ATD Report 69-92-50-11

CBE FACTORS

Monthly Survey No. 41

ATD Work Assignment No. 50

Aerospace Technology Division
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FOREWORD

This report is the forty-first 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
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- 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: AP9006500 SOURCE CODE: UR/0062/69/000/001/0119/0122

AUTHOR: Alimov, M. P.; 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: Nitrogen derivatives of the methylenamide of O,O-diethylphosphoric acid

SOURCE: AN SSSR. Izv. Ser khim, no. 1, 1969, 119-122

TOPIC TAGS: substituted amide, aliphatic phosphorus compound, aliphatic ester

ABSTRACT: The title compounds characterized in the table;

Table 1. Derivatives of methylenamide of O,O-diethylphosphoric acid

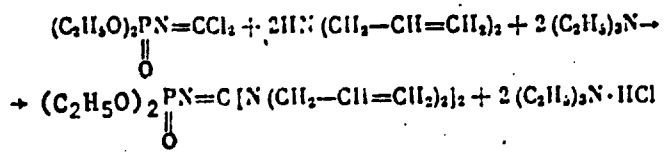
Compd No.	Compound	Bp, °C (mm)	n_D^{20}	d_4^{20}	Yield, %
1	$(C_2H_5O)_2P(O)N{=}C[N(CH_2-CH{=}CH_2)_2]_2$	156–157 (2,5)	1,4999	1,0439	75

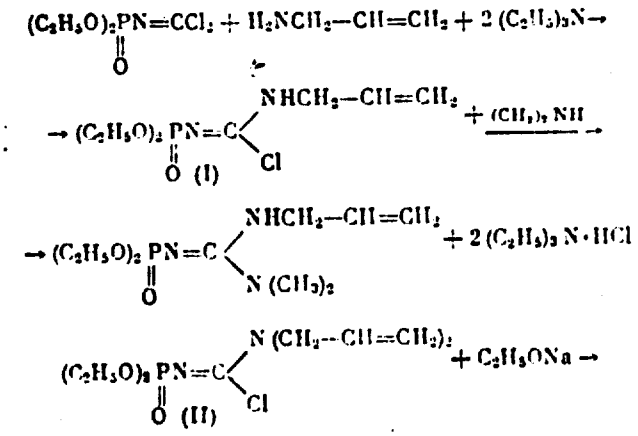
 UDC: 542.91+661.718.1

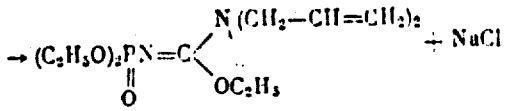
Table 1. (Cont.)

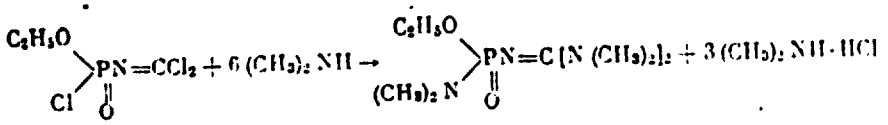
Compd No.	Compound	Bp, °C (mm)	n_D^{20}	d_4^{20}	Yield, %
2	$(C_2H_5O)_2P(O)N{=}C(NH-CH_2-CH{=}CH_2)_2$	161–162 (1,5)	1,4850	1,0950	50
3	$(C_2H_5O)_2P(O)N{=}C(NHCH_2-CH{=}CH_2)N(CH_3)_2$	151–152 (2)	1,4814	1,1058	27
4	$(C_2H_5O)_2P(O)N{=}C[N(CH_2-CH{=}CH_2)_2]N(CH_3)_2$	135–137 (1)	[illegible]	1,0707	60
5	$(C_2H_5O)_2P(O)N{=}C[N(CH_2-CH{=}CH_2)_2]N(C_2H_5)_2$	141–142 (2)	[illegible]	1,0439	15
6	$(C_2H_5O)_2P(O)N{=}C[N(CH_2-CH{=}CH_2)_2]OC_2H_5$	123–124 (2)	1,4727	1,0664	60
7	$(C_2H_5O)[(CH_3)_2N]P(O)N{=}C[N(CH_3)_2]_2$	114 (3)	1,4690	1,040	40
8	$(C_2H_5O)_2P(O)N{=}C<$ (ring: $NH-CH_2$, $N-CO$), $N-CH_2COOC_2H_5$	190–192 (1)	Mp 62–63°	—	56

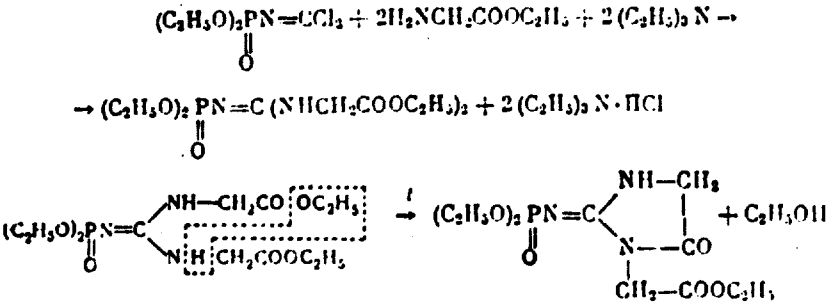
were synthesized by the reactions:











ACC NR. AP9006500

The reactions take place in dry ether at room temperature after mixing the reagents with cooling to -10 or -5°C. [WA-50; CBE No. 41] [PS]

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

Card 5/5

ACC NR: AP9007763 SOURCE CODE: UR/0426/68/021/010/0868/0873

AUTHOR: Aroyan, A. A.; Melik-Ogandzhanyan, R. G.; Garibdzhanyan, B. T.; Stepanyan, G. M.

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

TITLE: 2-(4-Alkoxybenzyl)-4-amino-6-hydroxy- and 2,5-bis(4-alkoxybenzyl)-4,6-dihydroxypyrimidines

SOURCE: Armyanskiy khimicheskiy zhurnal, v. 21, no. 10, 1968, 868-873

TOPIC TAGS: pyrimidine, cancer drug, sarcoma, tumor, drug dosage response

ABSTRACT: A study was made of the reaction of 4-alkoxyphenylacetic amidines with Et cyanoacetate to broaden the range of application of the amidines in synthesizing cancerolytically active pyrimidine derivatives. 2-(4-Methoxybenzyl)-4-amino-6-hydroxypyrimidine (I) was prepared by heating p-anisylacetamidine hydrochloride, NCCH$_2$COOEt, and NaOEt on a water bath for 3—4 hr. Compounds II—VI were similarly prepared.

Card 1/6 UDC: 541.69+547.853

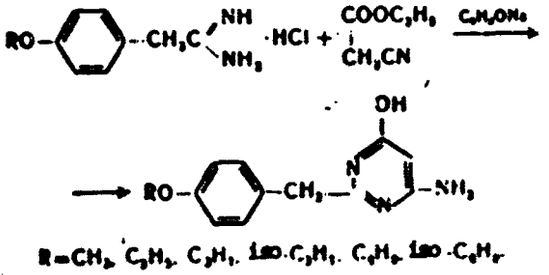
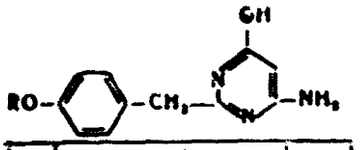


Table 1.



No.	R	Mp, °C	Yield, %
I	CH_3	273–274	82.6
II	C_2H_5	235–236	83.7

Table 1. (Cont.)

III	C_3H_7	254–255	94.3
IV	iso-C_3H_7	217–218	83.1
V	C_4H_9	223–224	82.4
VI	iso-C_4H_9	226–227	91.5

2,5-Bis(4-methoxybenzyl)-4,6-dihydroxypyrimidine (VII) was obtained by heating p-anisylacetamidine hydrochloride, di-Et 4-methoxybenzylmalonate, and NaOEt on a water bath for 5—6 hr. Compounds VIII—XII were similarly prepared.

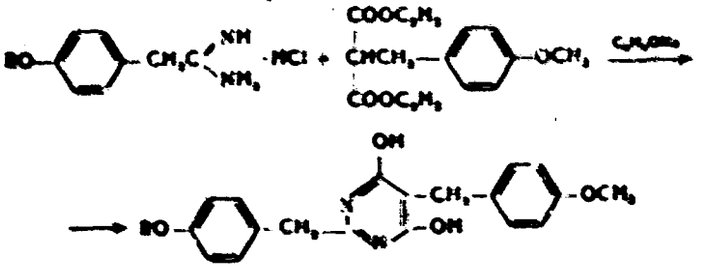
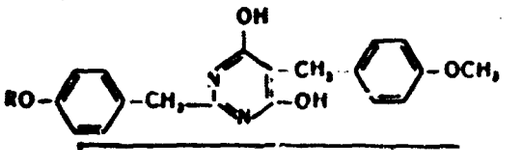


Table 2.



No.	R	Mp, °C	Yield, %
VII	CH_3	338–339	85.7
VIII	C_2H_5	330–331	86.5
IX	C_3H_7	338–339	85.4
X	iso-C_3H_7	340–341	85.7
XI	C_4H_9	343–344	84.3
XII	iso-C_4H_9	339–340	86.4

The toxicity and antiblastic properties of I—XII are shown in Table 3, where + denotes inhibition by 30—59%, ++ denotes inhibition by 60—79%, -- indicates stimulation by 60—79%, ---- indicates stimulation

Table 3. Toxicity and antiblastic properties of I—XII

No.	Toxicity for mice			Antitumor activity					
				Rats			Mice		
	LD_{100}, mg/kg	LD_{50}, mg/kg	MTD, mg/kg	Dose, mg/kg	Sarcoma 45	Sarcoma M-1	Dose, mg/kg	Sarcoma 180	Ehrlich ascitic tumor
I	3000			150	++	+	250	+	0
II	3750	3500	3000	150	----	0	250	0	0
III	3000			150	0	+	250	0	0
IV	5000	4500	4000	150	0	0	250	+	0
V	5000			150	0	0	250	0	0
VI	5000	4500	4000	150	0	0	250	0	0
VII	1500	1250	1000	100	0	+	200	0	0
VIII	1750	1400	1000	150	0	+	200	0	0
IX	5000			150	0	0	250	0	0
X	3500	3000	2500	150	--	0	250	0	0
XI	5000			150	+	+	200	0	0
XII	3500	3000	2500	150	0	+	250	0	0

by more than 95%, and MTD is the maximum tolerable dose. Orig. art. has: 3 tables. [WA-50; CBE No. 41] [FT]

SUB CODE: 06,07/ SUBM DATE: 22Nov67/ ORIG REF: 005/ OTH REF: 004

ACC NR: AP9007761 SOURCE CODE: UR/0426/68/021/010/0858/0863

AUTHOR: Aroyan, A. A.; Ovespyan, T. R.

