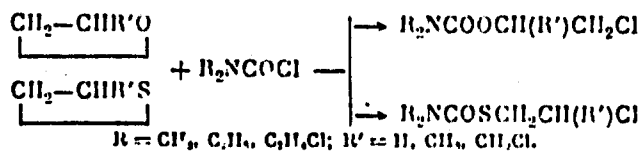
ORG: none

TITLE: Synthesis of 2-chloroalkyl N,N-dialkylcarbamates and -thioalkylcarbamates

SOURCE: Zhurnal organicheskoy khimii, v. 4, no. 9, 1968, 1661-1664

TOPIC TAGS: organic nitrogen compound, organic sulfur compound, carbamic acid derivative, chlorinated organic compound, carbamate chlorinated derivative

ABSTRACT: At 100—120°C, N,N-dialkylcarbamoyl chloride was allowed to react with an equimolar amount of alkene oxides and their sulfur analogs to form the corresponding substituted carbamates:

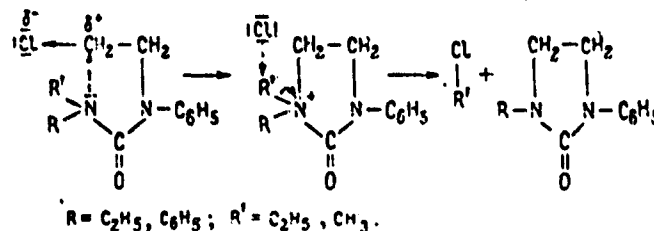
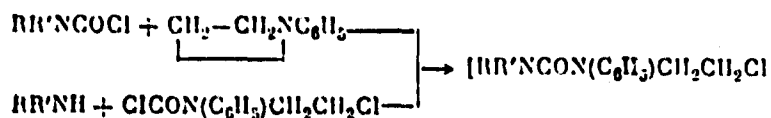


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UDC: 547.495.1+547.717
- 145 -

The structure of the substituted carbamates was confirmed by parallel synthesis. Parallel synthesis and IR spectra of the products formed in the reaction N-phenylethylenimine with N-diethylcarbamoyl chloride revealed that the reaction of nitrogen analogs of ethylene oxide with N,N-dialkylcarbamoyl chlorides proceeds according to the following mechanism:



Card

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ACC NR:

AP8030370

Table 1
 $\text{R}_2\text{NCOOCH}(\text{R}')\text{CH}_2\text{Cl}$ and $\text{R}_2\text{NCOSCH}_2\text{CH}(\text{R}')\text{Cl}$

R	R'	% Yield	Bp, °C (mm)	d_4^{20}	n_D^{20}
CH_3	H	88	67° (1.5)	1.1514	1.4482
C_2H_5	H	53	75 (3) [3]	1.0707	1.4160
$\text{C}_2\text{H}_4\text{Cl}$	H	69	140 (3)	1.3407	1.4900
CH_3	CH_3	54	60 (1)	1.0504	1.4451
C_2H_5	CH_3	65	80 (4) [3]	1.0352	1.4440
CH_3	CH_2Cl	56	102 (3) [3]	1.2603	1.4690
C_2H_5	CH_2Cl	70	101 (2) [3]	1.1569	1.4649
CH_3	H*	86	90 (2) [3]	1.2135	1.5139
C_2H_5	H*	54	104 (5) [3]	1.1293	2.5045
$\text{C}_2\text{H}_4\text{Cl}$	H*	62	162 (4)	1.3612	1.5430
CH_3	CH_3^*	60	94 (3)	1.1662	1.5109
C_2H_5	CH_3^*	59	112 (3)	1.0972	1.5400
C_2H_5	CH_2Cl^*	62	126 (3.5)	1.1972	1.5110

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* $\text{R}_2\text{NCOSCH}_2\text{CH}(\text{R}')\text{Cl}$.

ACC NR: AP8030370

The new compounds are characterized in the table. [WA-50; CBE No. 37][PS]

SUB CODE: 07/ SUBM DATE: 10Oct67/ ORIG REF: 003/ OTH REF: 006

Card 4/4

ACC NR: AP8029058

SOURCE CODE: UR/0450/68/002/008/0039/0044

AUTHOR: Somin, I. N.; Kuznetsov, S. G.

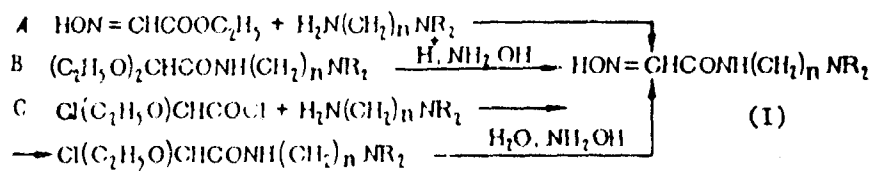
ORG: none

TITLE: Reactivators of cholinesterase. II. Oximinoacetic acid amides

SOURCE: Khimiko-farmatsevticheskiy zhurnal, v. 2, no. 8, 1968, 39-44

TOPIC TAGS: cholinesterase, substituted amide/cholinesterase reactivator

ABSTRACT: To test the assumption that the aminoalkylamides of oximinoacetic acid (I) in the zwitterion form $R_2NH^{\oplus}(CH_2)_nNHCOCH:NO^{\ominus}$ reactivate cholinesterase more effectively than the amides and esters without a cationic center, the previously undescribed compounds I were synthesized by three procedures and their reactivation effectiveness was compared with that of some methiodides and bisquaternary compounds (II).



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UDC: 577.153.9:024:547.484.2

ACC NR: AP8029058

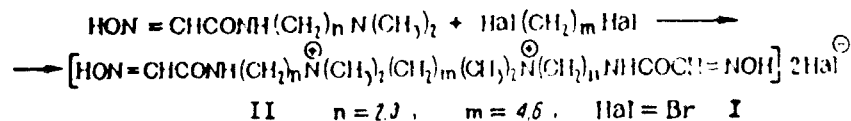


Table 1. Aminoallylamides of oximinoacetic acid
 $\text{R}_2\text{N}(\text{CH}_2)_n\text{NHCOCH}=\text{NOH}$ (I) and their derivatives

R_2N	n	% Yield, Procedure	Mp, °C, crystallization solvent		
			Base	HCl salt	MeI salt
Me_2N	0	27 (A)	130 (Me_2CO)	--	--
H_2	2	90 (A), 66 (B)	138 (EtOH)	210 (aq EtOH)	--
MeNH	2	90 (A), 52 (B)	136 (EtOH)	172 (EtOH)	--
Me_2N	2	60 (C)	132 (Me_2CO)	181 (EtOH)	174 (EtOH)
Et_2N	2	72 (C)	137 (Me_2CO)	163 (EtOH)	--
$(\text{CH}_2)_4\text{N}$	2	60 (C)	158 (EtOH)	158 (EtOH)	137 (EtOH)
$(\text{CH}_2)_5\text{N}$	2	89 (A), 75 (C)	184 (dioxane)	175 (EtOH)	159 (EtOH)

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ACC NR: AP8029058

Table 1. (Cont.)

$(\text{CH}_2)_5\text{N}(\text{CH}_2)_2\text{NMe}$	--	19 (C)	98 (Me_2CO)	--	--
$\text{MeN}[(\text{CH}_2)_2]_2\text{N}$	--	49 (C)	131 (EtOAc)	193 (MeOH)	189 (EtOH)
$(\text{CH}_2)_6\text{N}$	2	97 (A)	143 (dioxane)	188 (EtOH)	143 (EtOH)
MeNH	3	47 (A)	122 (Me_2CO)	--	--
Me_2N	3	82 (A), 75 (B), 51 (C)	97 (Me_2CO)	137 (EtOH)	189 (aq EtOH)
Et_2N	3	32 (C)	82 (EtOAc)	--	129 (EtOH)
Pr_2N	3	70 (A)	96 (EtOAc)	--	--
n-hexylMeN	3	70 (A)	79 (EtOAc)	--	--
$\text{Me}_2\text{CH}(\text{CH}_2)_3\text{NH}$	3	93 (A)	128 (EtOAc)	167 (EtOH)	--
$\text{Me}_3\text{C}(\text{CH}_2)_3\text{NH}$	3	97 (A)	139 (MeEtCO)	171 (EtOH)	--
$(\text{CH}_2)_4\text{N}$	3	60 (C)	125 (Me_2CO)	140 (EtOH)	141 (EtOH)
$(\text{CH}_2)_5\text{N}$	3	68 (C)	142 (EtOH)	158 (EtOH)	157 (EtOH)

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ACC NR: AP8029058

Table 1. (Cont.)

$O(CH_2)_4N$	3	75 (A)	121 (EtOH)	165 (EtOH)	152 (EtOH)
$(CH_2)_6N$	3	89 (A)	133 (EtOH)	159 (EtOH)	143 (EtOH)
Me_2N	4	80 (A), 46 (C)	120 (EtOAc)	—	—
$(CH_2)_5N(CH_2)_3CH$ $MeNH$	—	40 (C)	96 (benzene)	—	—
Me_2N	5	90 (A)	102 (EtOAc)	—	—
Me_2N	6	85 (A)	103 (EtOAc)	—	—
Me_2N	7	74 (A)	78 (EtOAc)	—	—

Procedure A: Equimolar quantities of ester and diamine were mixed and allowed to stand at room temp. After 48—72 hr, product I was filtered from anhydrous ether. Procedure B: 2.32 g $(EtO)_2CHCONH(CH_2)_3NMe_2$, 1.5 ml concentrated HCl, and 0.85 g $NH_2OH \cdot HCl$ in 6 ml H_2O were heated for 1 hr at 65—70°, alkalized with 50% KOH, extracted with chloroform and dried.

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ACC NR: AP8029058

Procedure C: Equimolar quantities of $Cl(EtO)CHCOCl$ and diamine were mixed and heated for 5 min at 65—70°C. The amide base was filtered or extracted with chloroform. Oximes without amine groups—oximinoacetic acid ethylamide and oximinoacetyl piperidide possess negligible reactivation effectiveness *in vitro*. Compounds I are somewhat less effective than the corresponding esters. The basic difference between $HON:CHCOX(CH_2)_nNR_2$ oximes and heteroaromatic aldoxime reactivators is that the ternary and quaternary derivatives of the former oximes are almost equally effective. The ternary amides of I in many cases are even more effective than their methiodides. The fact that compound I, $n = 3$, $R_2N =$ morpholine, is less effective than its methiodide confirms the initial assumptions, since the basicity of morpholine is 2—2.5 orders less than that of the other heterocyclic bases and dialkylamines which were studied. The introduction of a second quaternary ammonium group (compounds II) results in increased reactivation effectiveness. Compounds I with $n = 3$ and $R_2N = Me_2C(CH_2)_3NH$, Me_2CH , and Me_3NH , sterically imitating the introduction of a tri-Me and di-Me ammonium group at an optimum distance from the first ammonium center, are more effective than compounds I, $n = 3$, $R_2N = MeNH$, Me_2N , but less effective than oximinoacetamides with two ammonium centers. This indicates hydrophobic and coulombic interaction during contact of the second ammonium center with the corresponding segment of the phosphorylated cholinesterase.

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ACC NR: AP8029058

The water-stable compounds I display a therapeutic effect against Phosphacol poisoning, while compounds with a tertiary amino group penetrate the central nervous system. Orig. art. has: 2 tables.
[WA-50; CBE No. 37][FT]

SUB CODE: 07/ SUBM DATE: 01Mar68/ ORIG REF: 006/ OTM REF: 008

Card 6/6

ACC NR: AP8029427 SOURCE CODE: UR/0409/68/000/004-0746/0750

AUTHOR: Tjbanov, P. V.; Vasil'yev, A. F.; 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. IX. Determination of the energy of the intermolecular hydrogen bond of some O-methylhydroxylamine derivatives of sym-triazines in solution by infrared absorption spectra

SOURCE: Khimiya geterotsiklicheskih soyedineniy, no. 4, 1968, 746-750

TOPIC TAGS: hydrogen bonding, ir absorption, hydroxylamine, organic azine compound

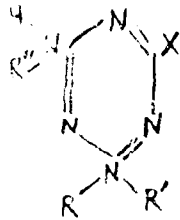
ABSTRACT: Energy values of the intermolecular hydrogen bond, which apparently blocks the active centers of biopolymers, were obtained for 2-chloro-4-diethylamino-6-methoxy-amino-sym-triazine(I), 2-chloro-4-di-n-propylamino-6-methoxyamino-sym-triazine(II), 2-methylthio-4-di-n-propylamino-6-methoxyamino-sym-triazine(III), 2-chloro-4-di-n-butylamino-6-methoxyamino-sym-triazine(IV), and 2-chloro-4-diethylamino-6-ethylamino-sym-triazine(V). The linear relation between the square

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UDC: 547.87+630.54
- 150 -

ACC NR:

AP8029427



(I: X=Cl, R=R'=Et, R''=MeO; II: X=Cl, R=R'=Pr, R''=MeO; III: X=MeS, R=R'=Pr, R''=MeO; IV: X=Cl, R=R'=Bu, R''=MeO; V: X=Cl, R=R'=Et, R''=Et)

of the optical density of the free N--H band (D_M^2) and the product of the optical density of the hydrogen-bonded N--H band times the thickness of the working layer ($D_D \times l$), as well as the linear relation between the reciprocal of the optical density ($1/D_M$) of the free N--H band and the product of the optical density of this band times the molar concentration

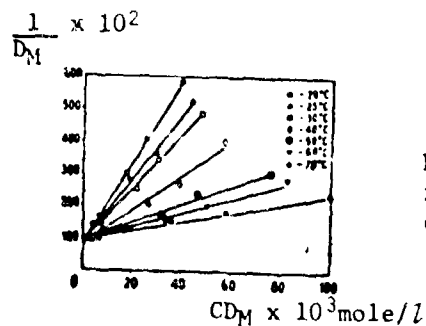


Fig. 1. The relation of $1/D_M$ to CD_M for the monomeric band of 2-chloro-4-di-n-propylamino-6-methoxyamino-sym-triazine

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ACC NR:

AP8029427

($C \times D_M$, see Fig. 1), indicate that the bonded associates are basically cyclic dimers. The absorption coefficients of both bands were determined by extrapolation of the linear relation of $D_M/(C \times l)$ to $D_D/(C \times l)$ since

$$\frac{D_M}{\xi_M C l} + \frac{D_D}{\xi_D C l} = 1.$$

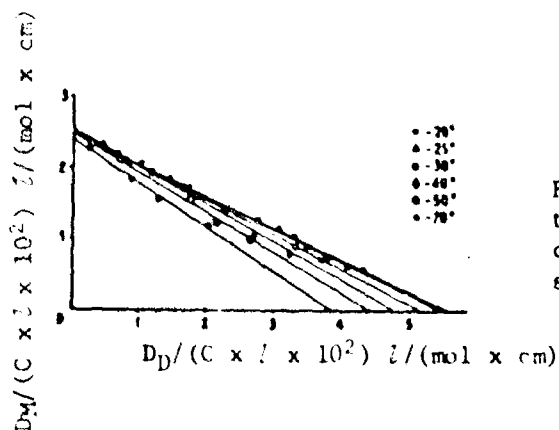


Fig. 2. Relation of $D_M/(C \times l)$ to $D_D/(C \times l)$ for 2-chloro-4-di-n-propylamino-6-methoxyamino-sym-triazine

Card

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ACC NR:

AP8029427

Table 1. Frequencies and absorption coefficients of valence vibration of the N--H band

Compd.	Frequency cm^{-1}		Av. cm^{-1}	Absorption coefficient ξ_M l/(mol x cm)
	NH Free	NH Bonded		
I	3381	3187	194	199-207 (204)
II	3381	3187	194	240-255 (249)
III	3379	3183	196	196-233 (215)
IV	3378	3188	190	239-261 (250)
V	3442	3264	178	296-401 (348)

The equilibrium constants for each temperature were obtained by averaging the constants calculated by the following equation for 4-5 concentrations:

$$K = \frac{D_M \xi_D}{\xi_M^2 D_D^2}$$

The energies of the hydrogen bonds and the entropy difference between the monomeric and cyclic molecules were found from the relation of the equilibrium constants to temperature. The most favorable conditions for hydrogen bond formation with the N of the cycle exist at the N atom in

Card

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ACC NR:

AP8029427

Table 2. Values of hydrogen bond energy and entropy*

Compd.	ΔS , Entr. units	$\sigma \Delta S$, Entr. units	ΔH , Kcal/mol	$\sigma \Delta H$, Kcal/mol
I	18.6	0.7	3.8	0.1
II	20.2	0.5	4.18	0.07
III	17.4	1.1	3.3	0.2
IV	13.0	2.0	3.1	0.3
V	9.9	1.3	2.4	0.2

* ΔH is the hydrogen bond energy, ΔS is the entropy difference between the dimer and the monomer, σ is the mean quadratic deviation of the obtained values.

position 1. This must result in a cyclic centrosymmetric dimer with linear hydrogen bonds. Orig. art. has: 3 figures and 3 tables.

[WA-50; CBE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: 11Jul66/ ORIG REF: 010/ OTH REF: 002

Card

5/5

ACC NR: AP8031275

SOURCE CODE: UR/0079/68/038/009/2088/2090

AUTHOR: Toropova, V. F.; Saykina, M. K.; Guseva, N. I.; Cherkasov, R. A.; Khakimov, M. G.

ORG: Scientific Research Chemistry Institute im. A. M. Butterov at Kazan State University im. V. I. Ul'yanov-Lenin (Nauchno-issledovatel'skiy khimicheskiy institut pri Kazanskom gosudarstvennom universitete)

TITLE: Stability of mercury complex compounds with phosphorus thio and dithio acids

SOURCE: Zhurnal obshchey khimii, v. 38, no. 9, 1968, 2088-2090

TOPIC TAGS: aliphatic phosphorus compound, aliphatic sulfur compound, complex compound, thiophosphate ester, mercury compound

ABSTRACT: The stability of Hg complexes with phosphorus thio acids:

Card 1/6

UDC: 547.241

ACC NR: AP8031275

Table 1. Ionization constants of phosphorus thio and dithio acids

Compd No.	Acid	$K_1 \cdot 10^4$
I	$(C_2H_5O)_2P(S)SH$	2.47-0.19
II	$C_2H_5O \begin{matrix} \diagup \\ \diagdown \end{matrix} \begin{matrix} S \\ S \end{matrix} SH$	1.50-0.14
III	$C_2H_5O \begin{matrix} \diagup \\ \diagdown \end{matrix} \begin{matrix} S \\ S \end{matrix} SH$	1.20-0.14
IV	$(C_2H_5)_2PS_2SH$	0.81-0.09

was studied by the polarographic and potentiometric method and by determining the pH of the solutions of $Hg(NO_3)_2$ and the acids in water-alcohol mixture containing 40% alcohol. All measurements were conducted at $25 \pm 1^\circ C$ and ionic strength constant 0.8. The latter was controlled by the addition of KNO_3 . Values of the instability constants determined from the potentiometric measurements are given in Table 2. The results

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Table 2. Values of instability constants of Hg complexes with derivatives of phosphorus thio and dithio acids

Ligand	pK_1	pK_2	pK_3
$C_3H_7O)_2P(S)O^-$	24.48 ± 0.07	27.78 ± 0.07	28.95 ± 0.05
$C_3H_7O \left. \begin{array}{l} \\ \\ \end{array} \right\} P(S)S^-$	31.30 ± 0.05	35.30 ± 0.10	—
$C_2H_5 \left. \begin{array}{l} \\ \\ \end{array} \right\} P(S)S^-$	32.18 ± 0.06	35.54 ± 0.06	—
$C_4H_9O \left. \begin{array}{l} \\ \\ \end{array} \right\} P(S)S^-$	33.85 ± 0.03	36.10 ± 0.08	—

of the potentiometric measurements in solutions containing $5 \times 10^{-4}M$ $Hg(NO_3)_2$ and 10^{-3} — $10^{-1}M$ of the acid are shown in Fig. 1. The stability of Hg complexes with S-containing compounds depends on the oxidation-reduction potential of the systems. For the acids studied the oxidation-reduction potentials were determined by potentiometric

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ACC NR:

AP8031275

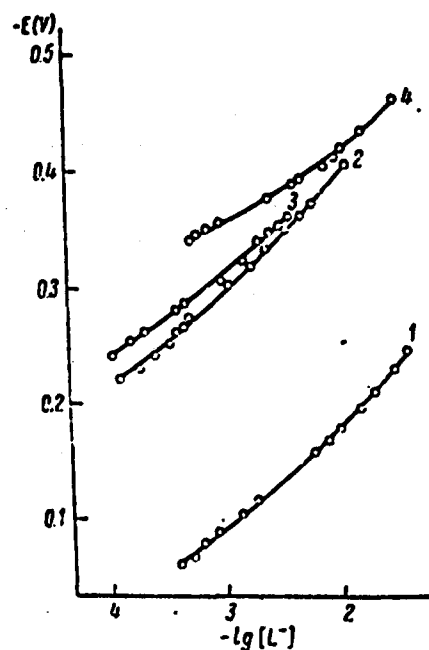


Fig. 1. Potential of Hg electrode in solution of Hg complexes in solution containing various amounts of phosphorus thio and dithio acids.

Numbers of curves correspond to those in Table 1.

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ACC NR: AP8031275

titration with 0.01N iodine solution in 40% methanol at pH 6.5. The results are shown in Table 3. The study confirmed an earlier conclusion

Table 3. Standard oxidation-reduction potential of
 $2RR'P(S)S^- \rightleftharpoons RR'P(S)S-S(S)P(RR')$

R	R'	E^0 (V)
C_6H_5	C_6H_5O	0.150 ± 0.002
C_2H_5	C_6H_5O	0.138 ± 0.003
C_3H_7	C_6H_5	0.114 ± 0.002

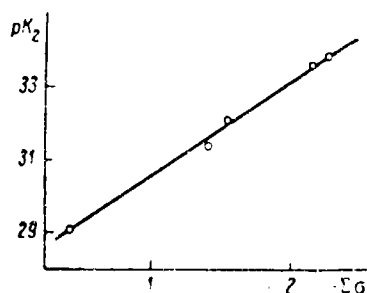


Fig. 2. Correlation of the values of instability constants of Hg phosphorus dithio acids complexes with $\Sigma\sigma$ of the substituents at P atom

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ACC NR: AP8031275

that the stability of Hg complexes increased with increasing reductive properties of the ligands. The stability of Hg complexes with phosphorus thio acids is inversely proportional to E^0 . The instability constants correlate with the $\Sigma\sigma$ of the substituents in the ligands, as shown in Fig. 2. Orig. art. has: 2 figures and 3 tables. [WA-50; CBE No. 37][PS]

SUB CODE: 07/ SUBM DATE: 27Oct67/ ORIG REF: 007/ OTH REF: 003

Card 6/6

ACC NR: AP8030566

SOURCE CODE: UR/0079/68/038/008/1898/1899

AUTHOR: Uretskaya, G. Ya.; Shinkarevskaya, M. S.; Terekhina, N. F.; Kraft, M. Ya.

ORG: none

TITLE: Carbonyl derivatives of the fluorene series. VI. 2-Fluoro-fluorenyl-7-glyoxal and 2-fluorofluorenyl-7-glyoxal

SOURCE: Zhurnal obshchey khimii, v. 38, no. 8, 1968, 1898-1899

TOPIC TAGS: fluorinated organic compound, aldehyde, fluorene derivative

ABSTRACT: Earlier studies revealed that carbonyl derivatives of fluorene have antiviral properties. In a search for new biologically active compounds, the preparation of fluorinated carbonyl derivatives of fluorene was studied. 2-Fluorofluorenyl-7-glyoxal (mp 137-139°C) was synthesized by boiling 2-fluoro-7-acetylfluorene with selenium dioxide in acetic acid. The initial 2-fluoro-7-acetylfluorene which is usually prepared by the Friedel-Crafts reaction in a 42% yield was obtained in a 72% yield using nitrobenzene as the solvent. 2-Fluoro-acetylfluorenone (mp 176-177.5°C) was obtained (95%) by the oxidation of 2-fluoro-7-acetylfluorene with sodium bichromate at 80°C. The oxidation of

Card 1/2

UDC: 547.678.3.07

ACC NR: AP8030566

2-fluoro-7-acetylfluorenone with selenium dioxide in acetic acid yielded 2-fluorofluorenyl-7-glyoxal (decomposes at 280°C).

[WA-50; CBE No. 37] [PS]

SUB CODE: 07/ SUBM DATE: 16Oct67/ ORIG REF: 005/ OTH REF: 001

Card 2/2

ACC NR: AP8024843

SOURCE CODE: UR/0358/68/037/003/0283/0288

AUTHOR: Uspenskiy, I. V.; Barmina, L. N.

ORG: Entomology Department, Institute of Medical Parasitology and Tropical Medicine im. Ye. I. Martsinovskiy, Ministry of Public Health, SSSR, Moscow (Entomologicheskiy otdel Instituta meditsinskoy parazitologii i tropicheskoy meditsiny Ministerstva zdravookhraneniya SSSR)

TITLE: The effectiveness of some organophosphorus compounds as acaricides in foci of tickborne encephalitis

SOURCE: Meditsinskaya parazitologiya i parazitarnyye bolezni, v. 37, no. 3, 1968, 283-288

TOPIC TAGS: encephalitis, organic phosphorus insecticide, acaricide

ABSTRACT: This article appears in Biological Factors

Card 1/1

UDC: 614.449.542:615.777.25

ACC NR.

AF8031329

SOURCE CODE: UR/0404/68/000/004/0447/0452

AUTHOR: Veveris, A. P.; Grinshteyn, V. Ya.

ORG: Institute of Organic Synthesis, AN LatSSR (Institut organicheskogo sinteza AN Lat SSR)

TITLE: Guanidino- β -diketones. IV. Methoxy- and hydroxyderivatives of guanidindibenzolmethanes

SOURCE: AN LatSSR. Izvestiya. Seriya khimicheskava, no. 4, 1968, 447-452 and insert facing p. 452

TOPIC TAGS: guanidino, ketone, bromination

ABSTRACT: Colorless, crystalline 4'-acetoxy-4-nitrochalcone (I-1) (96% yield) was synthesized by heating a mixture of 4'-hydroxy-4-nitrochalcone, HOAc, Ac₂O, and 1 drop of concentrated H₂SO₄ at 100°C for 10 min. 4'-Acetoxy-3-nitrochalcone (I-2) (92% yield) was similarly synthesized from 4'-hydroxy-3-nitrochalcone. 4'-Hydroxy-3'-methoxy-4-nitrochalcone (I-3) (46% yield) was synthesized as above from 3-methoxy-4-hydroxyacetophenone, 4-nitrobenzaldehyde, and pyridine dihydrochloride. 4'-Acetoxy-3'-methoxy-4-nitrochalcone (I-4) (88% yield) was synthesized as for I-1 from I-3, HOAc, Ac₂O, and concentrated H₂SO₄. Yellow, crystalline 2',4',5'-trimethoxy-4-nitrochalcone (I-5) was synthesized by adding

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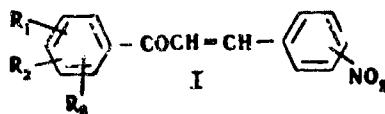
UDC: 547.638.1+547.495.9

ACC NR:

AP8031329

KOH in EtOH to 2,4,5-trimethoxyacetophenone and 4-nitrobenzaldehyde in EtOH, and 2',5'-dimethoxy-4-nitrochalcone (I-6) (64% yield) was similarly synthesized from 2,5-dimethoxyacetophenone. The nitrochalcone

Table 1. Nitrochalcones



Compd	R ₁	R ₂	R ₃	Position of -NO ₂	Mp, °C
I-1	4'-CH ₃ COO-	H	H	4	164-165
I-2	"	"	"	3	144-145
I-3	4'-HO	3'-CH ₃ O-	"	4	200-202

Card

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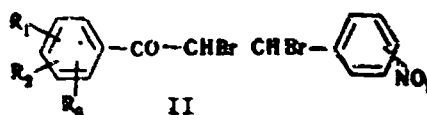
Table 1. (Cont.)

I-4	4'-CH ₂ COO-	"	"	4	171-172
I-5	2'-CH ₂ O-	4'-CH ₂ O-	5'-CH ₂ O-	4	184-185
I-6	2'-CH ₂ O-	5'-CH ₂ O-	H	4	149-150

dibromides (II-1—II-10) characterized in Table 2 were synthesized by bromination (in CHCl₃) of I-1, I-2, 3',4'-dimethoxy-4-nitrochalcone, 3',4'-dimethoxy-3-nitrochalcone, I-4, I-6, 2',5'-dimethoxy-3-nitrochalcone, 2',3',4'-trimethoxy-4-nitrochalcone, 2',3',4'-trimethoxy-3-nitrochalcone, and I-5, respectively. Nitrodibenzoylmethanes (IIIa) (no physical data in article) were synthesized by adding potassium in MeOH to II in boiling MeOH with subsequent addition of 1 N HCl. Amino-dibenzoylmethanes (IIIb) (no physical data) were synthesized by adding Adams' catalyst and 10% KOH in MeOH to IIIa in MeOH and working up with H at 760 mm with subsequent neutralization with HOAc. p-Guanidino-benzoylalkoxybenzoylmethanes (IIIc) (no data) were synthesized by adding

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Table 2. Chalcone dibromides



Compd	R ₁	R ₂	R ₃	Position of NO ₂	Mp, °C	% Yield
II-1	4'-CH ₂ COO-	H	H	4	131-133	78
II-2	"	"	"	3	150-153	89
II-3	4'-CH ₂ O-	3'-CH ₂ O-	"	4	173-174 (decomp)	82
II-4	"	"	"	3	136-140 (decomp)	70
II-5	4'-CH ₂ COO-	3'-CH ₂ O-	"	4	182-183 (decomp)	68
II-6	2'-CH ₂ O-	5'-CH ₂ O-	"	4	174-177 (decomp)	96

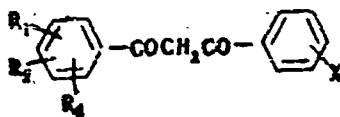
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ACC NR: AP8031329

Table 2. (Cont.)

II-7	"	"	"	3	140-143 (decomp)	82
II-8	2'-CH ₃ O-	3'-CH ₃ O-	4'-CH ₃ O-	4	130-132	79
II-9	"	"	"	3	114-117	63
II-10	2'-CH ₃ O-	4'-CH ₃ O-	5'-CH ₃ O-	4	166-168 (decomp)	83

concentrated HCl to IIIb and cyanamide at 100°C with subsequent dilution with water. m-Guanidinobenzoylalkoxybenzoylmerhanes (IIIId) (no data) were synthesized by adding 20% HCl in EtOH and cyanamide to IIIb in EtOH and boiling for 3 hr. Compounds IIIa-IIIId form poorly soluble

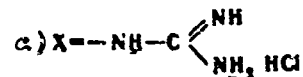


III

- a) X--NO₂
b) X--NH₂

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ACC NR: AP8031329



complexes with Cu salts. Compounds IIIc and IIIId, unlike guanidino-β-diketones with an open aliphatic chain, are fairly stable in the form of bases. Orig. art. has: 2 tables. [WA-50; CBE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: 10Jan67/ ORIG REF: 002/ OTH REF: 008

Card 6/6

ACC NR: AP8029415

SOURCE CODE: UR/0409/68/000/004/0685/0694

AUTHOR: Vinogradova, N. E.; Khromov-Borisov, N. V.

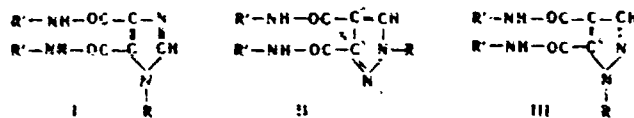
ORG: Institute of Experimental Medicine, AMN SSSR, Leningrad (Institut eksperimental'noy meditsiny AMN SSSR)

TITLE: The synthesis and mechanism of the formation of bis(methylamides) of pyrazoledicarboxylic acids

SOURCE: Khimiya geterotsiklicheskikh soyedineniy, no. 4, 1968, 685-694

TOPIC TAGS: pyrazole derivative, substituted amide/biologically active compound

ABSTRACT: The physiologically active bis(methylamides) of 1-alkylpyrazole-3,4-dicarboxylic acids (II) and bis(methylamides) of 1-alkylpyrazole-4,5-dicarboxylic acids (III), which are analogs of the CNS drugs "antifeins" (I), were synthesized by two procedures.



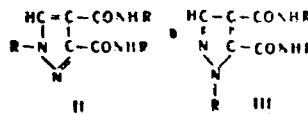
Card 1/5

UDC: 547.776.07:543.422.6

ACC NR: AP8029415

a R=C₆H₅, R'=CH₃; b R=R'=CH₃; c R=C₂H₅, R'=CH₃;
 d R=i-C₃H₇, R'=CH₃; e R=CH₂=CHCH₃, R'=CH₃; f R=H,
 R'=CH₃; g R=R'=H; h R=CH₃, R'=H

Table 1.



Compd	R	R'	Method	Mp °C	% Yield
IIIa	C ₆ H ₅	CH ₃	A	199-200	76,8
IIb	CH ₃	CH ₃	A	192-193	33,5*
IIIb	CH ₃	CH ₃	B	192-193**	25,7
IIIc	i-C ₃ H ₇	CH ₃		100-101,5	40
IIe+IIIe	CH ₂ =CHCH ₃	CH ₃	A	80-95	
IIe	CH ₂ =CHCH ₃	CH ₃	B	117-118**	29
IIIe	CH ₂ =CHCH ₃	CH ₃	B	122-123,5	1,5
IIc	C ₂ H ₅	CH ₃	B	129-130	30,1

Card

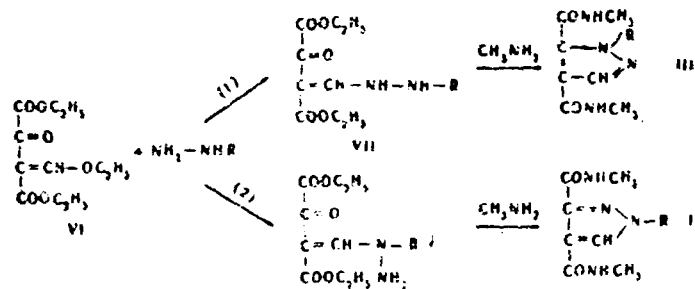
2/5

ACC NR: AP8029415

Table 1. (Cont.)

IIIc	C ₂ H ₅	CH ₃	B	101--107	3
IIIf	H	CH ₃	B***	245--246	74
IIIa	CH ₃	H	B***	282--283	38.7
IIIg	H	H	B***	322	70.6

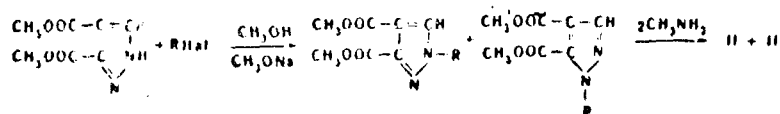
Procedure A: Alkyl(aryl)hydrazine was added to ethoxymethyleneoxaloacetic ester in EtOH. After heating, the reaction mixture was treated with 33% aqueous methylamine or ammonia, and the product was extracted with chloroform.



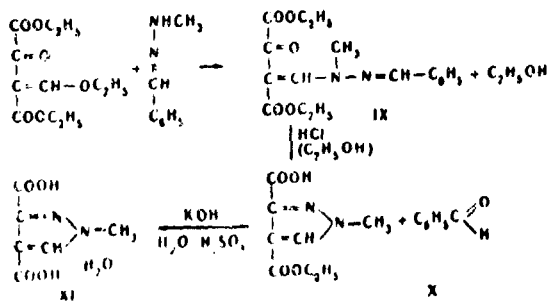
Card 3/5

ACC NR: AP8029415

Procedure B: A solution of NaOMe in MeOH was added to dimethyl pyrazole-dicarboxylate in MeOH. The reaction mixture was refluxed for 10 hr with excess MeI and 16 hr with EtBr, and the residue was treated with methylamine.



The new compound 1-methylpyrazole-3,4-dicarboxylic acid (XI) was synthesized by the following reactions:



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ACC NR: AP8029415

The bis(methylamide) of 1-methylpyrazole-3,5-dicarboxylic acid (XIII) was synthesized from dimethyl pyrazole-3,5-dicarboxylate by procedure B. The structure of compounds II and III was confirmed by UV spectra and by hydrolysis to acids. Compounds II, III, and XIII display pronounced central activity which consists in the inhibition of cortical branches, with simultaneous stimulation of a number of midbrain structures. The sedative effect of II, III, and XIII is somewhat stronger than that of antifeins, but II, III, and especially XIII display a weaker stimulating effect on the subcortical structures. Compound IIc displays a counter-inflammatory effect and stimulates the hypophyseal-adrenaline system. Orig. art. has: 3 figures and 3 tables. [WA-50; CBE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: 04Apr66/ ORIG REF: 011/ OTH REF: 017

Card 5/5

ACC NR: AP8030666 SOURCE CODE: UR/0020/68/181/006/1385/1388

AUTHOR: Yevtikhov, Zh. L.; Razumova, N. A.; Petrov, A. A. (Corresponding member AN SSSR)

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

TITLE: Some transformations of 1,1-pyrocatechol-1-fluoro-3-phospholenes

SOURCE: AN SSSR. Doklady, v. 181, no. 6, 1968, 1385-1388

TOPIC TAGS: pyrocatechol, phosphorus compound, heterocyclic phosphorus compound

ABSTRACT: When allowed to react with a small excess of water in the cold, the title compounds yielded unstable crystalline compounds I and II.

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UDC: 547.341
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ACC No: AP8030666

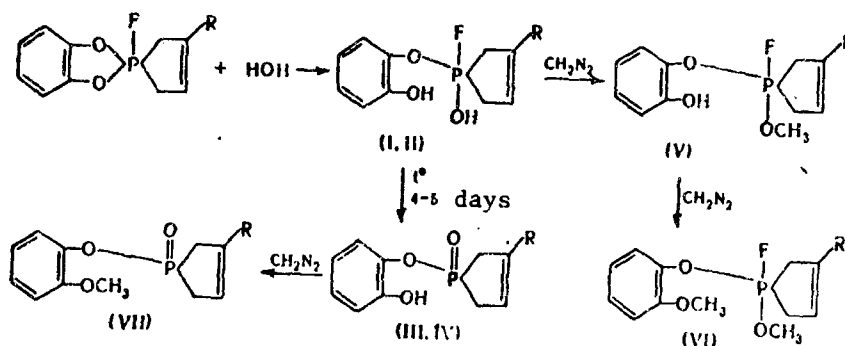


Table 1

No.	Product	% Yield	Bp, °C (p in mm)	d_4^{20}	n_D^{20}
I		38	84 (0.5) 81 (mp)	1.2990	1.5230

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ACC No: AP8030666

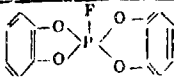
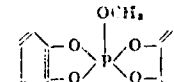
Table 1. (Cont.)

II		42	117 (0.9) 78 (mp)	1.2460	1.519
IV		64	137 (1.0) 57	1.1981	1.5210
V		78	119 (1.0)	1.2260	1.5220
VI		67	109 (0.8)	1.2101	1.5215
VII		73	102 (0.8)	1.1609	1.5115
VIII		81	112 (0.7)	1.2092	1.5240
IX		83	115 (0.8)	1.1909	1.5200

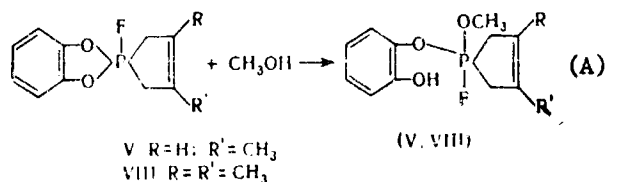
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ACC NR. AP8030666

Table 1. (Cont.)

X		47	112 (mp)	—	—
XI		42	115 (1,2)	1,2780	1,5235

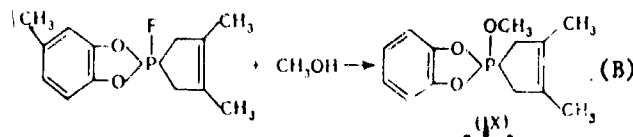
Compounds III and IV were formed when I and II were allowed to stand for 4—5 days or were heated at 100°C for 1—2 hr. Compounds V and VI were obtained by the reaction of II with diazomethane in ether, and VII was obtained similarly from IV. When title compounds without Me in the benzene ring reacted with MeOH, either V or VIII was formed. In the



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ACC NR: AP8030666

reaction of MeOH with title compounds containing Me in the benzene ring, only IX was formed. White crystalline X was obtained when the title



compounds were heated to 180°C. Treatment of X with MeOH yielded XI.



The structures were confirmed by IR and NMR spectra. Orig. art. has: 1 table. [WA-50; CBE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: 12Feb68/ ORIG REF: 005/ OTH REF: 001

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ACCESSION NUMBERS FOR CHEMICAL FACTORS

AP8020467	AP8021124	AP8036754
AP8020468	AP8021125	AP8036755
AP8020469	AP8021126	AP8036756
AP8020470	AP8021127	AP8036757
AP8020471	AP8021128	AP8036758
AP8020472	AP8036747	AP8036759
AP8020473	AP8036748	AP8036760
AP8020474	AP8036749	AP8037328
AP8020475	AP8036750	AP8037329
AP8020476	AP8036751	AP8037330
AP8020477	AP8036752	AP8037331
AP8021122	AP8036753	AP8037332
AP8021123		AP8037333

II. BIOLOGICAL FACTORS

ACC NR: AP8031322

SOURCE CODE: UR/0399/68/000/009/0127/0129

AUTHOR: Andryukin, A. A.; Vinogradova, O. N.; Akhtomova, L. ' .

ORG: Department of Hospital Therapy /Head--Professor F. L. Sukhinin/, Evening Medical Faculty, First Moscow Medical Institute im. I. M. Sechenov (Kafedra gospital'noy terapii lechebnogo vechernego fakul'teta I Moskovskogo meditsinskogo instituta); Second Therapeutic Clinic, Moscow Scientific Research Institute of First Aid im. N. V. Sklifosovskiy /Director--M. M. Tarasov/ (2-ya terapevticheskaya klinika Moskovskogo nauchno-issledovatel'skogo instituta skoroy pomoshchi)

TITLE: The unfavorable effect of TioTEF on hematopoiesis and associated complications

SOURCE: Sovetskaya meditsina, no. 9, 1968, 127-129

TOPIC TAGS: hematopoiesis, antitumor drug effect

ABSTRACT: The unfavorable effect of TioTEF(thiophosphamide) on hematopoiesis was observed during postoperative treatment of a woman with cancer. In the third course of treatment with TioTEF(200 mg, after previous courses of 260 mg and 200 mg) the woman was hospitalized with hemorrhages, severely ill. The first sign of the cytostatic effect of

Card 1/2

UDC: 615.771.7-06:616.419-003.97'008.64+616-006.04-085.771.7-06:616.419-003.971-008.64

ACC NR: AP8031322

TioTEF was a decrease in thrombocyte count in the peripheral blood, after the third injection of TioTEF. Developing thrombocytopenia then led to hemorrhaging. Pronounced inhibition of formation of polymorphonuclear leucocytes and erythrocytes was also noted. Bone marrow tests showed that TioTEF has a most pronounced effect on the formation of thrombocytes and polymorphonuclear leucocytes. [WA-50; CBE No. 37][JS]

SUB CODE: 06/ SUBM DATE: none

Card

2/2

ACC NR:

A78029372

SOURCE CODE: UR/3382/63/025/000/0304/0308

AUTHOR: Anikeev, I. K.

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: Notes on the rodents of the Sovesko-Gavanskiy region of Khabarovsk Krai

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 304-308

TOPIC TAGS: rodent, epizootiology, zoology

ABSTRACT: Seasonal variations in the mammal population of Khabarovskiy Krai were noted. Sixty-one per cent of the region studied is covered with forest. Mammal observations were made between 1956 and 1960 during which time 171,420 mammals were caught and 7038 were studied. Most common rats were the gray rat (*Rattus norvegicus*), the black rat (*Rattus rattus*), and the house mouse (*Mus musculus*). The gray rat was encountered both in the cities and at field catch points. Siberian red vole is the most widely distributed rodent in this area. It composes 69% of the total animals caught during summer field trips. It is most

Card

1/2

ACC NR:

AT8029372

typical of deciduous and mixed forest. It is less often caught in young birch stands and in scrub areas. During years of massive multiplication these animals can increase 21.5-40% over their base number. The large-toothed redbacked vole *C. rufocanus* represents 21-50% of the catch. The reed vole (*Microtus mofotis*) is less well-represented (2-3% of the catch). [WA-50; CBE No. 37] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 011

Card

2/2

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ACC NR: AP8031934

SOURCE CODE: UR/0020/68/182/001/0101/0104

AUTHOR: Arbuzov, B. A. (Academician); Vizel', A. O.; Ivanovskaya, K. M.;
Studentsova, I. A.; Garayev, R. S.

ORG: Institute of Organic and Physical Chemistry im. A. Ye. Arbuzov,
Academy of Sciences SSSR (Institut organicheskoy i fizicheskoy khimii
Akademii nauk SSSR); Kazan State Medical Institute im. S. V. Kurashev
(Kazanskiy gosudarstvennyy meditsinskiy institut)

TITLE: Synthesis and new biological effects of organophosphorus compounds
with low toxicity

SOURCE: AN SSSR. Doklady, v. 182, no. 1, 1968, 101-104

TOPIC TAGS: This article appears in Chemical Factors

Card 1/1

UDC: 547.76:661.718.1:541.69

ACC NR: AP8031714

SOURCE CODE: UR/0346/68/000/009/0024/0026

AUTHOR: Astapovich, L. G.; Ivanova, G. A.; Logginov, S. B.