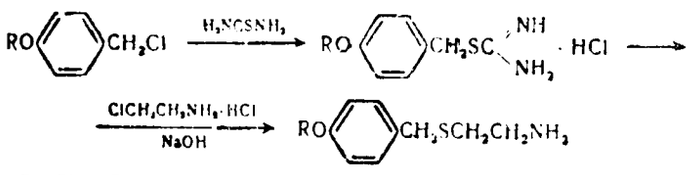
ORG: Institute of Fine Organic Chemistry, AN ArmSSR (Institut tonkoy organicheskoy khimii AN ArmSSR)

TITLE: Synthesis of β-mercaptoethylamine derivatives

SOURCE: Armyanskiy khimicheskiy zhurnal, v. 21, no. 10, 1968, 858-863

TOPIC TAGS: amine derivative, mercaptan, aromatic sulfur compound, guanidine, radiation protection

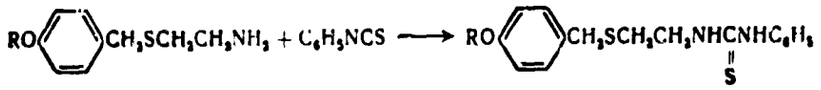
ABSTRACT: In a search for new radiation-protective compounds, a series of new derivatives of β-mercaptoethylamine was synthesized by the reaction:



R=CH_3, C_2H_5, C_3H_7, iso-C_3H_7, C_4H_9, iso-C_4H_9, C_5H_{11}, iso-C_5H_{11}.

 UDC: 541.69+547.436

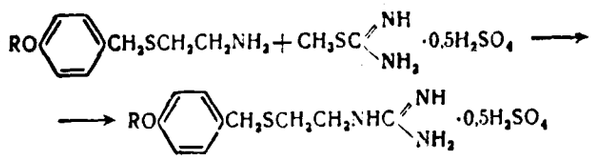
which takes place in an aqueous-alcohol solution with heating on a water bath. The β-(4-alkoxybenzylmercapto)ethylamines are unstable and were characterized as hydrochlorides. They were used in the synthesis of tuberculostatic and hypotensive compounds, thiourea derivatives:



$$RO\text{-}C_6H_4\text{-}CH_2SCH_2CH_2NH_2 + C_6H_5NCS \longrightarrow RO\text{-}C_6H_4\text{-}CH_2SCH_2CH_2NHCNHC_6H_5 \quad (S)$$

$R = CH_3,\ C_2H_5,\ C_3H_7,\ iso\text{-}C_3H_7,\ C_4H_9,\ iso\text{-}C_4H_9,\ C_5H_{11},\ iso\text{-}C_5H_{11}.$

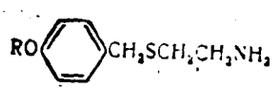
This reaction takes place in ethanol with boiling for 2 hr on a water bath. The 4-alkoxybenzylmercaptoethylamines were also used in the preparation of guanidine sulfates which are considered as potential sympatholytics:



$$RO\text{-}C_6H_4\text{-}CH_2SCH_2CH_2NH_2 + CH_3SC(=NH)NH_2 \cdot 0.5H_2SO_4 \longrightarrow RO\text{-}C_6H_4\text{-}CH_2SCH_2CH_2NHC(=NH)NH_2 \cdot 0.5H_2SO_4$$

This reaction takes place in an aqueous-alcohol solution with boiling

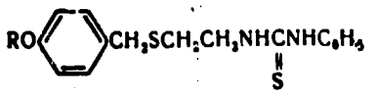
Table 1.



$$RO\text{-}C_6H_4\text{-}CH_2SCH_2CH_2NH_2$$

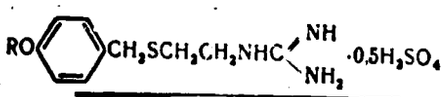
R'	Yield, %	Bp, °C/mm	d_4^{20}	n_D^{20}	Mp, °C of hydrochlorides
CH_3	71,4	152—154/1	1,1127	1,5732	165—167
C_2H_5	86,7	153—155/0,5	1,0802	1,5648	215—217
C_3H_7	67,5	164—166/1	1,0705	1,5568	210—212
$iso\text{-}C_3H_7$	60,1	160—165/1	1,0703	1,5556	228—230
C_4H_9	76,2	165—167/0,5	1,0419	1,5503	251—253
$iso\text{-}C_4H_9$	72,5	158—160/0,5	1,0406	1,5452	243—244
C_5H_{11}	63,6	171—172/0,5	1,0538	1,5552	242—244
$iso\text{-}C_5H_{11}$	69,2	171—173/0,5	1,0389	1,5428	220—221

Table 2.



R	Yield, %	Mp, °C
CH_3	65,1	103—104
C_2H_5	96,5	88—89
C_3H_7	63,2	97—98
iso-C_3H_7	74,9	70—71
C_4H_9	70,9	98—99
iso-C_4H_9	95,2	64—65
C_5H_{11}	80,4	87—88
iso-C_5H_{11}	71,0	126—127

Table 3.



R	Yield, %	Mp, °C
CH_3	79,8	215—217
C_2H_5	76,9	161—162
C_3H_7	56,5	230—233
iso-C_3H_7	64,7	222—224
C_4H_9	81,3	236—238
iso-C_4H_9	80,4	225—227
C_5H_{11}	77,3	231—233
iso-C_5H_{11}	84,2	232—234

ACC NR: AP9007761

for 8 hr. Composition, yield, and physical properties of the compounds synthesized are given in Table 1, 2, and 3. Orig. art. has: 3 tables. [WA-50; CBE No. 41] [PS]

SUB CODE: 07/ SUBM DATE: 22Nov67/ ORIG REF: 005/ OTH REF: 002

Card 6/6

ACC NR: AP9006705 SOURCE CODE: UR/0409/68/000/006/1108/1110

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

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

TITLE: Synthesis of substituted imidazo[5,1-b]benzimidazole. IV. Some reactions of 3-phenyl-4-methylimidazo[5,1-b]benzimidazole

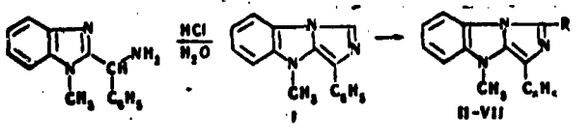
SOURCE: Khimiya geterotsiklicheskikh soyedineniy, no. 6, 1968, 1108-1110

TOPIC TAGS: organic imine compound, organic azole compound

ABSTRACT: Chemical properties and reactivity of the earlier synthesized 3-phenyl-4-methylimidazo[5,1-b]benzimidazole (I) were studied. The compound I remains unchanged when boiled with aqueous 20% KOH solution. Boiling of I with 20% HCl solution leads to cleavage of the ring and saponification of the formyl group to form 1-methyl-2-(α-amino-benzyl)benzimidazole:

Card 1/2 UDC: 547.785.5.07

ACC NR: AP9006705



II, R=CHO; III, R=$CH_2N(CH_3)_2$; IV, R=CH_2OH; V, R=NO; VI, R=$COCH_3$; VII, R=CH_2CH_2CN.

The reaction of I with $POCl_3$ in dimethylformamide at 0—25°C gave (91.5%) compound II (mp 199.5—200.5°C). Compound III (114.5—116.5°C) was obtained (98.5%) by the reaction of I with dimethylamine and formalin. Compound IV (159—160°C) was obtained (98%) by boiling an aqueous suspension of I with formalin. In acetic acid, I reacted with $NaNO_2$ to form (83%) compound V (mp 222—222.5°C). Compound VI (mp 209—210.5°C) was obtained (94.2%) by boiling a mixture of I, sodium acetate, and acetic anhydride. Compound VII (184—186°C) was was synthesized by boiling a mixture of I, acrylonitrile, and Rodionov reagent. The structure of the compounds synthesized was established by IR, UV, and NMR spectra. [WA-50; CBE No. 41] [PS]

SUB CODE: 07/ SUBM DATE: 29Jul66/ ORIG REF: 003/ OTH REF: 002

Card 2/2

ACC NR: AP9009759 SOURCE CODE: UR/0366/69/005/002/0317/0320

AUTHOR: Babayan, V. O.; Grigoryan, L. G.; Toganyan, S. V.