ORG: Scientific Research Institute of Veterinary Virology and Microbiology (Vsesoyuznyy nauchno-issledovatel'skiy institut veterinarnoy virusologii i mikrobiologii)

TITLE: Electron microscopy of strains of classical fowl plague virus

SOURCE: Veterinariya, no. 9, 1968, 24-26

TOPIC TAGS: fowl plague, electron microscopy

ABSTRACT: Electron microscope studies showed morphological differences between the virulent Rostok strain of fowl plague virus and the avirulent R₅ strain, obtained by adsorption of Rostok strain on chick erythrocytes with subsequent virus multiplication in chick embryo fibroblasts. R₅ viruses consisted of larger particles, and none of the rare forms observed among Rostok viruses (threads, dumbbells, rocket-shaped particles, etc.). Rostok viruses were 30—330 mμ in diameter, as compared with 45—260 mμ for R₅ viruses. The virulent viruses were spherical or slightly elongated, with 7% spindle-shaped. R₅ viruses were also predominately spherical, with only 5% spindle-shaped.

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UDC: 619:616.988.73-094.29

ACC NR: AP8031714

Comparative study showed that most Rostok viruses were 70—80 mμ in size, and most R₅ viruses (which can be classified as incomplete) were 10 mμ larger. Orig. art. has: 2 figures and 2 tables.

[WA-50; CBE No. 37][JS]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 006/ OTH REF: 004

Card

2/2

ACC NR: AT8029344

SOURCE CODE: UR/3382/63/025/000/0072/0077

AUTHOR: Balabkin, A. K.; Gorbacheva, N. A.; Demina, G. I.; Demin, Ye.P.; Kravtseva, A. I.; Shamova, A. M.; Trofimenko, I. P.

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: Epidemiological characteristics of tularemia in the Altai foothills

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 72-77

TOPIC TAGS: tularemia, epidemiologic focus, disease carrying insect, tick, rodent

ABSTRACT: The intensity of the tularemia focus around Mayma in the Altai foothills is determined by the participation of water voles in the epizooty, by the considerable population of Ixodid ticks, and by the wide distribution of *P. tularensis* in water. The participation of field mice in the tularemia epizooty was confirmed by isolation of bacterial cultures from two specimens. Drops in the population of field mice and common voles coincided with epizooties among water voles. For example,

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ACC NR: AT8029344

after an intense epizooty among water voles in 1958, the population of field mice in the winter and spring of 1959 was sharply reduced. Field mice are less susceptible to tularemia, and presumably can spread the infection among more susceptible animals because of their mobility and large numbers. Ixodid tick species found on farm animals in this area included *Dermacentor silvarum* (48.7% of the population), *D. pictus* (27.7%), *Ixodes persulcatus* (14.2%) and *Haemophysalis concinna* (9.2%), with a few examples of *I. aprenophorus*. Three tularemia cultures were isolated from preimaginal forms of *Dermacentor* and *Haemophysalis* ticks collected from a water vole, a common vole, and a hamster. Tularemia cultures were isolated not only from the middle and lower courses of streams in this focus, but also around sources. Contamination of the water may occur from spring migration of water voles or from flooding of field mouse colonies in the spring. Orig. art. has: 4 tables.

[WA-50; CBE No. 37][JS]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 008

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Card 2/2

ACC NR: AP8031728

SOURCE CODE: UR/0346/68/000/009/0090/0093

AUTHOR: Barabanshchikov, N. V.

ORG: Moscow Agricultural Academy im. K. A. Timiryazev (Moskovskaya sel'skokhozyaystvennaya akademiya)

TITLE: Some properties of milk in cows with foot and mouth disease

SOURCE: Veterinariya, no. 9, 1968, 90-93

TOPIC TAGS: hoof and mouth disease, agriculture production

ABSTRACT: During foot and mouth disease of cattle, the milk yield is sharply reduced (34.6% on the average for the herd, or up to 80—85% in individual cows). At the same time the content of solids increases by 13%, the fat content increases by 53.8%, the total protein content increases as much as 20.4% and the content of serum proteins up to 48%. Casein in the milk of cows with foot and mouth disease has different properties, hindering its processing into cheese. After recovery of cows from foot and mouth disease and removal of quarantine (50 days) the composition of milk differed considerably from its composition before the disease period. From the third to the ninth day of disease the content

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UDC: 619:[614.9-07:637.128+616.988.43:636.22/.28]

ACC NR:

AP8031728

of immune globulins increased up to 30% and the content of α -lactalbumin decreased up to 27% as compared with indices before the disease. Orig. art. has: 5 tables. [WA-50; CBE No. 37] [JS]

SUB CODE: 06/ SUBM DATE: none

Card

2/2

ACC NR:

AT8030990

SOURCE CODE: UR/0000/66/000/000/0202/0204

AUTHOR: Barkagan, Z. S.; Val'tseva, I. A.; Mitel'man, L. Sh.; Yagodkin, S. I.; Talyzin, F. F. (Corresponding member AMN SSSR; Professor)

ORG: TsNIL im. S. I. Chechuin, Department of General Biology, First MMI im. Sechenov (TsNIL, kafedra obshchei biologii i MMI); Propedeutic Therapeutic Hospital, Altai Government Medical Institute (Propedeuticheskaya klinika Altaiskogo gosudarstvennogo meditsinskogo instituta)

TITLE: Electroencephalographic evaluation of the effect on the body of fractions of venom from the Central Asian cobra

SOURCE: Reaktivnost' (Reactivity); materialy konferentsii 17-19 yanvarya 1967 goda. Moscow, 1966, 202-204

TOPIC TAGS: anticoagulant drugs, venom, electroencephalography

ABSTRACT: Central Asian cobra venom was separated by electrophoresis into six fractions, one of which (A1) migrated to the anode, and five (K1 through K5) migrated to the cathode. The least toxic fractions, A1 and K1, did not cause poisoning in mice administered doses 1.5-8 times higher than the LD₁₀₀ of nonfractionated venom. The effect of fractions of the venom on the bioelectrical activity of the rabbit brain

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ACC NR:

AT8030990

was compared with that of freshly prepared and dried native venom from the Central Asian cobra. Animals were administered 1 mg/kg subcutaneously, after which bioelectrical activity from the sensomotor areas of the cerebral cortex from unipolar leads was measured. Native venom caused two periods of brain disorder, the first attesting to the excitatory effect of neurotropic snake venom, and the second to a decrease in the lability of the CNS. The highly toxic K5 fraction caused changes similar to those of the native venom. Fractions K2 and K3 caused changes which demonstrated the presence of excitation in the CNS. The nontoxic fractions did not cause substantial changes in the bioelectrical activity of the brain even in quantities five times greater than the LD₁₀₀ of native venom. The external behavior of the animals during the period of action of fractions A1 and K1 did not differ from that of intact animals. However, fraction K1 demonstrated marked anticoagulant activity, completely blocking the formation of fibrin coagulum and prolonging recalcification time to 340 sec. Thus, fraction K1 may be considered a new potent biogenic anticoagulant. [WA-50; CBE No. 37] [XF]

SUB CODE: 06/ SUBM DATE: none

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Card

2/2

ACC NR:

AP8027992

SOURCE CODE: UR/0402/68/000/004/0461/0466

AUTHOR: Berezin, V. V.; Chunakov, M. P.; Semenov, B. F.

ORG: Institute of Poliomyelitis and Viral Encephalitis, AMN SSSR, Moscow (Institut poliomyelita i virusnykh entsefalitov AMN SSSR)

TITLE: Serological data on the role of birds in circulating Sindbis virus in the Volga delta

SOURCE: Voprosy virusologii, no. 4, 1968, 461-466

TOPIC TAGS: virus neutralization test, antibody, Sindbis virus

ABSTRACT: Results of serological study of birds in the Volga delta are shown in Table 1. As can be seen from the table, water fowl and shore birds are most important in circulation of Sindbis virus. Negative serological tests with 86 species of land birds indicate that Sindbis virus does not circulate on land. Antibodies to Sindbis virus were not found in the blood of the following bird species, among others: black tern, Caspian tern, redstart rook, falcon, and grebe. The presence of antibodies to Sindbis virus in young birds indicates the existence of natural foci of this disease in the Volga delta. Study of the migratory routes and wintering places of Ciconiiformes, together

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UDC: 576.858.25:598.2-167] (282.247.41-252.6)

ACC NR:

AP8027992

Table 1. Results of serological study of birds in the Volga delta and adjacent regions of the northwest Caspian area for the presence of antibodies to Sindbis virus

Bird species	Number of specimens	Size of the immune population (percentage)	Mean geometric antibody titer (in log ₂)	Maximum antibody titer
Common heron (<i>Ardea cinerea</i>)	113	16,8±4,07	6,89	1:1 280
Great white heron (<i>Egretta alba</i>)	16	6,6±2,0	—	1:320
Night heron (<i>Nycticorax nycticorax</i>)	66	30,3±5,6	6,8	1:1 280
Squacco heron (<i>Ardeola rallades</i>)	20	30,0±12,2	6,8	1:320
Glossy ibis (<i>Plegadis falcinellus</i>)	17	23,5±10,2	6,6	1:320
Spoonbill (<i>Platalla leucorodia</i>)	19	5,2±5,0	—	1:320
European cormorant (<i>Phalacrocorax carbo</i>)	315	18,7±2,1	6,1	1:1 280
Bald coot (<i>Fulica atra</i>)	35	5,7±2,1	—	1:320
Common tern (<i>Sterna hirunda</i>)	60	8,3±3,4	5,7	1:320
Herring-gull (<i>Larus argentatus</i>)	26	3,8±2,8	—	1:160
Mallard (<i>Anas platyrhynchos</i>)	46	34,7±7,0	6,7	1:5 120
Gray-lag goose (<i>Anser anser</i>)	11	18,6±11,7	—	1:320
Roller (<i>Coracias garrulus</i>)	12	8,3±2,5	—	1:320
Hoopoe (<i>Upupa epops</i>)	12	16,6±11,0	—	1:80
Kestrel (<i>Falco tinnunculus</i>)	8	—	—	1:320

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ACC NR: AP8027992

Table 1. (Cont.)

Spotted eagle (<i>Aquila clanga</i>)	2	--	--	1:80
White-tailed eagle (<i>Haliaeetus albicilla</i>)	2	--	--	1:80
Pheasant (<i>Phasianus colchicus</i>)	5	--	--	1:640

with the high antibody level observed in these birds in early spring indicates that Sindbis virus is brought by Ciconiiformes from Africa and possibly also from India every year. Volga birds were studied in 1964-1966. Orig. art. has: 3 tables. [WA-50; CBE No. 37][JS]

SUB CODE: 06/ SUBM DATE: 18Oct67/ ORIG REF: 002/ OTH REF: 005

Card 3/3

ACC NR: AP8031319

SOURCE CODE: UR/0399/68/000/009/0092/0095

AUTHOR: Bordyug, O. F.

ORG: Second Therapeutic Clinic /Head--Professor P. L. Sukhinin/, Moscow Municipal Scientific Research Institute of First Aid im. M. Z. Sklifosovskiy /Director--M. M. Tarasov/ (2-ya terapevticheskaya klinika Moskovskogo gorodskogo nauchno issledovatel'skogo instituta skoroy pomoshchi)

TITLE: Gaseous composition of the blood during acute intoxication with organophosphorus compounds

SOURCE: Sovetskaya meditsina, no. 9, 1968, 92-95

TOPIC TAGS: organophosphorus insecticide, insecticide damage

ABSTRACT: Preliminary results of a study of the gaseous composition of the blood in patients with acute organophosphorus intoxication (parathion and Dipterex) indicate the development of hypoxic hypoxia, due to oxygen deficiency. Intoxication developed after ingestion of Dipterex or parathion, sometimes in doses exceeding the lethal dose (from 40 to 180 ml): 20 patients recovered and 10 died. Changes in the gaseous composition of the blood during intoxication are shown in Table 1.

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UDC: 615.778.3-099-036.11-07:616.152.21

ACC NR:

AP8031319

Table 1. Change of the gaseous composition of the blood during acute intoxication with organophosphorus compounds ($M \pm m$)

Index	Poisoning with organophosphorus compounds		
	Second stage	Third stage	Norm
O ₂ in arterial blood (in vol. %)	19.9 \pm 3.31	17.4 \pm 2.64	17-21
CO ₂ in arterial blood	49.7 \pm 3.87	53.4 \pm 6.32	43-53
O ₂ in venous blood	11.9 \pm 2.44	14.2 \pm 4.24	8-16
CO ₂ in venous blood	57.6 \pm 5.91	47.9 \pm 3.16	45-60
Arterial-venous difference in O ₂	8.6 \pm 2.11	4.5	6-8
Oxygen capacity of arterial blood	20.2 \pm 0.58	20.6 \pm 1.12	18-23
Saturation of arterial blood with O ₂	91.7 \pm 3.16	86.9 \pm 4.09	94-96
Saturation of venous blood with O ₂	64.6 \pm 3.16	65.6 \pm 3.74	45-75

Arterial hypoxemia was noted in 21 out of 30 patients, decreased saturation of arterial blood with oxygen in 27 patients, and change in the difference in oxygen content between arterial and venous blood in 24 patients (all of which indicate oxygen deprivation). Changes in the

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2/3

ACC NR:

AP8031319

gaseous composition of the blood indicated in Table 1 generally disappeared after administration of atropine or cholinesterase reactivators, except in third-stage intoxication. Alcohol intoxication or pneumonic complications during acute intoxication resulted in death of patients. Orig. art. has: 3 tables. [WA-50; CBE No. 37][JS]

Card

3/3

ACC NR:

AT8029358

SOURCE CODE: UR/3382/63/025/000/0151/0158

AUTHOR: Borsuk, G. I.

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: Changes in phagocytic activity of leucocytes during immunogenesis after plague vaccination

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 151-158

TOPIC TAGS: phagocytosis, leucocyte, immunogenesis, plague, plague vaccine

ABSTRACT: The total number of phagocytes increased by 50% in the first 12 days after subcutaneous vaccination of animals with live anti-plague vaccine, and the number of active leucocytes increased by 10-15%. By the end of the observation period the total number of phagocytes was somewhat lower than in controls but the per cent of active leucocytes increased by about 20-25% from the 19th to the 21st day after immunization. The difference in phagocyte number in immune animals was

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ACC NR:

AT8029358

significantly greater than in blood cells taken from an *in vitro* experiment. Plague vaccine type EV was used. When tested, all mice immunized with this vaccine showed a well-developed phagocytic reaction while there was no such reaction in the control animals. Orig. art. has: 4 tables. [WA-50; CBE No. 37] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 015/ OTH REF: 001

Card

2/2

- 117 -

ACC NR: AP8031950

SOURCE CODE: UR/0062/68/000/009/2070/2073

AUTHOR: Brestkin, A. P.; Brik, I. L.; Ginetsinskaya, L. I.; Godovikov, N. N.; Kabachnik, M. I.; Teplov, N. Ye.

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

TITLE: Inhibition of acetylcholinesterase by O,O-diethyl S-[β-(aryl)-methylamino]ethyl thiophosphates and their methyl sulfomethoxides

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 9, 1968, 2070-2073

TOPIC TAGS: acetylcholinesterase, phosphate ester, kinetic chemical reaction rate

ABSTRACT: This article appears in Chemical Factors

Card 1/1

UDC: 541.69+661.718.1

ACC NR: AP8031958

SOURCE CODE: UR/0062/68/000/009/2161/2162

AUTHOR: Brestkin, A. P.; Brik, I. L.; Ginetsinskaya, L. I.; Godovikov, N. N. Kabachnik, M. I. Teplov, N. Ye.

ORG: Institute of Heteroorganic Compounds, Academy of Sciences SSSR (Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR); Institute of Evolutionary Physiology and Biochemistry im. I. M. Sechenov, Academy of Sciences SSSR (Institut evolyutsionnoy fiziologii i biokhimii Akademii nauk SSSR)

TITLE: Selective inhibition of butyrylcholinesterase

SOURCE: Selective inhibition of butyrylcholinesterase

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 9, 1968, 2161-2162

TOPIC TAGS: cholinesterase, organic phosphorus compound, thiophosphate ester, cholinesterase inhibitor, butyrylcholinesterase

ABSTRACT: This article appears in Chemical Factors

Card 1/1

UDC: 541.69+542.978+547.9

ACC NR: AP8031951

SOURCE CODE: UR/0062/68/000/009/2122/2123

AUTHOR: Brestkin, A. P.; Brik, N. L.; Ginetsinskaya, L. I.; Godovikov, N. N.; Kabachnik, M. I.; Teplov, N. Ye.

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

TITLE: Acetylcholinesterase inhibition by O-ethyl S-aryloxyethyl thiophosphonates

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 9, 1968, 2122-2123

TOPIC TAGS: cholinesterase, organic phosphorus compound, cholinesterase inhibitor, acetylcholinesterase, butyrylcholinesterase, phosphonate ester, thiophosphonate ester.

ABSTRACT: This article appears in Chemical Factors

Card 1/1

UDC: 542.978+547.9+661.7:8.1

ACC NR: AP8029406

SOURCE CODE: UR/0218/68/033/004/002170822

AUTHOR: Brestkin, A. P.; Fruyentova, T. A.

ORG: Institute of Evolutionary Physiology and Biochemistry im. I. M. Sechenov, Leningrad (Institut evolyutsionnoy fiziologii i biokhimi); Khabarovsk State Medical Institute (Khabarovskiy gosudarstvennyy meditsinskiy institut)

TITLE: The effect of salts on the cholinesterase hydrolysis of acetylcholine at various pH

SOURCE: Biokhimiya, v. 33, no. 4, 1968, 817-822

TOPIC TAGS: inorganic salt, cholinesterase, acetylcholine, hydrogen ion concentration

ABSTRACT: This article appears in Chemical Factors

Card 1/1

UDC: 577.15.04

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ACC NR AP8031943

SOURCE CODE: UR/0062/68/000/009/2028/2032

AUTHOR: Brestkin, A. P.; Volkova, R. I.; Godovikov, N. N.; Kabachnik, M. I.

ORG: Institute of Heteroorganic Compounds, Academy of Sciences SSSR (Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR); Institute of Evolutionary Physiology and Biochemistry im. I. M. Sechenov, Academy of Sciences SSSR (Institut evolyutsionnoy fiziologii i biokhimi Akademii nauk SSSR)

TITLE: Anticholinesterase properties of O-ethyl S-(β-alkylmercaptoethyl) methylthiophosphonates and their methyl sulfomethoxides

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 9, 1968, 2028-2032

TOPIC TAGS: cholinesterase, kinetic chemical reaction rate, sorption, thiophosphonate ester

ABSTRACT: This article appears in Chemical Factors

Card 1/1

UDC: 541.69+661.718.1

ACC NR: AP8031400

SOURCE CODE: UR/0433/68/000/009/0014/0016

AUTHOR: Bykovskiy, V. A. (Candidate of biological sciences)

ORG: VIZR (VIZR)

TITLE: Results in the development of chemical methods for control of field rodents

SOURCE: Zashchita rasteniy, no. 9, 1968, 14-16

TOPIC TAGS: rodent, phosphide, pesticide

ABSTRACT: Chemical measures for rodent control in the USSR since 1918 are reviewed. Zinc phosphide has been one of the most widely used agents within the past 30 yr. The avoidance reaction to zinc phosphide develops more slowly than with most poisons. This can be prevented to some extent by mixing the poison with feed the animals prefer: coarse cellular feed with a large amount of moisture for voles, seed for mice, and ats for susliks. A special survey by the All-Union Institute of Plant Protection determined that oats and barley treated with zinc phosphide (10, 15, and 20% solutions) during spring and summer did not constitute a hazard to herbivorous, carnivorous and other warm-blooded animals beneficial to man. Similar results were noted in studies in the Rostov area. However, in

Card 1/2

UDC: 632.958.31

ACC NR: AP8031400

Barabin lowlands, geese and other fowl were adversely affected by zinc phosphide. This indicates the necessity for regional evaluation of the safety of the agent. Other organic fluorinated compounds which may be substituted for zinc fluoride are diftoran, monofluorine, and glifluorine. Glifluorine is nontoxic for birds, and rodents develop an avoidance reaction slowly. It is considered an important agent for the control of susliks. However, a continued search for rodenticides with a narrower range of action with high toxicity for rodents and safety for beneficial animals is necessary. [WA-50; CBE No. 37] [XF]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AT8032006

SOURCE CODE: UR/0000/67/000/000/0130/0135

AUTHOR: Chichigina, A. A.

ORG: Irkutsk Scientific Research Institute of Epidemiology and Microbiology (Irkutskiy nauchno-issledovatel'skiy institut epidemiologii i mikrobiologii)

TITLE: Some properties of associated toxins of *Cl. perfringens* types A, B, or D with *E. coli*. Report 1. Hemolytic and lecithinase activity of associated toxins of *Cl. perfringens* types A, B or D with *E. coli*

SOURCE: Irkutsk. Nauchno-issledovatel'skiy institut epidemiologii i mikrobiologii. Materialy nauchnoy knoferentsii. Irkutsk, Vostochno-Sibirskoye knizhnoye izd-vo, 1967, 130-135

TOPIC TAGS: clostridium, escherichia coli, bacterial toxin

ABSTRACT: Study of the activity of associated toxins of *Cl. perfringens* types A (A-235); B (B-216); or D (D-214) with enteropathogenic *E. coli* (strains 0111, 055, 026) showed that the hemolytic activity of associated toxins was lower in 86% of tests than the activity of pure cultures of *Cl. perfringens* and *E. coli*. In 11% of tests the hemolytic activity of associated toxins did not change and in 3% of cases, the associated toxin

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ACC NR: AT8032006

was more active. Filtrates of pure cultures of types A, B or D hemolysed rabbit erythrocytes in a dose of 0.006—0.002 ml, whereas a dose of 0.04—0.02 ml of associated toxins was required. Lecithinase activity of associated toxins was weakened in 87.5% of cases, unchanged in 8.3% of cases, and intensified in only 4.2% of cases. Type A toxin decomposed lecithin in a dose of 0.008 ml, but under the influence of *E. coli* (regardless of serotype) lecithinase activity was reduced 2.4 times. Filtrates of pure cultures of types B and D decomposed lecithin in a dose of 0.04 ml, while associated toxins did not react positively in the test. Apparently, *E. coli* is an antagonist of *Cl. perfringens* types A, B, and D, especially of B and D. Orig. art. has: 1 table.

[WA-50; CBE No. 37] [JS]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AT8032007

SOURCE CODE: UR/0000/67/000/000/0136/0140

AUTHOR: Chichigina, A. A.

ORG: Irkutsk Scientific Research Institute of Epidemiology and Microbiology (Irkutskiy nauchno-issledovatel'skiy institut epidemiologii i mikrobiologii)

TITLE: Properties of associated toxins of *Cl. perfringens* types A, B and D with *E. coli*. Report II. Reaction of a living organism to injection of associated toxins of *Cl. perfringens* types A, B or D with *E. coli*

SOURCE: Irkutsk. Nauchno-issledovatel'skiy institut epidemiologii i mikrobiologii. Materialy nauchnoy konferentsii. Irkutsk, Vostochno-Sibirskoye knizhnoye izd-vo, 1967, 136-140

TOPIC TAGS: clostridium, bacterial toxin, escherichia coli

ABSTRACT: Different types of *Cl. perfringens* (A, B, D) in association with *E. coli* (both cultures grown together for 18 hr) behave differently. The most toxigenic type, type B, was most damaged by the effect of *E. coli*. The lethal activity of this type decreased considerably in 77% of tests with associated toxin, and necrotic activity decreased in 87.5%

Card 1/2

ACC NR: AT8032007

of tests. The lethal activity of type A in association with *E. coli* dropped 56.5%, and the necrotic activity—58%. The corresponding figures for type D were 48% and 67%, respectively. It was concluded that *E. coli* serotypes 0111, 055, and 026 are antagonists of *Cl. perfringens* types A, B, and D. The effect of types 011, 055, and 026 on *Cl. perfringens* was identical. White mice and guinea pigs were used to determine lethal activity and necrotic activity, respectively. Orig. art. has: 1 table.

[WA-50; CBE No. 37] [JS]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AP8029572

SOURCE CODE: CZ/0093/68/012/004/0361/0366

AUTHOR: Danes, L.; Kruml, J.; Mandel, L.; Kamarytova, V.

ORG: Military Institute of Hygiene, Epidemiology, and Microbiology, Prague; Department of Immunology, Institute of Microbiology Czechoslovak Academy of Sciences, Prague; Gnotobiological Laboratory, Czechoslovak Academy of Sciences, Novy Hradek nad Metuji, Czechoslovakia

TITLE: Experimental inhalation infection of germ-free pigs with vaccinia virus

SOURCE: Acta virologica, v. 12, no. 4, 1968, 361-366 and appropriate insert following p. 384

TOPIC TAGS: vaccinia virus, smallpox vaccine, experimental medicine, gnotobiology

ABSTRACT: Three groups of germ-free pigs were infected with various doses of vaccinia virus (*poxvirus officinale*) by the aerosol route. Extensive multiplication of the virus occurred in the lung. Penetration of the virus into the lymph nodes depended on the size of the inhalation dose and the degree of multiplication in the respiratory tract. Occasionally virus appeared in the kidneys, but viremia was not detected.

Card 1/3

ACC NR: AP8029572

Immunofluorescence demonstrated virus in the bronchiolar epithelium and in alveoli. Inhalation infection was carried out in an aerosol flow chamber by the Danes technique. The method of calculating inhalation dose size was also given by Danes. Virus titration was done in HeLa cells and the results were expressed as the number of plaque-forming units (PFU) per milliliter of fluid, per gram of organ, or per million cells. The direct immunofluorescence method was used. A fluorescein isothiocyanate conjugate of antivaccinial rabbit serum was used. Maximum replication of virus occurred in pulmonary tissue from 10—96 hr after infection. The infectivity of cells obtained by lavage increased and then decreased during the experiment. Relatively small doses of inhaled virus produced approximately 441—586 PFU of virus per animal. In animals killed after 10 days, the virus was present in both the peripheral and regional lymph nodes and in the upper and lower respiratory tracts. Lymph node material was less infective than lung material. No virus was demonstrated in the blood, spleen, or liver. In fluorescence studies, the fluorescence was associated with the bronchiolar epithelium. Fluorescence also occurred in cells in the alveolar spaces or in cells bound to structures of the alveolar septa. Fluorescence was particularly intense in cells of the bronchial lumina. The advantage of using germ-free, noncolostrical pigs for studying virus infection was that they permitted the study of the progression of the infection without having to deal with and compensate for bacterial

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Card 2/3

ACC NR: AP8029572

contamination. Also, the size of the pigs is sufficient to ensure exact measurement of inhalation dose and for the preparation of organ slides for pathology studies. The time required for penetration into the lymph nodes was directly proportional to the dose size and always coincided with the interval at which the virus had already considerably multiplied in lung tissue. Immunofluorescence revealed that the bronchiolar epithelial cells and alveolar cells are the sites at which viral antigen may be demonstrated early after infection. Vaccinia virus was more virulent when given to germ-free pigs than to adult rabbits. Orig. art. has: 2 tables and 2 figures.

[WA-50; CBE No. 37] [LP]

SUB CODE: 06/ SUBM DATE: none/ OTH REF: 008

Card 3/3

ACC NR: AT8029366 SOURCE CODE: UR/3382/63/025/000/0248/0253

AUTHOR: Devyatkina, M. S.

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: The distribution by habitat and population of mammals around Nihangou Bay

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya, v. 25, 1963, 248-253

TOPIC TAGS: encephalitis, epidemiologic focus, disease carrying mammal

ABSTRACT: The distribution of rodents by habitat in the tickborne

Card 1/3

ACC NR: AT8029366

Table 1. The distribution by habitat and population of murine rodents and other mammals in the area of Tikhangu Bay

Habitat	Number of trap-days	Number of trapped animals	Percent trapped																
			Striped field mouse	Common field mouse	Reed vole	Large-toothed red-backed vole	Norway rat	Black rat	House mouse	Harvest mouse	Siberian chipmunk	Red squirrel	Russian fly-ing squirrel	Manchurian hare	Shrew	Narur hedgehog	Ussur vole	Siberian weasel	Hoofed mammals
Brush	8230	406	3.1	1.2	0.9	0.2	0.1	-	0.06	p	-	-	-	0	p	p	p	-	-
Sparse deciduous forest	1300	392	3.4	4.1	0.6	0.2	-	-	0.008	p	p	p	-	0	p	-	-	-	p
Coniferous-deciduous taiga	3400	703	0.7	12.7	0.06	7.0	op	-	-	op	o	o	p	p	p	-	-	-	-
Worm wood thickets	3800	483	7.1	3.3	1.3	0.9	0.08	-	-	o	-	-	-	p	0.2	p	p	-	-
Crop plantings	3830	404	7.1	0.8	1.1	0.2	0.2	-	0.3	p	p	-	-	-	0.05	-	p	op	-
Banks of streams overgrown with thick underbrush	4050	393	6.7	0.1	1.6	0.2	0.5	-	-	-	-	-	-	0.4	-	-	-	p	-
Mixed-grass meadows	8.0	66	8.8	0.5	0.8	0.1	0.2	-	-	0	-	-	-	p	-	-	-	-	-
Beaches	visually	-	-	-	-	-	p	-	-	-	-	-	-	-	-	-	-	-	-
Settlements	67800	2961	0.1	0.01	op	op	1.3	p	2.8	op	op	-	-	p	-	-	-	-	-

Note to table: 0 = common, p = rare, op = very rare.

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ACC NR: AT8029366

encephalitis focus around Tikhangu, as revealed by collections in 1954-1960, is shown in Table 1. Orig. art. has: 2 tables.

[WA-50; CBE No. 37] [JS]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 006

Card 3/3

ACC NR:

AP8029034

SOURCE CODE: UR/0016/68/000/008/C104/0108

AUTHOR: Domaradskiy, I. V.; Grigoryan, E. G.; Borzenkova, V. I.; Val'kov, B. G.

ORG: Rostov-on-Don Scientific Research Antiplague Institute (Rostovskiy-na-Donu nauchno-issledovatel'skiy protivochumnyy institut)

TITLE: Multiplication of *P. pestis* in sterile and nonsterile soil

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 8, 1968, 104-108

TOPIC TAGS: *pasteurella pestis*, soil bacteriology

ABSTRACT: *Pasteurella pestis* strains multiplied in media based on soil suspensions. Chernozems, red soils, and yellow podsols from different parts of the Soviet Union were used. A total of 18 plague strains isolated from various hosts (animals and man) were studied. Plague bacteria multiplied in both sterile and nonsterile doses of soil, and did not lose virulence after 6--8 days in soil. Plague bacteria remained viable longer in sterile soil. Orig. art. has: 3 tables.

[WA-50; CBE No. 37][JS]

SUB CODE: 06/ SUBM DATE: 08Jul67/ ORIG REF: 004/ OTH REF: 004

Card

1/1

UDC: 576.851.45.095.15/.16:
616.981.452-022.33-036.21

ACC NR:

AT8029348

SOURCE CODE: UR/3382/63/025/000/0098/0100

AUTHOR: Domaradskiy, I. V.; Rykova, V. I.; Tkachenko, V. V.

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: The lecithinase activity of plague and tularemia bacteria

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 98-100

TOPIC TAGS: *pasteurella pestis*, *pasteurella tularensis*, lecithinase

ABSTRACT: Tularemia bacteria (strains 15, 464, and 484) and plague bacteria (strains 1, 17, and EB) did not form lecithinase C. Lecithinase activity was also not observed in products of either bacterial species after ultrasonic disintegration. Fraction II, water-soluble and water-insoluble fractions of plague bacteria also did not form lecithinase C. The absence of lecithinase C in plague bacteria is not surprising because *P. pestis* has very low hydrolytic activity. Utilization of lecithin by tularemia bacteria is apparently made possible by another enzyme system, possibly one like lecithinase A. Orig. art. has: 1 table.

[WA-50; CBE No. 37][JS]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 008/ OTH REF: 003
1/1 - 187 -

Card

ACC NR: AT8032003

SOURCE CODE: UR/0000/67/000/000/0119/0121

AUTHOR: Dotsenko, P. S.

ORG: Irkutsk Scientific Research Institute of Epidemiology and Microbiology (Irkutskiy nauchno-issledovatel'skiy institut epidemiologii i mikrobiologii)

TITLE: The protective properties of antiperfringens sera types A, B, and D during infection of animals with different types of *Cl. perfringens* in association with pathogenic *Staphylococcus*

SOURCE: Irkutsk. Nauchno-issledovatel'skiy institut epidemiologii i mikrobiologii. Materialy nauchnoy konferentsii. Irkutsk, Vostochno-Sibirskoye knizhnoye izd-vo, 1967, 119-121

TOPIC TAGS: clostridium, staphylococcus

ABSTRACT: Study of the protective properties of antiperfringens sera types A, B, and D in association with pathogenic *Staphylococcus* showed that with infection of guinea pigs with a culture of *C. perfringens* type A28-K (producing a stronger toxin) and with strain 235/70 (producing weaker toxin), taken either separately or as a mixture with strains 5, 23, 38, or 41 of *Staphylococcus*, antiperfringens type A serum gave a good protective effect. Similar results were obtained with type B (strain

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ACC NR: AT8032003

B-216) and type D (strain D-214) sera. The D₅₀ for guinea pigs of each type of toxin and its mixture was set as the dose causing death of animals within a day or two. Experimental data indicate that during infection of animals with *Cl. perfringens* types A, B, or D in association with pathogenic *Staphylococcus*, oscillations of toxigenic and virulent properties take place. Tests of antiperfringens sera showed that doses of 100—200 IU gave a good protective effect. Orig. art. has: 1 table. [WA-50; CBE No. 37][JS]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR:

AP8030530

SOURCE CODE: UR/0177/68/000/009/0056/0060

AUTHOR: D'yakov, S. I.

ORG: none

TITLE: Rapid laboratory diagnosis of dysentery by the immunofluorescent method

SOURCE: Voenno-meditsinskiy zhurnal, no. 9, 1968, 56-60

TOPIC TAGS: fluorescent antibody method, diagnostic medicine, dysentery, human ailment

ABSTRACT: This method is designed to employ fluorescent antibodies in distinguishing healthy fecal samples from those obtained from patients suffering from dysentery. Studies were based on examination of 1499 samples from 1137 persons. This method was high specific, highly sensitive and rapid, and is recommended for wide practical use for diagnosis of Sonneis dysentery and other varieties as well. It should be useful for employment during outbreaks and for distinguishing different species of microbial agents. The method should become even more effective with the introduction of monoreceptor type-specific fluorescing sera and use of phageimmunofluorescence with indicator phages. Orig. art. has: 2 tables. [WA-50; CBE No. 37] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 005/ OTH REF: 002
1/1 UDC: 616.935:616-078

Card

ACC NR:

AP8024839

SOURCE CODE: UR/0358/68/037/003/0263/0270

AUTHOR: Fastovskaya, E. I.; Kul'vinova, I. N.; Shlyaposhnikov, M. S.

ORG: Institute of Medical Parasitology and Tropical Medicine im. E. I. Martsinovskiy, Ministry of Public Health SSSR, Moscow (Institut meditsinskoy parazitologii i tropicheskoy meditsiny Ministerstva zdravookhraneniya SSSR)

TITLE: Tickborne encephalitis in the construction zone of the Sayano-shushenskaya hydroelectric station

SOURCE: Meditsinskaya parazitologiya i parazitarnyye bolezni, v. 37, no. 3, 1968, 263-270

TOPIC TAGS: epidemiology, tickborne encephalitis, disease vector, disease carrying tick, diagnostic medicine, serology, pest control method

ABSTRACT: The construction zone of the Sayano-Shushenskaya hydroelectric power station is located within a natural focus of tickborne encephalitis containing a large population of the disease vector, the tick *Ixodes persulcatus*. Serological testing of the local population showed that 71.5 % of all persons tested had a positive HI reaction to TBE serum. Epidemiologists studied the entire human and domestic

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UDC: 616.988.25-022.395.42-036.21(571.513)

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ACC NR:

AP8024839

cattle populations of the small villages of Karlovo and Maina. Home visits for the purpose of obtaining serum samples were made among the taiga population. Prophylaxis included antitick treatments and sanitation lectures to the people. Antitick measures were more effective in the villages than in open country. Tick treatments in the terraces along the Yenesei sharply reduced the number of ticks. Tick contact was also reduced sharply between 1964 and 1966 as a result of antitick measures. During the same period, the number of immune persons rose. Persons employed in the Maina lumber mill had more contact with ticks than the townspeople. Of the population, 48.9 % reacted positively to the HI test. Of 1—2-yr-olds, 53.8 % were positive; of 3—4-yr-olds, 65 %; of 5—10-yr-olds, 70 %; and of teenagers and adults, 78.4 %. Results in other villages and settlement areas were similar to those in Karlovo, making the population average of positive responses 71.5 %. Orig. art. has: 5 tables. [WA-50; CBE No. 37] [LP]

SUB CODE: 06/ SUBM DATE: 16Jun67/ ORIG REF: 006

Card

2/2

ACC NR:

AP8031721

SOURCE CODE: UR/0346/68/000/009/0037/0039

AUTHOR: Filippov, F. F. (Veterinarian); Kapitanaki, M. V. (Candidate of veterinary sciences)

ORG: [Filippov] Krasnodar Scientific Research Veterinary Station (Krasnodarskaya nauchno-issledovatel'skaya veterinarnaya stantsiya); [Kapitanaki] Krasnodar Regional Veterinary Laboratory (Krasnodarskaya krayevaya veterinarnaya laboratoriya)

TITLE: Chronic streptococcal septicemia in chickens

SOURCE: Veterinariya, no. 9, 1968, 37-39

TOPIC TAGS: bacterial disease, epizootiology

ABSTRACT: Two species of hemolytic *Streptococcus*, *Str. zooepidemicus* and *Str. zymogenes* were isolated from chickens with localized forms of streptococcosis in Slavyansk rayon of Krasnodar kray in 1966. Egg yield decreased 45 to 50% during the enzootic and more than 1000 out of 12,000 chickens died or were slaughtered between March and April. More than 90% of affected chickens showed pathological changes, mostly in the abdomen. Strains of *Str. zooepidemicus* dissociated into R-forms and S-forms (predominant and less virulent). Neither streptomycin nor

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ACC NR: AP8031721

furazolidone was effective against this disease. Recommended preventive measures include thorough disinfection, slaughter or isolation of sick fowl, and improvement of feed and vitamins. Sulfadimidine is recommended for treatment. Orig. art. has: 1 figure. [WA-50; CBE No. 37][JS]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AT8032012 SOURCE CODE: UR/0000/67/000/000/0160/0165

AUTHOR: Florensova, V. A.; Galushko, L. G.

ORG: Irkutsk Scientific Research Institute of Epidemiology and Microbiology (Irkutskiy nauchno-issledovatel'skiy institut epidemiologii i mikrobiologii)

TITLE: The dependence of the immunogenic properties of rabies vaccine on its content of live rabies fixed virus

SOURCE: Irkutsk. Nauchno-issledovatel'skiy institut epidemiologii i mikrobiologii. Materialy nauchnoy konferentsii. Irkutsk, Vostochno-Sibirskoye knizhnoye izd-vo, 1967, 160-165

TOPIC TAGS: rabies, rabies vaccine

ABSTRACT: Cataphoresis of vaccine with live rabies fixed virus and Fermi vaccine showed that the former retains immunogenic properties in sufficient titer after the expiration of its period of suitability (2 months), whereas Fermi vaccine loses immunogenic properties toward the end of the 2-month period. Cataphoresis was used to determine the presence of rabies fixed virus in inactivated Fermi vaccine 3.5-4.5 months after its preparation. Cataphoresis was conducted for 3 hr at

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ACC NR:

AT8032012

130 v and pH 6. Particles of live rabies fixed virus accumulated only at the anode. Samples collected at the anode caused death of mice (upon intracerebral injection of 0.03 ml) in 90—100% of cases. None of the cathode samples caused death of mice. Immunogenic properties, expressed as the resistance index of immunized animals, were much higher in vaccines with live rabies fixed virus than in Fermi vaccine. Orig. art. has: 1 table. [WA-50; CBE No. 37][JS]

SUB CODE: 06/ SUBM DATE: none

Card

2/2

ACC NR:

AT8031994

SOURCE CODE: UR/0000/67/000/000/0064/0068

AUTHOR: Florensova, V. A.; Vasenin, A. A.

ORG: Irkutsk Scientific Research Institute of Epidemiology and Microbiology (Irkutskiy nauchno-issledovatel'skiy institut epidemiologii i mikrobiologii)

TITLE: The possibility of using interference between tickborne encephalitis virus and rabies fixed virus for diagnosis of tickborne encephalitis

SOURCE: Irkutsk. Nauchno-issledovatel'skiy institut epidemiologii i mikrobiologii. Materialy nauchnoy konferentsii. Irkutsk, Vostochno-Sibirskoye knizhnoye izd-vo, 1967, 64-68

TOPIC TAGS: encephalitis, rabies, tissue culture

ABSTRACT: Study of interference between rabies fixed virus (Moscow strain) and tickborne encephalitis virus (Sophian strain) showed that the maximum degree of interference was observed when encephalitis was introduced 32—80 hr after an initial infection with rabies virus. The titer of encephalitis virus was 6.0—7.0 lg LD₅₀ per 0.03 ml, and 6.5—6.7 lg LD₅₀ per 0.03 ml for rabies virus. However, introduction of rabies fixed virus after infection with tickborne encephalitis virus did

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ACC NR:

AT8031994

not protect white mice from disease. Rabies virus was injected intraperitoneally in doses of 0.23 ml—0.3 ml (in the experiments in which interference occurred). Superinfection with encephalitis virus involved a dose of 0.03 ml. From 14 to 17 mice out of 20 survived. Cytopathic effects were not observed when viruses were introduced into tissue cultures (chick embryo fibroblast, human amnion, Hep-2, Liv). Orig. art. has: 4 figures. [WA-50, CBE No. 37][JS]

SUB CODE: 06/ SUBM DATE: none

Card

2/2

ACC NR:

AT8032011

SOURCE CODE: UR/0000/67/000/000/0153/0155

AUTHOR: Galushko, L. G.; Shchamel', Ye. I.

ORG: Irkutsk Scientific Research Institute of Epidemiology (Irkutskiy nauchno-issledovatel'skiy institut epidemiologii i mikrobiologii)

TITLE: The use of Rivanol for experimental purification of antitoxic sera

SOURCE: Irkutsk. Nauchno-issledovatel'skiy institut epidemiologii i mikrobiologii. Materialy nauchnoy konferentsii. Irkutsk, Vostochno-Sibirskoye knizhnoye izd-vo, 1967, 153-155

TOPIC TAGS: antitoxin, tetanus, diphtheria

ABSTRACT: Antidiphtheria serum purified with Rivanol had the same anaphylactic properties as serum purified with Diaferm-3, when injected into guinea pigs. Antitetanus serum purified with Rivanol had more pronounced anaphylactic properties than serum purified with Diaferm-3. The antitoxin yield for serum purified by a single precipitation with Rivanol was 72% for antidiphtheria serum and 78% for antitetanus serum. Purification of antidiphtheria serum with Rivanol gave better results than the industrial method, but purification of antitetanus serum with

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ACC NR:

AT8032011

Rivanol was not as satisfactory as the industrial method. Orig. art.
has: 1 table. [WA-50; CBE No. 37][JS]

SUB CODE: 06/ SUBM DATE: none

Card

2/2

ACC NR:

AT8029379

SOURCE CODE: UR/3382/63/025/000/0384/0390

AUTHOR: Garbuzov, M. I.

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: Use of poisoned bait to control small rodents in Khabarovsk kray

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i
Dal'nego Vostoka. Izvestiya, v. 25, 1963, 384-390

TOPIC TAGS: typhus, tularemia, disease vector, rodent, pest control
method

ABSTRACT: Poison bait was successfully used to control small rodents in
unsettled areas in the southern part of Khabarovsk kray. Recommended
carriers for the bait are grain, oats, barley, wheat, and other grains.
Root crops such as beets quickly lose their attractiveness for rodents.
The best and most successful poison was zinc phosphide (4-5 % by weight
of filler). Poison bait was distributed by scattering it in the fields.
The effective dose was 1.5-2 kg poison bait per hectare. Efficiency
was 79.3% (spring--80.8%, summer--58.4%, and autumn--83.0%). Spring is

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ACC NR: AT8029379

the best season for beginning rodent eradication measures. Work should begin after the snow melts and plant growth is well under way. The next best time for application, or the best time for secondary application, is autumn after the frost and before deep snow appears. Orig. art. has: 3 tables. [WA-50; CBE No. 37] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 010

Card 2/2

ACC NR: AT8029369 SOURCE CODE: UR/3382/63/025/000/0286/0295

AUTHOR: Garbuzov, M. A.; Lipayev, V. M.

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: Rodents of the Kamchatka peninsula

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 286-295

TOPIC TAGS: rodent, animal ecology, population ecology, epizootiology

ABSTRACT: The article discusses the geography, topography, climate, and rodent population of the Kamchatka peninsula. Mammals of 12 different types of biotopes were investigated. Five species were investigated: two types of voles, *Microtus oeconomus*, two long-tailed susliks (*Citellus unguilatus*) and one other species, and the northern pika (*O. hyperborea*). The Siberian red vole (*C. rutilus*) is the most widely distributed and most numerous species in all biotopes (ranging from 83.1% to 90.6% of all mammals in lowland locations studied, to 25% in

Card 1/3

ACC NR:

AT8029369

Table 1. Results of population counts of murine rodents on Kamchatka in August of 1958 and 1959

Biotope	Number of rodents (in %) of animals observed					
	River valleys of Kamchatka			Kolstroy Kystroy river valley		
	<i>Clethrionomys rutilus</i>	<i>C. rufocanus</i>	<i>Microtus oeconomus</i>	<i>Clethrionomys rutilus</i>	<i>C. rufocanus</i>	<i>Microtus oeconomus</i>
Lowland forest	20.5	2.5	1.5	5.1	1.5	5.5
Reedy meadow	—	—	—	4.0	0.5	0.2
Tundra lowlands	25.0	2.1	—	4.5	0.1	0
White birch forest	45.5	4.7	1.0	10.7	0.4	0.05
Forest meadows	—	—	—	5.7	0.3	0
Rocky birch forest	43.8	0	4.2	4.3	0.2	0
Cedar stands	—	—	—	6.0	2.0	0
Alpine meadows	—	—	—	3.0	1.0	0
High mountain rocky tundra	—	—	—	0	0	0
Deciduous forest	30.0	13.0	—	—	—	—
Old cuttings	30.0	17.0	—	—	—	—
Forest berry and scrub	42.5	7.4	18.1	8.0	0	0
Total	43.7	5.6	3.3	6.9	0.6	0.1
Relation of species in % of the total catches	83.1	10.6	4.3	93.8	7.8	1.6

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ACC NR:

AT8029369

the tundra and 50% in mixed forests). A summary of population studies in the different biotopes is presented in Table 1. Orig. art. has: 4 tables. [WA-50; CBE No. 37] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 016

Card

3/3

ACC NR: AP8031732

SOURCE CODE: UR/0346/68/000/009/0108/0109

AUTHOR: Golikov, A. V. (Candidate of veterinary sciences); Polyakova, V. S. (Research associate)

ORG: [Gol'kov] Tselinograd Scientific Research Veterinary Station (Tselinogradskaya nauchno-issledovatel'skaya veterinarnaya stantsiya); [Polyakova] Kazakh Scientific Research Veterinary Institute (Kazakhskiy nauchno-issledovatel'skiy veterinarnyy institut)

TITLE: Preserving vibrios by lyophilization

SOURCE: Veterinariya, no. 9, 1968, 108-109

TOPIC TAGS: lyophilization, culture method

ABSTRACT: After lyophilization strains of *Vibrio fetus* *venerealis* (two strains), *V. fetus* *intestinalis* (one strain), and *V. bubulus* (one strain) remained viable and retained cultural, morphological, biochemical, and pathogenic properties after 24 months of storage, depending on the medium. Vibrios lived 24 months in 5% gelatin with 10% sucrose, skimmed milk, 1.5% gelatin with 10% sucrose, and aminopeptide-2. On normal medium, vibrio cultures must be transferred every 10-12 days and do not retain properties. Cultures were frozen for 8 hr at -50°C and then

Card 1/2

UDC: 619:616.981.31-095.162

ACC NR: AP8031732

vacuum dried for 24 hr at a temperature of -10 to 25°C. Bovine amniotic fluid and sheep amniotic fluid were not suitable for lyophilization of vibrios. Orig. art. has: 1 table. [WA-50; CBE No. 37][JS]

SUB CODE: 06/ SUBM DATE: none

Card

2/2

ACC NR:

AP8026914

SOURCE CODE: UR/0016/68/000/006/0041/0046

AUTHOR: Golubeva, A. A.; Markaryan, A. G.

ORG: Institute of Epidemiology and Microbiology im. Gamaleya, AMN SSSR
(Institut epidemiologii i Mikrobiologii AMN SSSR)

TITLE: Successful control and prophylaxis of brucellosis among the
population of the RSFSR

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 6,
1968, 41-46

TOPIC TAGS: brucellosis, human ailment, disease therapeutics, disease
vector, hygiene

ABSTRACT: Brucellosis was spread throughout a considerable portion of
the RSFSR by the importation of animals from abroad and by transportation
of animals within the Soviet Union. During the World War II, and during
the post-war period, relatively uncontrolled importation and internal
transport of animals prevailed, thus causing the build-up of brucellosis
foci among goats and sheep in areas previously not listed as focal areas.
This was also coupled with a reduction of anti-epizootic controls
during the war years. These new epizootic foci and the increased
incidence in old foci were responsible for a significant increase in

Card

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UDC: 616.981.42-084(470)

ACC NR:

AP8026914

brucellosis in the post-war years necessitating complex and sustained
antiepidemic and vaccination measures in all parts of the RSFSR. The
number of human cases during this period also rose but with the
initiation of successful brucellosis control measures in the fifties,
cases dropped yearly and by 1965 the number of cases was one-fifth of
that in 1950. Some districts reported complete eradication of the
disease. Orig. art. has: 2 figures. [WA-50; CBE No. 37] [LP]

SUB CODE: 06/ SUBM DATE: 13Jun67

Card

2/2

ACC NR: AP8031330

SOURCE CODE: UR/0464/68/000/004/0453/0459

AUTHOR: Grinshteyn, V. Ya.; Sherin', L. A.; Blum, R. K.; Ratenberg, N. S.

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

TITLE: Synthesis and study of potential antidepressants. II. Synthesis, biochemical and pharmacological study of some β -hydroxyethylhydrazides and β -hydroxyethylhydrazines

SOURCE: AN LatSSR. Izvestiya. Seriya khimicheskaya, no. 4, 1968, 453-459

TOPIC TAGS: hydrazine compound, oxidase, drug dosage response

ABSTRACT: This article appears in Chemical Factors

Card 1/1

UDC: 547.298.61+547.234.2+577.150.4

ACC NR: AP8024910

SOURCE CODE: UR/0016/68/000/005/0102/0112

AUTHOR: Il'chenko, T. D.

ORG: Central Epidemiology Institute, Ministry of Health SSSR, Moscow (Tsentral'nyy institut epidemiologii Ministerstvo zdravookhraneniya SSSR)

TITLE: Nosogeography of acute intestinal infections in the USSR

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 5, 1968, 102-112

TOPIC TAGS: human ailment, enteritis, medical geography, epidemiology

ABSTRACT: Extensive geographical studies of regions in the Soviet Union showed that in some territories, morbidity to acute infectious diseases of the intestinal tract was always high or was always low. The same regularity persisted from year to year although morbidity levels varied. This still held up in the face of separate analyses of morbidity among urban and rural populations. There was a definite relation to disease incidence and climate. The number of cases rises with increased extremity in temperature (both high and low) and also in a progression from west to east. Highest incidence was in continental climate zones. Areas

Card

1/6

UDC: 616.34-022-036.11-039.21:91(47)



Fig. 1. Morbidity of acute intestinal infections (5-yr average 1960 to 1964) for republics, krais and oblasts of the Soviet Union. 1—6: progressively higher infectious levels.

Card

2/6

ACC NR:

AP8024910

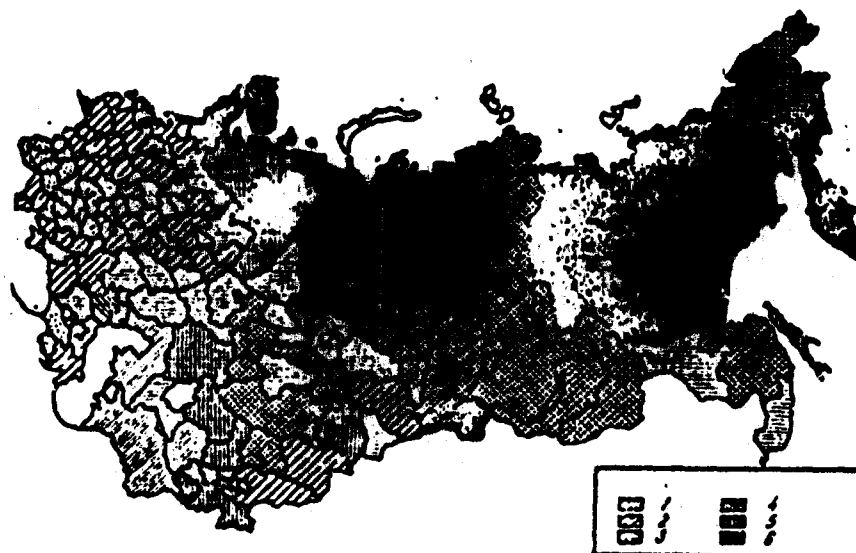


Fig. 2. Morbidity to acute intestinal infections among the urban population of republics, krais and oblasts of the Soviet Union (1960 to 1964). 1—6: progressively higher infectious levels.

Card

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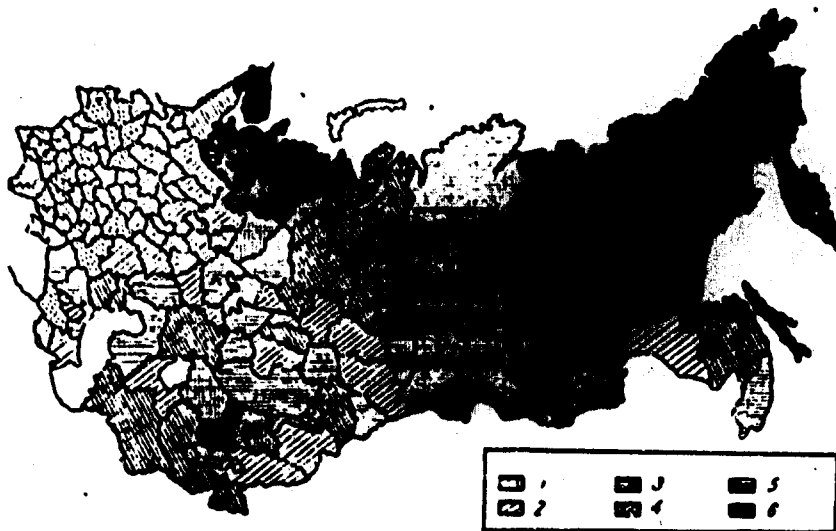


Fig. 3. Morbidity of acute intestinal infections among the rural population of republics, krays and oblasts of the Soviet Union (1960—1964). 1—6: progressively higher infectious levels.

Card

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ACC NR:

AP8024910

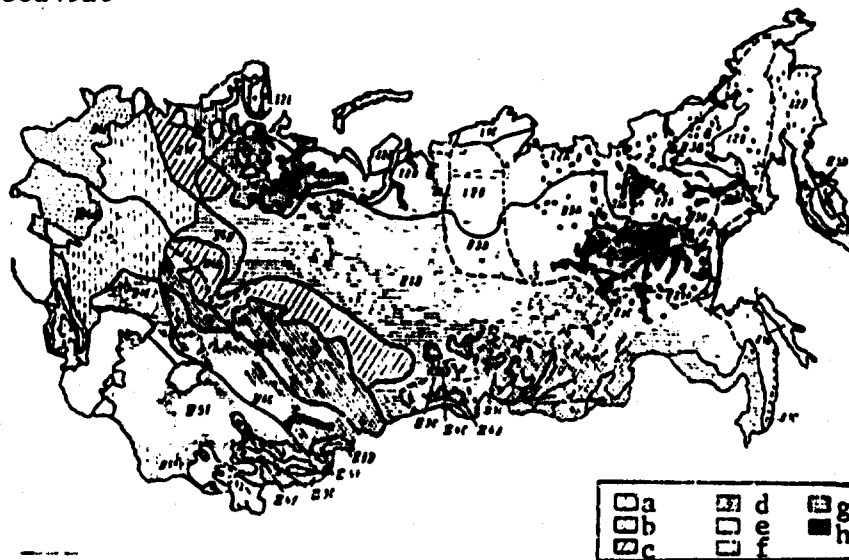


Fig. 4. Morbidity of acute intestinal infections (1960—1964) according to climatic zones. a—h—Areas in which the morbidity increases. Lines indicate boundaries of climate zones, dotted lines indicate climate sub-zones; III—4C index of climate zone. Characteristics of climate zone. I—rainy conditions; II—very damp rainy conditions; III—insufficient rain; IV—desert zones. Temperature conditions during summer: 1—very cold; 2—cold; 3—moderately warm; 4—hot; 5—very hot. Characteristic winter conditions: A—dry, little snow; B—dry, snowy winter; C—moderately dry winter with little snow; D—moderately damp winter with much snow; E—moderately wet winter; F—very wet winter.

Card

5/6

ACC NR:

AP8024910

remote from each other, but having similar climatic conditions, had similar morbidity indices for acute intestinal infections. Orig. art. has: 4 figures and 2 tables. [WA-50; CBE No. 37] [LP]

SUB CODE: 06/ SUBM DATE: 11Sep67

Card

6/6

ACC NR:

AT8032013

SOURCE CODE: UR/0000/67/000/000/0166/0168

AUTHOR: Ivanova, D. P.; Timokhina, T. A.

ORG: Irkutsk Scientific Research Institute of Epidemiology and Microbiology (Irkutskiy nauchno-issledovatel'skiy institut epidemiologii i mikrobiologii)

TITLE: The possibility of culturing stable cell lines on modified nutrient media

SOURCE: Irkutsk. Nauchno-issledovatel'skiy institut epidemiologii i mikrobiologii. Materialy nauchnoy konferentsii. Irkutsk, Vostochno-Sibirskoye knizhnoye izd-vo, 1967, 166-168

TOPIC TAGS: tissue culture, culture method

ABSTRACT: Study of the possibilities of culturing transplanted cell lines Hep-2 and A₁ on more economical media (less medium 199) showed that Hep-2 cells grow well and retain normal morphology on 90% medium 199 and 10% horse serum (medium 1), or 45% medium 199, 45% Hank's solution and 10% bovine serum (medium 2). The control medium was medium

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ACC NR: AT8032013

199 with 10% bovine serum. Hep-2 cells died on the third to fourth day in media consisting of 50—80% Hank's solution, 10—30% blood-protein hydrolysate and 10% bovine or horse serum. Cultures of A₁ grew well on medium 2, especially when 1—2% human serum was added. A₁ cells did not grow at all in the other media listed, or in four other media tested.
[WA-50; CBE No. 37] [JS]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AP8027546 SOURCE CODE: CZ/0067/68/000/004/0244/0248

AUTHOR: Kadlcik, K.--Kadlchik; Vosta, J.--Voshta, Y.; Polednikova, I; Vychodil, J.--Vykhodil, Y.

ORG: none

TITLE: Studies of tickborne encephalitis and leptospirosis in a natural focus

SOURCE: Ceskoslovenska epidemiologie, mikrobiologie, imunologie, no. 4, 1968, 244-248

TOPIC TAGS: human ailment, animal disease, tickborne encephalitis, leptospirosis, epizootiology, medical geography

ABSTRACT: Serological studies of animals in a natural tickborne encephalitis and leptospirosis focus near Vraz in Czechoslovakia was studied. Although no human or domestic animal cases were reported

Card 1/2

Table 1. Results of leptospirosis studies from 1959—1961

	Number of animals	Positives		
		Serological	Cultures	Histological
<i>Microtus arvalis</i>	40	10	2	0
<i>Clethrionomys glareolus</i>	164	5	4	5
<i>Pitymys subterraneus</i>	5	1	—	—
<i>Apodemus sylvaticus</i>	128	5	1	2
<i>Apodemus flavicollis</i>	101	5	1	4
<i>Mus musculus</i>	61	3*	10*	0
<i>Micromys minutus</i> Pall. 1771	2	—	—	—
<i>Sorex araneus</i> L. 1758	31	3	—	2
<i>Sorex minutus</i> L. 1760	2	—	—	—
<i>Arvicola terrestris</i> L. 1758	2	—	—	—
<i>Neomys fodiens</i> Schreber 1777	20	1	—	1
<i>Neomys anomalus</i> Cabrera 1907	1	—	—	—
<i>Crocidura</i> sp. Wagler 1832	1	—	—	—
<i>Talpa europea</i> L. 1758	4	—	—	—
Totals	568	33	18	32

* - Response to *L. Grippotyphosa* sera.

during the study, antibodies were detected in small animals. The animals studied are shown in Table 1. Orig. art. has: 4 tables. [WA-50; CBE No. 37] [LP]

SUB CODE: 06/ SUBM DATE: 26Aug67/ ORIG REF: 010

Card

2/2

ACC NR: AP8029059

SOURCE CODE: UR/0450/68/002/008/0054/0058

AUTHOR: Kaminskaya, L. I.; Virnik, A. D.; Bylinkina, Ye. S.; Papchinskiy, V. N.; Rogovin, Z. A.

ORG: Moscow Textile Institute (Moskovskiy tekstil'nyy institut)

TITLE: The use of glued nonwoven materials for sterilization of air

SOURCE: Khimiko-farmatsevticheskiy zhurnal, v. 2, no. 8, 1958, 54-58

TOPIC TAGS: antiblastic fiber, air purification equipment

ABSTRACT: This article appears in the General Section

Card

1/1

UDC: 614.712-084.484:615.468.21

- 204 -

ACC NR: AT8028571

SOURCE CODE: UR/0000/68/000/000/0273/0321

AUTHOR: Kantorovich, R. A.

ORG: All-Union Institute of Scientific and Technical Information, Moscow
(Vsesoyuznyy institut nauchnoy i tekhnicheskoy informatsii)

TITLE: Aspects of the world distribution and ecology of rabies

SOURCE: Moscow. Vsesoyuznyy institut nauchnoy i tekhnicheskoy informatsii. Meditsinskaya geografiya, 1966 (Medical geography, 1966); Itogi nauki, Seriya: Geografiya. Moscow, 1968, 273-321

TOPIC TAGS: rabies, medical geography

ABSTRACT: Rabies in Poland remains at a very low level (seven human cases in 1960—1962 and 440 animal cases) as a result of mass inoculations of dogs. Rabies foci of wild animals in Poland are shown in Fig. 1. Rabies in Czechoslovakia between 1945 and 1961 was recorded mostly among wild animals (55% of all animal cases—95% of these among foxes with a few cases among badgers). The activation of wild rabies foci in Central Europe in recent years has paralleled developments in Western Europe. The last major outbreak of rabies in the Soviet Union occurred in 1951—1954 and followed the usual pattern of an initial outbreak in the west which gradually spread to the east and northeast. Cases are somewhat more

Card 1/3

UDC: 911.3:616.988.21(100)

ACC NR: AT8028571

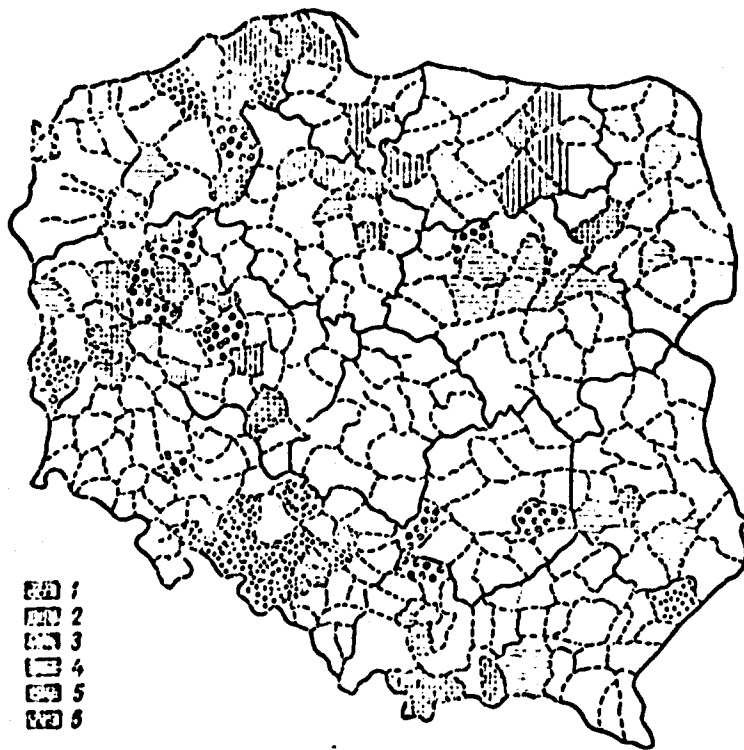


Fig. 1. Foci of wild-animal rabies in Poland in 1957—1962

1 — 1957; 2 — 1958;
3 — 1959; 4 — 1960;
5 — 1961; 6 — 1962

Card

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ACC NR: AT8028571

frequent in summer and fall, due to increased contact of the population with sources of infection. The role of wild animals in rabies infection of humans in the USSR has been increasing (from 28% in 1964 to 36% in 1966). Most of these cases (70%) are recorded in the forest-steppe and steppe zones of the USSR and the majority (78%) are caused by rabid foxes, with wolves and other wild animals responsible for 3.2—3.7%. In the 1946—1963 period there has been one peak of canine rabies (1951—1954), and three peaks of cattle and sheep rabies (the last in 1958—1962). A seasonal increase in the number of canine rabies cases is observed in February—March, both in years of epizootics and other years. Livestock rabies peaks in the fall and winter. Orig. art. has: 2 figures and 8 tables. [WA-50; CBE No. 37] [JS]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 084/ OTH REF: 176

Card 3/3

ACC NR: AP8031138 SOURCE CODE: UR/0248/68/000/009/0022/0029

AUTHOR: Ketiladze, Ye. S.

ORG: Institute of Virology im. D. I. Ivanovskiy, AMN SSSR, Moscow
(Institut virusologii AMN SSSR)

TITLE: Comparative clinical study of acute respiratory virus diseases

SOURCE: AMN SSSR. Vestnik, no. 9, 1968, 22-29

TOPIC TAGS: virology, virus diseases, respiratory system disease

ABSTRACT: A comparative study of the clinical course of influenza, parainfluenza, adenovirus, respiratory-syncytial and rhinovirus infections in 1500 adults and children showed marked differences in the nature of respiratory tract involvement, localization of the process, and general toxic manifestations. The clinical pictures of rhinovirus and respiratory-syncytial infections are discussed in greater detail. Among 220 patients 19—22 yr of age with respiratory tract infections, rhinovirus infection was diagnosed in 28% with the neutralization reaction, the complement-fixation reaction, and the hemagglutination inhibition reactions. Among 73 patients under 40 yr of age with respiratory-syncytial virus infection, pneumonia with bronchitis occurred in 25%.

Card 1/2

UDC: 616.2-022.6-036.11

ACC NR: AP8031138

The greatest possibility for separate clinical study of each group of infections is by immunofluorescence, which allows a diagnosis to be established within 2—3 hr. Among more than 3500 adults and children hospitalized for acute respiratory diseases, this method was used for differentiation of influenza A2 and B, parainfluenza, adenovirus, rhinovirus, and respiratory-syncytial virus infections. Orig. art. has: 4 figures. [WA-50; CBE No. 37] [XF]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 013/ OTH REF: 006

Card 2/2

ACC NR: AP8031406 SOURCE CODE: UR/0433/68/000/009/0024/0024

AUTHOR: Khalidov, A. B. (Candidate of biological sciences)

ORG: Biology Institute, Kazan (Biologicheskii institut)

TITLE: A mixture of 40% TMTD, 10% copper trichlorophenoxide, 20% γ -isomer of hexachlorocyclohexane, and 30% filler for combating wire worms and root bores

SOURCE: Zashchita rasteniy, no. 9, 1968, 24

TOPIC TAGS: organic insecticide, insecticide application, carbamic acid derivative

ABSTRACT: This article appears in Chemical Factors

Card 1/1

UDC: 632.951

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ACC NR:

AP8031724

SOURCE CODE: UR/0346/68/00G/009/0059/0060

AUTHOR: Khmelevskiy, B. N. (Aspirant)

ORG: All-Union Scientific Research Institute of Veterinary Sanitation
(Vsesoyuznyy nauchno-issledovatel'skiy institut veterinarnoy sanitarii)

TITLE: The effect of sevin on chickens during prolonged feeding

SOURCE: Veterinariya, no. 9, 1968, 59-60

TOPIC TAGS: organic insecticide, toxicity

ABSTRACT: Feeding chickens with feed containing sevin in small doses daily for six months did not produce any clinical symptoms of intoxication. Feeding of sevin in doses of 50 and 25 mg/kg did decrease egg yield, as compared with controls, by 25% and 9%, respectively. No significant changes in blood indices (percent of hemoglobin, number of erythrocytes and leucocytes, etc.) were noted. Cholinesterase activity was occasionally elevated or depressed from 10 to 30%, whereas in control chickens it remained at initial levels. Prolonged use of sevin in chicken feed did not produce accumulations of sevin in tissues or eggs. Sevin does not have a cumulative effect; it is rapidly broken down and excreted from the organism. [WA-50; CBE No. 37] [JS]

SUB CODE: 06/ SJBM DATE: none

Curd

1/1

UDC: 619:615.778.3-015

ACC NR:

AP8031715

SOURCE CODE: UR/0346/68/000/009/0026/0027

AUTHOR: Khoang, Van T'yen (Aspirant)

ORG: Moscow Veterinary Academy (Moskovskaya veterinarnaya akademiya)

TITLE: Nucleic acid dynamics and antibody titer in chicks inoculated against pseudoplague

SOURCE: Veterinariya, no. 9, 1968, 26-27

TOPIC TAGS: pseudoplague, ribonucleic acid

ABSTRACT: The content of RNA and DNA in the spleen and liver of chicks increased during immunization against avian pseudoplague, indicating the important role of RNA and DNA in antibody formation. Antibodies to pseudoplague appeared on the 5th day after vaccination, and reached a titer in most iowl of 1:1024 on the 30th day after vaccination. The RNA level in the spleen increased more sharply than in the liver. Antibody titers were determined in the hemagglutination inhibition reaction. Scientific Director, Professor S. I. Afonskiy supervised the work. Orig. art. has: 1 table. [WA-50; CBE No. 37][JS]

SUB CODE: 06/ SJBM DATE: none/ ORIG REF: 002/ OTH REF: 004

Card

1/1

UDC: 619:616.988.73-097

ACC NR: AP8030363

SOURCE CODE: UR/0394/68/006/009/0031/0033

AUTHOR: Khrushcheva, I. V.

ORG: VIZR

TITLE: The effect of Chlorophos and Hexachlorane on terminal oxidases of wheat

SOURCE: Khimiya v sel'skom khozyaystve; v. 6, no. 9, 1968, 31-33

TOPIC TAGS: oxidase, wheat, chlorophos

ABSTRACT: The effect of the insecticides Chlorophos (dimethyl 2,2,2-trichloro-1-hydroxyethylphosphonate) and Hexachlorane (1,2,3,4,5,6-hexachloro-cyclohexane) on the activity of cytochromoxidase, peroxidase, ascorbatoxidase, and polyphenol oxidase in wheat plants was studied over a two-year period. The results are shown in Figures 1-4:

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UDC: 632.951:581.19

ACC NR: AP8030363

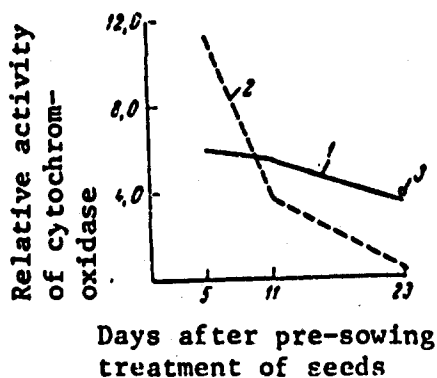


Fig. 1. Effect of insecticides on the activity of cytochromoxidase in leaves of wheat:

1 - Control; 2 - Hexachlorane; 3 - Chlorophos.

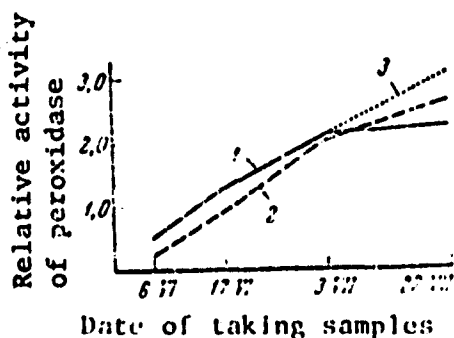


Fig. 2. Effect of insecticides on activity of peroxidase in leaves of wheat:

1 - Control; 2 - Hexachlorane; 3 - Chlorophos.

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ACC NR:

AP8030363

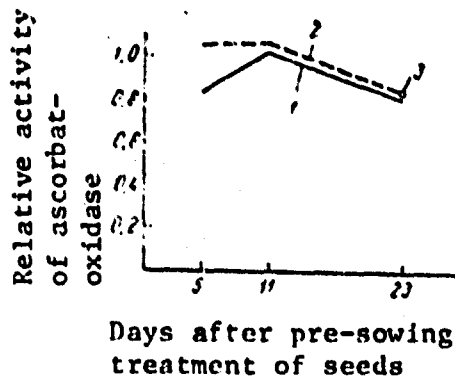


Fig. 3. Effect of insecticides on activity of ascorbate oxidase in leaves of wheat:

1 - Control; 2 - Hexachlorane; 3 - Chlorophos.

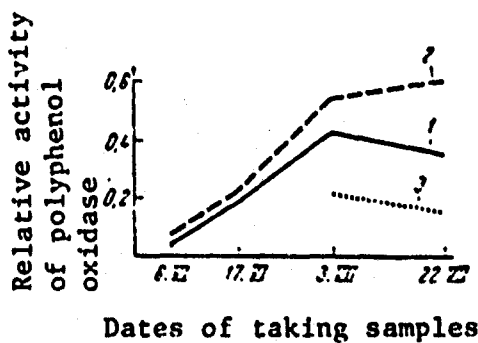


Fig. 4. Effect of insecticides on activity of polyphenol oxidase in leaves of wheat:

1 - Control; 2 - Hexachlorane; 3 - Chlorophos.

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ACC NR:

AP8030363

Cytochromoxidase, ascorbate oxidase, and polyphenol oxidase are mainly responsible for the intensification of the oxidizing processes in the early stages of development of wheat plants treated with Hexachlorane, while peroxidase assumes primary importance in intensifying the oxidizing processes in the later stages. The polyphenol oxidase system plays a major role in inhibiting the oxidizing processes in the later stages of development of plants treated with Chlorophos. When sprayed on wheat plants, Chlorophos, unlike other organophosphorus compounds, does not inhibit ascorbate oxidase. Orig. art. has: 6 figures.

[WA-50; CBE No. 37][FT]

SUB CODE: 07/ SUBM DATE: 18Jan68/ ORIG REF: 008

ACC NR:

AT8029364

SOURCE CODE: UR/3382/63/025/000/0236/0242

AUTHOR: Kir'yanov, G. I.

ORG: Irkutsk State Scientific Research Antiplague Institute of Siberia and the Far East (Irkutskiy gosudarstvennyy nauchno-issledovatel'skiy institut Sibiri i Dal'nego Vostoka)

TITLE: Effects of mink on a tularemia focus of the Altai

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 236-242

TOPIC TAGS: tularemia, epizootiology, medical geography

ABSTRACT: The effect of North American mink adapted to mountainous regions in the Altai region upon a tularemia focus there was observed. In this region rainfall is quite good, and the land is well watered by several rivers. The average human population density is about 10 persons/km² and agriculture is well developed in this region. There is a varied rodent fauna: water rats, marmots, voles, susliks, gerbils and related species, mice of various types, and assorted other miscellaneous small mammals which are highly susceptible to tularemia. Mortality rate for all of these mammals was determined in field studies and runs between

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1/2

ACC NR:

AT8029364

0.1 and 0.5%. Of 49 tularemia cultures isolated in the field, 43 or 87.7% came from the water rat, Ixodid ticks and from the water which has been infected by the rodents. The water rat plays a principal role in the epizootology of tularemia. Epidemiological studies of tularemia foci in the foothill and uphill zones for 12 yr have shown that the water route of infection is responsible for 92.6% of the cases, carriers 2.9%, meat processing 2.1%, food 1.6%, and 0.2% indeterminate. The nutrition habits of the American mink in this area were observed. The mink is the principal predator of these rodents and they constitute 92% of its food. The mink has been implicated in several small outbreaks of tularemia and it is suggested that it shares responsibility with indigenous rodents as a disease vector. Orig. art. has: 3 tables. [WA-50; CBE No. 37][LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 012

Card

ACC NR:

AT8029343

SOURCE CODE: UR/3382/63/025/000/0058/0071

AUTHOR: Kir'yanov, G. I.

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: Classification of Altai tularemia foci by epidemiological and landscape characteristics

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 58-71

TOPIC TAGS: tularemia, epidemiologic focus

ABSTRACT: There are three main types of tularemia foci in the Soviet Union. The first type, valley-brook focus of the marsh-lake-river type in foothills and mountain regions, occupies more than half the territory of Altai kray and includes terrain varying from forest-steppe foothills (400—500 m) to alpine taiga and semi-desert areas at an altitude of 2000—3000 m. Of the 30 species of mammals trapped in this type of focus (voles, hamsters, mice, rats, susliks, pikas and others), water voles predominated (35%). Tick species in this type of focus included *Derma-centor marginatus*, *D. pictus*, *Ixodes persulcatus*, *I. apronophorus*,

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ACC NR:

AT8039343

Haemophysalis concinna, *D. silvarum*, and *D. nutalli*. Tularemia cultures were isolated from the underlined strains. Only three cases of human tularemia contracted from ixodid ticks have been reported in this focus in the last 15 yr. *Culex modestus*, *Aedes vexans*, *A. cinereus*, *A. communis*, *A. excrucians*, and *A. punctator* mosquitoes are naturally infected with tularemia in this area. The mosquito population is low, however, because of the absence of good breeding places. Tularemia bacteria have not been isolated from horseflies or fleas in this type of Altai focus. Sand hoppers are closely associated with water voles and may be infected. Water is also an important source of tularemia infection of small rodents in this area. The valley-brook tularemia foci are responsible for 93.1% of the human infections in Altai kray. Rodents trapped in a typical river-flood plain focus (plain type) of the river Ob in the west Siberian lowland included muskrats (33.9%), water voles (31.3%), root voles (13.7%), narrow-skulled voles (3%), shrews (3%), house mice (2%), and others. Tularemia bacteria were isolated from water voles during an outbreak in 1951—1953. *Aedes vexans* was identified as a carrier and *A. ciprius* mosquitoes and *Chrysops reliatus* horseflies as possible carriers. Ticks of the genus *Ixodes* are established reservoirs and carriers of tularemia in river-terrace foci. In addition, *D. silvarum*, *I. persulcatus*, *I. apronophorus*, and *Haemophysalis concinna* ticks are naturally infected. The population of water voles and muskrats in this area is controlled by the two annual floods. In this type of focus an epizootic affects large

Card

2/3

ACC NR:

AT8939.343

numbers of rodents in a large area. The 1954 flood (from April 21 to August 15) was accompanied by mass outbreaks of tularemia, in which 39 people were infected (26 with the ulcerous bubonic form of tularemia). Most people were infected by mosquito bites while working in hay fields in the Ob flood plain, or by drinking contaminated water. The rapid multiplication of water voles along the upper reaches of the Ob in 1960 made necessary mass extermination in forest collectives in 1961. The third type of tularemia focus, marsh-lake foci of the interfluvial plain, are common in the forest-meadow and steppe zone of the European USSR, especially in the Oka river basin and in western Siberia. The red-cheeked suslik is most numerous here (36.8%), followed by the narrow-skulled vole (11%), the root vole (10%), the striped field mouse (9.8%), the muskrat (7%), and 17 other species. Tick fauna include *D. marginatus*, *D. pictus*, and *Ixodes apronophorus*. Mosquitoes *Aedes caspius dorsalis*, *A. exarucians*, *A. maculatus*, *A. flavescens*, *A. cypricus*, *A. punctator*, *A. raparius*, *A. cinereus*, *A. cataphylla*, and *Anopheles maculipennis* are encountered. The fleas include *Ctenocephalides canis*, *Oropsilla ilovaiskii*, *Ceratophyllus tesquorum*, *Mesopsylla hebes*, *Frontopsylla elata*, *Pectinootenus pavlovskii*, *Ctenophthalmus arvalis*, *Doratopsylla birulai*, and *Stenoponia ivanovi*. From 1947 to 1953 sporadic tularemia cases were recorded in 8 rayons out of 42 in Altai kray for a total of 40 human cases. All tularemia cases in this focus are associated with contaminated water. Orig. art. has: 4 tables. [WA-50; CBE No. 37] [JS]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 025

Card

3/3

ACC NR:

AP8030994

SOURCE CODE: UR/9053/68/010/008/1068/1073

AUTHOR: Kiselev, P. N.; Shutko, T. V.

ORG: Laboratory of Radiation Immunology and Microbiology, Central Scientific Research Institute of X-Ray Radiology, Leningrad (Laboratoriya radiatsionnoy immunologii i mikrobiologii Tsentral'nogo nauchno-issledovatel'skogo rentgeno-radiologicheskogo instituta)

TITLE: Mechanisms of cellular protection from microbial toxins

SOURCE: Tsitologiya, v. 10, no. 8, 1968, 1068-1073

TOPIC TAGS: bacteria 1 toxin, toxin antitoxin, diphtheria

ABSTRACT: Study of the penetration of diphtheria toxin into Ehrlich ascites carcinoma cells by labeling the toxin-antitoxin complex with fluorescein isothiocyanate showed that penetration of the toxin into the cells had a wave-like nature. In the first 24 hr of contact between toxin and cell, two peaks of rapid toxin accumulation and decrease (in the first 3 hr) were noted. Subsequently, toxin accumulated slowly in the cell to a maximum and was retained at this level until death of the cell. Penetration of toxin into the cell is an active process occurring only in live cells, and is probably caused by pinocytosis (the absorption of liquids by phagocytic cells). Live cells can inhibit toxin penetration

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UDC: 612.014.462:616-098

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ACC NR: AP8030994

into the protoplasm by forming vacuoles. The minimum luminescence of the toxin-antitoxin complex coincided with the maximum number of vacuoles. Removal of toxin from the cell via the vacuoles can be considered a detoxification mechanism. This detoxification mechanism is hindered by damage to the cell, for example from ionizing radiation (840 r of x-rays). Orig. art. has: 3 figures. [WA-50; CBE No. 37] [JS]

SUB CODE: 06/ SUBM DATE: 23Nov67/ ORIG REF: 011/ OTH REF: 006

Card 2/2

ACC NR: AP8024900 SOURCE CODE: UR/0016/68/000/005/0024/0029

AUTHOR: Kiseleva, B. S.

ORG: Moscow Institute of Vaccines and Sera im. Mechnikov (Moskovskiy institut vaktsin i syvorotok)

TITLE: Contemporary data on antigens of certain members of the family Enterobacteriaceae

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 5, 1968, 24-29

TOPIC TAGS: antigen, immunobiology, E coli, salmonella

ABSTRACT: A survey of contemporary literature on the antigenic structure of certain members of the family Enterobacteriaceae showed that the majority of intestinal microflora can be determined by

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UDC: 576.851.48/.49.097.2(047)
- 214 -

ACC NR:

AP8024900

Table 1. Differences between antigens of intestinal bacteria

Type of antigen	Cultures after various treatments										Bacteria in which the antigen was first demonstrated
	Live cultur.	1 hr at 60°	1 hr at 75°	1 hr at 100°	2 hr at 100°	2 1/2 hr at 100°	2 hr at 120°	MNCI	50% alcohol		
	1934	1934	1934	1934	1934	1934	1934	1934	1934		
A	++++	++++	++++	++++	++++	++(+)+	-----	++(+)-	++++	E. coli E. coli E. coli S. paratyphi B S. typhi	
H	++++	++++	++++	++++	-----	-----	-----	++++	++++		
M	++++	++++	++++	-----	-----	-----	-----	-----	-----		
V	++++	++++	++++	-----	-----	-----	-----	-----	-----		
Vi	+++	+++	+++	+++	+++	-----	-----	+++	-----		
a	+++	+++	+++	+++	+++	-----	-----	+++	-----	E. coli, Proteus	
P	+++	+++	+++	-----	-----	-----	-----	-----	-----	E. paracoli, Proteus, Shigella	
V	+++	+++	+++	-----	-----	-----	-----	-----	+++	Shigella, Variant	
S	+++	+++	+++	-----	-----	-----	-----	+++	+++	E. coli Shigella	
S	+++	+++	+++	(+M+)-	-----	-----	-----	+++	+++	Shigella, E. paracoli	
IF	+++	+++	+++	+++	+++	-----	-----	(-M+)-	+++		
C	+++	+++	+++	+++	+++	(+M+M)-	-----	(+)+	(+M+M+)	Shigella boydii Shigella	
D	+++	+++	+++	+++	+++	+++	-----	+++	+++		
H	+++	+++	+++	+++	+++	-----	-----	-----	(-)+	Salmonella	
S	+++	+++	+++	+++	+++	-----	-----	-----	+++		
O	+++	+++	+++	+++	+++	+++	+++	+++	+++		

Legend: 1) agglutinating ability; 2) agglutinin fixation ability; 3) agglutinogenic capacity; 4) agglutination inhibition; + = preserved; - = destroyed; (+) = weakened; (-) = not completely destroyed; . = not studied.

Card

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ACC NR:

AP8024900

demonstrating the presence of two complex antigens: a somatic and a capsular antigen. The results of this study are summarized in Table 1. Orig. art. has: 1 table. [WA-50; CBE No. 37] [LP]

SUB CODE: 06/ SUBM DATE: 16Dec66

Card

3/3

ACC NR:

AP8031716

SOURCE CODE: UR/0346/68/000/009/0028/0030

AUTHOR: Klenina, N. V. (Candidate of veterinary sciences); Tertyshnik, V. I. (Candidate of veterinary sciences); Antonov, V. S. (Senior research associate); Belan, A. D. (Veterinarian); Tabolzhanski, V. I. (Veterinarian)

ORG: Ukrainian Scientific Research Institute of Experimental Veterinary Medicine (Ukrainskiy nauchno-issledovatel'skiy institut eksperimental'noy veterinarii)

TITLE: The effectiveness of specific globulins in foot and mouth disease

SOURCE: Veterinariya, no. 9, 1968, 28-30

TOPIC TAGS: hoof and mouth disease, gamma globulin

ABSTRACT: Specific globulins obtained from the plasma of cattle and swine convalescing from foot and mouth disease prevented the disease in guinea pigs. The γ - β -globulin complex was more effective against foot and mouth disease than γ -globulin alone. Study of the effectiveness of globulins in foci of foot and mouth disease showed that the prophylactic dose for newborn calves was 5-10 ml, and 2 ml per animal for lambs and piglets. The therapeutic dose for newborn piglets was 3 ml.

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UDC: 619:616.988.43-085

ACC NR:

AP8031716

two or three times with a 2-to 3-day interval. Guinea pig tests were conducted with lapinized foot and mouth disease variant A₂₂. γ -Globulin from Bovine serum in a dose of 1 or 2 ml per guinea pig protected 66 and 100% of animals, respectively. Large-scale treatment of 1096 piglets from sick sows with globulin preparations saved 806 piglets, or 73.6%.
Orig. art. has: 1 table. [WA-50; CBE No. 37][JS]

SUB CODE: 06/ SUBM DATE: none

ACC NR:

AT8029340

SOURCE CODE: UR/3382/63/025/000/0034/0046

AUTHOR: Kluts, E. .; Kudinova, Z. S.; Kolesnik, V. S.; Pletnikova, G.P.

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: The susceptibility of some species of steppe rodents to infection with weakly virulent plague strains isolated in Zabaykal'ye

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 34-46

TOPIC TAGS: plague, disease carrying mammal

ABSTRACT: Study of the susceptibility of Mongolian bobaks (*Marmota bobak*), Daurian susliks, Brandt's vole (*Microtus brandti*), and clawed jirds (*Meriones unguiculatus*) to various weakly virulent plague strains (strain 803 -- isolated from Brandt's vole, strain 580 -- isolated from a suslik flea, and strain 798 -- isolated from a Daurian suslik, with all strains being isolated in Zabaykal'ye in 1960) showed that all strains are weakly virulent for most animals tested and are avirulent for guinea pigs and bobaks. White mice were most susceptible to

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ACC NR:

AT8029340

infection, sometimes from comparatively small doses of bacteria. Acute plague infection with bacteremia in organs and tissues was also observed occasionally in Brandt's vole, Daurian susliks and clawed jirds after infection with doses of three billion cells or more. Bacteria were easily recovered from organs and tissues of dead animals, but could not be found in organs of surviving animals two weeks after infection, even when infective doses of 15 billion cells were used. The susceptibility of rodents (especially white mice) can be markedly increased by simultaneous injection of egg yolk with bacteria. Animals receiving egg yolk and plague strain 17 in a dose of one million cells died, whereas controls given 300--500 million cells survived. Egg yolk can be used in the field to detect latent plague infections in rodents. Strains 580 and 803 showed some capacity to protect animals from subsequent infection with virulent plague bacteria, although it is not known whether this immunogenic property will be retained at lower doses. Orig. art. has: 10 tables. [WA-50; CBE No. 37][JS]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 005

Card

2/2

ACC NR: AT8029352

SOURCE CODE: UR/3382/63/025/000/0116/0119

AUTHOR: Klimova, I. M.

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: Effect of plague microbial toxin on aldolase activity of animal liver and blood serum

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 116-119

TOPIC TAGS: blood serum, bacterial toxin, enzymatic activity, liver

ABSTRACT: The effects of plague toxin on aldolase activity in the liver and blood serum of healthy and poisoned animals was investigated. Parallel experiments determining aldolase activity *in vitro* under the action of toxins were done. The *in vivo* experiments utilized two fractions of plague toxin which were given parenterally to white mice—1 LD₅₀, and to guinea pigs—2000 times the mouse dose. Seventeen hours after administration of toxin, the animals were decapitated and blood and liver samples were prepared. Liver and blood from healthy animals served as

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ACC NR: AT8029352

controls. *In vitro* experiments employed toxin extracted in urea. Increased aldolase activity in blood serum of poisoned mice appeared to be a nonspecific response. In the guinea pig, plague toxin did not produce such changes. In *in vitro* experiments the toxin extract did not alter aldolase activity of mouse liver samples. Orig. art. has: 1 table. [WA-50; CBE No. 37][R]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 011/ OTH REF: 005

Card

ACC NR: AT8029359

SOURCE CODE: UR/3382/63/025/000/0159/0168

AUTHOR: Kolesnik, V. S.; Pinigin, A. F.