ORG: Armenian Pedagogical Institute im. Kh. Abovyan (Armyanskiy pedagogicheskiy institut)

TITLE: Chloroarylation of halogen-containing diene compounds. I. Synthesis of 1-aryl-2,3,4-trichloro-2-butenes and some of their transformations

SOURCE: Zhurnal organicheskoy khimii, v. 5, no. 2, 1969, 317-320

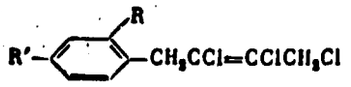
TOPIC TAGS: butene, chlorinated aliphatic compound, aryl radical

ABSTRACT: 1-Phenyl-2,3,4-trichloro-2-butene (II a) was prepared by adding CH_2:CClCCl:CH_2 (I) in acetone and hydroquinone and PhN_2Cl in H_2O to $CuCl_2$, CaC, and acetone in H_2O and stirring until N was no longer liberated. Compounds II b—II f were similarly prepared.

$$ArN_2Cl + \underset{(I)}{CH_2{=}CClCCl{=}CH_2} \rightarrow$$
$$\rightarrow N_2 + \underset{(II\ a\text{--}f)}{ArCH_2CCl{=}CClCH_2Cl}$$

Card 1/3 UDC: 547.413.4+547.538.1+547.557.1

Table 1



No.	R	R'	% Yield	Bp, °C (p in mm)	d_4^{20}	n_D^{20}
II a	H	H	81.12	113—113°	1.2922	1.5690
II b	H	NO_2	41.06	Mp 65—66	—	—
II c	Br	H	80.14	145—146	1.6040	1.5975
II d	CH_3	H	25.36	123—124	1.2781	1.5668
II e	H	CH_3O	41.64	137—138	1.3224	1.5710
II	NO_2	CH_3	38.40	Mp 87—88	—	—

4-Dimethylamino)-2,3-dichloro-1-phenyl-2-butene (III a) (53.4 % yield, bp, 118—119°C, d_4^{20} 1.1450, n_D^{20} 1.5510) was prepared by passing gaseous $(CH_3)_2NH$ into II a in ether and allowing the mixture to stand for 15 hr. 4-(Diethylamino)-2,3-dichloro-1-phenyl-2-butene (III b) (43.4 % yield, bp, 122—123°C, d_4^{20} 1.113., n_D^{20} 1.5400) was obtained by allowing Et_2NH and II a to react in a sealed ampule at 20°C for 2 days.

$$C_6H_5CH_2CCl{=}CClCH_2Cl + R_2NH \longrightarrow \underset{(III\ a,b)}{C_6H_5CH_2CCl{=}CClCH_2NR_2}$$

R = CH_3 (a), C_2H_5(b)

Orig. art. has: 2 figures and 1 table. [WA-50; CBE No. 41] [FT]

SUB CODE: 07/ SUBM DATE: 29Jan68/ ORIG REF: 009/ OTH REF: 001

ACC NR: AP9009948 SOURCE CODE: UR/0366/69/005/001/0093/0095

AUTHOR: Bagal, L. I.; Koldobskiy, G. I.; Gerasimova, Ye. S.; Tereshchenko, G. F.

ORG: Leningrad Institute of Technology imeni Lensovet (Leningradskiy tekhnologicheskiy institut)

TITLE: Preparation of halogenated nitroalkylamines by Gabriel's reaction

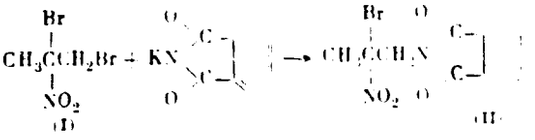
SOURCE: Zhurnal organicheskoy khimii, v. 5, no. 1, 1969, 93-95

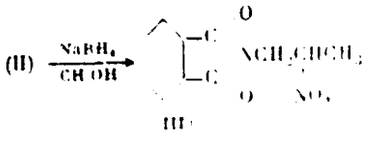
TOPIC TAGS: amine derivative, mixed halogenated organic compound

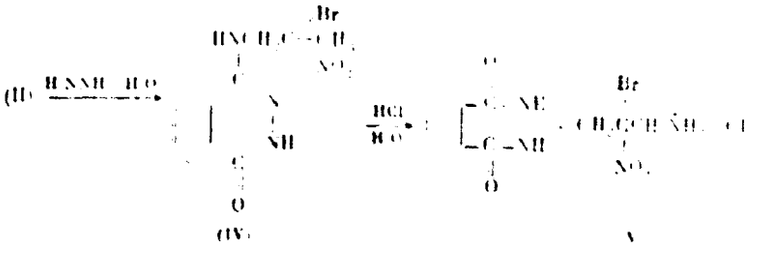
ABSTRACT: An earlier study revealed that the biological activity of halogenated alkylamines depends on their structure. This prompted the synthesis of new halogenated alkylamines with electronegative substituents. 1-Amino-2-bromo-2-nitropropane hydrochloride (V) (mp 163—164°C) was synthesized in a 50% yield by Gabriel's reaction using 1,2-bromo-2-nitropropane as the starting compound. The intermediate II (mp 96—97°C) is formed in a 70% yield when the reaction mixture is heated for 3—4 hr at 90°C in dimethylformamide solution.

Card 1/3 UDC: 547.416.+547.232

ACC NR: AP9009948







Card 2/3

ACC NR: AP9009948

The reduction of II to form (65%) compound III (mp 126—127°C) proceeds in methanol at 55—60°C. To increase the rate of conversion of II into V, compound II is treated with hydrazine to form IV which is hydrolyzed with concentrated HCl to form V. The acylation of V with acetic anhydride at 50°C in the presence of sodium acetate gave (63%) N-(2-bromonitropropyl)acetamide (mp 78—79°C). The ionization constant (pK_a) of compound V was 4.5 orders lower than that of unsubstituted propylamine, indicating that the introduction of an electronegative substituent (Br, NO_2) leads to a sharp decrease in the basicity of alkylamines. [WA-50; CBE No. 41] [PS]

SUB CODE: 07/ SUBM DATE: 27Mar68/ ORIG REF: 003/ OTH REF: 008

Card 3/3

ACC NR: AP9008410 SOURCE CODE: UR/0062/69/000/002/0307/0311

AUTHOR: Bel'skiy, V. Ye; Yefremova, M. V.; Shermergorn, I. M.; Pudovik, A. N.

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

TITLE: Kinetics of the hydrolysis of phosphinate esters

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 2, 1969, 307-311

TOPIC TAGS: kinetic chemical reaction rate, phosphinic acid, aliphatic ester, phosphinate ester

ABSTRACT: A study was made of the alkaline and neutral hydrolysis of some known ethyl phosphinates (1—9), n-butyl bis(iodomethyl)phosphinate (10), and sec-butyl bis(chloromethyl)phosphinate (11). The rate constants for neutral hydrolysis are shown in Table 1. The rate constants for alkaline hydrolysis are shown in Table 2. The values of the parameters in the Arrhenius equation $k = Ae^{xp(-E/RT)}$ and the activation entropies are shown in Table 3. The rate constants for neutral

Card 1/4 UDC: 541.127+542.938+661.718.1

Table 1. Neutral hydrolysis rate constants

No.	Compd	$k \cdot 10^6$, sec^{-1}		
		80°	90°	91°
1	$(ClCH_2)_2P(O)OC_2H_5$	—	8,43	
2	$\begin{matrix}ClCH_2\\BrCH_2\end{matrix}\!\!>\!P(O)OC_2H_5$	3,2	7,5	15,5
3	$\begin{matrix}ClCH_2\\JCH_2\end{matrix}\!\!>\!P(O)OC_2H_5$	2,1	5,3	10,3
4	$(JCH_2)_2P(O)OC_2H_5$	1,0	2,8	5,4
5	$(C_6H_5OCH_2)_2P(O)OC_2H_5$	0,88	2,2	4,7
6	$\begin{matrix}ClCH_2\\NC(CH_2)_3\end{matrix}\!\!>\!P(O)OC_2H_5$	0,79	1,6	2,7
7	$\begin{matrix}ClCH_2\\C_6H_5\end{matrix}\!\!>\!P(O)OC_2H_5$	0,12	0,23	0,54
8	$(C_6H_5)_2P(O)OC_2H_5$	0,059	0,11	0,27
9	$\begin{matrix}C_6H_5\\C_6H_{13}\end{matrix}\!\!>\!P(O)OC_2H_5$	0,038	0,077	0,15
10	$(JCH_2)_2P(O)OC_4H_9$-n	0,54	1,3	2,3
11	$(ClCH_2)_2P(O)OC_4H_9$-sec	28	74	157

Card 2/4

Table 2. Alkaline hydrolysis rate constants

No.	t, °C	k, l/(M·sec)	No.	t, °C	k, l/(M·sec)
1	25	1,6	7	25	0,0067
2	10	0,59		35	0,0102
	17	0,78		45	0,017
	23	1,02	8	70	0,00100
3	10	0,17		80	0,00150
	20	0,35		90	0,0021
	25	0,48		98	0,0029
	30	0,63	10	25	0,047
4	25	0,12		35	0,085
	35	0,23		45	0,168
	45	0,35	11	15	0,023
5	11,5	0,70		25	0,043
	18	1,01		35	0,068
	25	1,70		45	0,098
6	10	0,063			
	25	0,160			

Card 3/4

Table 3. Arrhenius parameters and activation entropies

No.	E, kg-cal/M		lg A		−ΔS≠	
	OH-	H_2O	OH-	H_2O	OH-	H_2O
1	9,7	21,8	7,35	8,02	27	24
2	7,0	22,7	5,21	8,57	37	21
3	11,0	23,5	7,72	8,88	25	20
4	10,1	24,6	6,48	9,24	31	18
5	11,0	24,4	8,25	9,06	23	19
6	10,4	17,7	6,93	4,81	29	38
7	8,7	21,6	4,20	6,47	41	31
8	9,5	21,9	3,05	6,32	47	32
9	--	19,5	--	4,65	--	39
10	12,0	21,2	7,45	6,86	26	29
11	10,1	24,8	6,00	10,80	33	11

and alkaline hydrolysis correlate with the sum of σ* (Taft) and with the sum of σ_p (Kabachnik) for substituents at P. Compound 11 has an unusually high hydrolysis rate because its hydrolysis proceeds by an S_N1 mechanism. Orig. art. has: 2 figures and 4 tables.

[WA-50; CBE No. 41] [FT]

SUB CODE: 07/ SUBM DATE: 02Apr68/ ORIG REF: 010/ OTH REF: 004

ACC NR: AP9009957 SOURCE CODE: UR/0366/69/005/001/0135/0140

AUTHOR: Berlin, A. Ya.; Martynov, V. S.; Kikot', B. S.