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: Characteristic pathogenic properties of brucellosis agent in reindeer

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 159-168

TOPIC TAGS: bacteriology, brucellosis, reindeer, disease vector, bacterial toxin

ABSTRACT: Characteristic pathogenic properties of brucellosis agent in reindeer, which are quite susceptible to brucellosis, are described organ by organ. In a group of 26 reindeer suffering from bursitis and other bone and joint ailments, all had positive agglutination reactions for brucellosis and positive skin tests to brucellohydrolysate. Pathological examination also revealed characteristic changes in the organs indicating brucellosis infection, and thus confirming similar observations recorded in the literature. Hyperplasia of the follicles was

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ACC NR:

AT8029359

noted in the lymph nodes and plasma cells of lymph-node tissue of corpses examined for brucellosis. In the liver there was generalized hyperplasia and local proliferation of elements of the reticulo-endothelial system (RES). Follicular hyperplasia was present in the spleen as well. Infiltration of "polyblasts" in seminal vesicles also appeared and there was evidence of dystrophy and decreased spermatogenesis. Necrosis and encapsulation were commonly noted in the tissues. Fibrous deposits were often found in vascular walls and in the seminal ducts. Examination of animals in a focus in Yakutia revealed necrotic spots in the livers averaging 2-5 cm in diameter. They were filled with epithelioid granules with giant cells. Upper respiratory involvement was also observed in these animals; also, genital damage was observed in females, and a high abortion rate is postulated due to damage to the reproductive system.

[WA-50; CBE No. 37] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 027

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Card

2/2

ACC NR: AP8030365

SOURCE CODE: UR/0394/68/006/009/0048/0050

AUTHOR: Kolesnikov, V. A.

ORG: Scientific Research Institute of Vegetable Growing (Nauchno-
issledovatel'skiy institut ovoshchnogo khozyaystva)

TITLE: Phytotoxicity of sodium trichloroacetate for vegetable crops

SOURCE: Khimiya v sel'skom khozyaystve, v. 6, no. 9, 1968, 48-50

TOPIC TAGS: weed killer, toxicity, sodium compound/herbicide

ABSTRACT: This article appears in Chemical Factors

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UDC: 632.954

ACC NR: AP8027993

SOURCE CODE: UR/0402/68/000/004/0470/0474

AUTHOR: Koiomakin, G. A.; Barinova, T. P.; Smirnova, M. M.;
Timonina, M. S.

ORG: Republic Veterinary Bacteriological Laboratory, Ministry of
Agriculture Kazakh SSR (Respublikanskaya veterinarno-bakteriologicheskaya
laboratoriya, Ministerstva sel'skogo khozyaystva Kazakhskoy SSR)

TITLE: Complex diagnosis of rabies

SOURCE: Voprosy virusologii, no. 4, 1968, 470-474

TOPIC TAGS: rabies, human ailment, diagnostic medicine

ABSTRACT: A diagnostic experiment for rabies was performed using
materials collected in the steppes of Kazakhstan from foxes, local
corsac foxes and cattle for analysis. Ninety per cent of the victims
of this disease are cattle. This complex diagnostic procedure was
selected because examinations of tissue samples revealed no babes-negri
bodies in the nerve cells of fox brains or brains of animals bitten by
foxes. However, sub-cultivation of tissue culture suspensions in other
animals produced rabies. The suggested procedure is the combined
microscopic analysis of smears, histological sections, and florescent

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UDC: 616.988.21-078

ACC NR: AP8027993

antibody studies. Also, precipitation-in-agar reactions are
recommended for rapid diagnosis. Orig. art. has: 4 tables.

[WA-50; CBE No. 37] [LP]

SUB CODE: 06/ SUBM DATE: 11Apr67/ ORIG REF: 005

Card

1/2

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ACC NR: AT8029356

SOURCE CODE: UR/3382/63/025/000/0144/0147

AUTHOR: Korobkov, G. G.

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: The effect of phenylhydrazine anemia in white mice on their sensitivity to plague

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya, v. 25, 1963, 144-147

TOPIC TAGS: plague, anemia

ABSTRACT: Study of the relationship between oxygen deprivation and sensitivity to plague showed that resistance to plague was higher among animals given phenylhydrazine to produce anemia. White mice were injected 3-5 times with 0.2 ml of a 1% solution of phenylhydrazine and then infected with virulent strain 1435 of *P. pestis* in doses of 10-10,000 cells. The LD₅₀ was 144 cells for anemic mice and 40 cells for healthy mice. Resistance to plague was increased in animals with moderate anemia, but was even higher among animals with light anemia. Injection of plague autolysate

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ACC NR: AT8029356

in doses of 0.05-0.103 ml, however, equalized the ID₅₀ for anemic mice and controls (0.051 ml and 0.059 ml, respectively). This increased susceptibility to plague intoxication in anemic animals conflicts with the previous data but may be explained by the overwhelming pathological process produced by the combination of anemia and plague intoxication. More work must be done on this problem. Orig. art. has: 2 tables.

[WA-50; CBE No. 37] [JS]

SUB CODE: 007 SUBM DATE: none/ ORIG REF: 007

Card 2/2

ACC NR: AT8029357

SOURCE CODE: UR/3382/63/025/000/0148/0150

AUTHOR: Korobkov, G. G.

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: The effect of thyroid function on the sensitivity of white rats to plague

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 148-150

TOPIC TAGS: plague, thyroid gland

ABSTRACT: Study of the relationship between thyroid function and the susceptibility of white rats to plague showed that increased thyroid function decreased the resistance of white rats to infection with 20,000 cells of *P. pestis* strain 1435 (which approximately corresponds to the Dlm for white rats). A total of 70% of animals given thyroid extract died from plague, as compared with 42.5% of controls. Decreased thyroid function, however, did not produce changes in the resistance of white rats

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ACC NR: AT8029357

to plague infection. Thyroid extract was administered orally to increase thyroid function, and methylthiouracil to depress thyroid activity.

[WA-50; CBE No. 37] [JS]

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

ACC NR: AP8030307 SOURCE CODE: UR/0468/67/001/006/0065/0072

AUTHOR: Kovalenko, S. P.

ORG: Institute of Botany, AN USSR, Kiev Institut botaniki AN USSR)

TITLE: Certain problems and perspectives in chemical mutagenesis

SOURCE: Tsitologiya i genetika, v. 1, no. 6, 1967, 65-72

TOPIC TAGS: mutation, mutant, chemical mutagen, genetics, molecular biology

ABSTRACT: This article appears in Chemical Factors

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ACC NR: AP8027646 SOURCE CODE: UR/0219/68/066/008/0109/0111

AUTHOR: Krivosheina, G. N.; Zhukov-Verezhnikov, N. N. (Active member AMN SSSR)

ORG: Laboratory of Experimental Genetics, Institute of Experimental Biology AMN SSSR, Moscow (Laboratoriya eksperimental'noy genetiki Instituta eksperimental'noy biologii AMN SSSR)

TITLE: Induction of reverse mutations in a thymine-dependent strain of *E. coli* and the study of donor capacity in the revertants

SOURCE: Byulleten' eksperimental'noy biologii i meditsiny, v. 66, no. 8, 1968, 100-111

TOPIC TAGS: *E. coli*, bacterial metabolism, mutation, mutant

ABSTRACT: When thymine-dependent strains of *E. coli* were cultured with 5-bromouracyl, a marked increase in the number of mutants was noted, indicating the mutagenic properties of this compound. 5-Bromouracyl affects the recombination frequency in the mutants as compared with recombination frequency in the parent strain. This compound affects the sex factor of these bacteria and it is thought that this influence also alters recombination frequency. This compound would cause a reduction in cell contacts and diminution in marker transfer during

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UDC: 576.851.48.095.57
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ACC NR:

AF8027646

conjugation, with a lessened frequency in the integration of markers and recipient chromosomes. Orig. art. has: 1 figure.

[WA-50; CBE No. 37] [LP]

SUB CODE: 06/ SUBM DATE: 31Mar67/ ORIG REF: 003/ OTH REF: 005

Card

2/2

ACC NR:

AT8029351

SOURCE CODE: UR/3382/63/025/000/0109/0115

AUTHOR: Krupenina, V. N.

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: Effect of plague microbial toxin on the activity of respiratory enzymes

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 109-115

TOPIC TAGS: plague, pasteurilla pestis, bacterial toxin, toxin effect, respiratory enzyme, enzymatic activity

ABSTRACT: The effect of toxins from *Bacterium (Bacillus) (Pasteurella) pestis* on the activity of a series of respiratory enzymes was investigated *in vitro*. In tissues which were obtained from white rats, 8 fractions of strain EV 229 was used. The enzymes investigated were succinodihydrogenase cytochromoxidase and mitochondrial catalase obtained from liver, kidneys, and heart. While toxins from *Bacillus pestis* depressed dehydrose and cytochromeoxidase activity in the body, catalase activity

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ACC NR:

AT8029351

increased. *In vitro* treatment of mitochondrial suspensions did not affect respiratory enzymes except at large doses. Damage to the vascular system possibly leads to disruption in cell respiration. Possibly the diminished vascular permeability interrupts blood flow locally and affects cellular metabolism. Pathological changes induced by the toxin are similar to those induced by other respiratory enzyme poisonings. Orig. art. has: 3 tables. [WA-50; CBE No. 37][LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 008/ OTH REF: 014

Card

2/2

ACC NR:

AP8026034

SOURCE CODE: UR/0439/68/047/007/1083/1088

AUTHOR: Kulik, I. L.; Dubrovskiy, Yu. A.; Komarova, L. V.

ORG: Laboratory of Medical Zoology, Institute of Epidemiology and Microbiology, Academy of Medical Sciences SSSR, Moscow (Laboratoriya meditsinskoy zoologii Instituta epidemiologii i mikrobiologii Akademii meditsinskikh nauk SSSR); Repetek Desert Station, Academy of Sciences TurkmenSSR (Repetekskaya peshano-pustynnaya stantsiya Akademii nauk TurkmenSSR)

TITLE: New method of determining the role of vertebrates in the feeding of blood-sucking parasites

SOURCE: Zoologicheskiy zhurnal, v. 47, no. 7, 1968, 1083-1088

TOPIC TAGS: epidemiologic focus, host parasite relationship, disease carrying insect, biologic ecology, leishmaniasis

ABSTRACT: Trypan blue was injected into the bloodstream of great gerbils (*Rhombomys opimus*) to trace the role of these animals in feeding of sandflies in natural foci of cutaneous leishmaniasis. Sandflies flying out of the gerbil burrows were trapped at the burrow entrances on sticky paper. The presence of dyed blood in insect stomachs was determined by

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UDC: 591.69-932.34=577.1.08
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ACC NR:

AP8026034

paper electrophoresis. Sandflies were mostly *Phlebotomus caucasicus* (92%), with some *Ph. papatasi*, and *Sergentomyia arpaclensis*. Sandflies fed on both young and adult gerbils. In colonies with more than half tagged animals, sandflies feeding on tagged animals made up 32% of the total number of insects with dyed blood in their stomachs. However, in colonies with less than half tagged animals, sandflies with dyed blood amounted to 10% of the total. Orig. art. has: 1 figure and 3 tables.

[WA-50; CBE No. 37][JS]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 012/ OTH REF: 001

Card

2/2

ACC NR:

AP8030362

SOURCE CODE: UR/0394/68/006/009/0028/0029

AUTHOR: Kurilov, V. I.

ORG: Belorussian Scientific Research Institute of Fruit Growing, Vegetable Growing, and Potatoes (Belorusskiy nauchno-issledovatel'skiy institut plodovodstva, ovoshchevodstva i kartofelya)

TITLE: The effectiveness of some insecticides against aphids carrying viral potato diseases

SOURCE: Khimiya v sel'skom khozyaystve, v. 6, no. 9, 1968, 28-29

TOPIC TAGS: plant disease control, phosphorus compound, pesticide, chlorophos, plant virus/aphid, potato

ABSTRACT: The effectiveness of Trichlorometaphos-3 (I), Trolen (II), Sayphos (III), Chlorophos (dimethyl 2,2,2-trichloro-1-hydroxyethylphosphonate) (IV), and polychloropinenc (V) against aphids and their entomophages was studied by spraying the pesticides on potatoes in the blossoming phase and recording the decrease in the number of aphids for 12 days over 3-day intervals. Compound III retained its toxic effect (90-100% destruction of aphids) the longest, although I and II displayed a stronger initial effect. Compounds IV and V proved ineffective.

Card

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UDC: 632.951

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ACC NR: AP8030362

The results of tests on the entomophage *Coccinellida* are summarized in Table 1. Thus, I and II should be applied in the early periods of

Table 1. Effect of insecticides on *Coccinellida*

Insecticides	Destruction of <i>Coccinellida</i> in stage % (n=25-544)			
	Egg	Larval	Pupal	Imago
I, %				
0,1	9	93	30	82
0,2	8	100	35	94
II, %				
0,1	6	91	30	84
0,2	9	100	34	88
III, %				
0,1	0,8	9	4	5
0,2	1	10	6	12
IV, 0,1%	6	100	61	100
V, 0,7%	11	98	48	100
Control (without treatment)	0,7	—	2	—

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ACC NR: AP8030362

aphid propagation or when the entomophages are in the egg stage (June 1—20) or the pupal stage. Orig. art. has: 2 tables.

[WA-50; CBE No. 37][FT]

SUB CODE: 07/ SUBM DATE: 15Mar68/ OTH REF: 002

Card 3/3

ACC NR: AP8030364

SOURCE CODE: UR/0394/68/006/009/0041/0046

AUTHOR: Ladonin, V. F.; Beketova, L. I.

ORG: VIUA

TITLE: Effect of some halophenoxy acids on the metabolism of RNA and protein in various parts of pea sprouts

SOURCE: Khimiya v sel'skom khozyaystve, v. 6, no. 9, 1968, 41-46

TOPIC TAGS: protein metabolism, nucleic acid metabolism, RNA/herbicide

ABSTRACT: Two-day-old pea sprouts grown without light were treated with the herbicides 2M-4Kh[(2-methyl-4-chlorophenoxy)acetic acid], 2M-4KhM [2-methyl-4-chlorophenoxy)butyric acid] and 2M-4KhP[(2-methyl-4-chlorophenoxy)-propionic acid] (10, 100, and 1000 mg/l) to determine how halophenoxy acids affect the distribution of RNA, protein, and nucleotides in various parts of pea sprouts. After specific time intervals, the sprouts were cut into 2-cm segments, which were then frozen and analyzed. The herbicides 2M-4Kh and 2M-4KhP retarded the growth of the apical meristem and disturbed the activity of the meristem in various parts of the stem. In the areas of abnormal meristematic activity the content of RNA, protein, and acid-soluble nucleotides increased sharply.

Card 1/3

UDC: 632.954:581.13

ACC NR: AP8030364

As shown in Table 1, the rate of synthesis of RNA led the rate of synthesis of protein, thus disturbing the vital processes of the plants.

Table 1. The effect of herbicides on the ratio of protein to RNA in various parts of pea sprouts

Parts of sprouts and time elapsed after their treatment	Amount of protein formed per unit of synthesized RNA, mg			
	Con-trol	2M-4Kh 1000 mg/l	Con-trol	2M-4KhP 1000 mg/l
24 hr				
Upper . . .	11.15	7.41(66.4)	11.00	6.14(55.5)
Middle . . .	11.87	11.10(94.2)	7.98	7.46(94.6)
Lower . . .	13.70	9.72(69.7)	9.27	7.37(79.5)
72 hr				
Upper . . .	6.25	5.72(84.9)	8.57	4.72(55.1)
Middle . . .	7.47	4.54(60.7)	8.26	6.86(83.3)
Lower . . .	6.27	4.79(76.3)	10.04	5.6(55.8)
100hr				
Upper . . .	6.96	3.77(54.2)	9.16	7.52(83.2)
Middle . . .	8.77	3.68(41.9)	10.14	6.61(65.1)
Lower . . .	7.21	3.58(49.6)	8.71	6.82(78.3)

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Note. In parentheses - of control value

ACC NR: AP8030364

The herbicidal effect of halophenoxy acids is probably due to their disturbance of the protein-nucleic metabolism. Orig. art. has: 4 tables.
[WA-50; CBE No. 37][FT]

SUB CODE: 07/ SUBM DATE: 23Jan68/ ORIG REF: 003/ OTH REF: 009

Card 3/3

ACC NR: AT8029368 SOURCE CODE: UR/3382/63/025/000/0281/0285

AUTHOR: Letov, G. S.; Yemel'yanova, N. D.; Letova, G. I.

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: The distribution and ecology of gerbils in Tuva and the adjacent parts of Mongolia

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 281-285

TOPIC TAGS: disease carrying mammal, plague, flea, tick, host parasite relationship

ABSTRACT: The zones of the midday gerbil (*Meriones meridianus* urianchaicus), the Mongolian midday gerbil (*M. microtus* psammophilus) and the clawed jird *M. unguiculatus* include the boundary of the Tuva ASSR with Mongolia in the Ubsa Nur and Uryuk Nur lake basins and the valley of the Bukhe-Muren-Gola river. The most northern section of the Tuva ASSR populated by midday gerbils is the Turan basin. This section is separated from the chief (Mongolian) part of the zone by two mountain

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ACC NR: AT8029368

ranges. The distribution of these gerbil species is of epidemiological interest because the animal colonies are included in the plague focus connected with Mongolia through the upland region of Kharmkhira-Bayrin-ul. The typical gerbil flea *Ceratophyllus laeviceps* is found on midday gerbils in all sections of the zone. Other fleas parasitizing gerbils and jirds in this area include *C. tesquorum*, *Frontopsylla hetera*, *F. aff. tjanschanica*, and *Neopsylla bidentatiformis*. *Dermacentor nuttalli*, *Eulaelaps cricetuli*, *E. kulpakovas*, *Haemolaelaps glasgowi*, *Haemogamasus mandschuricus*, *H. citelli* and *Nothrolaspis decoloratus* ticks were also found on midday gerbils in Mongolia and Tuva. Gerbil colonies in the Ubsa-Nur and Uryuk-Nur basins are particularly hazardous because of the high density of gerbils combined with the permanence of the settlement. The number of flea species parasitizing midday gerbils is gradually being reduced with movement of gerbils from the center of the zone to the periphery, which is connected with changes in the hosts' environment. [WA-50; CBE No. 37][JS]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 007

Card 2/2

ACC NR: AT8029374 SOURCE CODE: UR/3382/63/025/000/0352/0359

AUTHOR: Letova, G. I.; Yemel'yanova, N. D.; Letov, G. S.

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: Ectoparasites of murine rodents of Tuva. Report I. Ectoparasites of the water vole (*Arvicola terrestris*)

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 352-259

TOPIC TAGS: parasite, host parasite relationship, rodent, vole

ABSTRACT: Water voles in the Tuva Autonomous Republic are host to 18 species of fleas, 2 species of Ixodid ticks, 20 species of Gamasoid ticks and 3 species of redbodied ticks. There is definite vertical zonality in plant cover and this affects, to some extent, contact of rodents in the dry steppes with those rodents living in more moist areas. Ectoparasites such as *C. tesquorum*, *Ct. arealis*, and *H. citelli* were found in parasite collections made from water voles. The species most prevalent are:

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C. penicilliger arviola (39.3%), *C. rectangulatus* (21.3%), *C. calcarifer*, *H. amphibius* (22.4%), and the redbodied tick *T. autumnalis*. *Ceratophyllus walkeri* and *Ctenophthalmus assimilis* were absent from collections even though they are widely distributed among water voles in other parts of Kazakhstan and western Siberia. Water voles were most consistently infested with Gamasoid ticks. The average number of ticks per vole was about 20.9. Several ticks parasitizing water vole are of epidemiological interest: *D. nuttalli*, *L. muris*, *H. glasgowi*, *H. isabelinus*, which have been implicated in tularemia transmission in natural foci of tularemia. The redbodied ticks are encountered rarely on the water vole and are of comparatively little interest. Orig. art. has: 2 tables.

[WA-50; CBE No. 37] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 006

Card

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ACC NR:

AT8029367

SOURCE CODE: UR/3382/63/025/000/0273/0280

AUTHOR: Lipayev, V. M.

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: New data on the distribution of rodents in northeast Mongolia

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 273-280

TOPIC TAGS: rodent, disease vector, animal ecology, zoology

ABSTRACT: A mammal survey of steppe rodents was made in Northeastern Mongolia in 1955—1956. During these two seasons, 50 observation stations were set up, covering an area of over 2000 km, and motor travel covered over 18,000 km during the collection of specimens. The principal rodents of the area are shown in Fig. 1—4. According to several authors, *Marmota sibirica* is not found north of the 48th parallel; however, in this expedition several colonies were found north of the 48th parallel. *Citellus unguulatus* inhabits the forest-steppe zone of the Khentey foothills. Many specimens were caught in the valleys of the taiga. *Citellus dauricus* is widely distributed in the

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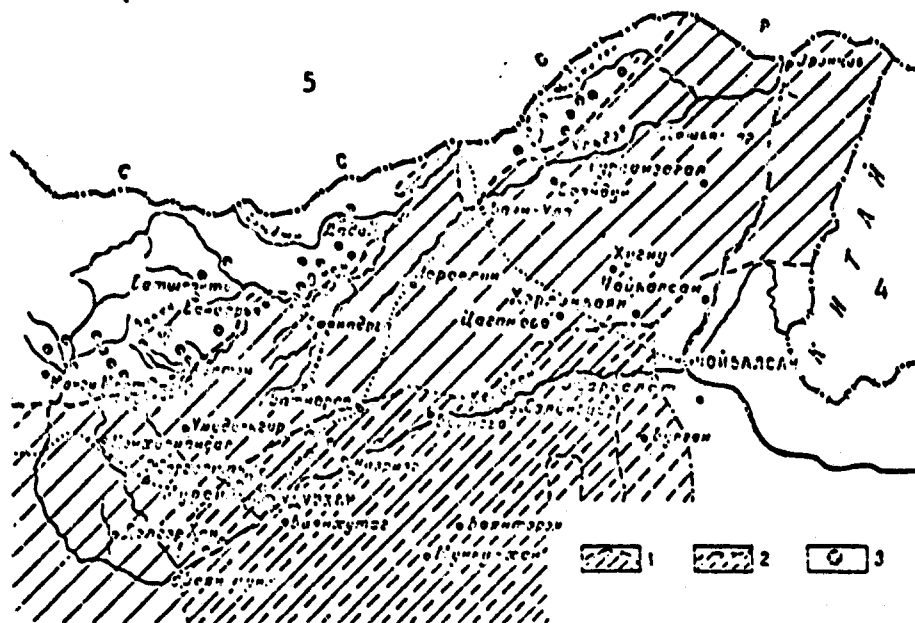


Fig. 1. Distribution of the Mongolian bobak (*Marmota bobak sibirica*) in the Northeast Mongolian Peoples' Republic. 1) Northern boundary and range of the bobak; 2) territory where no bobaks were found; 3) trapping points in 1965 and 1966; 4) China; 5) Soviet Union

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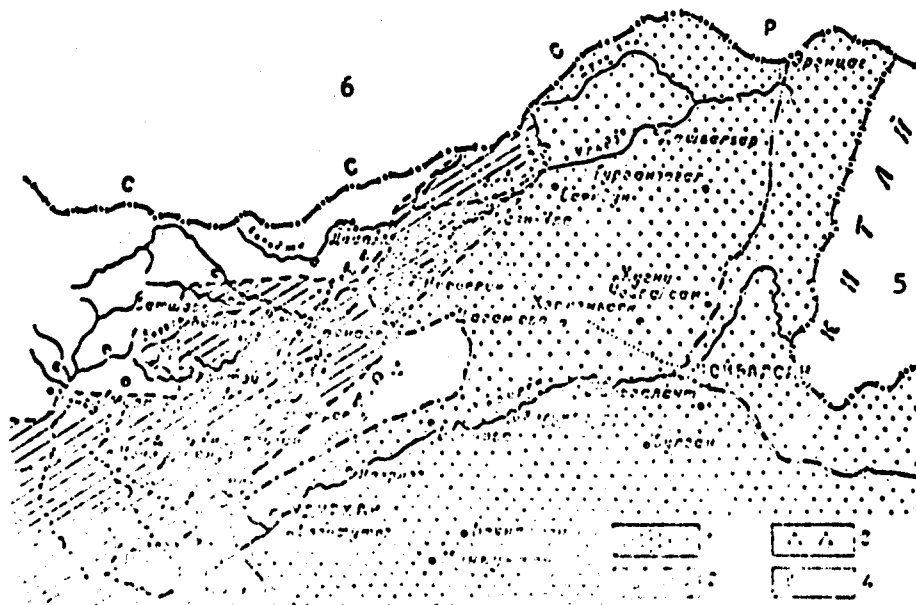


Fig. 2. Distribution of susliks in the northeast Mongolian Peoples' Republic. 1) range of the daurian suslik; 2) range of the long-tailed suslik *Citellus undulatus*; 3) observation points for the daurian suslik in 1955-1956; 4) observation points for the long-tailed suslik in 1955-1956; 5) China; 6) Soviet Union

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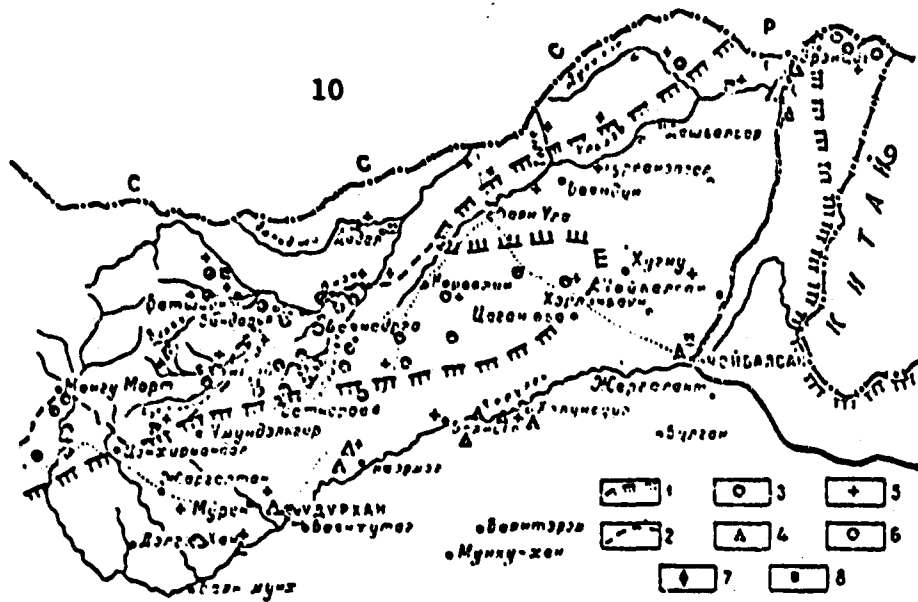


Fig. 3. Distribution of Brandt's vole *Microtus brandti* and other rodents in the northeast Mongolian Peoples' Republic. 1) northern boundary of range of Brandt's vole; 2) same, according to data taken in 1955—1956. This indicates sites used in 1955—1956; 3) Brandt's vole; 4) clawed jird (*M. unguiculatus*); 5) narrow skulled vole (*M. gregalis*); 6) silver vole; 7) northern pika (*O. hyperborea*); 8) gray rat; 9) China; 10) Soviet Union
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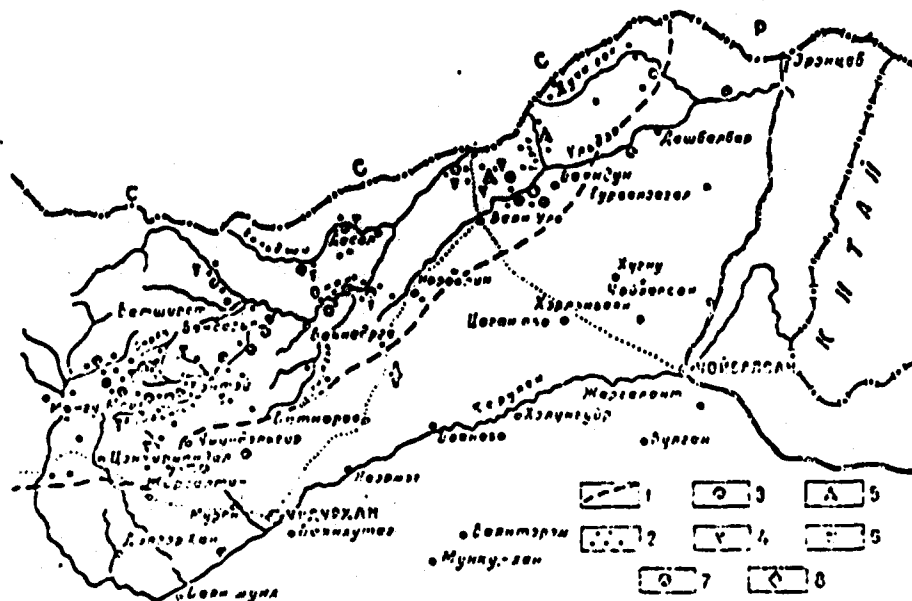


Fig. 4. Distribution of the Transbaikalian zokor and other rodents in the northeast Mongolian Peoples' Republic. 1) Southern range of the zokor. Observation points for 1955—1956; 2) zokor; 3) eastern vole; 4) large-toothed redback vole (*Clethrionomys rutilus*); 5) common vole (*M. arvalis*); 6) forest mouse; 7) Daurian hamster; 8) striped hairy-footed hamster (*Phodopus sungorus*)
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ACC NR:

AT8029367

valleys of Eastern Mongolia. This rodent has spread westward from the boundaries previously described. *Ochotona daurica* is common in Northeast Mongolia and was observed in the same habitat as the grey pika. *Ochotona hyperborea* is found at one station in this region. *Pallasiomys unguiculatus* is more common to the dry steppes of the Soviet border. Several long-established colonies in this area were studied and found to be substantially similar to and typical of colonies studied 10—15 yr ago. Often there were 38—49 specimens per hectare. *Microtus brandti* is typical of the dry-steppe rodents of Northeastern Mongolia and is often found in the forest-steppe and foothill and mountain zones as well. It is now found far north of its former range. There are some areas which are entirely free of this animal. *Microtus gregalis* is found all over the observed territory. *Alticola argentatus* was either frequently observed (some stations) or absent (others). *Microtus fortis* is found in the northeast quadrant of the area studied, and is common along some of the larger rivers and their tributaries. *Microtus arvalis* is found in the Ul'dza and nearby river basins and in Khuzhertan. *Clethrionomys rufocanis* is common not only in the Khentey taiga but in deciduous forests and forest-steppe meadows. *Apodemus speciosus* is also typical of the Khentey taiga zone. *Cricetulus barabensis* is widely distributed in the semi-desert zones of Mongolia. Specimens were also found in forest-steppe, foothills, and in the vicinity of several local rivers.

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Podopus sungorus is a commonly seen inhabitant of the eastern mongolian steppe. In two years 7200 specimens were caught. *Lepus tolai* is found in the southern part of the forest-steppe zone and in the Ul'dze river valley. *Lepus timidus* lives along main rivers, their tributaries, and in mixed forest zones. *Myospalix aspalax* is widely distributed in the eastern Khentey forest-steppe zone. *Rattus norvegicus* was observed at the Undurkan Choybalsan Erensabo, and nearby observation points. *Mustela musculus* is a common inhabitant of this area. Orig. art. has:
4 figures. [WA-50; CBE No. 37] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 006

Card

7/7

ACC NR:

AP8029022

SOURCE CODE: UR/0016/68/000/OCS/0037/0042

AUTHOR: Mal'tsev, V. N.

ORG: Institute of Biophysics AMN SSSR (Institut biofiziki AMN SSSR)

TITLE: Toxic action of bacterial endotoxins on the body. Literature survey

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 8, 1968, 37-42

TOPIC TAGS: endotoxin, poison effect, toxin effect, toxin physiologic effect

ABSTRACT: Bacterial endotoxins have a complex phospholipid-polysaccharide-protein structure. Lethal doses in different experimental animals vary from 0.1—0.01 mg/kg to 0.04—1 mg/kg. One feature of bacterial endotoxins produced by typhoid, paratyphoid, dysentery, *E. coli*, and others is that they affect the body differently after parenteral administration, according to species specificity. They are all viscerotropic. These endotoxins produce a loss of feeling in the extremities, headaches, nausea, vomiting, and increased body temperature along with the usual diarrhea. These toxins affect the CNS via interoreceptors.

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UDC: 576.851.48/.49.097.29+
615.371-06:576.851.48.49.097.29

ACC NR:

AP8029022

Investigation of biopotentials of the peripheral nerves showed that an increase in amplitude and a strengthening of the impulses occurred 2 min after immunization against toxins. Neuron disruption has also been noted in the CNS both *in vivo* and in histological studies. Endotoxin disrupts the normal function of the sympathetic nervous system and, after administration, there is an increase in the concentration of adrenalin and noradrenalin in the blood. Other physiological changes observed include hyper- and hypo-glycemia, liberation of glycogen from the liver, increase in maleic and some other acids, peripheral arterial spasms, and a generalized sympathomimetic reaction, analogous to the effect of adrenalin. There is conflicting evidence for the synergism of endotoxin and adrenalin on the body. The administration of dysentery and related bacterial endotoxins produces decreased arterial pressure and often vascular collapse. This collapse leads to an initial loss of feeling in the extremities, diminution of the knee jerk reflex and compensatory tachycardia. Venous pressure increases in the portal and peripheral systems. The disruption of neural regulation of capillary tonus in the digestive tract deprives the tissues not only of blood, but increases the permeability of vessel walls. Increased vascular permeability can increase the harmful effect of endotoxin on the capillaries of the endothelium and release histamine upon cell destruction. Microbial antigens also effect blood clotting. After injection of toxin, the

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ACC NR:

AP6029022

exudation of fibrinogen and its breakdown has been noted. Leucopenia is a consequence of the breakdown of blood circulation to the capillaries. This destruction of leucocytes releases endogenous pyrogen which acts on the thermoregulatory centers of the brain and causes fluctuating febrile response. Persons with hormone imbalances or those who are taking certain drugs are also more susceptible to bacterial endotoxins. Bacterial endotoxins can accelerate protein synthesis in the liver, spleen, adrenals, and lymph nodes. [WA-50; CBE No. 37][LP]

SUB CODE: 06/ SUBM DATE: 08Sep67/ ORIG REF: 060/ OTH REF: 080

Card

3/3

ACC NR:

AT8032004

SOURCE CODE: UR/0000/67/000/000/0122/0125

AUTHOR: Marasanova, L. P.

ORG: Irkutsk Scientific Research Institute of Epidemiology and Microbiology (Irkutskiy nauchno-issledovatel'skiy institut epidemiologii i mikrobiologii)

TITLE: Biological properties of *Cl. perfringens* type F as compared with types B and C

SOURCE: Irkutsk. Nauchno-issledovatel'skiy institut epidemiologii i mikrobiologii. Materialy nauchnoy konferentsii. Irkutsk, Vostochno-Sibirskoye knizhnoye izd-vo, 1967, 122-125

TOPIC TAGS: clostridium, bacterial toxin

ABSTRACT: Comparison of *Cl. perfringens* types B, C, and F is shown in Table 1. Toxicogenicity was determined by injection of toxin diluted from 0.1 to 0.000375 ml into the tail vein of mice. Lecithinase activity was determined by the effect of 18-hr cultures on egg-yolk suspension.

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Table 1. Distribution by activity of types F, B, and C

Priority occupied by type	Toxicogenic properties	Lecithinase activity	Hemolytic activity	Necrotic activity
1	Type C	Type C	Type C	Type C
2	B	B	F № 48	B
3	F № 48	F № 48	B	F № 48
4	F № 348	F № 318	F № 348	F № 348

Hemolysis was determined with rabbit erythrocytes and necrotic activity by intracutaneous injection of guinea pigs. It was concluded that type F cannot be finally differentiated from types B and C, although type F may be tentatively identified by its slightly different morphology and highly temperature-resistant spores. Orig. art. has: 1 table.

[WA-50; CBE No. 37][JS]

SUB CODE: 06/ SUBM DATE: none

Card

2/2

AUTHOR: Marasanova, L. P.

ORG: Irkutsk Scientific Research Institute of Epidemiology and Microbiology (Irkutskiy nauchno-issledovatel'skiy institut epedemiologii i mikrobiologii)

TITLE: Some biological properties of *Cl. perfringens* types A, B, C, D, E and F

SOURCE: Irkutsk. Nauchno-issledovatel'skiy institut epidemiologii i mikrobiologii. Materialy nauchnoy konferentsii. Irkutsk, Vostochno-Sibirskoye knizhnoye izd-vo, 1967, 126-129

TOPIC TAGS: clostridium, bacterial toxin

ABSTRACT: Comparison of the properties of *Cl. perfringens* types A (28k), B (216), C (219), D (222), E (342), and F (48), was conducted. Determination of the toxic properties of *Cl. perfringens* cultures *in vivo* (white mice) and *in vitro* (primary trypsinized 11-day chick embryo tissue culture) showed that all six types had toxic properties, varying with the type. Types C, B, and F were most toxic and type E least toxic. All types had hemolytic properties, but type A had the most hemolytic

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ACC NR: AT8032005

activity, and types D and E the least. All types possessed lecithinase activity, the maximum activity in type A and the minimum in types D and E. All types caused necrosis in guinea pigs injected with an average minimum necrotic dose of toxin (0.00012 ml). Types C, B, and F had the most necrotic activity, and types A, B, and E the least. Determination of the virulence of *Cl. perfringens* types by intramuscular injection of culture filtrates showed that both whole cultures and cells washed free of toxin were virulent, although the latter were considerably less virulent. Types B and C were the most virulent types, and E and D least virulent. It was concluded that the type of *Cl. perfringens* is dependent on the toxigenic and virulent properties. On the basis of toxigenicity and virulence, *Cl. perfringens* can be divided into two groups, one with more pronounced properties (types A, B, and F) and the other with less pronounced properties (types A, B, and F) and the other with less pronounced properties (types D and E). [WA-50; CBE No. 37] [JS]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AP8025710 SOURCE CODE: UR/0219/68/066/007/0053/0056

AUTHOR: Markelov, I. M.; Tsybulyak, G. N.; Krokholeva, T. N.;

ORG: Department of Anesthesiology and Reanimation /Head -- Prof. B. S. Uvarov/ (Kafedra Anesteziologii i peanimatologii); Clinic of Military Field Surgery /Head -- Prof. A. N. Berkutov/, Military Medical Academy im. S. M. Kirov, Leningrad (Klinika voyenno-polyevoy khiryrgii Voyenno-meditsinskoy akademii)

TITLE: Experimental data on biochemical disorders in tetanus

SOURCE: Byulleten' eksperimental'noy biologii i meditsiny, v. 66, no. 7, 1968, 53-56

TOPIC TAGS: tetanus, human ailment, metabolic disease

ABSTRACT: Enzyme and isoenzyme activity in blood serum of dogs infected with tetanus were studied. Lactodehydrogenase, creatinekinase, aldolase, aspartic- and alaninaminotransferase, blood sugar levels, acid-base balance, and water-soluble tissue proteins were determined by chemical methods and agar gel electrophoresis. Tissue hypoxia was developed as a result of the disease. Tetanus toxin and hypoxia induce a rise

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UDC: 616.981.551-092.9-008.9-992.18
- 239 -

ACC NR: AP8025710

creatinekinase and lactodehydrogenase activity in the blood serum.
Hypoxia was followed by nonrespiratory acidosis and increased potassium
titer, blood sugar rose and this was apparently caused by a compensatory
reaction to the high energy expenditure during the tetanic contractions.
Orig. art. has: 2 tables. [WA-50; CBE No. 37] [LF]

SUB CODE: 06/ SUBM DATE: 21Feb66

Card 2/2

ACC NR: AP8031946 SOURCE CODE: UR/0062/68/000/009/2042/2050

AUTHOR: Mastryukova, T. A.; Shipov, A. E.; Gorbenko, E. B.; Shabanova,
M. P.; Savchenko, K. N.; Kagan, Yu. S.; Kabachnik, M. I.

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

TITLE: A new type of selectively acting organophosphorus insecticides
and acaricides

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 9, 1968, 2042-
2050

TOPIC TAGS: organic phosphorus insecticide, phosphate ester, sorption,
white mouse

ABSTRACT: This article appears in Chemical Factors

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UDC: 541.69+661.718.1+615.777/79

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ACC NR: AP8031730

SOURCE CODE: UR/0346/68/000/009/0103/0103

AUTHOR: Mazur, R. I. (Aspirant)

ORG: none

TITLE: The distribution of Q-fever among slaughtered animals

SOURCE: Veterinariya, no. 9, 1968, 103

TOPIC TAGS: Q fever, complement fixation reaction

ABSTRACT: Study of the sera of slaughtered animals at the Moscow Meat Packing Plant with the complement fixation reaction showed that only three out of 1718 samples of cattle sera (from 25 farms) gave positive results with rickettsial antigen, and none of 363 samples of pig blood reacted positively. At the Baku Meat Packing Plant however, 1.8—17.6% of cattle sera was positive in the complement fixation reaction, and 13.3—17.6% of sheep sera. These data establish the presence of Q-fever in Azerbaydzhan. Epidemiological studies must be conducted to determine unsafe locations for Q-fever and special precautions must be taken to protect veterinary and slaughterhouse workers. Scientific Director Professor F. A. Terent'yev supervised the work.

[WA-50; CBE No. 37][JS]

SUB CODE: 06/ SURM DATE: none

Cord

1/1

UDC: 619:616.981.718-077.37.637.513

ACC NR: AP8030500

SOURCE CODE: UR/0426/68/021/006/0509/0514

AUTHOR: Midzhoyan, A. L.; Afrikyan, V. G.; Nonezyan, N. S.; Pirdzhanov, L. Sh.; Adzhibikyan, A. S.; Pogcsyan, A. V.

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

TITLE: Studies in the realm of the synthesis of benzodioxane derivatives III. Some amides and amines of the benzodioxane series as possible adrenolytic substances

SOURCE: Armyanskiy khimicheskiy zhurnal, v. 27, no. 6, 1968, 509-514

TOPIC TAGS: dioxane, amine salt, adrenolytic drug

ABSTRACT: This article appears in Chemical Factors

Cord

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UDC: 541.69

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ACC NR: AT8029377

SOURCE CODE: UR/3382/63/025/000/0369/0375

AUTHOR: Mirotvortsev, Yu. M.

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: Exterminating and hunting the marmot in the boundary zone of Gorno-Altai Autonomous Oblast

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 369-375

TOPIC TAGS: plague, epidemiologic focus, disease carrying mammal

ABSTRACT: The first mass extermination of the Altai marmot (*Marmota marmota*) around Kosh-Agach in Gorno-Altai Autonomous Oblast in 1960, conducted to prevent the development of a plague epizootic, showed that poisoning of burrows with tsianplav (a product containing sodium and calcium cyanides with various impurities) was almost 100% effective. The most effective dose was 75 g of tsianplav per burrow entrance. Poisoning Altai marmots with tsianplav is recommended as the most effective, reliable, and comparatively cheap extermination method in conditions of

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ACC NR: AT8029377

Gorno-Altai Autonomous Oblast. Poisoning of marmots with chloropicrin (25-100 g per burrow entrance) is not recommended because of the low mortality (73-84%). Chloropicrin-moistened balls were placed into burrows. As a result of the mass extermination, the marmot population decreased more than two-fold (from 2.25 burrows per hectare to 0.5-1 burrow hectare). Orig. art. has: 2 tables. [WA-50; CBE No. 37] [JS]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 011

Card 2/2

ACC NR: AP8025713

SOURCE CODE: UR/0427/68/021/005/0035/0042

AUTHOR: Movesesyan, E. A.; Polyak, R. Ya.; Il'ina, G. I.; Smorodintsev, A. A.

ORG: Department of Virology, Institute of Experimental Medicine, AMN SSSR, Leningrad (Otdel virusologii Instituta eksperimental'noy meditsinii AMN SSSR)

TITLE: Interaction of macrophages with intact viruses and their infective RNA

SOURCE: Biologicheskii zhurnal Armenii, v. 21, no. 5, 1968, 35-42

TOPIC TAGS: infective RNA, macrophage, virus

ABSTRACT: It is possible that the resistance of macrophages to virus infection can be explained by the absence of virus-deproteinizing enzymes capable of disrupting the viral particle and freeing its nucleic acid in these cells, thus preventing the virus from synthesizing the necessary biopolymers (viral proteins and nucleic acids). This experiment was designed to test this hypothesis. The viruses used were poliomyelitis 1 (type Mahoney) which had been cultured in a Detroit-6 cell line, Scotland encephalitis virus which had been maintained in

Card

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UDC: 615.371

ACC NR:

AP8025713

white mouse brains, and vaccinia virus, isolated from cellular detritus and cultured in chick embryo fibroblasts. These vaccinia and poliomyelitis viruses were obtained from virus-containing culture fluid, and the Scotland encephalitis virus was used in a 10% brain tissue suspension in phosphate buffer. Viral RNA was isolated by standard methods. As a result of infecting mouse macrophages with 1000-10,000 times the tissue infective dose (TID) with a polio virus, the virus was observed to penetrate via pinocytosis into a small part of the cell body. Within the cell the virus concentration was no higher than 0.5-1.5 lg TID 24 hr after infection. Increasing the infective dose had no effect on the penetrating ability of the virus. These results held whether the macrophages were in multi- or monolayer cultures. Guinea pig macrophages were also used as a virus medium, but the viruses did not penetrate into these cells any better than into the mouse macrophages. The virus was cultured for 6-8 days but the maximum concentration did not exceed 6.5-7.0 lg TID₅₀/ml in leucocytes. In almost every experiment the virus concentration decreased almost linearly when expressed in lg TID₅₀. Culturing the virus in suspended leucocyte cultures obtained from guinea pig mucus membranes did not facilitate the development of viruses. During seven days of observation, a minimum of the virus actually penetrated the cell; however, they did cause some morphological damage. Not more than 40% of the cells

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ACC NR: AP8025713

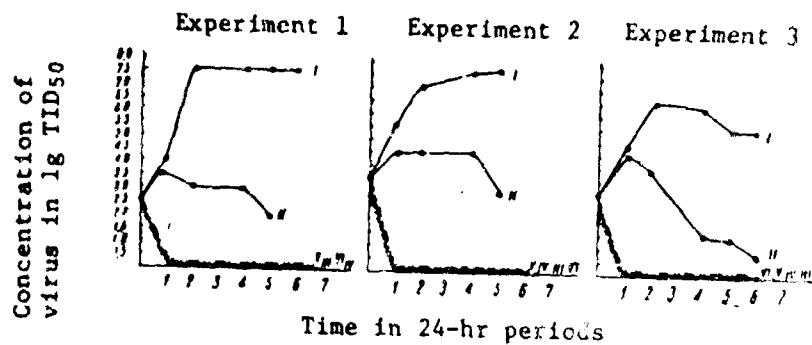


Fig. 1. Viral reproduction curve for poliomyelitis 1 (type Mahoney), inducing RNA in different tissue cultures.

Culture conditions: I - virus sensitive Detroit-6 culture; II - nonsensitive chick embryo fibroblast culture; III - nonsensitive mouse macrophage culture; IV - nonsensitive guinea pig culture; V - nonsensitive rat culture; VI - nonsensitive suspended guinea pig leucocyte culture obtained from mucus membrane

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ACC NR: AP8025713

were destroyed by the virus at the end of seven days. Parallel experiments using vaccinia virus, a DNA containing virus, showed that vaccinia virus penetrated mouse macrophages in a somewhat larger quantity. After 4-6 days, virus particles could be detected within the cells. Poliomyelitis virus and Scotland encephalitis virus particles did not persist for more than 48 hr within the cell. Penetration dynamics of these viruses were compared in cells such as Detroit-6 cells, which are normally susceptible to the virus. The results are shown in Figure 1. All tissue cultures injected with poliomyelitis-RNA were resistant to infection. Orig. art. has: 2 figures and 3 tables.

[WA-50; CBE No. 37][LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 002/ OTH REF: 017

Card 4/4

ACC NR:

AP8027987

SOURCE CODE: UR/0402/68/000/004/0421/0428

AUTHOR: Neustroyev, V. D.; Rezepova, A. I.; Titova, L. N.

ORG: Moscow Scientific Research Institute of Viral Preparations
(Moskovskiy nauchno-issledovatel'skiy institut virusnykh preparatov)TITLE: Properties of tickborne encephalitis virus strains isolated in
different geographical areas

SOURCE: Voprosy virusologii, no. 4, 1968, 421-428

TOPIC TAGS: tick, encephalitis, tissue culture, disease carrying tick

ABSTRACT: Hemagglutinating properties and other antigenic features of 17 strains of tickborne encephalitis virus isolated in and outside the USSR are reported. The brains of mice infected with the virus were used to test the hemagglutinating properties of the different strains. Strains were cultured in 9 different types of culture media. White rats were immunized 2-3 times intraperitoneally by administration of 2 ml of a 10% suspension prepared from mouse brain or from culture fluid. Sera were treated with a 10% suspension of goose erythrocytes and a 25% suspension of kaolin to extract the nonspecific agglutination inhibitors. The hemagglutination reaction was determined with 8 hemagglutinating units of antigen. Results of the study suggest the existence of antigenic features

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UDC: 576.855.25

ACC NR:

AP8027987

Table 1. Hemagglutination activity of various strains
of the virus of tickborne encephalitis

Origin of strain	Strain	Hemagglutination Activity		pH for hemagglutination reaction	Degree of titer decrease within 2 weeks after storage at 17°
		Antigens from mouse brain	Cultured in swine embryo kidney		
Far East	Sophian	1:2560—1:1280	1:128	6,2	5,8—6,6
Krasnoyarsk Krai	Krasnoyarskiy	1:1280—1:640	1:32—1:16	6,4	5,8—6,6
	Kargasovskiy	1:2560—1:1280	1:64	6,0	5,8—6,6
Czechoslovakia	Najir	1:1280	1:64—1:32	6,2—6,4	8
Czechoslovakia	V	1:640	1:16	—	—
Poland	Abel	1:640	—	6,0	5,8—6,2
Estonia	Stebak	1:640	—	—	—
Krasnoyarsk Krai	Bic	1:640	—	6,0	6,0—6,4
Kazakhstan	Alma-Ata	1:640—1:320	1:32	6,0	5,8—6,8
	Irrepat	—	—	—	—
Permskaya oblast	Ivady	1:640	1:8	6,2	5,8—6,6
Sverdlovsk oblast	No. 1691	1:1280	1:16—1:8	6,2	6,2—6,6
Sverdlovsk oblast	No. 2322	1:1280	1:8	6,2	5,8—6,6
Sverdlovsk oblast	K-1	1:320	1:64—1:16	—	—
Chelyabinsk oblast	Chelyabinsk	1:640	1:16	6,0	5,8—6,2
Karelia	Absettaev	1:320	1:16	6,2	5,8—6,2
Blood of patient	P.V.	1:320	1:16	6,2	5,8—6,2

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ACC NR: AP8027987

inherent in each strain of the virus isolated in different geographical areas and in a single focus. (see Table 1). Thus, strains of western origin caused destructive changes in clonal cultures of swine embryo kidney within 2-3 days, while similar changes occurred with eastern and Ural strains at later periods. Different strains of the virus had different hemagglutinating activity in different cultures and in mouse brain. Formation of hemagglutinins was greatest in cultures of clonal lines of swine embryo kidney, mouse embryo cells, and mouse brain. Western strains demonstrated great immunological activity. Orig. art. has: 3 tables and 3 figures. [WA-50; CBE No. 37] [XF]

SUB CODE: 06/ SUBM DATE: 08Jun67/ ORIG REF: 006/ OTH REF: 001

Card 3/3

ACC NR: AP8031713 SOURCE CODE: UR/0346/68/000/009/0020/0022

AUTHOR: Nikitin, Ye. Ye.; Yesionov, A. V.; Sobko, A. I.; Prokhorov, V.N.

ORC: All-Union Scientific Research Foot-and-Mouth-Disease Institute (Vsesoyuznyy nauchno-issledovatel'skiy yashchurnyy institut)

TITLE: Inactivation of foot-and-mouth disease virus during preparation of complement-fixing antigen

SOURCE: Veterinariya, no. 9, 1968, 20-22

TOPIC TAGS: hoof and mouth disease, virus antigen

ABSTRACT: The best method of inactivating foot-and-mouth-disease virus with complete loss of virulence but without loss of complement-fixing activity consisted of inactivation of lapinized foot-and-mouth-disease virus at 37°C and pH 7.6 for nine days, 37°C and pH 9 for two days, or 37°C and pH 6 for seven days. Antigens prepared by this method had a high degree of turbidity, which was removed with difficulty by freezing and centrifugation. Inactivation at pH 6 for seven days produced transparent avirulent antigens from foot-and-mouth-disease virus types A, O, and S, and A₂ variant. All types retained complement-fixing properties at +4°C for five months. Inactivation by heating at 58°C

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UDC: 619:616.988.43-095.87
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ACC NR: AP8031713

for 40 min, the currently recommended method, produced antigens with a relatively high residual virulence. Lapinized virus inactivated at 60°C and at 80°C completely lost complement-fixing activity. Orig. art. has: 3 tables. [WA-50; CBE No. 37] [JS]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AP8026918

SOURCE CODE: UR/0016/68/000/006/0067/0070

AUTHOR: Nikityuk, N. M.

ORG: Central Scientific Research Institute of Epidemiology (Tsentral'nyy nauchno-issledovatel'skiy institut epidemiologii)

TITLE: Use of the method of phage typing of *S. typhimurium* for interpretation of group diseases caused by this pathogen

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 6, 1968, 67-70

TOPIC TAGS: bacteriophage, salmonella, food

ABSTRACT: The use of bacteriophage typing for analysis of three outbreaks of group disease caused by *Salmonella typhimurium* in the Moscow area is reported. *S. typhimurium* of phage type 2 isolated from improperly cooked duck was the causative agent in the first outbreak; in the second outbreak, *S. typhimurium* of phage type 2b was detected in cold beef; in the third outbreak, "dry Kiev jam" (glazed fruit) was found to be contaminated with *S. typhimurium* of phage 2c. [WA-50; CBE No. 37] [XF]

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

Card

1/1

DOC. 616,981,49-678.75
- 247 -

ACC NR:

AP8031146

SOURCE CODE: UR/0248/68/000/009/0089/0094

AUTHOR: Nosik, N. N. (Moscow); Danilov, A. I. (Moscow)

ORG: Institute of Virology im. D. I. Ivanovskiy, AMN SSSR, Moscow (Institut virusologii AMN SSSR); All-Union Scientific Research Institute of Influenza, Ministry of Public Health, USSR, Leningrad (Vsesoyuznyy institut gripa Ministerstva zdravookhraneniya SSSR)

TITLE: Etiology, epidemiology, immunoprophylaxis, clinical picture, therapy and pathomorphology of influenza and acute respiratory disease

SOURCE: AMN SSSR. Vestnik, no. 9, 1968, 89-94

TOPIC TAGS: respiratory system disease, virus diseases, immunization

ABSTRACT: Delegates from different cities of the USSR, Bulgaria, Great Britain, Hungary, the German Democratic Republic, Poland, Finland, Czechoslovakia, and Switzerland participated in the Conference on Influenza and Acute Respiratory Diseases held in Leningrad from 19—22 December 1967. Reports on etiology included mutability of influenza virus A2 and B during the past 10 yr, transfer of inhibitor resistance, heat resistance, plaque formation, virulence following hybridization of influenza viruses A and A1, the significance of *Mycoplasma pneumoniae* in

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UDC: 616.921.5(063)(47)"1967"

ACC NR:

AP8031146

acute respiratory infections, and the significance of respiratory viruses in interepidemic and epidemic influenza outbreaks. Reports on epidemiology included mechanisms of transfer and dissemination of the pathogens of acute respiratory diseases through the air, penetration of bacterial and viral aerosols into different areas of the respiratory tract, survival in the air, and physiological and kinetic properties. Results of vaccine prophylaxis were noted. Nonspecific prophylaxis with lysozyme with ecmoline (ekmolin), leukocyte interferon and stimulation of interferon formation was discussed. The prophylactic effectiveness of amantadine 200 mg/day in vaccinal influenza type A2 in volunteers was reported. General problems in the study of respiratory viruses, and the clinical picture and pathomorphology of influenza and acute respiratory infections were discussed. A post-conference discussion was held on specific prophylaxis and therapy of influenza and influenza-like diseases, and on results and basic trends in scientific research for 1968—1969. Discussions on specific prophylaxis were directed toward the study of genetic properties of viruses and their interactions, a continuation of the 1967 study on the epidemiological effectiveness of mass vaccinations against influenza with live A2 and B influenza vaccine, and the epidemiological and immunological effectiveness of live attenuated vaccine for infants.

[WA-50; CBE No. 37] [XF]

SUB CODE: 06/ SURM DATE: none

Card

2/2

ACC NR:

AP8027999

SOURCE CODE: UR/0402/68/000/004/0494/0498

AUTHOR: Noskov, F. S.; Yermakov, N. V.; Avdeyenko, M. M.

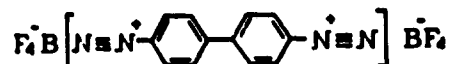
ORG: Military Medical Academy im. S. M. Kirov, Leningrad (Voyenno-meditsinskaya akademiya)

TITLE: Concentration and rapid detection of vaccinia virus on sorbents by the fluorescent antibody method

SOURCE: Voprosy virusologii, no. 4, 1968, 494-498

TOPIC TAGS: diagnostic medicine, vaccinia virus, fluorescent antibody method

ABSTRACT: Protein polycondensates were prepared from rabbit anti-vaccinia gamma globulin by condensing the globulin with a fluoroborate complex.



The resulting suspensions were capable of absorbing vaccinia virus on the cell surfaces, thus facilitating their detection as luminescent aggregates by the fluorescent antibody method. This method may be used for

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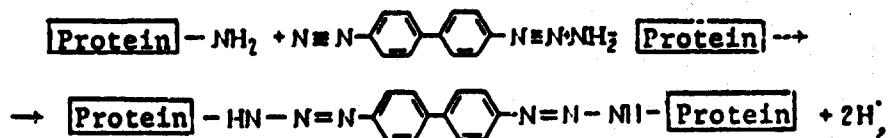
1/2

UDC: 576.858.13-073.4

ACC NR:

AP8027999

concentrating viruses from large volumes of dilute virus-containing fluid. The union of serum proteins and various substances through diazotization is a very convenient method for use in immunology since the immune proteins used do not lose their serological activity. The use of a fluoroborate complex of benzidine bis-diazonium for conjugation leads to the formation of bonds of the type:



with the formation of protein polycondensates to the ends of which the protein attaches. The fluoroborate complex prepared is a chemically pure preparation and was stable in storage for over a year without losing more than a small fraction of its reactive groups. Orig. art. has: 2 figures and 1 table. [WA-50; CBE No. 37][LP]

SUB CODE: 06/ SUBM DATE: 16Oct67/ ORIG REF: 006/ OTII REF: 003

Card

2/2

- 249 -

AUTHOR: Oehirov, Yu. D.; Bondarchuk, A. S.

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: Rodents in settlements of the Vitim-Olekma upland

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 243-247

TOPIC TAGS: disease carrying mammal, rodent

ABSTRACT: The distribution of rodents in the Vitim-Olekma upland is shown in Table 1. The house mouse was most frequently encountered near schools, hospitals, stores, and dining rooms. Voles and shrews were

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ACC NR:

AT8029365

Table 1. The species composition of rodents in settlements of the Vitim-Olekma upland

Settlements (villages)	Year	Periods of observation	Total number of rodents trapped	By species					
				House mouse (<i>Mus musculus</i>)	Large Japanese field-mouse (<i>Apodemus speciosus</i>)	Norway rat (<i>Rattus norvegicus</i>)	Large-toothed redbacked vole (<i>Citellus redbackus</i>)	Northern redbacked vole (<i>C. rasilus</i>)	Reed vole (<i>Microtus fortis</i>)
Chara	1959	15-18 March	34	30	1	1	2	0	1
Kyust'-Kenda	"	18-20 March	20	14	1	1	1	0	1
Voroshilov	"	22-25 March	8	5	1	1	1	0	1
Dagobchan	"	27-30 March	11	8	1	1	1	0	1
Selyaty	"	1-4 April	16	15	1	1	1	1	1
Chara	"	August	22	22	1	1	1	1	1
Kyker	"	25-27 July	30	30	1	1	1	1	1
Akina	"	13 July	13	13	1	1	1	1	1
Ul'durga	"	1-7 August	23	23	1	1	1	1	1
Usugli	"	6-8 August	24	24	1	1	1	1	1
Chara	1960	21-27 July	35	18	1	1	1	1	1
Kyust'-Kenda	"	7-12 August	6	1	1	1	1	1	5
Selyaty	"	16-19 October	15	15	1	1	1	1	1
Stouklakan	"	11-17 March	4	1	1	1	1	1	1
Srednyaya Olekma	"	20-22 March	4	1	1	1	1	1	1
Gulya	"	21-26 March	6	1	1	1	1	1	2
Total			295	251	2	1	6	27	8

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ACC NR: AT8029365

also trapped in houses. Orig. art. has: 2 tables.

[WA-50; CBE No. 37][JS]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 007

Card 3/3

ACC NR: AT8029360

SOURCE CODE: UR/3382/63/025/000/0205/0214

AUTHOR: Ol'kova, N. V.

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: Certain ecological and physiological features of the longtailed suslik

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 205-214

TOPIC TAGS: animal ecology, suslik, epizootiology, disease vector

ABSTRACT: Change in suslik body temperature is connected with temperature changes in the environment. In May and June the environmental temperatures are at their highest point and in autumn and early winter at their lowest. Along with temperature changes in the body, the excitability of the nervous system changes parallel with environmental temperature changes. It is most excitable in the summer, when body temperature is highest. Liver and kidney function also changes during the season and so do feeding habits. The susceptibility to plague changes with fattiness.

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ACC NR: AT8029360

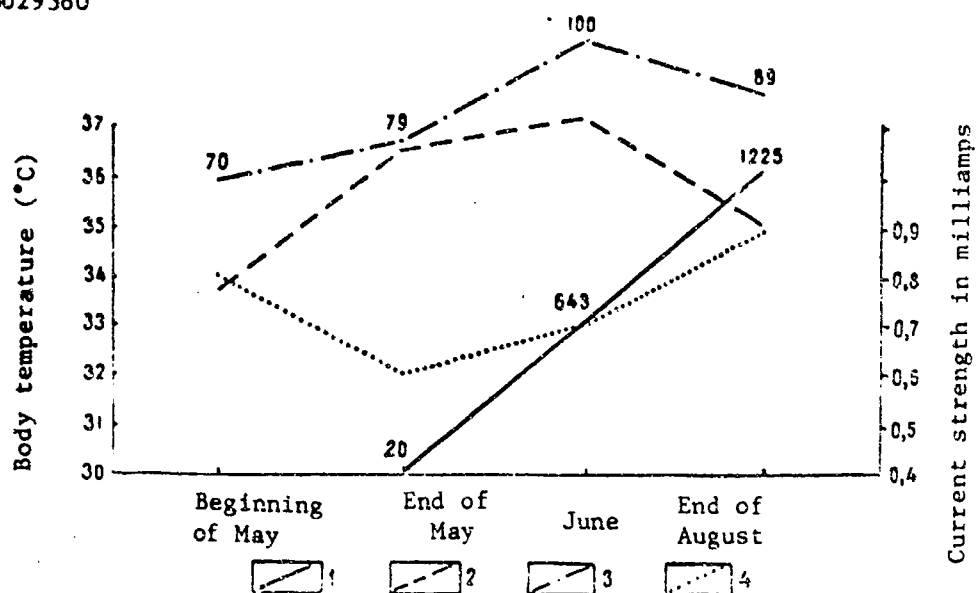


Figure 1. Relationship of the plague susceptibility of the long-tailed suslik to body temperature and nervous system activity. 1 - Susceptibility to plague (LD₅₀ in cell count); 2 - body temperature; 3 - number of animals with positive reaction upon administration of adrenaline (in %); 4 - current strength, produced by excitation of the neuromuscular system (in milliamps).

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ACC NR: AT8029360

There is also a relationship between change of susceptibility and changes in body temperature, general activity and excitability of the nervous system. However, these relationships do not correlate during periods of starvation. Figure 1 shows the effects of temperature changes on plague susceptibility in susliks. The suslik is the principal carrier of plague in the Mongolian plague focus studied. Results of body temperature study tissue and organ examinations and tracking of individual animals are discussed in detail. Orig. art. has: 4 tables and 1 figure. [WA-50; CBE No. 37][LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 026

Card 3/3

ACC NR: AP8029032

SOURCE CODE: UR/0016/68/000/008/0092/0098

AUTHOR: Olsuf'yev, N. G.; Yemel'yanova, O. S.; Meshcheryakova, I. S.;
Rodionova, I. V.

ORG: Institute of Epidemiology and Microbiology im. Gamaleya AMN SSSR
(Institut epidemiologii i mikrobiologii AMN SSSR)

TITLE: A tularemia pathogen, *F. novicida*, similar to *F. tularensis*

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 8,
1968, 92-98

TOPIC TAGS: tularemia, human ailment, enzymatic activity

ABSTRACT: Cultures of *Francisella novicida* were similar morphologically histologically, culturally, and pathogenically to *F. tularensis*. Its nutritive properties were similar to those of *F. tularensis*. There were partial cross serological and allergenic reactions between the two strains. Gel precipitation and antibody neutralization reactions revealed differences in antigenic structure of these microbes. Therefore, *F. novicida* is a different species. However, living cultures of *F. novicida* do not protect laboratory animals against subsequent infection with lethal doses of a virulent tularemia culture. *F. novicida* is found

Card 1/2 UDC: 576.851.45(Francisella novicida Larson et al.)

ACC NR: AP8029032

near waterways, especially in places where mass nesting of birds occurs, and also in the birds themselves and in rodents sharing the same habitat. Orig. art. has: 2 tables and 1 figure. [WA-50; CBE No. 37][LP]

SUB CODE: 06/ SUBM DATE: 29Dec67/ ORIG REF: 001/ OTH REF: 003

Card

2/2

ACC NR: AP8029037

SOURCE CODE: UR/0016/68/000/008/0120/0125

AUTHOR: Otgon, Ts.

ORG: none

TITLE: Epidemiology and epizootiology of brucellosis in Mongolia

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 8, 1968, 120-125

TOPIC TAGS: epidemiology, epizootiology, brucellosis

ABSTRACT: Brucellosis is widely distributed among livestock in the Mongolian Peoples' Republic. As a result of a series of natural and social factors, the most active foci are in the northern regions of the republic. The persons most susceptible to brucellosis are employees of meat-packing plants and employees working with animals in kolkhozes and sovkhoses. The two species of *Brucella* responsible for the outbreaks are *Br. melitensis* and *Br. abortus*. Active prophylaxis among both animals and animal workers and food handlers are recommended for reduction in the number of brucellosis cases. In the north, 3.7% of goats and sheeps are infected, while in the south 0.02% are infected. Corresponding figures for cattle are: 4.7% in the north, and 2.1% in the

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UDC: 616.981.42-036.21(517.3)

ACC NR:

AP8029037

south. Of the 1516 persons tested for brucellosis, 34% of them reacted positively. Of this number, 6% had active clinical cases of brucellosis.

[WA-50; CBE No. 37][LF]

SUB CODE: 06/ SUBM DATE: 22Jan68/ ORIG REF: 005

Card

ACC NR: AT8029347

SOURCE CODE: UR/3382/63/625/000/0089/0091

AUTHOR: Padalko, Z. F.; Garanina, Ye. P.; Duras, T. I.

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: The epizootiology and epidemiology of anthrax in Primorskiy kray

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 89-97

TOPIC TAGS: anthrax, epizootiology

ABSTRACT: At present, Primorskiy kray contains 16 locations unsafe with respect to anthrax in 11 out of 33 rayons. The unsafe locations are mostly around railroad tracks and apparently are old feci. Most cases of animal anthrax occur in the summer. The most unsafe location, in which four outbreaks have been recorded in 20 yr, is Shmakovskiy rayon. The last recorded case of anthrax here occurred in 1961. The affected cow had fed at the city dump, which is apparently a source of anthrax infection. Only five cases of human anthrax have been recorded in the kray in the last decade. Thirteen of the 16 cases recorded in the last

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ACC NR: AT8029347

20 yr were connected with slaughter of sick animals. The last such case was recorded in 1958 in Vladimiro-Aleksandrovskoye. No cases of anthrax among workers at slaughter houses and meat packing plants, or tanneries were recorded. Prophylactic measures taken in this area include inoculation of animals in unsafe locations, burning of carcasses of suspect animals, thorough disinfection, testing of hides, and vaccination of threatened occupational groups (tanners, meat packers, etc). Recommended measures for reducing the incidence of anthrax include forbidding home slaughter of animals. Orig. has: 2 tables.
[WA-50; CBE No. 37][JS]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AT8029361

SOURCE CODE: UR/3382/63/025/000/0215/0219

AUTHOR: Peshkov, B. I.

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: Biotopes and nutritional habits of water voles in the Lena river basin

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 215-219

TOPIC TAGS: animal ecology, nutrition, suslik, disease vector, plague, tularemia

ABSTRACT: The water vole is the most numerous and widely distributed rodent in central Yakutia (5 million pelts were taken in the last 10 years). It is most commonly found near lakes and rivers and is divided by living type into several biotopes from inhabitants of large lakesides, ravines, meadows, small rivers, and streams. Best living conditions for this rodent is along the banks of large rivers such as the Lena, Aldan, and Vilyuy where its numbers are highest. The water vole not only causes

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ACC NR: AT8029361

extensive crop damage in Yakutia but is also the principal carrier of tularemia there. Field work studies included collections of materials on nutrition and distribution of the water vole and its damage to plants and crops. Despite the wide distribution and interspecies variation on land, islands commonly contain one type of animal. The territory of any one group commonly embraces two thousand or more hectares. Three types of habitat groups have been established: field types which attack barley and other crops, types which are harmful only during periods of drought, and varied types. In times of drought these animals commonly remain underground, therefore affecting the number of captured animals. These animals feed on about 70 species of water and shore plants. Orig. art. has: 3 tables. [WA-50; CPE No. 37][LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 005

Card 2/2

ACC NR: AT8029346

SOURCE CODE: UR/3382/63/025/000/0083/0088

AUTHOR: Pinigin, A. F.; Petukhova, O. S.; Vyborov, G. P.

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 dogs under natural conditions

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 83-88

TOPIC TAGS: brucellosis, epidemiologic focus, Brucella

ABSTRACT: The existence of brucellosis among dogs in Western Siberia was established by mass serological and bacteriological tests. Dogs become infected by eating placentas, aborted or stillborn fetuses, parenchymatous organs, raw meat, milk, and other products from infected animals. Dogs are also active carriers of brucellosis. Under certain conditions dogs with brucellosis can be a source of human infection and probably also a source of infection for farm animals. The role of dogs in brucellosis has been neglected, especially in Irkutsk foci. The possible role of dogs in spreading brucellosis must be considered in

Card 1/2

ACC NR: AT8029346

prophylactic programs. On unsafe farms dogs must be checked as periodically as farm animals. Dogs with positive serological reactions should be killed unless especially valuable, when they should be isolated until results of serologic tests are negative. Positive agglutination reactions were found in the blood of 171 out of 959 dogs tested. A total of 16.2% of sheep were infected in sheep foci of brucellosis, with 62.5% of dogs giving positive agglutination reactions. In foci of cattle brucellosis, however, only 32.4% of dogs gave positive reactions. In deer foci, only 6.4% of dogs were infected. Serum agglutination titers of 1:20 or 1:25 were considered positive. Differential tests showed that 5 *Brucella* strains isolated from dogs were *Bp. abortus* and 18-*Bp. melitensis*. The degree of infection of dogs did not depend on their age, but more females than males were infected. *Brucella* apparently migrates from farm animals to dogs, and perhaps also in the reverse direction. Orig. art. has: 4 tables. [WA-50; CBE No. 37][US]

SUB CODE: 06/ SUPP DATE: none/ ORIG REF: 008/ OTH REF: 002

Card 2/2

ACC NR:

AP8026603

SOURCE CODE: UR/9062/68/000/004/0534/0538

AUTHOR: Polyakov, A. A.; Presnov, I. N.

ORG: All-Union Scientific Research Institute of Veterinary Sanitation, Moscow (Vsesoyuznyy nauchno-issledovatel'skiy institut veterinarnoy sanitarii)

TITLE: Biology of anthrax bacteria in soils used for cultivated plants

SOURCE: Sel'skokhozyaystvennaya biologiya, no. 4, 1968, 534-538

TOPIC TAGS: soil biology, anthrax, human ailment, animal disease

ABSTRACT: It has been discovered that the root zone of plants is lethal to anthrax bacilli. Several fields including wheat, clover, alfalfa, vego-mixture, and timothy were used as test plots and anthrax bacillus was seeded at intervals between 0-5 cm from surface of the soil. Best kills occurred in timothy plots. A second experiment involving the seeding of the anthrax bacillus at depth of 5-20 cm was also made. A chemical produced in the root zone of plant was responsible for the killing of anthrax bacillus. Orig. art. has: 2 figures.

[WA-50; CBE No. 37] [LP]

SUB CODE: 06/ SUBM DATE: 13Jun67/ ORIG REF: 020

Card

1/1

UDC: 574.616.981.51

ACC NR:

AT8031912

SOURCE CODE: UR/3399/65/000/061/0122/0127

AUTHOR: Posokhin, R. A.

ORG: Department of Public Hygiene /Head--S. A. Pul'kis/, Omsk Medical Institute (Kafedra kommunal'noy gigiyeny Omskogo meditsinskogo instituta)

TITLE: On the effect of air pollution in the Sovetskiy rayon of Omsk on living conditions and health of the population

SOURCE: Omsk. Meditsinskiy institut. Nauchnyye trudy, no. 61. Gigiyena vodoyemov, vodosnabzheniya, atmosfernogo vozdukha i planirovki naselennykh mest (Hygiene of reservoirs, water supply, air, and planning of populated places). Omsk, 1965; 122-127

TOPIC TAGS: air pollution, public health, respiratory system disease

ABSTRACT: The effect of air pollution on the living conditions and health of the inhabitants of Omsk has been evaluated from replies to a questionnaire by 2581 residents, of whom 2424 (93.9%) were over 18 yr. The data showed that 1926 inhabitants (70.7%) felt that they were affected by air pollution. Faulty ventilation of living quarters was reported by 1582 inhabitants (61.3%) as the prime factor in the unfavorable effects of air pollution. An adverse effect of pollution on health was reported by 1357 inhabitants (52.2%). Inhalation of

Card

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ACC NR:

AT8031912

pollutants caused respiratory tract disorders, difficulties in breathing, headache, nausea, sleep disorders, and other complaints. Inhabitants residing closest to the industrial zone on Entuziastov and Magistral'naya streets were most frequently affected. Orig. art. has: 3 tables.

[WA-50; CBE No. 37] [XF]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 006

Card

2/2

ACC NR:

AP8024846

SOURCE CODE: UR/0358/68/037/003/0297/0302

AUTHOR: Pospelova-Shtrom, M. V.

ORG: Department of Medical Entomology, Institute of Medical Parasitology and Tropical Medicine im. Ye. I. Martynovskiy, Ministry of Public Health SSSR, Moscow (Otdel meditsinskoy entomologii Instituta meditsinskoy parazitologii i tropicheskoy meditsiny Ministerstva zdravookhraneniya SSSR)

TITLE: Combatting tick carriers of spirochetosis in village foci of Central Asian republics

SOURCE: Meditsinskaya parazitologiya i parazitarnyye bolezni, v. 37, no. 3, 1968, 297-302

TOPIC TAGS: disease carrying insect, tick, epidemiologic focus, insecticide application

ABSTRACT: The incidence and population of *Alectorobius tholozani*, the carrier of tickborne spirochetosis, decreased approximately one-half in 26 settlements in Uzbekistan, Tadzhikistan and southern Kirghizia, according to studies conducted in 1965. A total of 55.6% of households were infested with ticks in these still-active foci. The highest percentage of infested farms was recorded in western Pamir (79%), with

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UDC: 614.449.542(575)
- 259 -

ACC NR: AP8024846

southern Kirgizia second. The lack of complete success in tick extermination in these foci is explained by failure to use Lindane, use of improper doses, failure to treat all potential foci, etc. The anti-malaria program has helped to reduce the population of village ticks because tick larvae and young nymphs are susceptible to DDT. In Tadzhikistan, resettlement of villagers from unsafe low mountain areas to the safe plain areas reduced the incidence of spirochetosis. The risk of infection is still high in some areas, and can only be eliminated by a comprehensive program of tick extermination. Orig. art. has: 2 tables.
[WA-50; CBE No. 37] [JS]

SUB CODE: 06/ SUBM DATE: 07Mar67/ ORIG REF: 005

Card 2/2

ACC NR: AP8026033 SOURCE CODE: UR/0439/68/047/007/1075/1082

AUTHOR: Revin, Yu. V.

ORG: Yakut Branch, Siberian Department, Academy of Sciences SSSR
(Yakutskiy filial Sibirskogo otdeleniya Akademii nauk SSSR)

TITLE: Biology of *Ochotona alpina* in the Olemko-Charskoye hills of Yakutia

SOURCE: Zoologicheskii zhurnal, v. 47, no. 7, 1968, 1075-1082

TOPIC TAGS: biologic ecology, disease vector, ornithology

ABSTRACT: A population of the northern pika *Ochotona alpina* inhabiting the high and rocky Olemko-Charskoye hills of Yakutiya was studied. 10-100 Specimens per hectare were collected in the nesting area. Ovulation occurs during the last 10 days of April and each female raises two broods (about 2.2 young per brood) each year. Main predators are ermines and sables. Population density of the pika decreases with a corresponding decrease in the density and variety of plant cover. Age distribution was imperfectly obtained since it is difficult to estimate the age of individuals more than one year old. After the nesting season, heavy tolls in young animals occur from the end of May to September.

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UDC: 599.325.2:591.5(57).56)

- 260 -

ACC NR: AP8026033

Food is taken as near the nesting site as possible and the pikas abandon each plant for a fresh one every three to four days. Orig. art. has: 5 tables. [WA-50; CBE No. 37][LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 006

Card 2/2

ACC NR: AP8029405 SOURCE CODE: UR/0218/68/033/004/0726/0732

AUTHOR: Rubinskaya, N. L.

ORG: Institute of Physiology im. I. P. Pavlov AN SSSR, Leningrad (Institut fiziologii AN SSSR)

TITLE: Nucleic acids of the neuron-neuroglia system in the anterior horns of the spinal cord and cerebellum due to the effect of anti-cholinesterase agents

SOURCE: Biokhimiya, v. 33, no. 4, 1968, 726-732

TOPIC TAGS: CNS drug effect, spinal cord, cerebellum, acetylcholinesterase, RNA, organophosphorus compound

ABSTRACT: The effect of the anticholinesterase preparation LG-63 [O-ethyl, S-hexyl, methylthiophosphinate] and armine [O-ethyl, O-p-nitrophenyl, ethylphosphinate] were investigated for their effects on the nucleic acid concentration in the anterior horns of the spinal cord and cerebellum. UV-cytospectrophotometry was used to determine concentration of nucleic acids in separate neurons and adjacent glial cells. LG-63 caused no significant changes in RNA concentration, cell volume, and RNA content in motor neurons and glial cells in the anterior horns

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UDC: 576.311.1

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ACC NR: AP8029405

of the spinal cord. RNA decreased in the cytoplasm of purkinje cells but increased in the adjacent glial satellite cells. Armine caused slight spasms and reduced RNA concentration in the spinal cord motor neurons and also caused reduction in the absolute nucleic acid level in glial cells. There was a decrease in RNA content, in purkinje cells but no change in adjacent neuroglia. Cholinesterase activity was inhibited by 60—80% while endogenic acetylcholine increased by 75—80%. Orig. art. has: 3 tables. [WA-50; CBE No. 37][LP]

SUB CODE: C6/ SUBM DATE: 18Oct67/ ORIG REF: 013/ OTH REF: 003

Card 2/2

ACC NR: AP8026660 SOURCE CODE: UR/0020/68/180/006/1473/1475

AUTHOR: Salganik, R. I.; Batalina, T. A.; Berdichevskaya, L. S.; Mosolov, A. N.

ORG: Institute of Cytology and Genetics, Siberian Department, Academy of Sciences SSSR (Institut tsitologii i genetiki Sibirskogo otdeleniya Akademii nauk SSSR)

TITLE: Inhibition of RNA synthesis and viral replication of TBE virus by ribonuclease

SOURCE: AN SSSR. Doklady, v. 180, no. 6, 1968, 1473-1475

TOPIC TAGS: RNA synthesis, tickborne encephalitis, ribonuclease, molecular biology

ABSTRACT: Inhibition of RNA synthesis and viral replication caused by ribonuclease was investigated *in vitro*. Preliminary studies established that RNA-ase inhibits the replication of RNA-containing viruses such as influenza virus, poliomyelitis virus and other viruses. This also occurred *in vivo* when the enzyme was given to mice via aerosol. DNA-ase inhibits the replication of vaccinia, herpes, and adenoviruses. In humans, DNA-ase has been used effectively in the treatment of herpes and

Card 1/3

UDC: 576.853.25:547.963.3
- 262 -

ACC NR

AP8026660

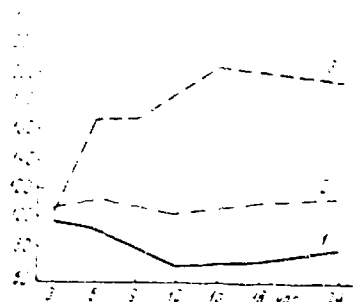


Fig. 1. Effect of RNA-ase on uridine labeled uptake into the RNA of chick fibroblasts infected with tickborne encephalitis virus.

1 - Relative radioactivity of the cell cultured in the presence of 0.5 mg/ml RNA-ase, to the radioactivity of the cell cultivated in a media which does not contain RNA-ase; 2 - relative radioactivity of cells infected and cultured after infection in a media containing 0.5 mg/ml RNA-ase to the radioactivity of the cells which have not been infected but which were cultured in a media containing 0.5 mg/ml RNA-ase; 3 - relative radioactivity of cells infected and cultured in a media without RNA-ase, to the radioactivity of the cells not infected and cultured in a media not containing RNA-ase. Radioactivity is determined in pulses per min.

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ACC NR:

AP8026660

adenoviral infection. This experiment tests the ability of RNA-ase to alter RNA synthesis in a cell culture of tickborne encephalitis virus, and to alter the course of experimental encephalitis infection in mice. In all mouse experiments, mice were given 10% suspensions of a brain homogenate containing viruses and were treated with pancreatized RNA-ase. Cell cultures used were primary chick embryo fibroblast cultures. Degree of RNA synthesis was monitored by tracing bound, labeled uridine. Readings were taken at 3, 6, 9, 15, 18, and 24 hr after the beginning of each experiment. Figure 1 summarizes the results of the experiment and shows the progressive synthesis of RNA in chick embryo tissue culture. Orig. art. has: 1 figure. [WA-50; CBE No. 37][LP]

SUB CODE: 06/ SUM DATE: 05Feb68/ ORIG REF: 016/ OTH REF: 003

Card

2/3

ACC NR:

AT8029341

SOURCE CODE: UR/3382/63/025/000/0047/0051

AUTHOR: Sardar, Ye. A.

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: Susceptibility of certain rodent species in the northwest Mongolian Peoples' Republic to an experimental plague infection

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 47-51

TOPIC TAGS: plague, pasteurilla pestis, experimental medicine, epizootiology

ABSTRACT: The autumn population of the narrow skulled vole is relatively resistant to plague. The average LD exceeds that for guinea pigs by 375.8 times. There is also an individual variation in resistance to plague among these rodents. It is possible to produce oral infections in these animals via infected food and also to infect them by means of infected fleas. Subcutaneous infection usually results in preservation of the agent for at least 30 days (the observation period). These animals are highly susceptible to infection via subcutaneous oral and

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ACC NR:

AT8029341

percutaneous infection. Average LD₅₀ is 3936 cells (78.7 LD₅₀ for guinea pigs). The plague microbe survives 15—30 days not only at the site of infection but also in the internal organs of these rodents. Well-developed bacteremia appears in susceptible individuals. Dose levels were based on experimental dosages of: 10, 100, 1000, 10,000 and 100,000 cells per dose. Pathological changes were observed at each dose in all animals. Even at doses of 100 cells per animal, inflammation of the regional lymph nodes and slight decreases in hemoglobin were noticed where at 1000 cells there was definite enlargement of the regional lymph nodes inflammation, bleeding, and necrotic damage in some cells. Orig. art. has: 3 tables. [WA-50; CbE No. 37] [LP]

SUB CODE: 06/ SUBM DATE: none

Card

2/2

ACC NR:

AT8029371

SOURCE CODE: UR/3382/63/025/000/0301/0303

AUTHOR: Sarzhinskiy, V. A.

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: Mammals and birds of the Chikoy river basin

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 301-303

TOPIC TAGS: zoology, mammal, bird, epizootiology, tularemia

ABSTRACT: A mammal and bird survey taken in 1958 in populated areas of Southwest Transbaikal revealed persons and animals reacting positively to the Tularemia test. The mammals and birds investigated lived in biotopes characterized by unique geobotanical characteristics. Bird populations were higher on islands than on the shores and along tributaries. *Ondatra* was the most common mammal. Voles composed 10-12% of the catch. The birds and small rodents such as the forest mouse coexisted along river banks. [WA-50; CBE No. 37] [LP]

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

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ACC NR:

AT8029363

SOURCE CODE: UR/3382/63/025/000/0232/0235

AUTHOR: Sarzhinskiy, V. A.

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: Zoological studies in a plague focus of the Altai mountains

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 232-235

TOPIC TAGS: zoology, plague, medical geography, epizootiology

ABSTRACT: Zoological studies were made in a plague focus in the Altai mountains where an epizooty of plague was discovered in 1961. During the study 881 mammals were caught and examined, of which 306 were the long-tailed suslik (*Citellus unguulatus*), 297 Pallas's pika (*O. pallasi*), 186 Altai marmots (*Marmota baibacina*), 28 Siberian polecats (*M. putorius* *ermanni*), 5 daurian pikas (*O. daurica*), 29 narrow-skulled voles (*Microtus gregalis*), 17 flat-skulled voles (*A. sverdlowski*), 17 jerboas (*Allactaga sibirica saltator*) and 2 ermines (*Mustela erminea*). Bacteriological examination was made of these animals and their

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ACC NR:

AT8029363

parasites. Ten cultures of plague agent were isolated. The flea *Amphalius runatus* yielded a positive culture. Other mites and fleas yielding plague cultures included *Frontopsylla hetera*, *Paradoxopsylla scorodumovi*, *Chactopsylla homoeus*, and *Amphipsylla prinaris*. The locality of these animals is in semi-desert highlands where the soil is very poor and there are many steep inclines. Mountains here are from 2500—2700 m high. Extensive descriptions of the habitats of the animals studied is provided. Plague bacilli were isolated from 20 mummified corpses of the Altai marmot. The density of some of these animals, particularly the long-tailed suslik is as high as 6—8 animals per hectare. In intermountain valleys it is up to 5 animals per hectare. This particular group of mammals is very seldom found near waterways (0.5—1 animals per hectare). Several species live communally and there is a constant exchange of parasites among them. Predators can also pick up parasites from their prey. [WA-50; CBE No. 37] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 009

Card

2/2

ACC NR:

AP8026108

SOURCE CODE: UR/0433/68/000/007/0052/0053

AUTHOR: Savzdarg, V. E.

ORG: none

TITLE: Sugarbeet aphids

SOURCE: Zashchita rasteniy, no. 7, 1968, 52-53

TOPIC TAGS: plant pest, pest control, insecticide application

ABSTRACT: Seventy scientists attended a conference on control of sugar beet aphids which was held in Korsk on 26—27 April 1968, and sponsored by the Ministry of Agriculture SSSR and other organizations. The pest was first observed in 1959 near Kiev and in Kirovograd oblast. It is now widespread in Kazakhstan and Kirgizia. Recommended treatment is a 25 hexachlorane dust (5—6 kg/ha) or 12 % (10—12 kg/ha) mixed with mineral fertilizer. Treatment should be made during the time when larvae emerge. Areas 20—30 m² should be treated 2—3 times at intervals of 8—10 days. Another mixture recommended is 2.5 % metaphos and 12 % hexachlorane dust. Dry warm soil is optimum for the activity of the larvae, scientists have demonstrated that wet soil impedes larval activity and that rain kills larvae or seriously weakens them. Thorough soaking of the soil is recommended since larvae can penetrate to a depth

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UDC: 632.9:595.752.2(047)

ACC NR:

AP8026108

of 1 m. Other reports included aspects of the systematic morphology of the pest and reports of economic aspects of aphid infestation average losses are 7 rubles per hectare. in some areas and the total losses are estimated in thousands of rubles. Orig. art. has: 1 figure.
[WA-50; CBE No. 37] [LP]

SUB CODE: 06/ SUBM DATE: none

Card

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ACC NR:

AP8031734

SOURCE CODE: UR/0346/68/000/009/0119/0120

AUTHOR: Sedov, V.

ORG: none

TITLE: [Interdepartmental Inter-republic Conference on Combatting Human and Animal Rabies]

SOURCE: Veterinariya, no. 9, 1968, 119-120

TOPIC TAGS: rabies, virology conference

ABSTRACT: At the Interdepartmental Inter-republic Conference on Combatting Human and Animal Rabies held in Tbilisi, it was reported that the number of cases of animal rabies decreased 21.6% from 1966 to 1967, and continues to decrease in 1968. No cases of human rabies have been recorded in recent years in Azerbaydzhan, Armenia, or Georgia. The uncommon increase in the role of rabid foxes in infection of humans, especially school children, was noted. The following antirabies methods were recommended: extermination of animals which are a natural reservoir of rabies virus; control of migratory dogs and cats and correct use of working dogs; wider use of inoculated sheepdogs; and wider dissemination of information on rabies prophylaxis. Every year

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ACC NR: AP8031734

more laboratories make use of rapid diagnostic methods, such as the fluorescent antibody method and the precipitation-in-agar reaction. A new device for pulverizing tissue in the preparation of rabies virus inactivated with hydroxylamine was recommended. [WA-50; CBE No. 37][JS]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AP8026827 SOURCE CODE: UR/0394/68/006/008/0020/0021

AUTHOR: Semenova, S. A.; Siforova, T. A.