ORG: Institute of Experimental and Clinical Oncology, Academy of Medical Sciences SSSR (Institut eksperimental'noy i klinicheskoy onkologii Akademii meditsinskikh nauk SSSR)

TITLE: Sulfonate esters of some diphenylalkane acids

SOURCE: Zhurnal organicheskoy khimii, v. 5, no. 1, 1969, 135-140

TOPIC TAGS: sulfonation, tumor, organic acid, acetate ester

ABSTRACT: The title compounds were synthesized to find new antitumor compounds of the alkylating type. Bis(p-chlorosulfophenyl)acetic acid (VIII) (67.8% yield, mp 189—190°C) was prepared by boiling ethyl bis(p-chlorosulfophenyl)acetate (IX) in HOAc and concentrated HCl for 2 hr, evaporating, and treating the residue with $HOSO_2Cl$ for 30 min at 20°C. Compound IX (17.6% yield, mp 117—118°C) was obtained by adding $Ph_2CHCOOEt$ (IV) to $HOSO_2Cl$ and $AlCl_3$ at 25—35°C and stirring for 1 hr at 20°C and for 5 min at 50°. β,β-Bis(p-chlorosulfophenyl)propionic acid (X) (11.2% yield, mp 235—236°C) and 3-(p-chlorosulfophenyl)-1-indanone (XVI) (48% yield, mp 131—132°C) were prepared by adding Ph_2CHCH_2COOH (II) to $HOSO_2Cl$ and $AlCl_3$ at 10°C and stirring for 1 hr.

 UDC: 547.541+547.639

$(C_6H_5)_2CH(CH_2)_nCOOH \longrightarrow (p\text{-}ClO_2SC_6H_4)_2CH(CH_2)_nCOOH \longrightarrow$

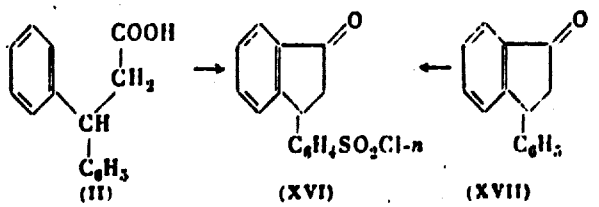
(I) R = H, n = 0; (II) R = H, n = 1; (III) R = H, n = 2; (IV) R = C_2H_5, n = 0; (V) R = CH_3, n = 1; (VI) R = C_2H_5, n = 1; (VII) R = C_2H_5, n = 2.

(VIII) R = H, n = 0; (IX) R = C_2H_5, n = 0; (X) R = H, n = 1; (XI) R = CH_3, n = 1; (XII) R = C_2H_5, n = 1.

$\longrightarrow (p\text{-}R'O_3SC_6H_4)_2CH(CH_2)_nCOOR$

(XIII) R = R' = C_2H_5, n = 0; (XIV) R = CH_3, R' = C_2H_5, n = 1; (XV) R = CH_3, R' = ClC_2H_4, n = 1.

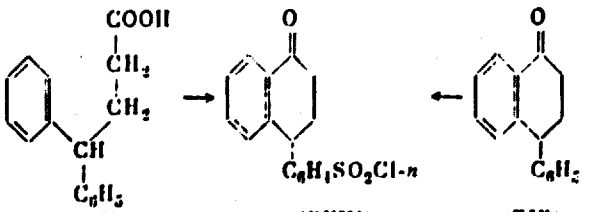
Compound X (55% yield) was also obtained by hydrolyzing methyl β,β-bis(p-chlorosulfophenyl)propionate (XI). Compound XVI (78.5% yield) was also obtained from 3-phenyl-1-indanone (XVII). Compound XI (59.4%



(II) (XVI) (XVII)

yield, mp 125—126°C) was prepared by adding $Ph_2CHCH_2COOCH_3$ to $HOSO_2Cl$ and $AlCl_3$ at 40°C and stirring for 1.5 hr. Ethyl β,β-bis(p-chlorosulfophenyl)propionate (XII) (55% yield, mp 98—99°C) was similarly prepared. Ethyl bis(p-ethoxysulfophenyl)acetate (XIII) 59.3% yield, mp 73—74°C)

was obtained by adding Et_3N to IX in EtOH at 20°C and heating to boiling after 1 hr. Methyl β,β-bis(p-ethoxysulfophenyl)propionate (XIV) (63% yield, mp 101—102°C) was similarly prepared from XI. Methyl β,β-bis(p-chloroethoxysulfophenyl) propionate (XV) (61.8% yield, mp 67—68°C) was obtained by adding Et_3N to XI in CH_2ClCH_2OH and allowing the mixture to stand at 20°C for 2 hr. 4-(p-Chlorosulfophenyl)-1-tetralone (XVIII) (71.2% yield, mp 106—107°C) was prepared by adding $Ph_2CHCH_2CH_2COOH$ to $HOSO_2Cl$ and $AlCl_3$ at 5—10°C and stirring for 45 min. Compound XVIII (76.3% yield) was also obtained from 4-phenyl-1-tetralone (XIX) and from $Ph_2CHCH_2CH_2COOEt$ (VII).



(III) (XVIII) (XIX)

Attempts to achieve chlorosulfonation of $Ph_2CHCOOH$ (I) proved unsuccessful. Orig. art. has: 2 tables. [WA-50; CBE No. 41] [FT]

SUB CODE: 06, 07/ SUBM DATE: 10Feb63/ ORIG REF: 001/ OTH REF: 007

ACC NR: AP9010306 SOURCE CODE: UR/0079/69/039/002/0321/0326

AUTHOR: Bokanov, A. I.; Korolev, B. A.; Stepanov, B. I.

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

TITLE: Acid-base properties of diethyl(p-dimethylaminophenyl)phosphine oxide

SOURCE: Zhurnal obshchey khimii, v. 39, no. 2, 1969, 321-326

TOPIC TAGS: aromatic phosphorus compound, aliphatic phosphorus compound, phosphine oxide derivative, acid base equilibrium

ABSTRACT: A study was made of the acid-base properties of diethyl-(p-dimethylaminophenyl)phosphine oxide (I) (mp 60—61°C, pH_{25} 10.35 and pH_{75} 7.85 in CH_3NO_2) in H_2O, CH_3NO_2, and CH_3CN. In H_2O, I is first protonated at the $(CH_3)_2N$ group, but in CH_3NO_2 and CH_3CN, it is first protonated at the P:O group. These findings are explained by an increase in the protonophilic nature of P:O groups in aprotonic solvents as a result of the formation of stable BHB^+-type complexes, where B is a phosphine oxide molecule. Orig. art. has: 5 figures and 2 tables.
[WA-50; CBE No. 41] [FT]

SUB CODE: 07/ SUBM DATE: 21Nov66/ ORIG REF: 004/ OTH REF: 007

Card 1/1 UDC: 543.257.1:547.558.1

ACC NR: AP9010317 SOURCE CODE: UR/0079/69/039/002/0373/0376

AUTHOR: Bokanov, A. I.; Korolev, B. A.; Stepanov, B. I.

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

TITLE: p-(Diethylphosphonyl)phenol

SOURCE: Zhurnal obshchey khimii, v. 39, no. 2, 1969, 373-376

TOPIC TAGS: phenol derivative, aromatic phosphorus compound, aliphatic phosphorus compound, benzoic acid, aromatic ester

ABSTRACT: p(Diethylphosphonyl)phenol (I) (48% yield; mp 171.5—172.5°C; pK_{a_1} 11.76, pK_{a_2} 3.26, pK_a 7.51 in CH_3NO_2) was prepared by adding 4% H_2O_2 to p-anisyldiethylphosphine in acetone, boiling for 1 hr, evaporating by half, extracting with $CHCl_3$, distilling the $CHCl_3$, adding HI (d 1.70), and boiling for 3 hr in N. p-(Diethylphosphonyl)phenyl benzoate (II) (mp 119—121°C; pK_{a_1} 10.08, pK_{a_2} 2.58, pK_a 6.33) was obtained by the Schotten-Baumann benzoylation of I. The value of

Card 1/2 UDC: 661.718.1+547.56

$$p\text{-}(C_2H_5)_2PC_6H_4OC_6H_5 \xrightarrow{H_2O_2} p\text{-}(C_2H_5)_2(O)PC_6H_4OH \xrightarrow{C_6H_5COCl} \underset{(I)}{p\text{-}(C_2H_5)_2(O)PC_6H_4OH} \longrightarrow \underset{(II)}{p\text{-}(C_2H_5)_2(O)PC_6H_4OOCC_6H_5}$$

σ^- for the p-diethyloxophosphine group was found to be 0.65. Orig. art. has: 3 figures. [WA-50; CBE No. 41] [FT]

SUB CODE: 07/ SUBM DATE: 23Jan68/ ORIG REF: 005/ OTH REF: 004

AUTHOR: Borisova, Ye. Ya.; Lobodina, V. T.; Zaytseva, M. G.; Cherkasova, Ye. M.

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

TITLE: Aminoamides III. 1-Dialkylamino-3-phenyl-3-acylaminopropanes and 1-dialkylamino-3-phenyl-3-acylaminopentanes

SOURCE: Zhurnal organicheskoy khimii, v. 5, no. 2, 1969, 284-286

TOPIC TAGS: amine derivative, substituted amide, organic amide

ABSTRACT: The aminoamides of benzoic and phenylacetic acids (I—XI) characterized in the table:

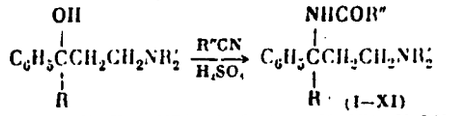
$C_6H_5(R)(NHCOR'')CH_2CH_2NR_2$

No.	Yield, %	Bp, mm	Mp, petroleum ether
I	41.8	198—200° (2)	67—68°
II	51.0	210—212 (1)	79—80

 UDC: 547.235

III	48.1	125—126 (2)	80—81
IV	50.9	186—188 (2)	96—97
V	49.0	220—222 (2)	70—71
VI	58.3	180—182 (1)	—
VII	51.7	242—244 (2)	98—99
VIII	50.3	252—254 (2)	88—89
IX	42.4	—	79—80
X	45.6	132—135 (3)	52—53
XI	45.5	—	118—119

were synthesized by the conversion of the appropriate amino alcohols:



R" = $C_6H_5CH_2$ (I—VIII), C_6H_5 (IX—XI); NR'_2 = $N(CH_3)_2$ (I, II, IX), $N(C_2H_5)_2$ (V, VI, X), NC_4H_8O (VII, VIII, XI), NC_5H_{10} (III, IV); R = H (I, III, V, VII, IX—XI), C_6H_5 (II, IV, VI, VIII).

which takes place in the presence of concentrated (98%) sulfuric acid at 70—90°C. The aminoamides are white crystals, soluble in ether,

chloroform, alcohol, and slightly soluble in petroleum ether. Their structure was established by IR spectra. [WA-50; CBE No. 41] [PS]

SUB CODE: 07/ SUBM DATE: 19Mar68/ ORIG REF: 004

ACC NR: AP9006704 SOURCE CODE: UR/0409/68/000/006/1105/1107

AUTHOR: Chipen, G. I.; Bokaldere, R. P.; Grinshteyn, V. Ya.

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

TITLE: Substituted triazolylthioureas

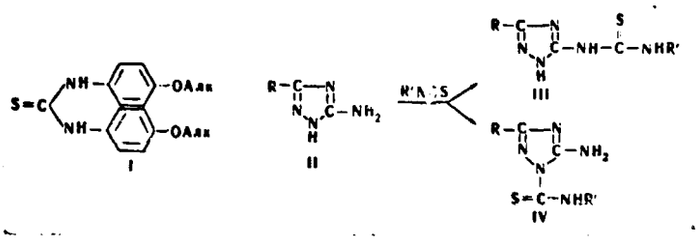
SOURCE: Khimiya geterotsiklicheskikh soyedineniy, no. 6, 1968, 1105-1107

TOPIC TAGS: organic azole compound, thiourea

ABSTRACT: The strong tuberculostatic activity of diarylureas (I) is well known. The substitution of the aryl groups for a heterocyclic group leads to a marked change in the physiological activity of thiourea derivatives. In a search for new physiologically active compounds, the preparation of substituted thiourea compounds containing the triazole ring was studied. The reaction of aminotriazole with isothiocyanates gave, depending on the reaction conditions, compounds III and compounds IV:

Card 1/3 UDC: 547.792.3

ACC NR: AP9006704



1-(Anilinothioformyl)-5-amino-1,2,4-triazole (mp 133—135°C) was obtained (38%) by the reaction of 3-amino-1,2,4-triazole with phenyl isothiocyanate in alcohol at room temperature. This method was also used to obtain 1-(anilinothioformyl)-3-methyl-5-amino-1,2,4-triazole (mp 136—137°C), yield 55%. N-(4-ethoxyphenyl)-N'-(3-amyl-1,2,4-triazolyl-5)thiourea (mp 212°C, yields 30%), 1-(methylaminothioformyl)-5-amino-1,2,4-triazole (mp 160°C, yield 28%), and 1-(methylaminothioformyl)-methyl-5-amino-1,2,4-triazole (mp 174—175°C, yield 47%) were prepared by boiling the appropriate substituted thiocyanates with substituted triazoles in alcohol. N-methyl-N'-(1,2,4-triazolyl-5)thiourea (mp 213°C, yield 35%), N-methyl-N'-(3-methyl-1,2,4-triazolyl-5)-thiourea (mp 219°C, yield 30%), N-phenyl-N'-(1,2,4-triazolyl)thiourea (mp 205°C, yield 90%), and N-phenyl-N'-(3-methyl-1,2,4-triazolyl)-thiourea (mp 198—200°C, yield 88%) were synthesized

Card 2/3

ACC NR: AP9006704

by boiling substituted triazoles with substituted thiocyanates in alcohol. N-(4-propoxyphenyl)-N'-(3-methyl-1,2,4-triazolyl-5)thiourea (mp 182—183°C, yield 77%), N-(4-butoxyphenyl)-N'-(3-methyl-1,2,4-triazolyl-5)thiourea (mp 185—186°C, yield 83%), N-(4-ethoxyphenyl)-N'-(3-propyl-1,2,4-triazolyl-5)thiourea (mp 169—170°C, yield 90%), N-(4-ethoxyphenyl)-N'-(3-amyl-1,2,4-triazolyl-5)thiourea (mp 184—186°C), and N-(4-ethoxyphenyl)-N'-(1,2,4-triazolyl-5)thiourea (mp 209—210°C, yield 69%) were synthesized by the reaction of triazole derivatives with isothiocyanates on boiling in pyridine.
[WA-50; CBE No. 41] [PS]

SUB CODE: 07/ SUBM DATE: 15Nov66/ ORIG REF: 002/ OTH REF: 008

Card 3/3

ACC NR: AP9007760 SOURCE CODE: UR/0426/68/021/010/0842/0845

AUTHOR: Dovlatyan, V. V.; Eliazyan, K. A.

ORG: Armenian Agricultural Institute (Armyanskiy sel'skokhozyaystvennyy institut)

TITLE: Synthesis of herbicides. Ethyl O-(α-N-acetylamino-β,β,β-trichloroethyl)glycolates

SOURCE: Armyanskiy khimicheskiy zhurnal, v. 21, no. 10, 1968, 842-845

TOPIC TAGS: weed killer, herbicide, glycolate, legume crop, cereal crop, chlorinated aliphatic compound

ABSTRACT: O-Substituted glycolic acid derivatives may be of definite interest as weed-control agents. O-(α-N-Acetylamino-β,β,β-trichloroethyl)glycolonitrile (I) (86.77% yield, mp 116—118°C) was prepared by adding α,β,β,β-tetrachloroethylacetamide to 40% HCHO and NaCN in H_2O in the cold and stirring for 1 hr. O-(α-N-Trichloroacetylamino-β,β,β-trichloroethyl)glycolonitrile (II) (81.6% yield, mp 72—73°C) was similarly prepared. Ethyl (α-N-acetylamino-β,β,β-trichloroethoxy)iminoacetate hydrochloride (III) (71.4% yield, decomposes

Card 1/3 UDC: 542.91+632.954

at 99—101°C) was obtained by passing dry HCl into I in ether and EtOH below 0°C and allowing the mixture to stand for 15 hr. Ethyl (α-N-trichloroacetylamino-β,β,β-trichloroethoxy)iminoacetate hydrochloride (IV) (77.7% yield, decomposes at 102—104°C) was similarly prepared. Ethyl O-(α-N-acetylamino-β,β,β-trichloroethyl)glycolate (V) (71.4% yield, mp 72—74°C) was prepared by stirring III and H_2O and allowing the mixture to stand at 20°C for 2 hr. Ethyl O-(α-N-trichloroacetylamino-β,β,β-trichloroethyl)glycolate (VI) (91.7% yield, mp 59—61°C) was similarly prepared.

$$CCl_3CH(NHOCR)Cl \xrightarrow{CH_2O,\ NaCN} \underset{(I,\ II)}{CCl_3CH(NHOCR)OCH_2CN} \longrightarrow$$

$$\xrightarrow[HCl]{C_2H_5OH} \underset{(III,\ IV)}{CCl_3CH(NHOCR)OCH_2C(=NH\cdot HCl)(OC_2H_5)} \xrightarrow{H_2O}$$

$$\longrightarrow \underset{(V,\ VI)}{CCl_3CH(NHOCR)OCH_2COOC_2H_5}$$

Compounds I and II display the highest herbicidal activity. Compound I (3 mg/kg) inhibited the accumulation of green mass in wheat by 60%, in wild oats by 50%, and in corn by 77.3%. Compound I surpasses

Table 1. Action of I and VII on plants

Compd	Dose, mg/kg	Corn	Peas	Wheat	Wild oats
Control	—	100	100	100	100
$CH_3CONHCHCCl_3$ (I) OCH_2CN	3	52,5	102,8	—	35,5
	6	30,0	108,3	—	16,0
	12	5,0	97,2	—	—
$CH_3CONHCH(OH)CCl_3$ (VII)	3	65,0	77,7	42,3	34,2
	6	45,0	61,1	23,5	31,6
	12	37,5	75,0	—	23,7

α-hydroxy-β,β,β-trichloroacetamide (VII) in herbicidal activity as shown in Table 1. Compound I may be used against cereal grains in legume plots. Orig. art. has: 1 table. [WA-50; CBE No. 41] [FI]

SUB CODE: 02,07/ SUBM DATE: 08Jun67/ ORIG REF: 001

ACC NR: AP9009758 SOURCE CODE: UR/0366/69/005/002/0312/0317

AUTHOR: Ganushchak, N. I.; Zolotukhina, K. G.; Dombrovskiy, A. V.

ORG: Chernovtsy State University (Chernovitskiy gosudarstvennyy universitet)

TITLE: Halogenarylation of unsaturated compounds with aromatic diazo compounds. XXXV. Reaction of divinyl and isoprene with some diazonium chlorides. Synthesis of arylbutenyl derivatives of β,β'-dichlorodiethylamine and piperidine

SOURCE: Zhurnal organicheskoy khimii, v. 5, no. 2, 1969, 312-317

TOPIC TAGS: butene, chlorinated aliphatic compound, amine derivative, aryl radical, piperidine

ABSTRACT: Chloroarylbutenes react with piperidine and diethanolamine to form physiologically active substances whose properties depend on the nature of the substituents in the benzene ring of the arylbutenyl radical. The title synthesis was performed to prepare chloroarylbutenes containing halo atoms in the benzene ring as well as fragments of known physiologically active substances and to obtain from them derivatives of piperidine and β,β'-dichlorodiethylamine. 4-Chloro-1-(p-fluorophenyl)-2-butene (I) was prepared by adding p-fluoroaniline,

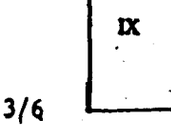
 UDC: 547.5+547.789.1+547.822

concentrated HCl, and $NaNO_2$ to CH_2:CHCH:CH_2, $CuCl_2$, and CaO in acetone at 5—7°C and pH 4—5. Compounds II—XI were similarly prepared. N-(4-Aryl-2-buten-1-yl)-β,β'-dichlorodiethylamine hydrochlorides (XII—XIX) were prepared by heating the corresponding chloroarylbutene with diethanolamine for 12 hr and treating the mixture with $CHCl_3$. N-(4-Aryl-2-buten-1-yl)-piperidines (XX—XXIV) were prepared by heating and stirring V—VII, X, or XI and piperidine in H_2O for 12 hr.