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

TITLE: Selective toxicity of organophosphorus pesticides

SOURCE: Khimiya v sel'skom khozyaystve, v. 6, no. 8, 1968, 20-21

TOPIC TAGS: phosphorus compound, pesticide, insect control, mercaptan, tick

ABSTRACT: The contact toxicity of Metilmerkaptos, Vamidotion, Rogor, and Antio for the common cobweb tick, the larvae of bulb-flies (*Syrphus spp.*)—active entomophages of aphids—, and stethoruss beetles (*Stethorus spp.*), which eat ticks, was determined. Tick-infested apple leaves and aphid-infested peach leaves were immersed for several seconds in the test liquid and then placed in glass tumblers covered with moist gauze. Similarly treated larvae of bulb flies and stethoruss beetles were placed in

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UDC: 632.95:661.718.1

Table 1. Toxicity of organophosphorus pesticides for the cobweb tick, peach aphid, and their predators

Compound	CK ₅₀ , % for cobweb tick M+m	Selectivity coefficient of compound		CK ₅₀ , % for peach aphid M+m	Selectivity coefficient of compound for bulb flies
		For stetho- russ beetles	For bulb flies		
"Rogor"	$3 \times 10^{-5} \pm 3$	11	5	$4 \times 10^{-5} \pm 6$	4
"Antio"	$13 \times 10^{-5} \pm 23$	8	3	$12 \times 10^{-5} \pm 3$	3
"Metilmerkaptofos"	$10 \times 10^{-5} \pm 10$	52	30	$17 \times 10^{-5} \pm 5$	18
"Vamidotion"	$15 \times 10^{-5} \pm 13$	106	33	$63 \times 10^{-5} \pm 7$	9

other tumbler. The results are summarized in the table. Orig. art. has: 1 table. [WA-50; CBE No. 37] [FT]

SUB CODE: 07/ SUBM DATE: 17Nov67/ ORIG REF: 005

Card 2/2

ACC NR:

AT8029339

SOURCE CODE: UR/3382/63/025/000/0025/0033

AUTHOR: Shamova, A. M.

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: Characteristics of plague microbe cultures, isolated in the Gorno-Altai autonomous oblast in 1961

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 25-33

TOPIC TAGS: plague, Pasteurella pestis, microbiology, bacteriology, bacterial enzyme

ABSTRACT: In the summer of 1961, ticks and wild animals were trapped and organ suspensions taken from them for the isolation of *Pasteurella pestis*. In all, 10 strains of *Pasteurella* were isolated. Three came from animals and 7 from the fleas: *Amphalius runatus*, *Paradoxopsyllus scorodumovi*, *Frontopsylla hetera*, *Amphipsylla primaris*, *Chaetopsylla homocus*. All organ and tissue suspensions were cultured on Hottinger's agar at a pH of 7.2 with the addition of 0.01-0.1% dry blood. These

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	84		337		993		919		1476-88		1371	
	White mice	Guinea	White mice	Guinea	White mice	Guinea	White mice	Guinea	White mice	Guinea	White mice	Guinea
10 ¹	—	—	—	—	□□□	—	□□□	—	□□□	—	□□□	—
10 ²	—	—	—	—	□□□	—	□□□	—	□□□	—	□□□	—
10 ³	—	—	—	—	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□
10 ⁴	□□□	—	□□□	—	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□
10 ⁵	□□□	—	□□□	—	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□
10 ⁶	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□
10 ⁷	—	□□□	—	□□□	—	□□□	—	□□□	—	□□□	—	□□□
10 ⁸	—	□□□	—	□□□	—	□□□	—	□□□	—	□□□	—	□□□
LD ₅₀	<10 ¹	<10 ¹	<10 ³	<10 ³	10 ³	733-10 ³	<10 ³	43-10 ³	316-10 ³	<10 ³	<10 ³	2,34-10 ³



Fig. 1. Virulence of plague strains for white mice and guinea pigs. Primary studies.

1 - Animal died, plague cultures isolated; 2 - animal died but no cultures isolated; 3 - animal sacrificed with chloroform, plague cultures isolated; 4 - animal sacrificed with chloroform, no plague cultures isolated; 5 - animal not infected

Infective dose in millions of cells	Strain	84	337	993	919	1476	88	337	84	1476
	10 ¹		—	—	—	□□□	—	—	—	—
10 ²		—	—	—	□□□	□□□	—	—	—	□□□
10 ³		□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□
10 ⁴		□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□
10 ⁵		□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□
10 ⁶		□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□
10 ⁷		□□□	□□□	□□□	—	□□□	□□□	□□□	□□□	—
LD ₅₀ in millions of cells		<10 ¹	<10 ³	10-100	100	10 ³ -100	10 ³ -100	100	10 ³ -100	10 ³ -100
Variation limits of LD ₅₀ in millions of cells		—	—	10-3750	30-10 ³	10-375	30-100	10 ³ -2750	10-340	30-1000



Fig. 2. Virulence of plague microbe strains for white mice.

1 - Animal died, plague cultures isolated; 2 - animal died but no cultures isolated; 3 - animal sacrificed with chloroform, plague cultures isolated; 4 - animal sacrificed with chloroform, no plague cultures isolated; 5 - animal not infected

Strain		913	1476	1571	905	1122	1476-90	1571	904	906	1476
Infective dose in millions of cells	10 ⁰	—	—	—	—	—	—	—	—	—	□□□
	10 ¹	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□
	10 ²	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□
	10 ³	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□
	10 ⁴	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□
	10 ⁵	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□
	10 ⁶	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□
	10 ⁷	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□	□□□
LD ₅₀ in millions of cells	11.6 × 10 ³	< 10 ³	10 × 10 ³	22.0 × 10 ³	43 × 10 ³	100 × 10 ³	147.3 × 10 ³	84.07 × 10 ³	718.8 × 10 ³	—	
Variation limit of LD ₅₀ in millions of cells	4.0 × 10 ³ —14.0 × 10 ³	—	2.5 × 10 ³ —20.0 × 10 ³	1.0 × 10 ³ —30.0 × 10 ³	1.0 × 10 ³ —100.0 × 10 ³	1.0 × 10 ³ —100.0 × 10 ³	1.0 × 10 ³ —100.0 × 10 ³	1.0 × 10 ³ —100.0 × 10 ³	1.0 × 10 ³ —100.0 × 10 ³	1.0 × 10 ³ —100.0 × 10 ³	



Fig. 3. Virulence of plague strains for guinea pigs.

1 - Animal died, plague cultures isolated; 2 - animal died but no cultures isolated; 3 - animal sacrificed with chloroform, plague cultures isolated; 4 - animal sacrificed with chloroform, no plague cultures isolated; 5 - animal not infected

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ACC NR:

AT8029339

strains differed in morphological and virulence properties. Figure 1 shows the difference in virulence of the strains tested for white mice and guinea pigs. Numbers in squares indicate time in days from the time the animal appeared sick until killed with chloroform. Three strains (913, 1476-90, 1571) were highly virulent for white mice and weakly virulent for guinea pigs. Strain 905 was less virulent for both animals. Properties of these strains corresponded with the stock strains (EZ and 1435) and a culture of murine pseudotuberculosis agent. Further experiments utilized white mice. Figure 3 shows the virulence for guinea pigs. Strain 1122 and 1476-90 were quite virulent for guinea pigs; the average lethal dose was 1000 cells or less and LD₅₀ for all strains varied from 4.5 × 10³—218 × 10⁶ microbial cells. Virulence did not change through prolonged passaging through white mice and guinea pigs. Orig. art. has: 3 figures.

[WA-50; CBE No. 37][LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 008

Card

4/5

ACC NR: AP8029031

SOURCE CODE: UR/0016/68/000/008/0086/0092

AUTHOR: Shapiro, M. I.; Somov, G. P.; Lazarev, A. N.; Gopachenko, I. M.; Netskiy, K. V.

ORG: Vladivostok Institute of Epidemiology and Microbiology (Vladivostokskiy institut epidemiologii i mikrobiologii)

TITLE: Tsutsugamushi fever investigations in Primorskiy kray

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 8, 1968, 86-92

TOPIC TAGS: human ailment, tsutsugamushi fever, epidemiology, medical geography

ABSTRACT: Foci of tsutsugamushi fever were discovered in seven districts in the Primorskiy kray (Far East) and in the islands of the southern Primore. *Rickettsia tsutsugamushi* occurred in 138 samples, including 33 taken from rodents and 7 taken from ticks. In morphological, histological, and antigenic properties, these strains were identical to classical *Rickettsia tsutsugamushi* cultures. *Rickettsia tsutsugamushi* carriers, new to USSR, included *Ap. speciosus*, *Cl. rufocanus*, *M. minutes* and *N. mitomurai*, all local mites. There are 9 principal species of

Card 1/3

UDC: 616.981.714-036.21(571.63)

ACC NR: AP8029031

Table 1. Results of studies of red-bodied ticks

Sample no.	Strain no.	Place where rodent was caught	Time of catch	Species of red-bodied ticks testing virus positive	No. of ticks tested	Species of rodent host for ticks
1	40	Kraskino settlement	September	<i>I. pavlovskiy</i>	250	Far Eastern ground squirrel
2	41	Kraskino settlement	"	<i>I. pavlovskiy</i> Predominates <i>I. pallidus</i> One specimen <i>N. taeniorhynchus</i>	120	Field mouse
3	1202	Rikord's island	"	<i>I. orientalis</i> Predominates <i>N. taeniorhynchus</i> <i>N. japonica</i> One specimen <i>I. orientalis</i> <i>I. pavlovskiy</i>	300	Far Eastern ground squirrel
4	61	Lake Bretsini	October	<i>N. taeniorhynchus</i> Predominates <i>N. japonica</i> One specimen <i>I. orientalis</i>	100	Field mouse

Card

ACC NR: AP8029031

Table 1. (Cont.)

5	65	Lake Doretsini	'	N. mitamurai N. japonica	Predominates One specimen	150	Field mouse
6	67	Tumangan River	'	L. pavlovskiy N. japonica	Predominates One specimen	95	' '
7	72	Lake Doretsini	November	N. mitamurai	—	200	' '

rodent carriers infested by 12 species of red-bodied ticks. Tick carriers included the species shown in Table 1. Orig. art. has: 1 figure and 3 tables. [WA-50; CBE No. 37] [LP]

SUB CODE: 06/ SUBM DATE: 03May67/ ORIG REF: 003/ OTH REF: 012

Card 3/3

ACC NR: AT8029338 SOURCE CODE: UR/3382/63/025/000/0017/0024

AUTHOR: Shchekunova, Z. I.; Demin, Ye. P.; Demina, G. I.

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: Plague epizootic among pikas in Western Mongolia

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 17-24

TOPIC TAGS: plague, epizootiology, disease carrying mammal

ABSTRACT: Pallas' pika (*Ochotona pallasii*) is very sensitive to the plague strains observed in it during the plague epizootic recorded in Western Mongolia in 1959, whereas these strains are only weakly virulent for guinea pigs. In the spring the population of Pallas' pika was very low, and the population of the Daurian pika (*Ochotona daurica*) was higher. The epizootic apparently stopped, due to the dying-off of Pallas' pika and the resettlement of the infected burrows with less susceptible rodent species such as the Daurian pika or the long-tailed Siberian suslik (*Citellus undulatus*). It may be assumed that Pallas' pika acquired the

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ACC NR: AT8029358

infection from a sick marmot, since the first infected pikas were found near a marmot burrow. The nearness of this epizootic focus to the boundaries of the Soviet Union and the absence of any natural barrier to rodent migration makes it necessary to intensify antiepidemic measures in the Gorno-Altai Autonomous Oblast. The plague epizootic was most intense when the pika population reached 20 burrows per hectare. In June—July, 20% of burrows were infected, and 40% in September. Fleas remained infected with plague for the entire period of the epizootic. Plague cultures were isolated from *Amphalius runatus* (both pikas), *Frontopsylla hetera* (P=Pallas' pika), *Ctenophyllus hirticrus* (P), *Paradoxopsyllus scorodumovi* (both pikas, long-tailed Siberian suslik and flat-skulled vole), *Amphipsylla primaria* (P and long-tailed Siberian suslik), *Rhadinopsylla dahurica* (both pikas), *Rhadinopsylla li* (Daurian pika and long-tailed Siberian suslik). Orig. art. has: 5 tables. [WA-50; CBE No. 37] [JS]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 007

Card 2/2

ACC NR: AT8029370

SOURCE CODE: UR/3382/63/025/000/0296/0300

AUTHOR: Shkilev, V. V.

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: Fertility of the Daur hamster in the Primorskiy Kray (Far East)

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 296-300

TOPIC TAGS: hamster, animal ecology, epizootiology

ABSTRACT: In the Primorskiy Kray, the Daurian hamster is a principal representative of steppe rodents of the Prikhankay valley. The population and fertility of this animal varies considerably. Table 1 shows the ages and population of specimens captured during the study of a plague epizooty. The fertile period lasts from 6 to 7 months and each

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Table 1. Multiplication of the Daurian hamster in the Primorskiy Kray (1951—1954)

Total females per yr	Up to 16	17-19	20-22	23-25	26-28	29-31	32-34	35 and more	Total
Number studied	80	100	121	85	49	36	30	12	519
Percent fertile	1,2	3,7	10,7	16,4	20,4	38,8	73,0	80,0	18,1

female has 3 or 4 litters. A monthly breakdown of the fertility of this animal is shown in Table 2. Often unexpected warm weather in October

Table 2. Multiplication of the Daurian hamster in the Primorskiy Kray

Month	Pregnant females per yr (in %)									Av. no. of embryos per pregnancy	Average number of embryos/pregnancy/yr								
	1949	1950	1951	1952	1953	1954	1955	1959	1948		1949	1950	1951	1952	1953	1954	1955	1959	
III	--	--	--	--	--	--	--	--	30*	--	--	--	--	--	--	--	--	--	
IV	--	--	10*	23*	55,8	36,3	40	71*	38,8*	45,8	--	--	8	7	8	6	6,2	6,5	6

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Table 2. (Cont.)

V	100*	--	47	52	52,7	37,6	55,5	82,6	22,2	43,2	7,6*	--	7	9,1	9,2	7	7,6	7,5	7,5
VI	40*	33,1	31,2	40,6	17,6	35,2	41,1	44,4	52,5	19,9	8*	5	7,2	8,5	7,3	7,7	--	7,7	5,2
VII	11,7	--	26,6	20	21	30	12,5	17,8	4,7	16,4	6	--	7	7,5	6,5	7,9	7,1	6	7,3
VIII	14,2	--	36	24,4	17,2	30	19,3	7,1	17,2	26,8	7	6	7	6,8	7,3	7,3	7	8	5,5
IX	--	52,2	10	--	6,4	11,1	13,1	--	--	10,3	--	--	6	--	7	7,5	8,4	--	--
X	--	--	16,6	--	--	3,0	--	--	--	3,3	--	--	--	--	--	--	--	--	--

* Numbers are given in connection with the increase in specimens examined.

can cause a prolonged generative cycle in this animal. Often young females will have a litter at the end of the breeding season which will raise the number of hamsters observed in the survey much higher. Often 19% of very young animals fall to predators. By April and May at least 42.8—50% of females are either pregnant or nursing. By July this number decreases to 14%. In August second pregnancies are usually developed but in September there are practically no pregnant females and only 4.5% of them are nursing. The breeding pattern begins at a

Card

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ACC NR: AT8029370

rapid rate in spring, gradually tapering off towards the ends of the season. Orig. art. has: 2 tables. [WA-50; CBE No. 37][LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 008

Card 4/4

ACC NR: AP8030360

AUTHOR: Skazkina, T. P.; Zharkov, V. I.

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

TITLE: The question of fungicidal activity of the butyl ester of 2,4-D

SOURCE: Khimiya v sel'skom khozyaystve, v. 6, no. 9, 1968, 24-26

TOPIC TAGS: fungicide, fungus, pathogen

ABSTRACT: The fungicidal activity of butyl (2,4-dichlorophenoxy) acetate (I) (0.1% active ingredient) was evaluated by studying its effect on the mycelium of pure potato agar cultures of pathogenic fungi. Compound I completely inhibited the growth of spores of *Botrytis cinerea* Pers. and *Phytophthora infestans* D.B., but had little effect on millet smut spores *Sphacelotheca Panici-miliacei* Pers. Moist treatment of oat seeds with I reduced the number of smut-infected oat plants from 17.6% (control) to 1.41%, while wet treatment (10 min exposure) of the seeds reduced the number of infected plants from 17.6% to 8.78%. When the oat plants were sprayed with I, the number of infected plants fell to 8.1%. Orig. art. has: 2 tables. [WA-50; CBE No. 37][FT]

SUB CODE: 07/ SUBM DATE: 27Nov67/ ORIG REF: 007/ OTH REF: 019

Card

1/1

UDC: 632.952+954

ACC NR:

AP8031136

SOURCE CODE: UR/0248/68/000/009/0003/0010

AUTHOR: 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: Basic trends in prevention of influenza and other respiratory viral infections

SOURCE: AMN SSSR. Vestnik, no. 9, 1968, 3-10

TOPIC TAGS: communicable disease, virus disease, vaccine, influenza

ABSTRACT: The efficacy of live influenza vaccine administered directly into the respiratory tract is compared with killed vaccine administered subcutaneously. Live vaccine produces immunity in 70% of subjects after 2 to 3 administrations. Periodic variations in antigenic properties of the influenza virus, improvement in the technique of attenuating the virulence in passages on developing chick embryos, and improvement in immunogenic activity of live vaccine are necessary steps in producing a more refined and efficient product. Improved methods for administering

Card

1/2

UDC: 616.921.5+616.2-022.6]-084

ACC NR:

AP8031136

the vaccine into the respiratory tract are noted. The Smirnov atomizer for pulverization of vaccine permits administration of a more standard dose in the upper respiratory tract. Further studies are necessary on the safety and effectiveness of peroral and aerosol methods of immunization which would allow simultaneous vaccination of large population groups. Interferon stimulation, chemoprophylaxis with synthetic drugs such as amantadine (simmetrol) and seroprophylaxis with powdered equine immune serum administered into the respiratory tract are noted as non-specific measures in influenza prophylaxis. Preparation of live and killed vaccine against parainfluenza, adenovirus, and respiratory-syn-cytial virus infections and Mycoplasma pneumoniae infections are discussed. Development and utilization of a polyvalent vaccine including the most important viruses or antigen components in a single preparation for immunization of adults and children is planned.

[WA-50; CBE No. 37] [XF]

SUB CODE: 06/ SUEM DATE: 17Jan68

Card

2/2

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ACC NR: AP8026915

SOURCE CODE: UR/0016/68/000/0006/0047/0050

AUTHOR: Solodovnikov, Yu. P.

ORG: First Moscow Medical Institute im. I. M. Sechenov (I Moskovskiy meditsinskiy institut)

TITLE: Epidemiological significance of man as a source of infection in Salmonellosis

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 6, 1968, 47-50

TOPIC TAGS: salmonella, human ailment, epidemiology disease vector

ABSTRACT: Recent studies have shown that an affected person or a seemingly healthy carrier may infect other persons with salmonellosis. Most dangerous sources of infection are food-handlers since the greatest number of people are infected when affected persons or carriers infect foodstuffs, which are good media for the multiplication of the bacteria. This was traced by the examination of 122 persons carrying salmonella and 188 persons associated with them. All investigations were carried out during a salmonellosis epidemic. It was possible to rule out all other sources of infection before identifying man as an infection

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1/2

UDC: 616.981.49.022.36

ACC NR: AP8026915

source. These diseases affect children between the ages of 2 and 3.5 yr and their families usually contract the disease from them.

[WA-50; CDE No. 37] [LP]

SUB CODE: 06/ SUBM DATE: 09Mar67/ ORIG REF: 002/ OTH REF: 012

Card

ACC NR: AP8029058

SOURCE CODE: UR/0450/68/002/008/0039/0044

AUTHOR: Somin, I. N.; Kuznetsov, S. G.

ORG: none

TITLE: Reactivators of cholinesterase. II. Oximinoacetic acid amides

SOURCE: Khimiko-farmatsevticheskiy zhurnal, v. 2, no. 8, 1968, 39-44

TOPIC TAGS: cholinesterase, substituted amide/cholinesterase reactivator

ABSTRACT: This article appears in Chemical Factors

Card 1/1

UDC: 577.153.9:024:547.484.2

ACC NR:

AP8031727

SOURCE CODE: UR/0346/68/000/009/0088/0090

AUTHOR: Strelkov, N. M.; Popov, N. A.

ORG: All-Union Scientific Research Institute of Veterinary Sanitation
(Vsesoyuznyy nauchno-issledovatel'skiy institut veterinarnoy sanitarii)

TITLE: Diagnosis of *Salmonella* strains used for rat extermination

SOURCE: Veterinariya, no. 9, 1968, 88-90

TOPIC IAGS: culture medium, salmonella, bacteriology

ABSTRACT: The use of *Salmonella* strains Isachenko (officially designated *S. enteritidis* var. danysz) and strain 5170 Prokhorova (also known as *S. typhi* murida rodentia) for rat extermination has made necessary development of tests to differentiate these *Salmonella* strains from the strains causing disease of farm animals. The three main stages in differential diagnosis of *Salmonella* include: 1) determination of basic cultural, morphological, and biochemical properties of the culture; 2) serotyping with agglutinating O- and H-sera; and 3) test for glycerine fermentation and intensity of oxygen formation. Isachenko and Prokhorova bacteria both lack the first somatic antigen, which is detected in step 2. Isachenko and Prokhorova bacteria are similar to *S. enteritidis* but with

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UDC: 619:614.449.932

ACC NR:

AP8031727

the following differences: 1) neither change color in Stern's medium (glycerine-fuchsin-broth) after a day of incubation at 37°C, while *S. enteritidis* turns the liquid purple; 2) Bitter's medium with methyl red becomes rose or orange in the presence of Isachenko or Prokhorova bacteria, while *S. enteritidis* is clear red. [WA-50; CBE No. 37][JS]

SUB CODE: 06/ SUBM DATE: none

Card

1/2

ACC NR:

AT8028570

SOURCE CODE: UR/0000/68/000/000/0237/0272

AUTHOR: Tarasevich, I. V.

ORG: none

TITLE: The world distribution of tsutsugamushi fever

SOURCE: Moscow. Vsesoyuznyy institut nauchnoy i tekhnicheskoy informatsii. Meditsinskaya geografiya, 1966 (Medical geography, 1966); Itogi nauki, Seriya: Gerografiya. Moscow, 1968, 237-272

TOPIC TAGS: tsutsugamushi fever, medical geography, rickettsial disease

ABSTRACT: (Subtitle) Tsutsugamushi fever in the Soviet Union and China. Study of ticks and vectors in Khasanskiy rayon of Primorskiy kray in 1963 showed that the dominant rodent species were the field mouse and the reed vole (*Microtus maximovi*ci). More than 60,000 ticks were collected from small mammals, mostly *Leptotrombidium pavlovskyi* (42%), *L. japonica* (33%), *Neotrombicula mitamurai* (41%), *pavlovskyi* (42%), *L. japonica* (33%). Other tick species recorded included *L. orientalis*, *L. palpalis*, *N. zhmajeval*, *N. talmiensis*, and *Cheladonts ikaensis*. The percentage composition of different trombiculid mite species in different habitats varied: the density of *L. pallida* was high on the shores of lake

Card

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UDC: 911.3:616.981.714(100)

ACC NR:

AT8028570

Doretsini (18%) and considerably lower in the Tumyn'tszyan and Yanchikhe river valleys (0.6 and 0.2%, respectively). *L. pavlovskyi* mites were more

Table 1. Results of study of trombiculid mite larvae in bioassays on white mice

Place trapped	Number of bioassays		Trombiculid mite species in positive bioassays	Host species
	Total	Positive		
Shore of Lake Doretsini	9	1	<i>L. pallida</i> , <i>L. pavlovskyi</i> , <i>N. japonica</i>	Striped field mouse
	1	1	<i>N. japonica</i> , <i>L. pallida</i> , <i>L. pavlovskyi</i> , <i>L. orientalis</i>	Greater long-tailed hamster
	3	1	<i>L. pallida</i> , <i>L. orientalis</i> , <i>N. japonica</i>	Reed vole
Shore of Lake Tal'mi	1	--		Striped field mouse
Valley of Tumyn'tszyan River	5	2	<i>L. pavlovskyi</i> , <i>N. japonica</i>	Striped field mouse
	8	1	<i>L. pavlovskyi</i> , <i>N. japonica</i>	Reed vole
Valley of Yanchikhe River	5	--		Striped field mouse
Valley of Cherukhe River	1	--		Striped field mouse
	8	--		Reed vole

Card

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numerous in the river valleys than on the lake shore. According to a more refined classification, *L. pallida* is more common in mud-volcano lake regions, and *L. pavlovskyi*, *N. mitamurai* and *N. tamiyai* mites in mud-volcano river valley areas. *M. japonica* was observed in both types of terrain. The degree of infestation of mites and hosts with rickettsia is shown in Table 1. The transphase transmission of rickettsia in *L. pavlovskyi* was established. Isolated strains were identical to the standard tsutsugamushi strains. Serological studies of the blood of 93 inhabitants in 1963—1964 showed complement-fixing antibodies in the blood of 9 people, and in 4.5% of 337 visitors. An additional five positive reactions were recorded among patients with other diagnoses. It was concluded that the boundary of the tsutsugamushi zone in this area extends to the Suyfun lowland. Rickettsial strains were also isolated from black rats (*Rattus rattus caraco*) and small Ussur white-toothed shrews (*Crocidura suaveolens*) in the Brus'ya and Suyfun River valleys. No cross reactions between tsutsugamushi rickettsia and the rickettsia causing north Asian tickborne rickettsiosis were noted. The indirect immunofluorescent method showed that 18 out of 100 larvae carried rickettsia, including *L. pavlovskyi* and *L. pallida* larvae. The constant presence of tsutsugamushi fever in southern China is associated with the mite carrier *L. deliensis*, parasitizing *Tupaia balangeri* and other small mammals. In the natural focus of tsutsugamushi fever in Canton, rickettsial strains were isolated from patients, from *L. deliensis*

Card

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mites, from *R. rattus* and *R. norvegicus* and from *Suncus murinus* shrews. In this focus the disease occurs after the rainy season in June—July and September—October. These peaks coincide with the maximum population levels of *L. deliensis*. In southern China tsutsugamushi fever is severe and sometimes fatal. Study of the natural focus of tsutsugamushi fever in Fu-chien showed a connection between human disease and domestic rabbits, which carried into the house *L. deliensis* and other trombiculid mites. A total of 16 strains of *R. tsutsugamushi* were isolated from 64 rabbits. Strains were also isolated from *Euschongastia indica*, *Acomatocarus* sp., *Walchia* sp., pigs, *R. rattus*, *R. losea*, and *R. norvegicus* rats, *Mus musculus* and *M. bactrianus* mice and *Suncus murinus* shrews. *L. deliensis* can transmit tsutsugamushi rickettsia transovarially and from phase to phase. A small outbreak (13 cases) of tsutsugamushi fever was recorded in Hong Kong in 1960. Infection apparently occurred when the patients rested on ground overgrown with high grass, where mites were abundant. Lymphadenitis was recorded in 12 cases and enlarged spleen in 9. The Pescadore Islands have been known as an endemic focus of tsutsugamushi fever since the 1930's. In May—August, 1962, 103 people became ill. The carrier of the rickettsia was identified as *L. deliensis*, and the host *Suncus murina* (27 out of 70 trapped rodents were infected). A few mites were also found on *R. rattus rufescens* and *R. norvegicus*. Most of the victims were women working in the fields and

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ACC NR: AT8028570

their young children. Mites were found most often in bushes lining the fields as wind breaks. Study of the population of *L. deliensis* in this focus from 1961—1963 showed that the lowest numbers of larvae were recorded in February—March and the highest in September—October. Orig. art. has: 4 figures and 12 tables. [WA-50; CBE No. 37] [JS]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 026/ OTH REF: 085

Card 5/5

ACC NR: AT8029362 SOURCE CODE: UR/3382/63/025/000/0220/0222

AUTHOR: Tarasov, N. S.; Dubovik, I. M.; Fedorov, V. M.

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: The intensity of migration of bobaks from Mongolia into Zabaykal'ye

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 220-222

TOPIC TAGS: plague, epidemiologic focus, rodent

ABSTRACT: The movement of Mongolian bobaks (*Marmota bobak*) in Zabaykal'ye was traced in order to determine the effectiveness of barriers erected to prevent migration of bobaks from Mongolia into the Soviet Union. In 1956—1958 a 10-km strip of land (150 km long) was cleared of all bobaks to separate the Zabaykal'ye rodents from the epizootic of plague among Mongolian rodents. Studies showed that adult bobaks can migrate up to 800 m in one season (migration usually occurs in spring and summer). An average of nine bobaks crossed each km of border in one season. The

Card 1/2

ACC NR: AT8029362

intense migration of bobaks from Mongolia into the Soviet Union ensures resettlement of the barren strip in a couple of years unless animals are exterminated. Orig. art. has: 2 tables. [WA-50; CBE No. 37][JS]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 006

Card 2/2

ACC NR: AP8031731 SOURCE CODE: UR/0346/68/000/009/0106/0108

AUTHOR: Timofeyev, F. Ye. (Aspirant)

ORG: Vitebsk Veterinary Institute im. Oktyabr'skoy revolyutsii
(Vitebskiy veterinarnyy institut)

TITLE: The effect of antibiotics and bacteriophages on *Pasteurella suis*

SOURCE: Veterinariya, no. 9, 1968, 106-108

TOPIC TAGS: pasteurellosis, bacteriophage, bacteriostasis, bactericide

ABSTRACT: Sigmamycin and oletetrin demonstrated bacteriostatic and bactericidal properties (depending on the dose) with respect to *Pasteurella suis* in *in vitro* experiments. Combined use of both antibiotics even in diminished doses (2 to 3 times) was more effective against *P. suis* than use of the individual drugs separately. Oletetrin was bacteriostatic in doses of 0.39—0.78 µg/ml and bactericidal in doses of 3.12—6.24 µg/ml. Sigmamycin was bacteriostatic in doses of 0.24 to 0.48 µg/ml and bactericidal in doses of 0.9—1.8 µg/ml. Since more than half the strains were resistant to tetracycline, and sometimes also to streptomycin and oleandomycin, sigmamycin, oletetrin and chloramphenicol must be used in combination with these antibiotics for prophylaxis of

Card 1/2

UDC: 619:616.981.459-06:6179.9

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ACC NR: AP8031731

pasteurellosis. The plague bacteriophage was adapted to *P. suis*. Antibiotics in combination with the adapted bacteriophage had a pronounced therapeutic and prophylactic effect during experimental pasteurellosis of swine. This combination can be recommended for further study and use. Administration of bacteriophage orally was more effective than intramuscular injection. The work was conducted under the guidance of Scientific Director Professor N. I. Smirnov. Orig. art. has: 1 table.

[WA-50; CBE No. 37][JS]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AT8029342

SOURCE CODE: UR/3382/63/025/000/0052/0057

AUTHOR: Timofeyeva, L. A.

ORG: Irkutsk State Scientific Research Antiplague Institute of Siberia and the Far East (Irkutsk'i'y gosudarstvennyy nauchno-issledovatel'skiy protivochumnyy institut Sibiri i Dal'nego Vostoka)

TITLE: The effect of dried egg yolk on the sensitivity of white mice to plague

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 52-57

TOPIC TAGS: plague, rapid diagnostic method

ABSTRACT: Fresh egg yolk increased the sensitivity of white mice to plague more than cortisone, novocambichin (embichin 7), histamine, or sodium glycocholate, both with respect to percentage of animal deaths and length of life after infection. Lyophilized egg yolk was as effective as fresh egg yolk in increasing the sensitivity of white mice to plague. Injection of small doses of slightly virulent plague strains into animals given dry egg yolk caused the death of most animals. Infection of white mice with *P. pestis* 1435 in a dose of 5 cells after

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ACC NR: AT8029342

injection with dried egg yolk caused death of 90% of animals, with remaining animals surviving only 3 days. The use of egg yolk to increase the sensitivity of bioassay animals to plague improves the field diagnosis of plague in infected rodents. Orig. art. has: 2 figures and 1 table. [WA-50; CBE No. 37][JS]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 012/ OTH REF: 001

Card 2/2

ACC NR: AT8029355 SOURCE CODE: UR/3382/63/025/000/0135/0143

AUTHOR: Tkachenko, V. V.

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: Comparative studies of hemolytic properties of certain microbes

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya, v. 25, 1963, 135-143

TOPIC TAGS: hemolysis, enzymatic activity, Pasteurella pestis, Staphylococcus, anthrax, E. coli, pseudotuberculosis

ABSTRACT: Chemical characteristics of plague hemolysin are similar to those of the higher fatty acids. In order to test the species specificity of this compound, the effects of hemolysin were compared in the following microbes: *Staphylococcus aureus*, anthrax bacilli, *E. coli* and pseudotuberculosis agent. Also the hemolytic properties of the organisms themselves were compared. *Staph. aureus* has among its hemolysin components a non-specific β -hemolysin which appears to be a higher fatty acid and is insoluble in acetone. The anthrax bacillus has a thermostable hemolysin which is very much like the plague hemolysin. These cultures

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ACC NR: AT8029355

were grown first in media containing blood and then in transplanted cell lines. Also lyophilized and various extract preparations were tested. None of these organisms were able to hemolyse blood as did the plague agent when grown in aerated culture. The heated and lyophilized cultures also did not have hemolytic properties. Free and bound lipids of *Staph. aureus* had some hemolytic properties. A δ -hemolysin, which produces uncoupling in lipids and catalyzes the hydrolysis of lipids, specifically, Staphylococcal lecithovitellinase was isolated from cell fractions of *Staph. aureus*. Anthrax and *E. coli* free and bound lipids produced lysis in washed guinea pig erythrocytes. The yield of free lipids from anthrax bacilli was comparatively high (about 7-8%; upon lipid extraction of gram negative bacteria about 2-3%), and was similar in its physical properties to a hemolysin extracted from the plague microbe. *E. coli* lipids were not easily emulsified in physiological saline solution from observing the hemolytic activity of the murine pseudotuberculosis agent showed that when cultured in blood cultures, weak and intermittent hemolysis appeared with monkey, sheep, and horse erythrocytes but good hemolysis was obtained with guinea pig and rabbit erythrocytes. Human erythrocytes were not lysed. Best lysis appeared with dog erythrocytes. Aerated washed and saline-suspended pseudotuberculosis cultures lost their lytic capacity for guinea pigs and other animals. Lyophilized cultures retained hemolytic properties after storage from 3 to 4 months

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ACC NR: AT8029355

to a year after lyophilization. A water insoluble residue from this microbe also exhibited hemolytic activity. It appeared to be a protein-lipopolysaccharide complex but unconnected with pseudotuberculosis toxin. Hemolytic activity of these bacteria surpassed that of plague bacteria. Other chemical properties of plague and pseudotuberculosis lipid extracts were similar. Acetone-soluble fractions of these lipids also produced lysis in guinea pig erythrocytes while similar lipid fractions of *Staph. aureus* were devoid of hemolytic properties. Orig. art. has: 3 tables.

[WA-50; CBE No. 37] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 007/ OTH REF: 012

Card 3/3

ACC NR:

AT8029354

SOURCE CODE: UR/3382/63/025/000/0129/0134

AUTHOR: Tkachenko, V. V.; Domaradskiy, I. V.

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: Hemolytic properties of lipids from the plague microbe

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 129-134

TOPIC TAGS: plague, Pasteurella pestis, lipid, hemolysis, enzymatic activity

ABSTRACT: Acetone solubility, solubility in other organic solvents, decrease in hemolytic activity after treatment with hydrogen ions, increased hemolytic activity in alkaline medium, inhibiting effect of protein, cholesterol, calcium ions, magnesium ions, thermostability and other properties of plague microbe hemolysin are similar to those of higher fatty acids capable of producing hemolysis. Some of the properties of the hemolysin isolated from plague bacteria are similar to those evoked by palmitic, stearic and oleic acids *in vivo*. Lecithinase

Card

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ACC NR:

AT8029354

metabolism of the plague microbe is almost unknown and therefore further studies designed to identify the chemical nature of plague hemolysin are planned. Orig. art. has: 5 tables. [WA-50; CBE No. 37] {LP}

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 007/ OTH REF: 003

Card

2/2

ACC NR: AT8029353

SOURCE CODE: UR/3382/63/025/000/0120/0128

AUTHOR: Tkachenko, V. V.; Krotova, V. A.

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: Hemolytic properties of dried plague bacteria

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya, v. 25, 1963, 120-128

TOPIC TAGS: plague, pasteurilla pestis, hemolysis, freeze drying, clostridium perfringens

ABSTRACT: The hemolytic activity of dried plague bacteria and of bacterial fractions was tested. The hemolytic activity of freeze-dried plague bacteria was determined after storage for 1-2 days to 1-2 months. The freeze-dried preparations retained their hemolytic activity through prolonged storage (two years). When administered by aerosols, freeze-dried samples had 7-8 times hemolytic activity of nonfreeze-dried preparations. Autolysis was the main factor in loss of potency in the non-freeze-dried samples. Therefore, the destruction of cells and the

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ACC NR: AT8029353

release of the hemolytic factor are related. Further tests indicated that the non-water-soluble fractions possessed the hemolytic factor. This was also true in parallel experiments conducted using *Cl. perfringens* toxin. The non-water-soluble fractions were extremely resistant to destruction. The hemolytic activity of freeze-dried plague bacteria and non-water-soluble fractions did not change after boiling for three hours. They were capable of lysing washed guinea pig erythrocytes at 4°C. The addition of calcium ions reduced hemolytic activity of the freeze-dried residues by 3-3.2 times. Magnesium ions helped to reduce loss in hemolytic activity. However, cholesterol added in 0.29% concentrations reduced hemolysis. Hemolytic activity of freeze-dried cultures and their nonsoluble residues also depended upon pH factors (0.16 M phosphate buffer, pH 5.65, 7.21, and 7.73; 0.16 M phosphate-linoleic acid buffer (pH 5.62, 7.01, and 7.63). At a pH of less than 7.0, hemolytic activity it was lower than at pH's greater than 7.0. A pH of 7.73 appeared to be optimal. Hemolytic activity was inversely proportional to the concentration of hemolytic factors in the medium. The insoluble lipid polysaccharide fractions had 10 times the hemolytic activity of the freeze-dried intact cells. [WA-50; CBE No. 37][LP]

SUB CODE: 06/ SUBJ DATE: none/ ORIG REF: 007/ OTH REF: 009

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ACC NR:

AT8028570

their young children. Mites were found most often in bushes lining the fields as wind breaks. Study of the population of *L. deliensis* in this focus from 1961—1963 showed that the lowest numbers of larvae were recorded in February—March and the highest in September—October. Orig. art. has: 4 figures and 12 tables. [WA-50; CBE No. 37] [JS]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 026/ OTH REF: 085

Card

5/5

ACC NR:

AT8029362

SOURCE CODE: UR/3382/63/025/000/0220/0222

AUTHOR: Tarasov, N. S.; Dubovik, I. M.; Fedorov, V. M.

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: The intensity of migration of bobaks from Mongolia into Zabaykal'ye

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 220-222

TOPIC TAGS: plague, epidemiologic focus, rodent

ABSTRACT: The movement of Mongolian bobaks (*Marmota bobak*) in Zabaykal'ye was traced in order to determine the effectiveness of barriers erected to prevent migration of bobaks from Mongolia into the Soviet Union. In 1956—1958 a 10-km strip of land (150 km long) was cleared of all bobaks to separate the Zabaykal'ye rodents from the epizootic of plague among Mongolian rodents. Studies showed that adult bobaks can migrate up to 800 m in one season (migration usually occurs in spring and summer). An average of nine bobaks crossed each km of border in one season. The

Card

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ACC NR: AP8024840

SOURCE CODE: UR/0358/68/037/003/0270/0274

AUTHOR: Tsirkin, Yu. M.

ORG: Institute of Medical Parasitology and Tropical Medicine im. Ye. I. Martsinovskiy, Ministry of Public Health, SSSR, Moscow (Institut meditsinskoy parazitologii i tropicheskoy meditsiny Ministerstva zdravookhraneniya SSSR)

TITLE: Certain features of tickborne encephalitis

SOURCE: Meditsinskaya parazitologiya i parazitarnyye bolezni, v. 37, no. 3, 1968, 270-274

TOPIC TAGS: human ailment, tickborne encephalitis, epidemiology

ABSTRACT: There is some evidence that abrupt changes in temperature and atmospheric pressure alter the incidence of tickborne encephalitis in a population. A modeling experiment conducted in a test chamber was inconclusive, because of structural defects of the chamber. Experiments were also conducted in an altitude chamber to determine whether or not gradual loss of atmospheric pressure altered the course of tickborne encephalitis infection. In addition to weather changes, differences in local topography were investigated to see whether they play a determining

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UDC: 616.988.25-022.395.42

ACC NR: AP8024840

role in the onset of an epidemic. At the end of the epidemic season in Krasnoyarskiy Kray, hungry ticks were collected and of these, 345 ticks yielded 63 strains of tickborne encephalitis virus. However, the virus content was much less in May than in June or July. While the number of ticks carrying viruses remains about the same, the virus content per tick is smaller at the beginning of the epidemic season. As virus content increases, the incubation period shortens. In May, at the beginning of the epidemic period, the incubation period was longer than in July. In May, a 12-day incubation period was reported in 45% of cases, but by July in only 23% of the cases. At the beginning of the epidemic season, which corresponds with the unpleasant weather conditions, the percentage of grave cases of tickborne encephalitis is greater. In 1963 the majority of serious cases were associated with the exceptionally poor weather conditions. Temperatures were 6.8% lower than in the previous year and temperatures above 0°C were not recorded until after 25 May. During the epidemic season of 1962, half of all cases reported that year were reported in June, although the weather was not different from that of July. However atmospheric pressure measurements showed that a type of atmospheric condition, characterized by cyclones was 2-2.5 times more frequent in May than in June. Orig. art. has: 2 tables. [WA-50; CBE No. 37][LP]

SUB CODE: 06/ SPEC DATE: 08Sep65/ ORIG REF: 010/ OTH REF: 006

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ACC NR: AP8031722

SOURCE CODE: UR/0346/68/000/009/0046/0047

AUTHOR: Tutushin, M. I. (Candidate of veterinary sciences); Nikulina, O. Ye. (Junior research associate)

ORG: South Kazakhstan Scientific Research Veterinary Station (Yuzhno-Kazakhstanskaya nauchno-issledovatel'skaya veterinarnaya stantsiya)

TITLE: Dipterex against tick carriers of hemosporidian parasites

SOURCE: Veterinariya, no. 9, 1968, 46-47

TOPIC TAGS: disease carrying insect, tick, acaricide, animal parasite

ABSTRACT: Study of the acaricidal properties of Dipterex with respect to the tick carriers of hemosporidian parasites was conducted in 1965 to 1967 in South Kazakhstan. Dipterex of Soviet and Chinese manufacture, containing 50-80% active substance, was used. Field tests showed that 1-3% aqueous solutions of Dipterex with 1% sulfanol killed *Hyalomma detritum*, *H. anatolicum*, and *H. plumbeum* (regardless of the degree of engorgement) within 24 hr of treatment. The residual effect of Dipterex varied with concentration and temperature, decreasing at lower concentrations and elevated temperatures. Laboratory tests in which ticks were placed on calf skin moistened with a 0.5% alkaline

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UDC: 619:616.993.192.6-084:636.22/.28

ACC NR: AP8031722

solution of Dipterex proved that this solution is effective also. Application of 0.5% alkaline solution of Dipterex to infested cows killed 100% of ticks, and was indentially effective against all tick species in different stages of development and saturation. The residual effect was very weak, not more than 4 to 5 days. A 0.5% alkaline solution of Dipterex successfully protected cows from ticks for an entire winter and is recommended for this application.

[WA-50; CBE No. 37][JS]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR:

AP8024843

SOURCE CODE: UR/0358/68/037/003/0283/0288

AUTHOR: Uspenskiy, I. V.; Barmina, L. N.

ORG: Entomology Department, Institute of Medical Parasitology and Tropical Medicine im. Ye. I. Martynovskiy, Ministry of Public Health, SSSR, Moscow (Entomologicheskiy otdel Instituta meditsinskoy parazitologii i tropicheskoy meditsiny Ministerstva zdravookhraneniya SSSR)

TITLE: The effectiveness of some organophosphorus compounds as acaricides in foci of tickborne encephalitis

SOURCE: Meditsinskaya parazitologiya i parazitarnyye bolezni, v. 37, no. 3, 1968, 283-288

TOPIC TAGS: encephalitis, organic phosphorus insecticide, acaricide

ABSTRACT: Results of a year's trial of three organophosphorus insecticides in a taiga focus of tickborne encephalitis in south Krasnoyarsk kray are shown in Table 1. Malathion and methylnitrophos were used in 30% concentrations, and Dipterex, in 91% concentration. It is evident from the table that increasing the dose increases the effectiveness of the

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UDC: 614.449.542:615.777.25

ACC NR:

AP8024843

Table 1. The effectiveness of experimental preparations

Acaricide	Dose of insecticide (in kg/ hectare)	Effectiveness (in %)		
		Absolute	Relative to DDT (emulsion)	
			With equivalent doses	Average
Malathion	0.25	82.0	95.34	95.9
	0.5	88.46	96.98	
	1.0	92.4	101.09	
	2.0	90.2	90.2	
Methylnitrophos (O-O-dimethyl O-3-methyl-4-nitrophenyl thiophosphate)	0.25	85.9	99.88	97.17
	0.5	89.3	97.91	
	1.0	87.3	95.51	
	2.0	95.4	95.1	
Dipterex	0.5	89.9	98.57	92.1
	1.0	85.7	95.43	
	2.0	85.2	85.2	
	1.0	100		

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ACC NR:

AP8024843

Table 1. (Cont.)

DDT (emulsion)	0.25	86.0		
	0.5	91.2		
	1.0	91.1		
	2.0	100		
DDT (dust)	0.25	70.0		
	0.5	81.7		
	1.0	92.0		
	2.0	95.4		

acaricide only slightly. *Ixodes persulcatus* ticks are carriers of tickborne encephalitis in this area. Orig. art. has: 2 tables and 1 figure. [WA-50; CBE No. 37] [JS]

SUB CODE: 06/ SUBM DATE: 04Mar67/ ORIG REF: 013/ OTH REF: 005

Card

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ACC NR:

AT8030991

SOURCE CODE: UR/0000/66/000/000/0204/0207

AUTHOR: Val'tseva, I. A.