$$ArN_2Cl + CH_2{=}CHCH{=}CH_2 \rightarrow ArCH_2CH{=}CHCH_2Cl + N_2$$

Table 1

p-R'C$_6$H$_4$CH$_2$C(R)=CHCH$_2$Cl

No.	R'	R	Reaction temp, °C	% yield	Bp, °C (p in mm) or mp, °C	n_D^{20}
I	F	H	7	66	125° (10)	1.5456
II	F	CH$_3$	7	65	135—137 (10)	1.5255
III	Br	CH$_3$	0÷5	50	117—120 (3)	1.5805
IV	J	CH$_3$	0÷5	45	176—180 (10)	1.6340
V	C_2H_5OOC	CH$_3$	−2÷+4	65	184 (3)	1.5475
VI	NH_2SO_2	H	−5÷+1	70	105—106	—
VII	NH_2SO_2	CH$_3$	−2÷+5	70	—	1.5000
VIII		H	−4÷0	45	—	1.5800
IX		CH$_3$	−4÷0	40	83	—

Card 3/6

Table 1 (cont'd)

X	$(C_2H_5)_2N(CH_2)_2OOC$	H	−4÷+2	60	—	1.5270
XI	$(C_2H_5)_2N(CH_2)_2OOC$	CH$_3$	−2÷+4	60	—	1.5240

$$ArCH_2C(R)=CHCH_2Cl + HN(CH_2CH_2OH)_2 \longrightarrow$$

$$\longrightarrow ArCH_2C(R)=CHCH_2N(CH_2CH_2OH)_2 \xrightarrow{SOCl_2} ArCH_2C(R)=CHCH_2N(CH_2CH_2Cl)_2 \cdot HCl$$

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Table 2

p-R'$C_6H_4CH_2C(R)$=$CHCH_2R$

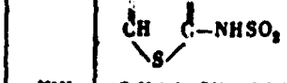
No.	R'	R	R"		% yield	Mp, °C, or n_D^{20}
XII	F	H			50	76—77°
XIII	F				60	97—98
XIV	Br				55	133—134
XV	J				50	83—84
XVI	C_2H_5OOC				55	78—80
XVII	NH_2SO_2	CH_3			60	88—90
XVIII			$N(CH_2CH_2Cl)_2$ HCl		50	83—85
XIX	$(C_2H_5)_2N(CH_2)_2OOC$	H			55	57—58
XX	$(C_2H_5)_2NOOC$	CH_3		base	40	1.5400
				HCl	100	115—116
				MeI	"	78—80
XXI	$(C_2H_5)_2N(CH_2)_2OOC$	H		base	50	1.4845
				2HCl	100	240
				MeI	"	80—81
XXII	$(C_2H_5)_2N(CH_2)_2OOC$	CH_3	NC_5H_{10}	base	50	0:1
				2HCl	100	98—99
				MeI	"	55—56

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Table 2 (cont'd)

XXIII	NH_2SO_2	H		base	45	129—130
				HCl	100	121—123
				MeI	"	99—100
XXIV	NH_2SO_2	CH_3		base	45	0:1
				HCl	100	65—67
				MeI	"	72—76

$$ArCH_2C(R)=CHCH_2Cl + 2HNC_5H_{10} \longrightarrow ArCH_2C(R)=CHCH_2NC_5H_{10} + HCl$$

Orig. art. has: 2 tables and 1 figure. [WA-50; CBE No. 41] [FT]

SUB CODE: 07/ SUBM DATE: 08Aug68/ ORIG REF: 003

Card 6/6

ACC NR: AP9010307 SOURCE CODE: UR/0079/69/039/002/0326/0329

AUTHOR: Genkina, G. K.; Koroleva, P. A.; Gilyarov, V. A.; Stepanov, B. V.; 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. Mendeleyev (Moskovskiy khimiko-tekhnologicheskiy institut)

TITLE: Basicity and structure of N-p-(trifluoromethyl)phenyl-N-p-anisyl-phosphamidines

SOURCE: Zhurnal obshchey khimii, v. 39, no. 2, 1969, 326-329

TOPIC TAGS: aromatic phosphorus compound, fluorinated aromatic compound, substituted amide, potentiometric titration, tautomerism

ABSTRACT: A study was made of the basicity of some known phosphamidines by potentiometric titration in CH_3NO_2 with $HClO_4$. The results are shown in Table 1. These phosphamidines are strong organic bases, and their basicity correlates satisfactorily with σ_I of the substituents at the P atom, as shown in Figure 1. The tautomeric equilibrium in this series of

 UDC: 541.454:546.185

Table 1. Values of pK_a of the phosphamidines in CH_3NO_2

No.	A	B	pK_a (CH_3NO_2)	pK_a (H_2O)
1	iso C_4H_9	iso C_4H_9	17.05	10.05
2	n-C_4H_9	n-C_4H_9	17.10	10.09
3	C_6H_5	C_6H_5	17.15	10.13
4	C_6H_5	iso C_4H_9O	15.31	8.76
5	C_6H_5	C_2H_5O	15.18	8.61
6	C_6H_5	C_6H_5	14.70	8.25
7	C_6H_5	C_6H_5O	14.14	7.86
8	n-C_4H_9O	n-C_4H_9O	14.06	7.80
9	C_6H_5O	C_6H_5O	14.09	7.82
10	CH_3O	CH_3O	13.31	7.23

ACC NR: AP9010307

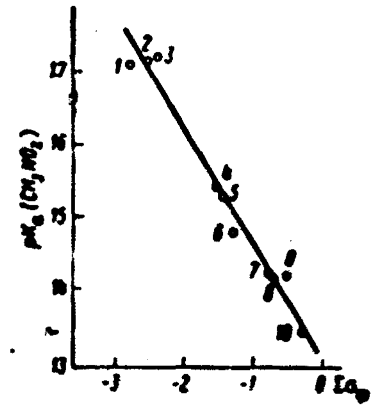


Fig. 1. Relation of pK_a (CH_3NO_2) to $\Sigma\sigma_\phi$

phosphamidines is strongly shifted in the direction of the anisylamide form (I).

(I)

Orig. art. has: 1 table and 1 figure. [WA-50; CBE No. 41] [PT]

SUB CODE: 07/ SUBM DATE: 16Feb68/ ORIG REF: 007/ OTH REF: 002

Card 3/3

ACC NR: AP9009942 SOURCE CODE: UR/0366/69/005/001/0054/0058

AUTHOR: Grabenko, A. D.; Danchenko, M. N.; Pel'kis, P. S.

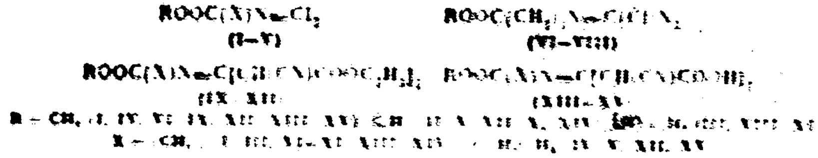
ORG: Institute of Organic Chemistry, Academy of Sciences UkrSSR, Kiev (Institut organicheskoy khimii Akademii nauk UkrSSR)

TITLE: Synthesis of N-alkyl substituted iminocarbonic acid dichloride and their nucleophilic exchange reactions

SOURCE: Zhurnal organicheskoy khimii, v. 5, no. 1, 1969

TOPIC TAGS: organic imine compound, chlorinated organic compound

ABSTRACT: Earlier studies revealed that some arylamides of carbonic acid dichloride are physiologically active and may be used as pesticides. In a search for new physiologically active compounds, new derivatives of iminocarbonic acid were synthesized:



Card 1/3 UDC: 547.495

$ROOC(X)N=CR'R''$

Compound no.	R	R'	R''	X	Yield, %	Bp, (mm) or Mp, °C	d_4^{20}
I	CH_3	Cl	Cl	$(CH_2)_5$	87	110–114° (5)	1.1898
II	C_2H_5	Cl	Cl	$(CH_2)_5$	90	120–1[illegible] (5)	1.1441
III	iso-C_3H_7	Cl	Cl	$(CH_2)_5$	85	130–13[illegible] (5)	1.1831
IV	CH_3	Cl	Cl	$CH_2C_6H_4$	74	65	—
V	C_2H_5	Cl	Cl	$CH_2C_6H_4$	73	69	—
VI	CH_3	Cl	N_3	$(CH_2)_5$	32	—	[illegible]
VII	C_2H_5	Cl	N_3	$(CH_2)_5$	48	—	1.1695
VIII	iso-C_3H_7	Cl	N_3	$(CH_2)_5$	53	—	1.1262
IX	CH_3	$CH(CN)COOC_2H_5$	$CH(CN)COOC_2H_5$	$(CH_2)_5$	50	—	1.1306
X	C_2H_5	$CH(CN)COOC_2H_5$	$CH(CN)COOC_2H_5$	$(CH_2)_5$	44	—	1.1324
XI	iso-C_3H_7	$CH(CN)COOC_2H_5$	$CH(CN)COOC_2H_5$	$(CH_2)_5$	94	—	1.1281
XII	CH_3	$CH(CN)COOC_2H_5$	$CH(CN)COOC_2H_5$	$CH_2C_6H_4$	50	—	1.1615
XIII	CH_3	CH(CN)COOH	CH(CN)COOH	$(CH_2)_5$	25	121	—

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XIV	C_2H_5	CH(CN)COOH	CH(CN)COOH	$(CH_2)_5$	80	114	—
XV	CH_3	CH(CN)COOH	CH(CN)COOH	$CH_2C_6H_4$	90	350	—

The N-substituted amine. of carbonic acid dichloride I—V) were obtained by treating ice-cooled solutions of esters of 5-isothiocyanatocapronic p-isothiocyanatomethylbenzoic acids in CCl_4 with dry Cl. Compounds VI—VIII were obtained by heating on a water bath a mixture of II with sodium azide in aqueous-acetone solution. Compounds IX—XII were prepared by the reaction of II with sodium ethyl cyanoacetate with heating on a water bath. Compounds XII—XV are formed when compounds IX, X, and XII are heated on a water bath with 10% NaOH. [MA-50; CBE No. 41] [PS]

SUB CODE: 07/ SUBM DATE: 24Dec67/ ORIG REF: 002/ OTH REF: 006

Card 3/3

ACC NR: AP9008861 SOURCE CODE: UR/0470/69/000/001/0061/0068

AUTHOR: Gubergrits, M.; Kirso, U.

ORG: Institute of Chemistry, Academy of Sciences EstSSR (Institut khimii Akademii nauk EstSSR)

TITLE: Structure, reactivity, and biological activity of phenols

SOURCE: AN EstSSR. Izvestiya. Khimiya, geologiya, no. 1, 1969, 61-68

TOPIC TAGS: phenol derivative, cancer, white mouse, biologically active compound

ABSTRACT: An attempt was made to characterize the interrelationship of the molecular structure, reactivity, and biological activity of phenols on the basis of an analysis of literature and original data concerning their cancerogenic capacity and toxicity. A solution of PhOH in acetone or in HPh, with 0.3% 9,10-dimethylbenzanthracene (DMBA) or without it, was applied to the skin of white mice. The animals were observed for 12—20 weeks. Thirteen series of experiments were run with phenols of various structure. The initial data for determining the relation of the promoter and cancerogenic activity of phenols to

Card 1/3 UDC: 541.697:616.006.6:547.56

ACC NR: AP9008861

Table 1. Initial data

Substituents in benzene ring	Percent of experimental animals with tumors: A	Malignant tumors A'	[illegible]	[illegible]	Characteristics of reaction series
H	[illegible]	60	[illegible]	[illegible]	Series 4: 0.3% DMBA in acetone + promoter in HPh; 12 wk
2-CH3	[illegible]		[illegible]	[illegible]	
3-CH3	[illegible]		[illegible]	[illegible]	
4-CH3	[illegible]		[illegible]	[illegible]	
3-OH	[illegible]		[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Series 5: 0.3% [illegible] in HPh + promoter [illegible] HPh; 15 wk
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
3-OH	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
H	[illegible]	[illegible]	[illegible]	[illegible]	Series 10: only promoter in HPh; 20 wk
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

Card 2/3

their structure are shown in Table 1. The interrelationship between the biological activity of phenols (their cancerogeno-promoter capacity and toxicity) and the characteristics of the electron structure of their molecules may be described quantitatively by means of a modified Hammett-Taft equation, i.e., by the methods of chemical kinetics. In most cases, there is satisfactory agreement with the principle of the independent and additive effect of substituents in the benzene ring on the reactivity of the OH group (reaction center) in biological processes, especially for the meta- and para-substituted homologs. The toxicity increases and the promoter-cancerogenic properties weaken as the electron density at the reaction center of the phenols increases. The limiting step of the overall toxicity reaction of phenols in the organism is electrophilic, while the limiting step of the overall cancerogenic reaction is nucleophilic. Therefore, the phenols which display a pronounced promoter-cancerogenic capacity are of low toxicity, and vice versa. In accordance with the nature of the reaction, the specific deviation of ortho-substituted phenols from the general principle is due to a decrease in their toxicity and an increase in their cancerogenic properties. Orig. art. has: 3 tables and 1 figure.
[WA-50; CBE No. 41] [FT]

SUB CODE: 06/ SUBM DATE: 16Sep68/ ORIG REF: 010/ OTH REF: 020

AUTHOR: Ivanov, B. Ye.; Kudryavtseva, I. A.

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

TITLE: Phosphonomethylation of compounds with a reactive hydrogen atom

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 2, 1969, 480

TOPIC TAGS: phosphonate ester, aliphatic phosphorus compound, aromatic phosphorus compound

ABSTRACT: Diethyl 2-cyano-2-phenylethylphosphonate (bp 146—147°C at 0.001 mm); dipropyl propylthiomethylphosphonate (bp 88—89°C at 1 mm); diethyl α-piperidylmethylphosphonate (bp 88—90°C at 0.04 mm); and diphenyl α-phenoxymethylphosphonate (bp 153—154°C at 0.002 mm) were synthesized in yields of 35, 40, 60, and 36%, respectively, by condensation in the ternary system in tetralin solution at 150—200°C:

$$RH + CH_2O + P(OR')_3 \rightarrow RCH_2P(OR')_2 + R'OH$$
$$\parallel$$
$$O$$

UDC: 542.991+661.718.1

ACC NR: AP9008427

using malonic, cyanoacetic, and acetoacetic esters and acetylacetone as RH. The structure of the compounds synthesized was established by IR and NPR spectra. [WA-50; CBE No. 41] [PS]

SUB CODE: 07/ SUBM DATE: 04Apr68

Card 2/2

ACC NR: AP9006503 SOURCE CODE: UR/0062/69/000/001/0138/0140

AUTHOR: Ivanov, B. Ye.; Pasmanyuk, S. V.

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

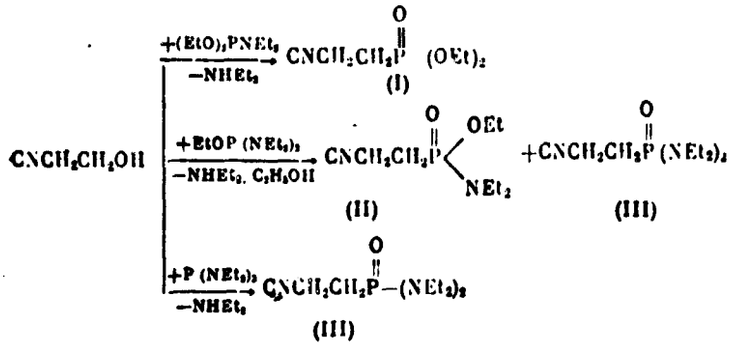
TITLE: Reactions of amidophosphites with β-substituted nitriles

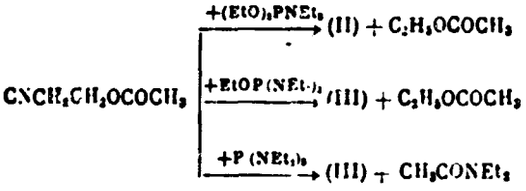
SOURCE: AN SSSR. Izv. Ser khim, no. 1, 1969, 138-140

TOPIC TAGS: substituted amide, aliphatic phosphorus compound, aliphatic ester

ABSTRACT: The reactions of mono-, di-, and triamidophosphites with β-substituted nitriles at 140—180°C proceed with Arbuzov rearrangement to form compounds I, II, and III:

Card 1/3 UDC: 542.938+661.718.1





The previously reported compound I is formed at 140—150°C in a 48% yield. Compounds II (bp 112—114°C at 2 x 10^{-2} mm) and III (bp 122—124°C at 2 x 10^{-2} mm) were obtained at 165--170°C in yields of 7.8 and 12%, respectively. The reaction of acetoxypropionitrile with diethyl bis(diethylamido)phosphite at 145—150°C gave 83% II.

[WA-50; CBE No. 41] [PS]

SUB CODE: 07/ SUBM DATE: 18Jun68/ ORIG REF: 001

ACC NR: AP9008429 SOURCE CODE: UR/0062/69/000/002/0481/0482

AUTHOR: Ivasyuk, N. V.; 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: Hydrolysis of bis(chloromethyl)thiophosphinic acid

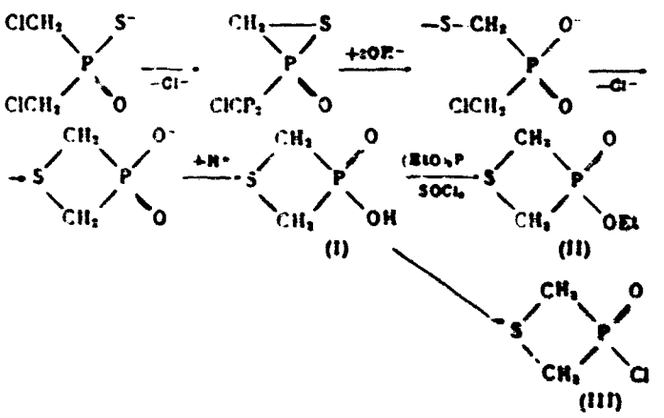
SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 2, 1969, 481-482

TOPIC TAGS: phosphinic acid, thiophosphinic acid derivative, aliphatic ester, aliphatic phosphorus compound

ABSTRACT: Analysis of the products formed in the acid hydrolysis of bis(chloromethyl)thiophosphinic acid at room temperature suggests the following hydrolysis mechanism:

Card 1/2 UDC: 542.938+661.718.1

ACC NR: AP9008429



The primary hydrolysis product, compound I (mp 142°C) was obtained in a yield of about 80%. Treatment of compound I with triethyl phosphite gave compound II (n_D^{20} 1.5078, d_4^{20} 1.2551). The treatment of I with thionyl chloride gave compound III (mp 101—103°C).

[MA-50; CBE No. 41] [PS]

SUB CODE: 07 SUBM DATE: 14Nov68

Card 2/2

ACC NR: AP9010319 SOURCE CODE: UR/0079/69/039/002/0379/0382

AUTHOR: Kumay, G. Kh.; Valetdinov, R. K.; Ismagilov, R. K.