ORG: TsNIL im. S. I. Chechulin, First MMI im. Sechenov (TsNIL I MMI)

TITLE: On changes in the function of the respiratory center following poisoning with Central Asian cobra venom

SOURCE: Reaktivnost' (Reactivity); materialy konferentsii 17-19 yanvarya 1967 goda. Moscow, 1966, 204-207

TOPIC TAGS: venom, cerebral cortex, central nervous system, rabbit, experiment animal

ABSTRACT: Evaluation of CNS disorders following administration of snake neurotoxins to rabbits was done by simultaneous registration of the bioelectric activity of the cerebral cortex, registration of external respiration and use of artificial respiration following arrest of natural respiration. Respiration remained rhythmical even during periods of CNS excitation and inhibition in most animals. The rhythm of the waves of the EEG corresponded to the respiratory rate for 7 to 20 min in 10 animals. After 20 to 30 min, there was complete interruption in respiratory rhythm and bioelectrical activity of the cerebral cortex. During the terminal

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stage, respiratory depth increased sharply and there was increased inhibition of inspiration and expiration. Use of artificial respiration frequently restored disordered bioelectrical activity of the brain. When artificial respiration was temporarily discontinued, natural inspirations with high amplitude occurred in one group of animals. If the mechanism of action of the neurotropic toxin can be considered curare-like, it is difficult to explain the increase in respiratory amplitude before death of the animals and the characteristic intensive inspirations after discontinuing artificial respiration, because increased relaxation of the respiratory muscles, depending on the depth of the action of the venom, would have led to a decreased level of inspired air and not to an increase. These forms of periodic respiration with compensatory increase in amplitude suggest an overexertion of the respiratory center and inadequacy of functions inhibiting inspiration. It may be concluded that the injurious effects of cobra venom appear first in the subcortical structures of the CNS and especially in the respiratory center. Later, cells of the cerebral cortex are affected. The lethal effects of the venom are not due to its peripheral action. [XF]

SUB CODE: 06/ SUBM DATE: none

Card

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ACC NR:

AT8030992

SOURCE CODE: UR/0000/66/000/000/0207/0209

AUTHOR: Valtseva, I. A.; Talyzin, F. F. (Corresponding member AMN SSSR; Professor); Chechulin, A. S.

ORG: TsNIL im. S. I. Chechulin (TsNIL); Department of General Biology, First MMI im. Sechenov (kafedra obshchey biologii I MMI)

TITLE: The role of reactivity of the nervous system of animals following administration of the venom of Central Asian snakes

SOURCE: Reaktivnost' (Reactivity); materialy konferentsii 17-19 yanvarya 1967 goda, Moscow, 1966, 207-209

TOPIC TAGS: venom, central nervous system, experiment animal

ABSTRACT: Differences in sensitivity to similar amounts of Central Asian cobra venom administered to animals of the same species with similar weights, and the role of CNS lability in this sensitivity are discussed. Experiments on mice weighing 20—24 g showed that 0.0250 mg of venom caused death of the animals within 6 to 23 min; 0.0125 mg caused death within 5 to 34 min; 0.0095 from 1 hr, 46 min to 3 hr, 28 min; and 0.0050 mg did not cause death until 48 hr after venom was administered. Two animals remained alive for three days. Additional experiments on mice and rabbits indicated that animals most liable to the effects of neurotropic snake venom were those with marked CNS reactivity. It was

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ACC NR: AT8030992

determined in 1949 that the minimal LD of *Vipera libetina* L. venom was 0.264 mg in mice weighing 31 to 35 g. Death occurred within 5 to 7 hr in all but two animals, which did not succumb. It is noted that registration of biological activity in the brain of rabbits administered different doses of venom is a reliable method for determining the status of the CNS. Mice and rabbits poisoned with the venom of Central Asian cobras showed hemorrhagic foci in the area of the bite, but not in the internal organs on autopsy; heartbeat was present 20 to 30 min after cessation of respiration. Mice and rabbits poisoned with *Vipera libetina* venom had generalized and localized hemorrhages; heartbeat was present 10 to 30 min after cessation of respiration. Labile processes in the CNS must be considered when antivenoms are used for treatment of snake-bites. [WA-50; CBE No. 37] [XF]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AT8029350 SOURCE CODE: UR/3382/63/025/000/0106/0108

AUTHOR: Vasil'yeva, Z. I.; Domaradskiy, I. V.

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: The effect of vitamin B₁ on pyruvic acid metabolism prior to and after injection of plague toxin

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 106-108

TOPIC TAGS: plague, bacterial toxin, vitamin

ABSTRACT: Plague toxin sharply inhibited pyruvic acid metabolism in control white mice, but did not affect pyruvic acid metabolism in animals saturated with vitamin B₁. The accumulation of vitamin B₁ in animal livers intensified oxygen consumption and pyruvic acid consumption by liver homogenates of vitaminized animals. White mice were given 4 µg of vitamin B₁ daily for 15—20 days. The lack of an effect of plague toxin on pyruvic acid metabolism in animals receiving vitamin B₁ is still not understood. Orig. art. has: 2 tables.

[WA-50; CBE No. 37] [15]

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

Card

1/1

ACC NR: AT8029349

SOURCE CODE: UR/3382/63/025/000/0101/0105

AUTHOR: Vasil'yeva, Z. I.; Domaradskiy, I. V.

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: The effect of plague toxin on pyruvic acid metabolism

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 101-105

TOPIC TAGS: plague, bacterial toxin

ABSTRACT: Plague toxin decreased consumption of pyruvic acid *in vitro* and inhibited oxygen absorption by liver homogenates from white mice and guinea pigs. Plague toxin inhibited decrease of pyruvic acid and oxygen consumption in *in vivo* tests with white mice. Plague toxin did not have a pronounced effect on endogenous respiration of mouse-liver homogenates, but inhibited endogenous respiration in guinea-pig liver homogenates. Experiments showed that the effect of plague toxin on pyruvic acid metabolism is nonspecific. Other toxins tested—cholera, *Brucella*, and pseudotuberculosis — had the same effect on pyruvic acid

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ACC NR: AT8029349

metabolism as plague toxin. Toxins were obtained from *P. pestis* strain 1, *P. pseudotuberculosis* strain 423, *Br. melitensis* strain 50, and from a mixture of cholera strains. The average LD for plague toxin was 7 µg, for pseudotuberculosis - 120 µg, for cholera - 700 µg and for *Brucella* toxin - 1.1 µg. *Brucella* toxin inhibited respiration of liver homogenates in both species of animals, cholera toxin only in guinea pigs, and pseudotuberculosis toxin did not inhibit endogenous respiration at all. Orig. art. has: 3 tables. [WA-50; CBE No. 37][JS]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF. 006/ OTH REF: 006

Card 2/2

ACC NR: AP8031316

SOURCE CODE: UR/0451/68/000/005/0026/0029

AUTHOR: Visnanyy, L. Yu.

ORG: Tartu University (Tartuskiy universitet)

TITLE: Apparatus for producing aerosols

SOURCE: Meditsinskaya tekhnika, no. 5, 1968, 26-29

TOPIC TAGS: aerosol, medical equipment

ABSTRACT: This article appears in the Environmental Section

Card 1/1

UDC: 615.451.35.014.24

ACC NR: AP8029035

SOURCE CODE: UR/0016/68/000/008/0109/0112

AUTHOR: Vlasova, Ye. V.; Solov'yeva, N. I.; Tolovskaya, K. R.

ORG: Institute of Epidemiology and Microbiology im. Gamaleya, AMN SSSR
(Institut epidemiologii i mikrobiologii AMN SSSR)

TITLE: Antigenic and immunogenic properties of purified *CL. histolyticum*
collagenase

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 8,
1968, 109-112

TOPIC TAGS: clostridium, bacteria enzyme

ABSTRACT: Purified collagenase obtained from *Clostridium histolyticum* possessed immunogenic properties when injected into rabbits, stimulating formation of anticollagenase antibodies. Anticollagenase activity of rabbit serum was noted after injection of 1.75 mg of collagenase, and persisted for 4 months after the fourth injection. Immunodiffusion and immunoelectrophoresis showed that purified collagenase contains a slight admixture (one of the proteinases of *CL. histolyticum*). Immune horse serum in a dose of 0.005 ml inhibited 80% of the activity of 30 µg of collagenase, and 0.01 ml inhibited 95% of collagenase activity, while 0.5 ml of rabbit serum completely inhibited collagenase. The two

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UDC: 576.851.555.098.31.097.2

ACC NR: AP8029035

collagenases observed during chromatography of purified collagenase on DEAE cellulose were shown by immunodiffusion to have identical antigenic specificity. Orig. art. has: 1 figure and 1 table.

[WA-50; CBE No. 37][JS]

SUB CODE: 06/ SUBM DATE: 27Mar67/ ORIG REF: 008/ OTH REF: 007

Card

2/2

ACC NR: AP8031720

SOURCE CODE: UR/0346/68/000/009/0036/0037

AUTHOR: Vyatkin, S. K. (Chief of veterinary section); Belousov, Z. F. (Veterinarian); Butuzov, G. M. (Candidate of veterinary sciences)

ORG: Siberian Scientific Research Veterinary Institute (Sibirskiy nauchno-issledovatel'skiy veterinarnyy institut)

TITLE: Leptospirosis of swine in North Kazakhstan oblast

SOURCE: Veterinariya, no. 9, 1968, 36-37

TOPIC TAGS: leptospirosis, serologic test

ABSTRACT: Leptospirosis of swine has been reported in North Kazakhstan oblast since 1963, with a slight increase in the number of new unsafe locations during the farrowing period. By 1965 the number of unsafe locations had increased to 7, and on two collective farms 211 sows aborted and 30% of piglets died in 6 months. Vaccination of brood sows on farms unsafe with respect to leptospirosis 15-60 days before farrowing, and vaccination before breeding were found to have no adverse effect on the course of the pregnancy. Feeding piglets in their first days with immune milk conferred passive immunity and sharply reduced the death rate from leptospirosis. Serological tests (the microagglutination and lysis reaction) with sera of 407 pigs showed positive reactions

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UDC: 619:616.986.7-036.2:636.4(574.22)

ACC NR: AP8031720

to *L. pomona* in 49 animals, *L. saxkoebing*-3, *L. jakiami*-11, *L. tarassovi*-14, *L. bataviae*-2, *L. icterohaemorrhagiae*-12, and *L. grippotyphosa*-12 animals. [WA-50; CBE No. 37][JS]

SUB CODE: 06/ SUBM DATE: none

Card

2/2

ACC NR: AP8029028

SOURCE CODE: UR/0016/68/000/008/0071/0075

AUTHOR: Yablonskaya, V. A.

ORG: Institute of Epidemiology and Microbiology im. Gamaleya AMN SSSR
(Institut epidemiologii i mikrobiologii)

TITLE: Sensitizing properties of live scrub typhus vaccine E

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 8,
1968, 71-75

TOPIC TAGS: vaccine, rickettsia, sensitizing antibody

ABSTRACT: The sensitizing properties of combined live scrub typhus vaccine E, Breinl strain, and its individual components (live typhoid vaccine E, live scrub typhus vaccine E and soluble antigen from *Rickettsia prowazeki*) were studied in conditions of revaccination of guinea pigs sensitized with different materials. Animals were divided into 6 groups and sensitized by subcutaneous administration of 0.5 ml of (1) killed soluble antigen prepared from *R. prowazeki*, Breinl strain, (2) live scrub typhus vaccine E, (3) live combined scrub typhus vaccine E, (4) killed sorbed lung scrub typhus vaccine, (5) a mixture from yolk sac tissue of

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UDC: 615.372:576.851.71-06:616-056.3

ACC NR: AP8029028

noninfected chick embryo, and (6) sorbed pulmonary scrub typhus vaccine. One ml of a resolving dose of liver scrub typhus vaccine E, live combined scrub typhus vaccine and antigen from *R. prowazeki* (16 antigen units), was administered intracardially to each animal 21 days after sensitization. Comparison of anaphylaxis in animals sensitized with these substances indicated that the sensitizing properties of live scrub typhus vaccine and live combined scrub typhus vaccine were almost identical, and were less pronounced with soluble antigen from *R. prowazeki*. It was determined that egg protein was responsible for the sensitizing properties of both vaccines and to a lesser degree in the antigen from *R. prowazeki*.
Orig. art. has: 2 tables. [WA-50; CBE No. 37] [XF]

SUB CODE: 06/ SUBM DATE: 26Dec67/ ORIG REF: 004

Card

2/2

ACC NR: AP8029033

SOURCE CODE: UR/0016/68/000/008/0098/0102

AUTHOR: Yastrebov, V. K.; Mikhaylov, A. K.; Shpynov, N. V.

ORG: Omsk Institute of Natural Foci of Infection (Omskiy institut prirodnookhavykh infektsii); Altai Mountain Oblast Sanitary-Epidemiological Station (Gorno-Altayskaya oblastnaya sanitarno-epidemiologicheskaya stantsiya)

TITLE: Epidemiological characteristics of tick rickettsiosis in northern Asia in the Altai Mountain Autonomous Oblast

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 8, 1968, 98-102

TOPIC TAGS: tick, rickettsial disease, disease incidence, animal parasite

ABSTRACT: Results of an epidemiological analysis of 200 cases of tick rickettsiosis registered in the Altai Mountain Autonomous Oblast from 1945 to 1966 are reported. Morbidity statistics from 1960 to 1966 showed that the highest incidence was in the Ongudai rayon, with 60% of cases registered in Shishikman, Ongudai, Ulita, Ten'ga, and Lower Talda. The epidemic season begins in late April when 27% of all cases are

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UDC: 616.981.711-036.21(571.15)

ACC NR: AP8029033

registered, with the highest incidence (55.4%) being in May, 4.2% in June and July, and 8.5% in August. Rural inhabitants accounted for 98.4% of all cases: children under 15 years of age were most frequently affected. Ixodidae ticks found in the Altai Mountain Autonomous Oblast are *Dermacentor nuttalli* Ol., *Ixodes persulcatus* P. Sch., *Dermacentor silvarum* Ol., *Dermacentor pictus* Herm. and *Haemaphysalis concinna* Koch; the first four species were found in the Ongudai rayon in a 1966-1967 survey. *Dermacentor nuttalli* was most frequent with 22 examples/km being found mostly in intermountain-steppe valleys and slopes. The rickettsial strain *D. sibiricus* from *Dermacentor nuttalli* and *Ixodes persulcatus* was isolated in 1965 in the Ongudai rayon. Twenty-four strains of *D. sibiricus* were detected in 20 groups of *Dermacentor nuttalli* ticks in May 1966, and in 36 groups of ticks in 1967, thus proving the high natural infectivity of this species. Among 564 subjects tested, positive complement-fixing reactions to *D. sibiricus* were found most frequently in subjects 30-50 years of age and older. Positive indirect hemagglutination reactions were highest in subjects aged 7-15 and 30-49. Complement-fixing antibodies to *D. sibiricus* were found in 3.1 to 11.6% of farm animals (cattle, horses, yaks, marals). Orig. art. has: 2 tables and 1 figure. [WA-50; CBE No. 37][XF]

SUP CODE: 06/ SUPP DATE: 29Dec67/ ORIG REF: 003

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Card

ACC NR:

AT8029373

SOURCE CODE: UR/3382/63/025/000/0331/0351

AUTHOR: Yemel'yanova, N. D.; Zhovtyy, I. F.; Tereshchenko, O. N.; Korotkova, G. V.

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: Rodent ectoparasites in the Tuva ASSR

SOURCE: Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya. v. 25, 1963, 331-351

TOPIC TAGS: epidemiologic focus, disease carrying insect, flea, epizootiology

ABSTRACT: Collection of rodent ectoparasites in Tuva ASSR in 1947—1958 uncovered the following new flea species: *Pulex irritans* (dogs, pika, long-tailed Siberian suslik, and man), *Echidnophaga oschanin* (Mongolian and Daurian pikas), *Ctenocephalides canis* (dog), *Chaetopsylla appropinquans* (badger), *Chaetopsylla homoeus* (Siberian polecat, ermine, and Mongolian bobak), *Paraceras flabellum* (badger), *Ceratophyllus mokrsecky* (house mouse), *Ceratophyllus laeviceps kusenkovi* (clawed jird, hamsters, Daurian

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ACC NR:

AT8029373

pika, and Mongolian jerboa), *Ceratophyllus laeviceps ellobii* (midday gerbil), *Ceratophyllus penicilliger* (root voles, narrow-skulled vole, long-tailed Siberian suslik, pika, and Mongolian bobak), *C. turbidus* (root vole and suslik), *C. garei* (root vole), *C. avicittelli* (long-tailed Siberian suslik, bobak, and jerboa), *Frontopsylla luculenta* (long-tailed Siberian suslik, Daurian, and Mongolian pikas, gerbil, Siberian jerboa and hamster), *Frontopsylla elata* (long-tailed Siberian suslik, Daurian and Mongolian pikas and occasionally bobaks, hamsters, gerbils, and voles), *Paradoxopsyllus dashidorzhi* (Mongolian pika, its burrows, and the Siberian polecat), *Ophthalmopsylla praefecta* (jerboa, gerbil and burrows of pikas, jerboas and susliks), *Mesopsylla euota* (Siberian jerboa, Mongolian and Daurian pikas, long-tailed Siberian susliks, and suslik and jerboa burrows), *Amphipsylla sibirica* (root voles, Ungur vole, and Daurian hamster), *Leptopsylla nana* (hamster), *Leptopsylla otsibirica* (root vole), *Rhadinopsylla rothschildi* (Daurian hamster, jerboa and suslik and gerbil burrows), *Rhadinopsylla pseudodahurica* (redbacked vole), and *Neopsylla teratura* (suslik). A total of 66 species and sub-species of fleas were observed in this area, which adjoins Mongolian plague foci and may include foci of tularemia, spring—summer encephalitis, and other diseases. Orig. art. has: 2 figures and 19 tables. [WA-50; CBE No. 37] [JS]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 005

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Card

2/2

ACC NR: AP8027984

SOURCE CODE: UR/0402/68/000/004/0401/0408

AUTHOR: Zeytlenok, N. A.; Vil'ner, L. M.; Trukhmanova, L. B.; Kropachev, V. A.; Rodin, I. M.; Markelova, T. A.; Gol'dfarb, M. M.

ORG: Institute of Poliomyelitis and Virus Encephalites AMN SSSR, Moscow (Institut poliomyelita i virusnykh entsefalitov); Institute of High Molecular Compounds, AN SSSR, Leningrad (Institut vysokomolekulyarnykh soyedineniy AN SSSR)

TITLE: Antiviral and interferonogenic activity of some vinylpyrrolidone

SOURCE: Voprosy virusologii, no. 4, 1968, 401-408

TOPIC TAGS: antiviral agent, interferon, tickborne encephalitis, epidemiology

ABSTRACT: Copolymers of vinylpyrrolidone with maleic anhydride or crotonic acid with vinylamine produced an increase in mouse resistance to subcutaneous inoculation with tickborne encephalitis or Semliki forest viruses. The copolymers were similar to those produced by interferon or interferonogens. This effect occurred only in prophylactic inoculation, and increased with the age of the animals but declined as the arbovirus dose increased. These substances did not induce interferon

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UDC: 576.858.095.383+576.858.095.18]:547.747

ACC NR: AP8027984

production in the cell cultures, but did induce the production of an inhibitor identical to mouse interferon *in vivo* only. Maximum titer was determined after 24 hr. It is possible that these compounds can act as interferonogens. Their antiviral action may lie in their anti-toxic properties in that they may be able to block sensitized receptors in the cell and make them resistant to the penetration viruses. These polymers have the following molecular weights: vinylpyrrolidone with crotonic acid—60,000; and vinylpyrrolidone with maleic anhydride—500,000. Orig. art. has: 7 tables. [WA-50; CBE No. 37][IP]

SUB CODE: 06/ SUBM DATE: 05Sep67/ ORIG REF: 006/ OTH REF: 009

Card

ACCESSION NUMBERS FOR BIOLOGICAL FACTORS

AN8030935	AP8033279	AP8033967
	AP8033280	AP8033972
AP6022376	AP8033281	AP8033973
AP8024503	AP8033282	AP8034060
8025178	AP8033283	AP8034215
AP8025929	AP8033284	AP8034216
AP8027342	AP8033285	AP8034217
AP8027752	AP8033287	AP8034218
AP8027823	AP8033365	AP8034219
AP8028090	AP8033585	AP8034236
AP8028335	AP8033586	AP8034377
AP8030228	AP8033587	AP8034378
AP8030229	AP8033590	AP8034381
AP8030230	AP8033591	AP8034383
AP8030231	AP8033597	AP8034384
AP8031137	AP8033601	AP8034756
AP8031139	AP8033602	AP8034757
AP8031141	AP8033604	AP8034805
AP8031733	AP8033608	AP8036202
AP8032038	AP8033779	
AP8032040	AP8033819	AT8031128
AP8032172	AP8033930	AT8031129
AP8032174	AP8033931	AT8031130
AP8032426	AP8033953	AT8031131
AP8032428	AP8033956	AT8032702
AP8032429	AP8033957	AT8032714
AP8033275	AP8033963	AT8032716
AP8033276	AP8033965	AT8034079
AP8033278	AP8033966	AT8034083

III. ENVIRONMENTAL FACTORS

ACC NR: AT8025215

SOURCE CODE: UR/2667/68/000/052/0065/0070

AUTHOR: Anisimova, T. N.

ORG: none

TITLE: Continuous duration of wind speeds under the conditions of the plains areas in the USSR

SOURCE: Moscow. Nauchno-issledovatel'skiy institut aeroklimatologii. Trudy, no. 52, 1968. Voprosy klimatologii (Problems of climatology), 65-70

TOPIC TAGS: atmospheric wind field, wind speed duration

ABSTRACT: A discussion is presented of methods used to determine the characteristics of the duration of sustained wind speeds over plains areas in the Soviet Union. The data were taken from the *Spravochnik po klimaty SSSR (Handbook on the Climate of the USSR)*, Part III, and consisted of measurements made at 28 stations located in areas of various types of shelter and terrain and representing such widely distant areas as Dickson Island in the Arctic to Kiev in the Ukraine and Irkutsk in Central Asia. Wind-speed intervals for open flat terrains were ≤ 2 , ≤ 4 , ≥ 5 , ≥ 8 , ≥ 12 , ≥ 16 , and ≥ 20 m/sec. Model values of the frequency of

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UDC: 551.552

ACC NR: AT8025215

wind-duration limits (cases in which modes for hourly intervals and those for more than 1 hr were calculated) were used to construct distribution curves. Analysis of these curves failed to show any significant differences in them either for the various stations, wind-speed limits, or for seasons, i.e., the distribution curves related to a single law of distribution in which only the numerical parameters varied. Orig. art. has: 1 figure, 3 tables, and 2 formulas. [WA-50; CBE No. 7] [EK]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 002

Card 2/2

ACC NR: AT8020763

SOURCE CODE: UR/2531/68/000/229/0037/0047

AUTHOR: Azimova, N. D.; Zarubin, Ye. V.; Kachurin, L. G.

ORG: none

TITLE: Determination of the structural and gradient characteristics of the atmospheric surface boundary layer within vegetation

SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy, no. 229, 1968. Vliyaniye meteorologicheskikh faktorov na fotosintez i teplovoy rezhim rastitel'nogo pokrova (Effect of meteorological factors on photosynthesis and thermal conditions of vegetation), 37-47

TOPIC TAGS: microclimatology, vegetation microclimatology, atmospheric surface boundary layer, surface boundary layer structure, turbulent exchange, wind gradient, lapse rate, atmospheric turbulence, humidity gradient

ABSTRACT: Results are presented of field experiments carried out to determine the coefficient of turbulent exchange within crop foliage from structural and gradient measurements. In investigating the structural elements, the horizontal and vertical wind-speed components were measured with two-component, high-frequency spark anemometers (threshold velocity

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UDC: 551.58:551.586

ACC NR:

AT8020763

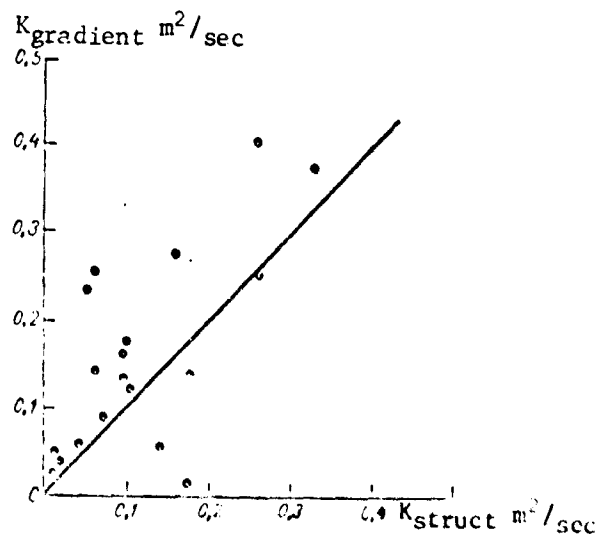


Fig. 1. Correlation graph for the values of the coefficient of exchange calculated by the gradient and structural methods

of 2--3 cm/sec); readings were registered with N-107 oscillographs. Of the 64 series of measurements made, only those in which the horizontal velocity did not exceed 3.3 m/sec were analyzed. The Ye. S. Lyapina formula

$$k = \frac{\overline{v} \sqrt{\overline{w^2} - \overline{w}^2}}{2 \sqrt{\overline{v^2} - \overline{v}^2}} - D$$

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ACC NR: AT8020763

was used to calculate the coefficient of turbulent exchange k . In this formula v is the horizontal component of the wind velocity; w is the vertical component of wind velocity, and D is the average time during which the vertical component retained one sign. The data were averaged for 2-min periods. The calculations were made for 22 series of observations and were compared with those made by the standard (Budyko) method (see Fig. 1). Temperature and humidity gradients were measured with ADC (automatic remote gradient meters) instruments, using the psychrometric method. The lapse rates Δt , lapse rates $\Delta t'$ determined with wet-bulb thermometers and the average temperatures determined with dry-bulb and wet-bulb thermometers were measured directly, with readings registered on an EPP-09 M2 potentiometer set 60 m away from the sensors. The gradient meter sensitivity was $0.02^\circ/\text{mm}$, and that of the thermometers was $0.1^\circ/\text{mm}$. Data obtained in 82 series of measurements made at several levels in a crop field and at the Voyeykovo meteorological test area in August and September 1966 were used to compare the gradient meter and psychrometer readings. In comparing the data obtained by the two methods, graphed measurements for both types of instruments were symmetrical in relation to the bisectrix between the coordinate axes; however, the point spread exceeded permissible errors. The total errors when Δt and $\Delta t'$ were equal to zero were:

$$\delta_{\text{psychrometer}} \approx 0.2^\circ, \text{ and } \delta_{\text{gradient meter}} \approx 0.01^\circ \ll \delta_{\text{psychrometer}};$$

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when Δt and $\Delta t'$ were equal to 1° , the total errors were:

$$\delta_{\text{psychrometer}} \approx 0.4^\circ, \text{ and } \delta_{\text{gradient meter}} \approx 0.02^\circ \ll \delta_{\text{psychrometer}}.$$

Orig. art. has: 14 figures and 4 formulas. [WA-50; CBE No. 37] [EP]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 008

Card

ACC NR: AT8019053

SOURCE CODE: UR/2531/68/000/207/0014/0027

AUTHOR: Berlyand, M. Ye. (Doctor of physico-mathematical sciences);
Onikul, R. I.

ORG: none

TITLE: Theory of air-mass transformation and the formation of river fogs

SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy,
no. 207, 1968. Voprosy atmosferynoy diffuzii i zagryazneniya vozdukha
(Problems of atmospheric diffusion and air pollution), 14-27

TOPIC TAGS: micrometeorology, microclimatology, air mass transformation,
fog, radiation fog, river fog, numeric forecasting, fog forecasting

ABSTRACT: Analytical and numerical methods are presented for representing
some aspects of the theory of air-mass transformation, especially in
reference to the role of the exchange coefficient in the development of
river fogs. Equations are derived to describe the changes in temperature
and humidity in a cold air mass moving across an open river onto a
frozen or snow surface on the leeward shore. In this presentation the
 x axis is perpendicular to the banks, the y axis follows the direction
of the bank, and z is the vertical axis; the underlying surface does not

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UDC: 551.524

ACC NR: AT8019053

vary in the y direction, the river banks are straight, x' is the
distance along the x axis from the windward bank over the river, x is the
distance on the leeward bank from the river's edge, and the processes
involved in air-mass transformation are limited to changes in the initial
temperatures and humidities measured on the windward bank. The initial
system of equations and boundary conditions are written as follows:
Over the river ($x' > 0$)

$$u \frac{\partial \tau'}{\partial x'} = \frac{\partial}{\partial z} k' \frac{\partial \tau'}{\partial z}; \quad u \frac{\partial Q'}{\partial x'} = \frac{\partial}{\partial z} k' \frac{\partial Q'}{\partial z}, \quad (1)$$

when $x' = 0$

$$\tau' = \tau^0; \quad Q' = Q^0.$$

when $z = 0$

$$\tau' = \tau_0 = \text{const}; \quad Q' = Q_m(\tau_0).$$

Over the leeward bank ($x > 0$)

$$u \frac{\partial \tau}{\partial x} = \frac{\partial}{\partial z} k \frac{\partial \tau}{\partial z}; \quad u \frac{\partial Q}{\partial x} = \frac{\partial}{\partial z} k \frac{\partial Q}{\partial z}, \quad (2)$$

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when $x = 0$

$$\tau = \tau'; \quad Q = Q'$$

when $z = 0$

$$-\rho c_p k \frac{\partial \tau}{\partial z} - L \rho k \frac{\partial Q}{\partial z} = R; \quad Q = Q_{\text{mice}}(\tau).$$

Here τ is the air temperature; Q is the specific humidity of the air; k is the coefficient of turbulent exchange; the indexes ' and ° refer to the temperature, humidity and exchange coefficient above the river and the windward bank, respectively (without the index, the measurements apply to the leeward bank); u is the wind speed; $Q_m(\tau_0')$ and $Q_{m, \text{ice}}(\tau)$ are the saturation specific humidity at water surface temperature τ_0' and the saturation specific humidity referred to a smooth ice surface at snow surface temperature on the leeward bank τ_0 ; ρ is the atmospheric density; c_p is the heat capacity of the air at a constant pressure; L is specific heat of snow evaporation; and R is the radiation balance of the underlying surface of the leeward bank. The significant feature of the problem is that the lapse rate varies greatly in the direction of the wind, producing both vertical and horizontal inhomogeneities in the turbulent exchange field. These inhomogeneities generally are insignificant on the leeward side of the river but are considerable above the river, although here they

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ACC NR: AT8019053

are confined to the near-surface layer. Higher in the atmosphere, however, the exchange coefficient is very similar to that at the same height over the shore. This condition is described as follows: the coefficient of turbulent exchange is assumed to increase linearly with height in the atmospheric surface boundary layer which has a thickness h , but is constant above this layer (when $z \leq h$) as expressed by

$$k = \kappa_0 + k_1 z,$$

and by

$$k = \kappa_0 + k_1 h = \text{const.}$$

when $z \geq h$.

Here, κ_0 is the coefficient of molecular thermal conductivity of the air and k_1 is the coefficient of turbulent exchange at the unit height z_1 . The variation in air-flow stability above the river is determined from the equation

$$Ri = \frac{-g}{\tau'} \frac{\frac{\partial \tau}{\partial z}}{\left(\frac{\partial u}{\partial z}\right)^2},$$

where g is the gravitational acceleration.

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ACC NR: AT8019053

Assuming that the wind speed increases logarithmically with height and does not vary in the horizontal plane, an approximate solution is obtained from the equation

$$u = u_1 \frac{\ln \frac{z}{z_0}}{\ln \frac{z_1}{z_0}},$$

where u_1 is the wind speed at the unit height z_1 , and z_0 is the roughness of the underlying surface. Since the lapse rate and wind speed vary with h , the Ri number also varies, i.e., first increases, attains a maximum at some height h , and then decreases to that value which is characteristic of the inflowing air. Here, the approximate solution employs the Budyko approach which assumes that near the water surface k' increases proportionally to the Ri number. The effect of the stability of the turbulent exchange coefficient is calculated from the relation

$$k'_i = k_{1p} \sqrt{1 + \overline{Ri}}, \quad (3)$$

where $k_{1p} = \frac{x^2 u_1}{\ln \frac{z_1}{z_0}}$ is the equilibrium value of the exchange coefficient at

$h = z$; x is the Karman constant; \overline{Ri} is the mean value of the Ri number in the disturbed layer; and k' increases with height to about the level

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at which the Ri number reaches a maximum, but above which it decreases to k^0 in the inflowing air. The rate of decrease is assumed to be proportional to that of the Ri number. A numerical solution is desirable because the variations of the exchange coefficient are very complex and are dependent on the lapse rate. For such a solution, heat- and moisture-exchange equations are added for the lee shore by introducing the equivalent temperature θ related to the atmospheric temperature τ and humidity Q by the relation

$$\theta = \tau + \frac{L}{c_p} Q. \quad (4)$$

The system of equations

$$u \frac{\partial \theta}{\partial x} = \frac{\partial}{\partial x} k \frac{\partial \theta}{\partial x} \quad (5)$$

is used to determine θ above the lee shore when $x = 0$

$$\theta = \theta', \text{ where } \theta' = \tau' + \frac{L}{c_p} Q'.$$

when $z = 0$

$$- \rho c_p k \frac{\partial \theta}{\partial x} = R.$$

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ACC NR: AT8019053

The solution for θ over the leeward bank is made independently of those for τ and Q , and the saturation humidity on the ground and $\tau|_{z=0}$ and $Q_{z=0}$ are determined as functions of x ; the results are then used as the ground-level boundary conditions. The equations and boundary conditions of (1), (2), and (5) are transformed into finite differences form, a grid having Δx intervals on the x -axis and Δy intervals on the y -axis is constructed on the plane zox , and the differences are determined by factorization. Then the vertical distribution of the exchange coefficient is determined from the temperature distribution in that interval along x which immediately precedes the interval for which the second derivation for z is approximated. This procedure eliminates one of the most complex problems posed by the non-linearity of the initial differential equations. The temperature τ at grid intersection points having the coordinates of $i\Delta x, j\Delta z$ are denoted as $\tau_{i,j}$ and similar designations are made for humidity and equivalent temperature. The effective coefficient of exchange at the distance $i\Delta x$ for the grid layer $j\delta z - (j+1)\delta z$ is calculated from the formula

$$k_e^{i,j,j+1} = \frac{\Delta z}{(j+1)\delta z} \frac{dz}{\int_{j\delta z} \frac{dz}{k(z)}}$$

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The numerical solution for τ , presented as an example, is as follows:

$$A_{i-1,j} \tau_{i,j+1} + 2B_{i-1,j} \tau_{i,j} + C_{i-1,j} \tau_{i,j-1} = D_{i-1,j} \quad (6)$$

Here

$$\begin{aligned} A_{i-1,j} &= k_e^{i-1,j,j+1}; & C_{i-1,j} &= k_e^{i-1,j,j-1}; \\ B_{i-1,j} &= \frac{(\Delta x)^2}{\Delta x} u_j + \frac{1}{2} (k_e^{i-1,j,j+1} + k_e^{i-1,j,j-1}) \\ D_{i-1,j} &= -\frac{(\Delta x)^2}{\Delta x} u_j \tau_{i-1,j} \end{aligned}$$

where u_j is the wind speed at the level $j\delta z$. The boundary conditions for both the water and land surfaces are written as follows:

$$\tau_{i,0} = P_{i,1} \tau_{i,1} + S_{i,1} \quad (7)$$

For the water surface

$$P_{i,1} = 0; \quad S_{i,1} = \tau_0$$

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for the leeward shore

$$P_{i,1} = 0; \quad S_{i,1} = \tau_{0,j}$$

and the equivalent temperature θ on the leeward shore is

$$P_{i,1} = 1; \\ S_{i,1} = \frac{R\Delta z}{c_p \rho k_e^{i-1,0,1}}$$

$P_{i,2}$ and $S_{i,2}$, $P_{i,3}$, $S_{i,3}$, etc., are calculated from the recurrent formulas

$$P_{i,j+1} = \frac{k_e^{i-1,j,j+1}}{u_j \left(\frac{\Delta z^2}{\Delta x} \right) + (1 - P_{i,j}) k_e^{i-1,j-1,j} + k_e^{i-1,j,j+1}}; \quad (8)$$

$$S_{i,j+1} = \frac{u_j \frac{(\Delta z)^2}{\Delta x} \tau_{i-1,j} + k_e^{i-1,j-1,j} S_{i,j}}{k_e^{i-1,j,j+1}} P_{i,j+1}. \quad (9)$$

The computation is continued until the magnitude of the modulus of the remainder $\tau^0 - \frac{S_{i,j}}{1 - P_{i,j}}$ becomes no smaller than some small magnitude

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ACC NR: AT8019053

which is determined by numerical experiments, i.e., its smallness is evidence that the temperature at this level is close to that of the inflowing air. It is then assumed that the temperature at that level is equal to τ^0 and the reverse trend is obtained from the equation

$$\tau_{i,j} = P_{i,j+1} \tau_{i,j+1} + S_{i,j+1}. \quad (10)$$

The above method was used to write programs for solution on a Ural-4 computer of a wide range of possible weather conditions. The results showed that the intensity of river fogs and their vertical and horizontal extent depend primarily on the width of the river, the distance from the leeward shore, wind speed, the temperature contrast between the inflowing air and the water surface, the relative humidity and temperature of the inflowing air and "certain other factors." The numerical methods which have been used in the last few years permit solution of complex problems of the type described. However, they are still too time-consuming, even with electronic computers, and thus a simplified method is proposed by which a preliminary separation is made of primary and secondary factors. Of special interest is the application of this technique in analyzing the development of river fogs in Siberia, i.e., in the Angara river valley, which is rather wide. Here, the distributions of air temperature and humidity above the land and water surfaces closely resemble those

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ACC NR: AT8019053

postulated in the above analytical method. In the simplified case, equations (1) and (2) are neglected and it is assumed that the coefficient of exchange varies approximately with height (power law) and u and k are constant in the upper atmospheric layers, constituting a two-layer problem. The initial system of equations and boundary conditions, taking into account the deviations in the temperature T and humidity q from their values on the windward bank, is as follows:

Above the river ($x' > 0$):

$$\begin{aligned} \frac{\partial}{\partial z} k_1 z^m \frac{\partial T_1'}{\partial z} = 0; \quad \frac{\partial}{\partial z} k_1 z^m \frac{\partial q_1'}{\partial z} = 0; \quad 0 \leq z \leq H; \\ u_2 \frac{\partial T_2'}{\partial x'} = k_2 \frac{\partial^2 T_2'}{\partial z^2}; \quad u_2 \frac{\partial q_2'}{\partial x'} = k_2 \frac{\partial^2 q_2'}{\partial z^2}; \quad z \geq H, \end{aligned} \quad (1)$$

when $z = 0$

$$T_1' = \Delta T_0; \quad q_1' = \Delta q_0,$$

when $z = H$

$$T_1' = T_2'; \quad q_1' = q_2'; \quad \frac{\partial T_1'}{\partial z} = \frac{\partial T_2'}{\partial z}; \quad \frac{\partial q_1'}{\partial z} = \frac{\partial q_2'}{\partial z}.$$

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when $x' = 0$

$$T_2' = q_2' = 0.$$

On the leeward bank ($x > 0$):

$$\begin{aligned} \frac{\partial}{\partial z} k_1 z^m \frac{\partial T_1}{\partial z} = 0; \quad \frac{\partial}{\partial z} k_1 z^m \frac{\partial q_1}{\partial z} = 0; \quad 0 \leq z \leq H; \\ u_2 \frac{\partial T_2}{\partial x} = k_2 \frac{\partial^2 T_2}{\partial z^2}; \quad u_2 \frac{\partial q_2}{\partial x} = k_2 \frac{\partial^2 q_2}{\partial z^2}; \quad z \geq H, \end{aligned} \quad (12)$$

when $z = 0$

$$-c_p \frac{\partial T_1}{\partial z} - L \frac{\partial q_1}{\partial z} = 0; \quad q_1 = \mu' T_1,$$

when $z = H$

$$T_1 = T_2; \quad q_1 = q_2; \quad \frac{\partial T_1}{\partial z} = \frac{\partial T_2}{\partial z}; \quad \frac{\partial q_1}{\partial z} = \frac{\partial q_2}{\partial z}.$$

when $x = 0$

$$T_2 = T_2'; \quad q_2 = q_2'.$$

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Here, it is assumed that the radiation balance is the same on both sides of the river and the boundary condition for humidity on the surface of the leeward shore is linearized. The following designations are then introduced: $k_2' = k_1' H^m$, and $k_2 = k_1 H^m$, where the index 1 characterizes magnitudes referred to the layer $0 \leq z \leq H$, and index 2, to the layer $z \geq H$, and

$$\mu = Q_0 \left(\frac{17}{235 + \tau_0^0} + \frac{3}{273 + \tau_0^0} \right).$$

where τ_0^0 and Q_0^0 are the atmospheric temperature and humidity in the advancing flow when $z = 0$, and $\Delta T_0'$ and $\Delta q_0'$ are the contrasts in temperature and humidity between the surface of the river and the advancing flow. All functions in the equations and the initial and boundary conditions are subjected to double Laplace transformations for the variables x and x' , using equations of the type

$$\bar{T} = \int_0^{\infty} \int_0^{\infty} e^{-\mu x - \rho' x'} T(x, x', z) dx dx'.$$

Then, for the leeward shore ($x > 0$):

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$$\begin{aligned} \frac{d}{dz} k_1 z^m \frac{d\bar{T}_1}{dz} = 0; \quad \frac{d}{dz} k_1 z^m \frac{d\bar{q}_1}{dz} = 0; \quad 0 \leq z \leq H; \\ k_1 \frac{d^2 \bar{T}_1}{dz^2} - u_2 \rho \bar{T}_1 = -u_2 \bar{T}_1; \quad k_1 \frac{d^2 \bar{q}_1}{dz^2} - u_2 \rho \bar{q}_1 = -u_2 \bar{q}_1; \quad z \geq H. \end{aligned} \quad (13)$$

when $z = 0$

$$-c_p \frac{d\bar{T}_1}{dz} - L \frac{d\bar{q}_1}{dz} = 0; \quad \bar{q}_1 = \mu \bar{T}_1.$$

and when $z = H$

$$\bar{T}_1 = \bar{T}_2; \quad \bar{q}_1 = \bar{q}_2; \quad \frac{d\bar{T}_1}{dz} = \frac{d\bar{T}_2}{dz}; \quad \frac{d\bar{q}_1}{dz} = \frac{d\bar{q}_2}{dz}.$$

In deriving the solution on the leeward bank a preliminary determination must be made to obtain the first Laplace transformation from the solution made over the river, using the independent variable x' from the equation

$$\bar{T}' = \int_0^{\infty} e^{-\rho' x'} T'(x', z) dx'.$$

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Then

$$\begin{aligned} \frac{d}{dz} k_1 \frac{d\bar{T}_1'}{dz} = 0; \quad \frac{d}{dz} k_1 \frac{d\bar{q}_1'}{dz} = 0; \quad 0 \leq z \leq H; \\ k_2 \frac{d^2\bar{T}_2'}{dz^2} - u_2 \rho' \bar{T}_2' = 0; \quad k_2 \frac{d^2\bar{q}_2'}{dz^2} - u_2 \rho' \bar{q}_2' = 0; \quad z \geq H, \end{aligned} \quad (14)$$

when $z = 0$

$$\bar{T}_1' = \frac{\Delta T_0'}{\rho'}; \quad \bar{q}_1' = \frac{\Delta q_0'}{\rho'}$$

when $z = H$

$$\bar{T}_1' = \bar{T}_2'; \quad \bar{q}_1' = \bar{q}_2'; \quad \frac{d\bar{T}_1'}{dz} = \frac{d\bar{T}_2'}{dz}; \quad \frac{d\bar{q}_1'}{dz} = \frac{d\bar{q}_2'}{dz}$$

Instead of solving this system of differential equations by constructing Green functions, a simpler method is proposed as follows: \bar{T}_1' , \bar{T}_2' , \bar{q}_1' , and \bar{q}_2' are sought in the form of linear combination solutions of single transformations of the equations for the river and leeward shore. It is assumed that the initial conditions are homogeneous and the boundedness of the functions being sought are calculated for distance from the underlying surface. For example, the calculation for \bar{T}_2' is as follows:

$$\bar{T}_2' = A\bar{T}_2'^0 + B\bar{T}_2'^1 \quad (15)$$

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Here $\bar{T}_2'^0$ is the Laplace transformation from T_2' for the variable x_1' , and $\bar{T}_2'^1$ is the analogous Laplace transformation from T_2' for the variable x . The constants A, B and the other constants are not dependent on z but only on ρ , ρ' and the parameters of the problem. Substituting (15) into the equation for \bar{T}_2' , the equation

$$k_2 \frac{d^2}{dz^2} (A\bar{T}_2'^0 + B\bar{T}_2'^1) - u_2 \rho' (A\bar{T}_2'^0 + B\bar{T}_2'^1) = -u_2 \bar{T}_2' \quad (16)$$

is obtained. Then, obviously the equations become

$$k_2 \frac{d^2\bar{T}_2'^0}{dz^2} - u_2 \rho' \bar{T}_2'^0 = 0, \quad (17)$$

$$k_2 \frac{d^2\bar{T}_2'^1}{dz^2} - a \rho' \bar{T}_2'^1 = 0, \quad (18)$$

where

$$a = \frac{k_1}{k_2}$$

After substituting (17) and (18) into 16,

$$A = \frac{1}{\rho - a\rho'}$$

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is obtained immediately. Other coefficients of the type of (15) give the solutions for conditions above the river. The remaining constants are determined by substitution into the boundary conditions, and the final expression for the sought for functions are solved, followed by the inverse Laplacian transformation. The solution for the layer $0 \leq z \leq H$ has the form:

$$\begin{aligned}
 T_1 &= T_1|_{x=0} + \Delta T_1; \quad q_1 = q_1|_{x=0} + \Delta q_1; \\
 T_1|_{x=0} &= \frac{c_p \Delta T'_0 + L \Delta q'_0}{c_p + L \mu'} \frac{1}{\sqrt{\pi}} \int_0^h \frac{R(\sqrt{t})}{\sqrt{l_1 + l_2 - t}} dt; \quad Q_1|_{x=0} = \mu' T_1|_{x=0}; \\
 \Delta T_1 &= \frac{L(\mu' \Delta T'_0 - \Delta q'_0)}{c_p + L \mu'} \xi^{1-m} [R(\sqrt{l_1}) - R(\sqrt{l_1 + l_2})]; \quad \Delta q_1 = -\frac{c_p \Delta T_1}{L}; \\
 T'_1 &= \Delta T'_0 [1 - \xi^{1-m} R(\sqrt{l_1})]; \quad q'_1 = \Delta q'_0 [1 - \xi^{1-m} R(\sqrt{l_1})]. \quad (19)
 \end{aligned}$$

where

$$\begin{aligned}
 R(y) &= e^{y^2} \operatorname{erfc} y; \quad \xi = \frac{x}{H}; \\
 m &= \frac{H}{1-m} \sqrt{\frac{u_2}{k_2}}; \quad l_1 = \frac{x'}{u_2}; \\
 l_2 &= \frac{x}{u_2}.
 \end{aligned}$$

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and the function

$$\frac{1}{\sqrt{\pi}} \int_0^h \frac{R(\sqrt{t})}{\sqrt{l_1 + l_2 - t}} dt$$

is tabulated. Calculations, made for the model described earlier, showed that river fogs could also develop when the atmospheric layer near the underlying surface was calm. It was also found that for a given water-air temperature contrast, and with other conditions being equal, a rise in the water-surface temperature had a tendency to reduce fog intensity. Fogs are most intense and of longest duration when the water temperature is 0° . Orig. art. has: 5 figures, 2 tables, and 19 formulas.

[WA-50; CBE No. 37][ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 600

Card 18/18

ACC NR: AT8023419

SOURCE CODE: UR/3269/68/000/017/0032/0037

AUTHOR: Chernov, I. M.

ORG: none

TITLE: Some patterns of the atmospheric processes over Siberia and their utilization in predicting the occurrence of ice on the Lower Yenisey

SOURCE: Gidrometeorologicheskii nauchno-issledovatel'skiy tsentr SSSR. Trudy, no. 17, 1968. Raschety i prognozy stoka i ledovoykh yavleniy na rekakh i vodokhranilishchakh (Calculation and prediction of runoff and ice phenomena in rivers and reservoirs), 32-37

TOPIC TAGS: climatology, Arctic climatology, river ice, hydrology, ice forecasting, river transportation, atmospheric circulation

ABSTRACT: Results are presented of a study of the relationship of the geographic positions of upper-level troughs over Siberia for the 1939 through 1965 period to the time when the rivers of the Yenisey basin freeze over. Basic to the study was an analysis of the thermobaric field and determination on the 500-mb level of the positions of the upper-level troughs relative to the Syktyvkar, Podkamennaya Tunguska, and Yakutsk weather stations. Three principal positions were identified: central eastern, and western; a fourth position was an upper-level ridge over the

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UDC: 551.509.323:551.326.032

ACC NR: AT8023419

Yenisey basin. The central and eastern positions resulted in cold air mass advection, and the western trough and the ridge positions, in warm air mass advection. The frequencies with which these situations occurred in August, September, and October for the twenty-seven year period are summarized in the following table. The characteristics of the atmospheric

Table 1. Frequency of synoptic situations on the 500-mb surface over central Siberia for 1939-1965

Situation	Aug.		Sept.		Oct.	
	abs.	%	abs.	%	abs.	%
Central	70	17	45	31	32	22
Eastern	24	29	25	30	39	50
Western	24	36	22	35	17	27
Ridge	27	21	20	42	41	35

processes causing the freezing of the Lower Yenisey River (mouth of the Angara River to Yenisey Bay), generally on 20 September, were identified by the following criteria: 1) normal autumnal deviation from normal mean continental air temperature for October at Turukhansk, $> 0.9^{\circ}$, and ice

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ACC NR: AT8023419

developing on the Lower Yenisey within \pm 3 days of the normal; 2) season with abnormally low temperatures--anomalies for October at Turukhansk, -1° or lower and ice developing 4 or more days earlier than normally; 3) season with abnormally high temperatures--deviation from mean monthly norm of 1° or more and ice developing 4 or more days later than normally. The results of predictions made using these criteria were compared with actual data for the autumn of 1966 with favorable results. Orig. art. has: 3 figures and 4 tables. [WA-50; CBE No. 37] [ER]

SUB CODE: 04, 08/ SUBM DATE: none/ ORIG REF: 004

Card 3/3

ACC NR: AP8029572 SOURCE CODE: CZ/0093/68/012/004/0361/0366

AUTHOR: Danes, L.; Kruml, J.; Mandel, L.; Kamarytova, V.

ORG: Military Institute of Hygiene, Epidemiology, and Microbiology, Prague; Department of Immunology, Institute of Microbiology Czechoslovak Academy of Sciences, Prague; Gnotobiological Laboratory, Czechoslovak Academy of Sciences, Novy Hradek nad Metuji, Czechoslovakia

TITLE: Experimental inhalation infection of germ-free pigs with vaccinia virus

SOURCE: Acta virologica, v. 12, no. 4, 1968, 361-366 and appropriate insert following p. 384

TOPIC TAGS: vaccinia virus, smallpox vaccine, experimental medicine, gnotobiology

ABSTRACT: This article appears in Biological Factors

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ACC NR

AM8013633

EDITOR: Durov, A. G.

ORG: none

TITLE: Atlas of Leningrad Oblast'

SOURCE: Moscow. Glavnoye upravleniye geodezii i. kartografii pri Sovete Ministrov SSSR, 1967. 82 p.

TOPIC TAGS: cartography, physical geography, economic geography, political geography, administrative geography, climatology, soil science, atlas

ABSTRACT: The *Atlas of Leningrad Oblast'* is intended for teachers, regional surveyors, and students of high schools and institutes. It may also be useful in the work of various Party, advisory, planning, and economic organizations. This composite cartographic work correlates factual material with a study of the environment, population, economics, culture, and history of the oblast.' It contains 125 multicolored maps and charts (range of scales from 1:600,000 to 1:35,000,000) supplemented with explanatory texts. The maps depict the economic and cultural successes and development of Leningrad Oblast' during the 50 years of Soviet

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ACC NR:

AM8013633

power, with significant space being allotted to the history of the oblast', especially during the Revolution. The *Atlas* was compiled at the initiative of the Scientific Research Geographic-Economics Institute (NIGEI) of Leningrad State University im. A. A. Zhdanov (LGU) and the Pedagogic Institute im. A. I. Gertsen, assisted by the Leningrad Regional Committee of the CPSU, the Regional Executive Committee, the Geographical Society of the Soviet Union, and the Main Administration of Geodesy and Cartography of the Council of Ministers USSR. The compilation was carried out by the NIGEI and Plant No. 5. Other organizations involved in the compilation include: the Department of Geography of LGU, the Geographical Society of the Soviet Union, the Department of Geography of the Pedagogic Institute im. A. I. Gertsen, the Botanical Institute of the Academy of Sciences USSR, the Central Museum of Soil Science im. V. V. Dokuchayev, the Main Geophysical Observatory, the Leningrad Oblast' Planning Commission the Oblast; and City Bureau of Statistics, and the Northwestern Territorial and the Fifth Geological Administrations of the Ministry of Geology USSR. The individual cartographers responsible for specific maps are listed at the end of the introduction. [WA-50; CBE No. 37] [FB]

SUB CODE: 08/ SUBM DATE: 25Oct67

Card

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ACC NR:

AP8025412

SOURCE CODE: HU/0033/68/000/003/0157/0165

AUTHOR: Gotz, G.

ORG: none

TITLE: Hydrodynamic interaction between large convective systems and the tropospheric jet-stream zone

SOURCE: Idojaras, no. 3, 1968, 157-165

TOPIC TAGS: atmospheric wind field, atmospheric convection, troposphere, jet stream, atmospheric turbulence, wind shear, hydrodynamic equation, weather forecasting

ABSTRACT: Contributions made by several authorities to the study of the association of severe storm winds, including jet streams, with large convective systems are summarized and analyzed. A new type of hydrodynamic interrelationship between the wind field and convective cloud systems is presented. The author bases his work on known facts concerning the adaptability of one of the types of intensive convective systems to the presence of a jet stream in an upper-level zone. In this case, a Bernulli-type suction effect is produced which is caused by the difference between the horizontal velocities in the cloud atmosphere and those in the

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ACC NR: AP8025412

atmospheric layer above. Analysis of the vertical hydrodynamic accelerations ~~makes~~ it possible to obtain a qualitative explanation of several of the aspects of chaotic convective systems which up to the present time have been known only in quantitative form. An extensive review of the paper in English follows the original paper. Orig. art. has: 2 figures and 12 formulas. [WA-50; CBE No. 37] [ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 001/ OTH REF: 014

Card 2/2

ACC NR: AT8019141 SOURCE CODE: UR/3116/68/274/000/0123/0131

AUTHOR: Kovrova, A. M.

ORG: none

TITLE: Investigation of turbulent exchange in the Arctic

SOURCE: Leningrad. Arkticheskiy i antarkticheskiy nauchno-issledovatel'skiy institut. Trudy, v. 274, 1968. Meteorologicheskiye usloviya v Arktike v period MGSS (Meteorological conditions in the Arctic during the IQSY period), 123-131

TOPIC TAGS: atmospheric turbulence, turbulent exchange, aircraft buffeting, gustiness, gust load, Arctic atmospheric turbulence

ABSTRACT: New measurements are reported of gust loads experienced by an IL-14M aircraft during August-September 1964 in the central Soviet Arctic area during the occlusion of a cyclone with a diffuse front. The measurements were made with a MP-66 potentiometer and were registered with a K6-51 optical recorder. Mean values of the overloads were determined by the Kovrova method (*Problemy Arktiki i Antarktiki*, no. 21, 1965), the only difference being that accelerometer ordinates were used instead of discontinuity points. Characteristics of turbulent exchange

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File: 551.5(98)

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ACC NR: AT8019141

determined included the coefficient of turbulence at various altitudes irrespective of whether or not clouds were present, in clouds (including fogs), and in clear skies; other measurements included determination of the dimensions of turbulent formations and updraft velocities. Calculations were made of the dependence of vertical wind gusts and aircraft accelerations on gust frequency. It was found that in clouds the coefficient of turbulence was considerably higher than in clear skies. The highest value ($K = 104 \text{ m}^2/\text{sec}$) obtained from mean data was attained at $h = 100 \text{ m}$ during a flight in fog. This contrasts with information reported by M. A. German (*Trudy Leningrad Gidrometeorol. Inst.*, no. 4, 1963) in the summer of 1957 which indicated light turbulence in the Arctic fogs (maximum overload frequency at $\bar{\Delta}n = 0.05 \text{ g}$; turbulence coefficient, $14 \text{ m}^2/\text{sec}$). Accelerographic readings made in 1963—1964 in fog at $h = 100\text{--}200 \text{ m}$ showed moderate bumping, in single events, of $\frac{+0.438}{-0.34}$ and a coefficient of turbulence $K = 74 \text{ m}^2/\text{sec}$, while in clear skies, $K = 46 \text{ m}^2/\text{sec}$. The great difference between the 1957 data and the 1963 to 1964 data is attributed to the fact that the 1957 fog was of intramass variety and the latter was of frontal variety. In general, turbulent exchange is highly developed in the clouds over the Arctic, and is 1.5—2 times greater than in cloudless skies, and generally increases sharply above St and Sc clouds. Turbulence characteristics determined on single flights are evaluated as adequately reflecting the distribution

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ACC NR: AT8019141

of turbulence with height in the Arctic for typical synoptic conditions. Orig. art. has: 4 figures, 6 tables, and 4 formulas.

[WA-50; CBE No. 37][ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 004

Card 3/3

ACC NR: AT8025217

SOURCE CODE: UR/2667/68/000/052/0093/0097

AUTHOR: Perzhina, R. A.

ORG: none

TITLE: Some features of the vertical variability of wind speed in the atmospheric boundary layer

SOURCE: Moscow. Nauchno-issledovatel'skiy institut aeroklimatologii. Trudy, no. 52, 1968, Voprosy klimatologii (Problems of climatology), 93-97

TOPIC TAGS: atmospheric boundary layer, atmospheric wind field, wind speed

ABSTRACT: Rawinsonde data, collected at the Kiev, Leningrad, L'vov, Minsk, Moscow, and Riga aerological stations from 1959 through 1963, are the basic data used in an empirical analysis of some of the characteristics of the vertical variability of wind speed in the atmospheric boundary layer. The mean and mean square deviations in wind speed were calculated for vane height (10-15 m) and for $h = 0.1, 0.2,$ and 0.5 km above the ground and $h = 1.0, 1.5, 2.0,$ and 3.0 km above sea level.

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UDC: 551.554

ACC NR: AT8025217

Interpolation equations are presented which can be used to make approximate calculations of mean wind-speed profiles and to determine their variability in the boundary layer when the mean wind speed at vane height is in excess of 3-4 m/sec. Orig. art. has: 3 figures and 6 formulas. [WA-50; CBE No. 37] [ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 004

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ACC NR: AP8026738

projects in areas where conventional (coal, gas, etc.) power sources are unavailable or expensive. Orig. art. has: 1 figure.

[WA-50; CBE No. 37] [ER]

SUB CODE: 04/ SUBM DATE: none

Card 3/3

ACC NR: AT8025214

SOURCE CODE: UR/2667/68/000/052/0003/001

AUTHOR: Sapozhnikova, S. A. (Doctor of geographical sciences)

ORG: none

TITLE: Characteristics of the weather of days according to local solar time on the basis of the observations made in a synoptic period

SOURCE: Moscow. Nauchno-issledovatel'skiy institut aeroklimatologii. Trudy, no. 52, 1968. Voprosy klimatologii (Problems of climatology), 3-17

TOPIC TAGS: weather forecasting, wind field forecasting, atmospheric humidity, cloudiness, atmospheric temperature, forecasting period, time zone

ABSTRACT: Results are presented of an analysis of the effects of the differences in weather observation periods used at the various network weather stations of the USSR (2400, 0300, 0600, 0900, 1200, 1500, 1800, and 2100 hr Moscow decreed time since 1966; 0100, 0700, 1300, and 1900 hr local solar time formerly used during climatological observation periods) on the calculation of such characteristics of daytime and nighttime weather conditions as cloudiness, atmospheric temperature and

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UDC: 551.5,551/.509

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ACC NR: AT8025214

relative humidity, and wind speed. Corrections, particularly for wind speed, are found to be—as expected—very dependent on the diurnal amplitudes of the various elements and on the length of periods of darkness and daylight. Calculations of data obtained at weather stations which, because hourly observations are not made, cannot be made directly, can be improved markedly by making the appropriate calculations for time corrections at the individual stations. Appendices accompanying the paper list the diurnal amplitudes of wind speeds at 50 weather stations which are representative for all time zones and latitudes in the USSR, the corrections applied for mean nighttime and daytime wind speeds for differences in observation periods, and the corrections for these nighttime and daytime wind speeds as functions of diurnal wind-speed amplitudes for the two observation periods. Orig. art. has: 2 figures and 9 tables.

[WA-50; CBE No. 37] [ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 006

Card 2/2

ACC NR: AT8025218 SOURCE CODE: UR/2667/68/000/052/0098/0119

AUTHOR: Sklyarov, V. M.

ORG: none

TITLE: Diurnal variation of wind speed in the atmospheric planetary boundary layer

SOURCE: Moscow. Nauchno-issledovatel'skiy institut aeroklimatologii. Trudy, no. 52, 1968. Voprosy klimatologii (Problems of climatology), 98-119

TOPIC TAGS: atmospheric wind field, atmospheric boundary layer, boundary layer wind, atmospheric turbulence

ABSTRACT: A method is proposed whereby diurnal variations in boundary layer wind speeds can be determined by combining rawinsonde measurements made at 6-hr intervals in a 24-hr period with those made with pilot balloons in periods intermediate within these main intervals. In this method the results obtained from the pilot balloon measurements are reduced to the rawinsonde data, using a method involving the differences in long-term values of the mean diurnal wind speeds. The procedure involves the individual computation of the long-term mean diurnal wind

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UDC: 551.553
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ACC NR: AT8025218

speeds at fixed height from speeds obtained in four equally spaced rawinsonde ascents (\bar{v}_{ra}) and for four other identically spaced periods in which pilot balloon observations (\bar{v}_{pb}) are made. The difference between these two values is the error of the pilot balloon observations relative to the rawinsonde measurements (with the opposite sign). If it is assumed that the difference $\Delta\bar{v}$ is stable for all of the observation periods, the mean wind speed for a given period obtained from long-term pilot balloon observations can be reduced to the value \bar{v}_{red} of an adequately "mean rawinsonde measurement" for the same period, i.e.

$$\bar{v}_{red} = \bar{v}_{pil. bal.} + \Delta\bar{v} .$$

This procedure was tested on a 5-yr series (1959—1963) of aerological observations made at Kharkov in which the ascents were made at 3-hr intervals. The variations in wind speeds at vane height and at the 300-, 600-, 850-, and 1350-m heights are tabulated by the method of observation and by seasons, months, and hours, the latter by season and by vane level and $h = 100, 200, 300, 600, 850, 1350, \text{ and } 1850 \text{ m}$. Most of the results obtained in the study were found to agree in general with

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ACC NR: AT8025218

those obtained by conventional procedures. Some rather unexpected results, however, requiring further study, included the following: 1) the atmospheric layer in which the wind speed changes and turbulent exchange were most evident was highest during the spring months rather than during the summer, and 2) the wind speeds did not always increase with height. Orig. art. has: 10 figures, 8 tables, and 5 formulas.

[WA-50; CBE No. 37][ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 028

Card 3/3

ACC NR: AP8031136

SOURCE CODE: UR/0248/68/000/009/0003/0010

AUTHOR: 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: Basic trends in prevention of influenza and other respiratory viral infections

SOURCE: AMN SSSR. Vestnik, no. 9, 1968, 3-10

TOPIC TAGS: communicable disease, virus disease, vaccine, influenza

ABSTRACT: This article appears in Biological Factors

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UDC: 616.921.5+616.2-022.6]-084

ACC NR: AMS013634

EDITOR: Sochava, V. B.

ORG: none

TITLE: Atlas of Transbaikalia, The Buryat Autonomous Republic, and Chitin Oblast

SOURCE: Moscow. Glavnoye upravleniye geodezii kartografii pri Sovete Ministrov SSSR, 1967. 176 p.

TOPIC TAGS: cartography, Central Asian atlas, geographic atlas

ABSTRACT: The *Atlas of Transbaikalia* was published in accordance with a decision of the Presidium of the Siberian Department, Academy of Sciences USSR. It is a cartographic correlation of modern knowledge of the environment, economy, and climate of Transbaikalia. The sections of the *Atlas* may be divided into the following three groups: (1) sections devoted to environmental factors, such as regional air temperatures, wind circulation, etc.; (2) maps dealing with population, culture, medical-geographical analyses of the territory, and public health; and (3) maps depicting regional industry and agriculture. There is also a section dealing with the environment of Baikal. Since this book is intended mainly as a cartographic study, there are no textual discussions of the areas studied;

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ACC NR: AM8013634

however, at the end of the *Atlas* there are explanatory texts relating to the maps themselves. The plan and the list of maps for the *Atlas* (scales ranging from 1:2,000,000 to 1:40,000,000) were prepared by the Institute of Geography of Siberia and the Far East at sessions in Ulan-Ude and in Chitin, with republic and oblast active members participating. The following institutes of the Buryat ASSR and of Chitin Oblast contributed significantly to the *Atlas*: the Buryat Branch of the Siberian Department of the Academy of Sciences USSR, the Chitin Laboratory of the Institute of Geography of Siberia and the Far East, the Buryat and Chitin Geological Administration, and the Chitin Hydrometeorological Observatory. The coworkers of the Institute of the Earth's Crust, Siberian Department of the Academy of Sciences USSR in Irkutsk contributed significantly to the maps in the section entitled "Surface and Resources." The Limnological Institute of the Academy of Sciences USSR in the settlement of Listvyank in the Baikal area participated in the compilation of the thematic maps of Baikal. Most of the over-all work was done by the staff of Factory No. 4 of the Main Administration of Geodesy and Cartography of the Council of Ministers USSR. The individual authors and editors of the maps are listed with each map, or in the final explanations. [WA-50; CBE No. 37] [FB]

SUB CODE: 08/ SUBM DATE: 17Jul67

Card

2/2

ACC NR: AT8025216

SOURCE CODE: UR/2667/68/000/052/0071/0092

AUTHOR: Solokha, T. F.

ORG: none

TITLE: Approximate calculation of wind speed in the 100-m atmospheric surface boundary layer for the central regions of European USSR

SOURCE: Moscow. Nauchno-issledovatel'skiy institut aeroklimatologii. Trudy, no. 52, 1968. Voprosy klimatologii (Problems of climatology), 71-92

TOPIC TAGS: atmospheric boundary layer, wind field, wind gradient, wind speed

ABSTRACT: An approximate calculation procedure is described for the determination and characterization of the changes in wind speed with height in the lower 100-m layer of the atmosphere over the forest and forest-steppe (southeast of the Oka River) terrains of central European USSR. These variations are determined by comparing wind speeds measured at vane-heights with those measured at $h = 100$ m from radiosondes and pilot balloons (77 weather stations, 7 pilot balloon launch sites, and 18 radiosonde stations). Since station characteristics varied widely,

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UDC: 551.552

ACC NR: AT8025216

the stations were grouped by such characteristics as type of terrain (forest or forest-steppe), openness (visual range, degree of shelter), type of relief, proximity to water body and type of shoreline, and nearness to populated areas. The mean annual wind speed and the diurnal amplitude of the speed in July were taken into account in the station grouping process. The results of the study are presented in the form of graphs, tables, and extensive appendices which show in detail the monthly, daily mean, daytime, and nighttime relationships of wind speeds to 20 types of weather station positions. Orig. art. has: 4 figures, 10 tables, and 4 formulas. [WA-50; CBE No. 37][ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 013/ OTH REF: 003

ACC NR: AP8027122

SOURCE CODE: UR/0240/68/000/008/0006/0009

AUTHOR: Tsapko, V. V. (Candidate of medical sciences); Kupyrov, V. N.

ORG: Kiev Scientific Research Institute of General and Communal Hygiene (Kiyevskiy nauchno-issledovatel'skiy institut obshchey i kommunal'noy gigiyeny)

TITLE: Contamination of soil and ground waters with toxic chemicals

SOURCE: Gigiyena i sanitariya, no. 8, 1968, 6-9

TOPIC TAGS: insecticide, herbicide, organic nitro compound, chlorinated aromatic compound, water pollution, underground water

ABSTRACT: The contamination of soil and ground waters with insecticides (hexachloran and heptachlor) and a herbicide (a mixture of isomeric nitrotoluenes containing o-nitrotoluene 28.6, m-nitrotoluene 29.6, p-nitrotoluene 40.0, and impurities 1.8%) was studied under laboratory conditions in glass tubes (110 mm in diameter and 900-1000 mm high) filled with soil and watered regularly with distilled water. Controls without the application of the toxic chemicals were treated in the same way. Samples of water filtered through the soil and soil samples were analyzed by paper chromatography and organoleptic method to determine the

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UDC: 614.771+614.778]:615.778

ACC NR: AP8027122

content of the insecticides and herbicide. The concentration of nitrates and the oxidizability of the waters were also determined. The experiments with the insecticides were conducted for 18 months and that with the herbicide for 5 months. Data on the concentration of nitrates and on the oxidizability are shown in Figures 1 and 2. The insecticides

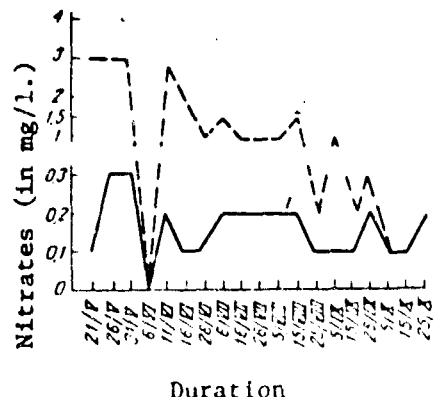
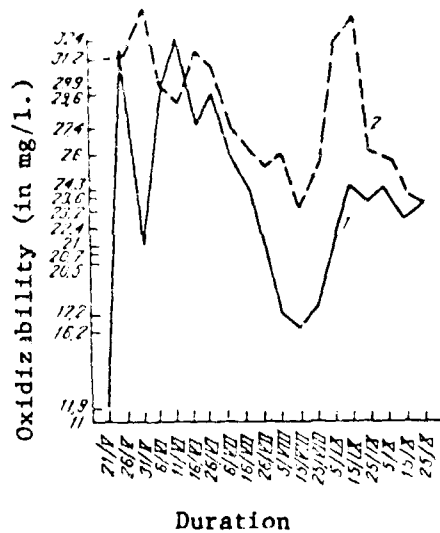


Fig. 1. Content of nitrates in water filtered through soil layer in glass column with the application of herbicide, nitrotoluene.

1 - Experiment; 2 - control

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ACC NR: AP8027122



ACC NR: AP8026083

SOURCE CODE: UR/0050/68/000/007/0003/0018

AUTHOR: Vager, B. G.; Zilitinkevich, S. S. (Candidate of physico-mathematical sciences)

ORG: Institute of Oceanology, AN SSSR (Institut okeanologii AN SSSR)

TITLE: Theoretical model of diurnal variations of meteorological fields

SOURCE: Meteorologiya i gidrologiya, no. 7, 1968, 3-18

TOPIC TAGS: atmospheric turbulence, weather forecasting, atmospheric model, atmospheric boundary layer

ABSTRACT: A theoretical model of the Ekman nonstationary turbulent boundary layer is proposed. A problem of diurnal variations of meteorological fields is formulated on the basis of this model. One of the basic goals of this investigation is the examination of the problem of diurnal variations in such a way as to include the coefficient of turbulent exchange as a function of such unknown variables as the horizontal components of wind speed, the potential temperature, coefficient of turbulent exchange and turbulent energy, nature of turbulent mixing, and rate of turbulent energy dissipation into heat. Taking into account all difficulties connected with this approach, the problem had to be simplified in

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UDC: 551.510.522

ACC NR: AP8026083

other respects, and such processes as the heat-exchange on the underlying surface and in the ground were ignored, as were the radiation heat exchange in the atmosphere, moisture exchange, and evaporation processes. Diurnal variations of temperature at the bottom of the boundary layer are considered to be sinusoidal. There is, in general, a qualitative correlation between theoretical calculations and experimental data. Violations of the universal laws of diurnal variations in drag and heat exchange, caused by nonstationary processes, are considered to be relatively insignificant, and therefore could be ignored in rough calculations. Orig art. has: 8 figures and 27 formulas. [WA-50; CBE No. 37][ER]

SUB CODE: 04/ SUBM DATE: 01Feb68/ ORIG REF: 014/ OTH REF: 005

Card 2/2

ACC NR: AP8025413

SOURCE CODE: HU/0033/68/000/003/0166/0174

AUTHOR: Ventura, E.

ORG: none

TITLE: Characteristics of the temperature inversions over Budapest

SOURCE: Idojaras, no. 3, 1966-174

TOPIC TAGS: atmospheric boundary layer, temperature inversion

ABSTRACT: An analysis is made of data obtained by radiosondes lofted over Budapest from the Budapest Aerological Observatory between 1960 and 1964, to determine the characteristics of temperature inversions over the area. These data indicated the presence in the winter of a maximum in the inversions in the surface three-kilometer layer; only short-term radiation inversions occurred during the summer. Ground-level inversions occurred with identical frequency during both the winter and summer. The fact that wintertime inversions do not exceed those occurring in the summer is due to the intrusion into the Carpathian basin during the winter of cold air masses which inhibit the formation of inversions. The largest lapse rates occur in the ground-level inversions, generally in the 100-500-m inversion layers. Two subtypes of inversions occurring in the cold air

Card 1/2

ACC NR: AP8025413

masses in the Carpathian basin are described. [Translation of author's abstract]. Orig. art. has: 7 figures and 3 tables.

[WA-50; CBE No. 37][ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 003/ OTH REF: 002

Card 2/2

ACC NR: AP8031316

SOURCE CODE: UR/0451/68/000/005/0026/0029

AUTHOR: Visnaryy, L. Yu.

ORG: Tartu University (Tartuskiy universitet)

TITLE: Apparatus for producing aerosols

SOURCE: Meditsinskaya tekhnika, no. 5, 1968, 26-29

TOPIC TAGS: aerosol, medical equipment

ABSTRACT: Apparatus for producing aerosols from phytoncides and other easily vaporizing substances used in medical practice is described. The apparatus is shown in Figure 1. The capacity of an experimental model 140 mm in diameter and 650 mm in length using water for aerosol production was almost 10^{-3} kg/sec⁻¹ when the temperature of the water and air was 18°C. It was shown that by changing the water temperature, aerosols of the desired temperature could be produced, and that when the water

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UDC: 615.451.35.014.24

ACC NR: AP8031316

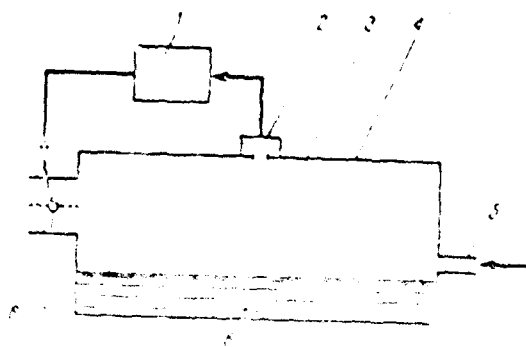


Figure 1. Principal scheme of the apparatus for providing aerosols.

1 - Regulating apparatus; 2 - pressure controller; 3 - free chamber volume; 4 - chamber; 5 - inflow connecting pipe; 6 - liquid; 7 - outlet connecting pipe; 8 - shut-off mechanism.

temperature was increased, more aerosol was produced. Orig. int. list 2 figures and 11 equations. [GA-50; CHE 50. 37] 1968

SUB CODE: 06/ SUBM DATE: 29Jan68/ ORIG REF: 004

Card 2/2

- 336 -

ACC NR: AP8026526

SOURCE CODE: UR/9055/68/000/007/0022/0023

AUTHOR: Vorobeychik, A. (Research associate); Sosnin, F. (Senior hydrogeologist, Member of Alma-Atinskaya Hydrological Party)

ORG: [Vorobeychik] Institute of Hydrogeology and Hydrophysics, AN Kazakh SSR (Institut gidrogeologii i gidrofiziki AN Kazakhskoy SSR)

TITLE: Large-capacity lysimeters

SOURCE: Sel'skoye khozyaystvo Kazakhstana, no. 7, 1968, 22-23

TOPIC TAGS: hydrology, soil science, soil evaporation, irrigation

ABSTRACT: Two types of lysimeter installations set out in the deserts of the lower Ili River area near Lake Balkash in Kazakhstan form a distinctive pattern in the desert landscape. The measurements of evaporation, transpiration, and water percolation are being carried out by the Institute of Hydrogeology and Geophysics and the Alma-Atinskaya Hydrogeological Party, as a preliminary study to future irrigation and farming in the area. Two types of lysimeters are used. The first is 1 m square, and the other is round, 1 m in diameter and 0.785m² in area. Each lysimeter consists of two parts, an upper casing section and a lower pan section. Three of the lysimeters are made of 4-mm sheet steel and the

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ACC NR: AP8026526



FIG. 1

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ACC NR:

AP8026526

casing is 1.3 high; the pan is made of the same material and is 0.4 m deep. The other lysimeters are made of drain pipe with 10-mm thick walls; their heights vary as follows: 1.25, 1.75, 2.25, and 3.35 m. The pans are 0.25 m deep. The test areas are located in unsalinized and salinized sands of eolian origin. Orig. art. has: 1 figure.

[WA-50; CBE No. 37] [ER]

SUB CODE: 08/ SUBM DATE: none

Card

3/3

ACC NR:

AT8020761

SOURCE CODE: UR/2531/58/000/229/0004/0006

AUTHOR: Yefimova, N. A.

ORG: none

TITLE: Field investigations of the meteorological regime of vegetation

SOURCE: Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy, no. 229, 1968. Vliyaniye meteorologicheskikh faktorov na fotosintez i teplovoy rezhim rastitel'nogo pokrova (Effect of meteorological factors on photosynthesis and thermal conditions of vegetation), 4-6

TOPIC TAGS: atmospheric radiation, atmospheric humidity, micrometeorology, photosynthesis, atmospheric temperature, wind field

ABSTRACT: A brief description is presented of the instruments and general procedures used in a series of field tests carried out in a winter wheat field near Gatchinsk and a winter rye field near Belogorka to measure meteorological elements affecting photosynthesis in these crops. Meteorological elements measured included the following: atmospheric temperatures and humidities measured with aspiration psychrometers set horizontally at four levels (two within the plant foliage and two above it) in the 1965 experiments and at six levels (four within and

Card

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UDC: 551.58:551.586

- 338 -

two above the foliage) in 1966; wind speeds registered with contact anemometers at $h = 0.25, 0.50, 1.00, 2.00, \text{ and } 4.00 \text{ m}$; soil surface temperatures measured with 16-junction AFI "thermospiders," and elbow thermometers at depths of 5, 10, 15, and 20 cm; leaf and stalk temperatures measured with "thermospiders," and the temperature of the vegetation as a whole with radiometers having germanium filters; direct, scattered, and reflected shortwave radiation and radiation balance were measured at $h = 1 \text{ m}$ above the grassland by standard methods; and total radiation, radiation balance and photosynthetically active radiation within the grassland—with optical-acoustical gas analyzers. Field investigations also were made of the following instruments: the AFI heat balance meter; several sensors and remote-control recorders for measuring temperature and humidity gradients, wind speeds, wind-speed fluctuations; and the Kozyrev photopyranometer. [WA-50; CBE No. 37] [ER]

SUB CODE: 04/ SURM DATE: none/ ORIG REF: 002

Card

2/2

ACC NR:

AT8019140

SOURCE CODE: UR/3116/68/274/000/0110/0118

AUTHOR: Zav'yalova, I. N.; Sergeyeva, G. G.

ORG: none

TITLE: Variability of the wind over the western regions of the Arctic during the IQSY period

SOURCE: Leningrad. Arkticheskiy i antarkticheskiy nauchno-issledovatel'skiy institut. Trudy, v. 274, 1968. Meteorologicheskiye usloviya v Arktike v period MGSS (Meteorological conditions in the Arctic during the IQSY period), 110-118

TOPIC TAGS: atmospheric wind field, western Arctic wind field, atmospheric circulation, wind field structure, wind direction, wind speed

ABSTRACT: An analysis is made of the time-wise variability of the winds over the western [Soviet] regions of the Arctic during the IQSY period (1964). The data used in the study were obtained from temperature and wind soundings from the Kheys and Dickson Island stations, and on Cape Chelyuskin. The calculations made included determinations of the mean monthly values of the absolute interdiurnal variability of the wind directions and speeds, carried out for the most part with a Ural-2

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UDC: 551.5(98)

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ACC NR: AT8019140

computer. Upper-air observations were made with a "Malakhit" radio-theodolite and, as such, are not high-precision data. The results, compared with data obtained during the IGY, indicate that there was no noticeable difference in wind-direction changes between the two periods and that the principal differences in wind-speed variations were in variability of magnitudes, i.e., greater during the IQSY than during the IGY. Orig. art. has: 4 figures and 1 table. [WA-50; CBE No. 37][ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 007

Card 2/2

IV. GENERAL

ACC NR: AP8029059

SOURCE CODE: UR/0450/68/002/008/0054/0058

AUTHOR: Kaminskaya, L. I.; Viraik, A. D.; Bylinkina, Ye. S.; Fapchinskiy, V. N.; Rogovin, Z. A.

ORG: Moscow Textile Institute (Moskovskiy tekstil'nyy institut)

TITLE: The use of glued nonwoven materials for sterilization of air

SOURCE: Khimiko-farmatsevticheskiy zhurnal, v. 2, no. 8, 1968, 54-58

TOPIC TAGS: antiblastic fiber, air purification equipment

ABSTRACT: Glued, nonwoven, antiblastic filter material made of antimicrobial viscose was more effective in trapping bacterial particles and had less aerodynamic resistance than a mass of the fiber randomly arranged. The best filtration material for air sterilization is designated VNFM, an acronym for high bulk nonwoven filter material, consisting of viscose alone (VNFM-1), 80% viscose, and 20% caprone with a fiber diameter of 29.4 μ (VNFM-2), or a mixture of 80% viscose and 20% lavsan (daeron) with a fiber diameter of 23.3 μ (VNFM-3). The effectiveness of filtration was estimated by the coefficient of passage of bacterial particles (K_{np}).

which is calculated by equation 1 $K_{np} = \frac{C_N \cdot 100}{C_{N_0}}$ %, where C_{N_0} is the

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UDC: 614.712-084.484:615.468.21

ACC NR: AP8029059

concentration of bacterial aerosol in front of the filter (number of cells/liters of air); and C_N is the concentration of bacterial aerosol in back of the filter (number of cells/liters of air). Tests of efficiency of air filtration were conducted at a filtration rate of 0.25-0.27 m/sec, which is close to optimum. The coefficient of passage of the bacterial particles through VNFM hardly changed as relative humidity was increased from 66.5-100%, or when material was compressed 10-20%. VNFM-2 is recommended for sterilization of air in antibiotic production facilities. The number of layers of VNFM-2 necessary to trap all bacterial particles is 7 with an air flow less than 0.15 m/sec, or 2 with an air flow greater than 4 m/sec. VNFM-2 has undergone industrial tests in plants where preliminary purification of air is accomplished with fiberglass filters. Large-scale tests showed that the necessary sterility of air was insured for not less than 10 months. Orig. art. has: 1 figure and 3 equations.

[WA-50; CBE No. 37] [JS]

SUB CODE: 06/ SUBM DATE: 14Feb68/ ORIG REF: 007/ OTH REF: 002

Card 2/2

ACC NR: AP8029714

SOURCE CODE: UR/0433/68/000/008/0059/0059

AUTHOR: none

ORG: none

TITLE: A new plant protection institute

SOURCE: Zashchita rasteniy, no. 8, 1968, 59

TOPIC TAGS: agriculture institute, agriculture science

ABSTRACT: The new Zonal Plant Protection Institute of southwestern regions of the USSR (121 Shchusev Street, Kishenev) is organized on the basis of the Moldavian Branch of the All-Union Plant Protection Institute. The new institute has eight laboratories and a staff of more than 100 scientists and laboratory assistants. The institute has the following laboratories: Laboratory of Entomology (supervisor M. A. Gontarenko); Laboratory of Phytopathology (supervisor V. N. Bogdanova); Biomethods Laboratory (supervisor V. I. Talitskiy); Laboratory of Pesticide Analysis Methods (supervisor V. P. Vaintraub); Immunity Laboratory (supervised by the director of the institute V. A. Shapa); Mechanization Laboratory (supervisor M. A. Listengut); Laboratory of Economics and Organization (supervisor V. A. Cherkassov); and the Laboratory of Indication and Prognoses. [WA-50; CBE No. 37][PS]

SUB CODE: 02/ SUBM DATE: none

Card

1/1

APPENDIX I. SOURCES

Acta virologica (Transactions in virology)

AMN SSSR. Vestnik (Academy of Medical Sciences of the USSR. Herald)

AN AzerbSSR. Doklady (Academy of Sciences of the Azerbaydzhan SSR, Reports)

AN BSSR. Vestsi. Seryya biyalagichnykh navuk (Academy of Sciences of the Belorussian SSR. News. Biological Sciences Series)

AN LatSSR. Izvestiya. Seriya Khimicheskaya (Academy of Sciences of the Latvian SSR. News. Chemistry series)

AN SSSR. Doklady (Academy of Sciences of the USSR. Reports)

AN SSSR. Izvestiya. Seriya khimicheskaya (Academy of Sciences of the USSR. News. Chemistry series)

Antibiotiki (Antibiotics)

Armvanskiy khimicheskiy zhurnal (Armenian Journal of Chemistry)

Biokhimiya (Biochemistry)

Biologicheskiy zhurnal Armenii (Biological Journal of Armenia)

Byulleten' eksperimental'noy biologii i meditsiny (Bulletin of experimental biology and medicine)

Ceskoslovenska epidemiologie, mikrobiologie, imunologie (Czechoslovak epidemiology, microbiology and immunology)

Gidrometeorologicheskiy nauchno-issledovatel'skiy tsentr SSSR. Trudy. Rashchety i prognozy stoka i ledovykh yavleniy na rekakh i vodokhranilishchakh (Hydrometeorological Scientific Research Center of the USSR. Transactions. Calculations and predictions of the flow and glacial phenomena on rivers and reservoirs)

Gigiyena i sanitariya (Hygiene and sanitation)

Idojaras (Weather)

Irkutsk. Gosudarstvennyy protivochumnyy institut Sibiri i Dal'nego Vostoka. Izvestiya (Irkutsk. State Plague Control Institute of Siberia and the Far East. News)

Irkutsk. Nauchno-issledovatel'skiy institut epidemiologii i mikrobiologii. Materialy nauchnoy konferentsii. Irkutsk. (Irkutsk. Scientific-Research Institute of Epidemiology and Mikrobiology. Material of the Scientific Conference. Irkutsk)

Khimiko-farmatsevticheskiy zhurnal (Chemical and Pharmaceutical Journal)

Khimiya geterotsiklicheskiykh soyedineniy (Chemistry of Heterocyclic Compounds)

Khimiya v sel'skom khozyaystve (Chemistry in Agriculture)

Kinetika i kataliz (Kinetics and catalysis)

Leningrad. Arkticheskiy i antarkticheskiy nauchno-issledovatel'skiy institut. Trudy. Meteorologicheskiye usloviya v Arktike v period MGSS (Leningrad. Arctic and Antarctic Scientific Research Institute. Transactions. Meteorological conditions in the Arctic during the IZSY period)

Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy. Vliyaniye meteorologicheskikh faktorov na fotosintez i teplovoy rezhim rastitel'nogo pokrova (Leningrad. Main Geophysical Observatory. Transactions. Influence of Meteorological Factory on photosynthesis, and the heat regime of the plant cover)

Leningrad. Glavnaya geofizicheskaya observatoriya. Trudy. Voprosy atmosfery diffuzii i zagryazeniya vozdukha (Leningrad. Main Geophysical Observatory. Transactions. Problems of atmospheric diffusion and air pollution)

Meditinskaya parazitologiya i parazitarnyye bolezni (Medical parasitology and parasitic diseases)

Meditinskaya tekhnika (Medical Technology)

Meteorologiya i gidrologiya (Meteorology and Hydrology)

Moscow. Glavnoye upravleniye geodezii i kartografii pri Sovete Ministrov SSSR (Moscow. Main Administration of Geodesy and Cartography for the Council of Ministry SSSR)

Moscow. Nauchno-issledovatel'skiy institut aeroklimatologii. Trudy. Voprosy klimatologii (Moscow. Scientific Research Institute of Aeroclimatology. Transactions. Problems of climatology)

Moscow. Vsesoyuznyy institut nauchnoy i tekhnicheskoy informatsii. Meditsinskaya geografiya. Itogi nauki. (Moscow. All-Union Institute of Scientific and Technical Information. Medical geography. Scientific Results)

Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov i osobo chistykh khimicheskikh veshchestv. Metody polucheniya khimicheskikh reaktivov i preparatov (Moscow. All-Union Scientific Research Institute of Chemical Reagents and High Purity Chemicals. Methods of obtaining chemical reagents and preparations)

Omsk. Meditsinskiy institut. Nauchnyye trudy. Gigiena vodovemov, vodosnabzheniya, atmosfernogo vozdukhha i planirovki naselennykh mest (Omsk. Medical Institute. Scientific transactions. Hygiene of reservoirs, water supply, air, and planning of populated places)

Priroda (Nature)

Reaktivnost'; materialy konferentsii. Moscow (Reactivity; Conference material. Moscow)

Sel'skokhozyaystvennaya biologiya (Agricultural biology)

Sel'skoye khozyaystvo kazakhstana (Agriculture of Kazakhstan)

Sovetskaya meditsina (Soviet medicine)

Tsitologiya (Cytology)

Tsitologiya i genetika (Cytology and Genetics)

Ukrainskiy khimicheskii zhurnal (Ukrainian Journal of Chemistry)

Veterinariva (Veterinary medicine)

Voprosy virusologii (Problems of virology)

Vovlenno-meditsinskiy zhurnal (Military medical journal)

Zashchita rasteniy (Plant protection)

Zhurnal mikrobiologii, epidemiologii i immunobiologii (Journal of microbiology, epidemiology and immunology)

Zhurnal obshchey khimii (Journal of general chemistry)

Zhurnal organicheskoy khimii (Journal of organic chemistry)

Zoologicheskii zhurnal (Zoological journal)

APPENDIX II. AUTHORS

- Abdvakhahov, A. A. 1
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