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

TITLE: Reaction of some trialkylphosphines with carbon tetrachloride

SOURCE: Zhurnal obshchey khimii, v. 39, no. 2, 1969, 379-382

TOPIC TAGS: aliphatic phosphorus compound, phosphorus oxide, phosphine oxide derivative

ABSTRACT: A white waxy phosphonium compound (I) of undetermined structure ($C_{37}H_{81}Cl_4P_3$) (51.9% yield) was prepared by adding CCl_4 to Bu_3P in Et_2O in H and stirring at -10 to -8°C. A second phosphonium compound of undetermined structure ($C_{46}H_{99}Cl_4P$) (69.4% yield) was similarly prepared from $(BuCH_2)_3P$. Tributylphosphine oxide (II) (86% yield, bp_{15} 175—178°C) was obtained by adding NaOEt in Et_2O to I in Et_2O and boiling for 30 min. Compound II (87% yield, mp 61—62°C) was also also obtained by adding H_2O to I in Et_2O and stirring. Tris(β-cyanoethyl)phosphine oxide (III) (50.8% yield, mp 168—169°C) was prepared

Card 1/2 UDC: 547.241

ACC NR: AP9010319

by refluxing $P(CH_2CH_2CN)_3$, CCl_4, and CH_3OH for 4 hr. Compound III

$$R_3P + CCl_4 \longrightarrow \begin{matrix} CCl_3 \\ Cl \end{matrix}\!\!>\!PR_3$$

$$\begin{matrix} CCl_3 \\ Cl \end{matrix}\!\!>\!PR_3 + CH_3OH \longrightarrow OPR_3 + CH_3Cl + HCCl_3$$

(64.8% yield, mp 169°C) was also obtained by boiling $P(CH_2CH_2CN)_3$, CCl_4, and HPh for 6 hr. Tris(hydroxymethyl)phosphine oxide (87.5% yield) was prepared by boiling $P(CH_2OH)_3$ and CCl_4 in EtOH for 4 hr. Methylbis(hydroxymethyl)phosphine oxide (97.2% yield, mp 48—50°C, n_D^{20} 1.4950) was obtained by boiling $CH_3P(CH_2OH)_2$, CCl_4, and CH_3OH for 1 hr and allowing the mixture to stand for a long time. Butylbis(hydroxymethyl)phosphine oxide (89.8% yield, d_4^{20} 1.1515, n_D^{20} 1.4895) was similarly prepared. [WA-50; CBE No. 41] [FT]

SUB CODE: 07/ SUBM DATE: 11Mar68/ ORIG REF: 004/ OTH REF: 008

Card 2/2

ACC NR: AP9010310 SOURCE CODE: UR/0079/69/039/002/0341/0346

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

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: Synthesis and some properties of ethyl(β-carbethoxyethyl)phosphinic chloride

SOURCE: Zhurnal obshchey khimii, v. 39, no. 2, 1969, 341-346

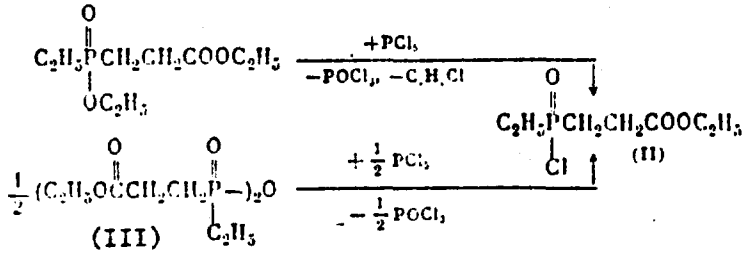
TOPIC TAGS: phosphinic acid, aliphatic ester, substituted amide, heterocylic phosphorus compound, heterocyclic oxygen compound

ABSTRACT: Ethyl ethyl(β-carbethoxyethyl)phosphinate (40.9% yield, $bp_{0.22}$ 116—118°C, d_4^{20} 1.0760, n_D^{20} 1.4550) and ethyl(β-carbethoxyethyl)phosphinic anhydride (III) (28.3% yield, $bp_{0.7}$ 201°C, d_4^{20} 1.1835, n_D^{20} 1.4690) were prepared by adding EtOH to ethyl(β-chloroformylethyl)phosphinic chloride in HPh at 0—3°C, stirring for 3 hr at 20°C, and allowing the mixture to stand for 24 hr. Ethyl(β-carbethoxyethyl)phosphinic acid (I) was obtained by adding

Card 1/6 UDC: 547.241+547.297

ACC NR: AP9010310

ethyl(β-carbethoxyethyl)phosphinic chloride (II) to ice. Compound II was prepared by adding PCl_5 to ethyl ethyl(β-carbethoxyethyl)phosphinate in CCl_4 and heating for 5 hr to 60°C. Compound II (41.8% yield) and 2-ethyl-2,5-dioxo-1,2-oxaphospholane (IX) (19% yield, $bp_{0.03}$ 136—138°C, d_4^{20} 1.2910, n_D^{20} 1.4860) were similarly prepared from III.



Compound III was prepared by adding II to H_2O in HPh and Et_3N at 0—3°C and allowing the mixture to stand for 24 hr. Butyl ethyl(β-carbethoxyethyl)phosphinate (IV) was obtained by adding BuOH to II and Et_3N in HPh in the cold and allowing the mixture to stand for

Card 2/6

Table 1.

$C_2H_5P(O)(X)CH_2CH_2COOC_2H_5$

No.	X	Yield, %	Bp, °C (p in mm)	d_4^{20}	n_D
I	OH	94.6	—	1.2062	1.4720
II	Cl	70.4	114.5° (0.007)	1.1974	1.4705
III	$C_2H_5OC(O)CH_2CH_2P(O)(C_2H_5)-$	67.9	196—191 (0.1)	1.1762	1.4725
IV	C_6H_5O	51.4	114 (0.001)	1.0366	1.4495
V	C_6H_5O	67.9	148—150 (0.001)	1.1445	1.5070

Table 1. (Cont.)

VI	$(C_2H_5)_2N$	54.0	127 - 128 (0.001)	1.0413	1.4650
VII	C_6H_5S	41.2	124 (0.001)	1.0896	1.4920

$$2C_2H_5P(O)(Cl)CH_2CH_2COOC_2H_5 + H_2O + 2(C_2H_5)_2N \longrightarrow$$

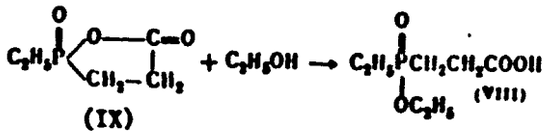
(II)

$$\longrightarrow 2(C_2H_5)_2N \cdot HCl + (C_2H_5OC(O)CH_2CH_2P(O)(C_2H_5))_2O$$

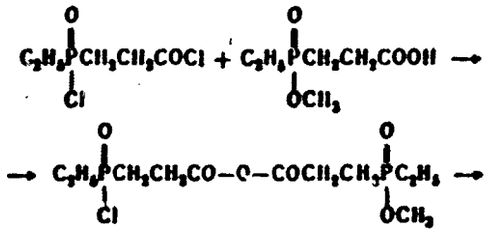
(III)

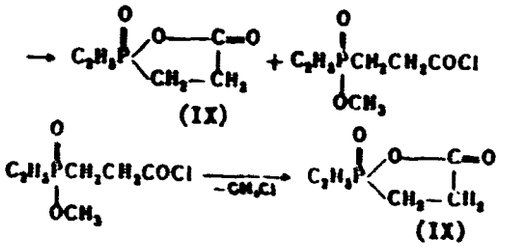
24 hr. Compounds V and VII were similarly prepared. Ethyl(β-carbethoxyethyl)phosphinic diethylamide (VI) was obtained by adding Et_2NH to II in HPh in the cold. Ethyl ethyl(β-carboxyethyl)phosphinate

(VIII) (d_4^{20} 1.1540, n_D^{20} 1.4610) was obtained by allowing IX to react with EtOH at 20—64°C. Compound IX (50% yield, $bp_{0.04}$ 136°C, d_4^{20} 1.2826) was also prepared by refluxing II for 5 hr at 230°C. Compound



IX (73.9% yield, $bp_{0.04}$ 137—138°C, d_4^{20} 1.2915, n_D^{20} 1.4865) was additionally obtained by adding methyl ethyl(β-carboxyethyl)phosphinate





to ethyl(β-chloroformylethyl)phosphinic chloride and stirring for 4 hr at 60°C. Orig. art. has: 1 figure and 1 table.

[WA-50; CBE No. 41] [FT]

SUB CODE: 07/ SUBM DATE: 05Feb68/ ORIG REF: 006

ACC NR: AT9009875 SOURCE CODE: UR/0000/69/000/000/0031/0031

AUTHOR: Kochkin, D. A.; Zubov, P. I.; Voronkov, N. A.; Novoderezhkina, I. S.;

ORG: Institute of Physical Chemistry, AN SSSR, Moscow (Institut fizicheskoy khimii AN SSSR)

TITLE: Biologically active organotin and organolead polymers and copolymers

SOURCE: IUPAC International Symposium on Macromolecular Chemistry, 1969. Kinetics and mechanism of polyreactions; abstracts of papers to be presented at the Symposium, 25-30th August, 1969, 31

TOPIC TAGS: organotin compound, organolead compound, bactericide, fungicide, metal containing polymer

ABSTRACT: The results of the authors study of the synthesis and properties of biologically active organotin and organolead polymers, particularly paint and varnish coating based on organotin and organolead polymers, will be presented at the International Symposium on Micromolecular Chemistry, on August 25-30, 1969, in Budapest. Polymeric materials with good physicochemical and mechanical properties and high

Card 1/2

ACC NR: AT9009875

bactericidal and fungicidal activity were synthesized and tested. [WA-50; CBE No. 41] [PS]

SUB CODE: 07/ SUBM DATE: none

Card 2/2

ACC NR: AP9007646 SOURCE CODE: UR/0240/69/000/001/0045/0049

AUTHOR: Krasovskiy, G. N.; Korolev, A. A.; Belyayeva, N. G.; Varshavskaya, S. P.; Kutakov, K. V.; Malikova, R. T.; Trakhtman, M. B.

ORG: Department of Communal Hygiene, First Moscow Medical Institute im. I. M. Sechenov (Kafedra kommunal'noy gigiyeny Pervogo Moskovskogo meditsinskogo instituta)

TITLE: Comparative sensitivity of man and laboratory animals to chemical factors (Atsetofos) in an experiment

SOURCE: Gigiyena i sanitariya, no. 1, 1969, 45-49

TOPIC TAGS: poison effect, phosphorus compound, cholinesterase, human survival, guinea pig, white rat, white mouse, gastroenterology

ABSTRACT: The comparative sensitivity of man and laboratory animals is of primary interest to environmental hygienists, who must frequently extrapolate experimental data from animals to man. For such extrapolations, it is necessary to have a clear understanding of the qualitative and quantitative correlations of the sensitivity of man and laboratory animals to the action of toxic substances. The degree of the comparative reaction of man and laboratory animals to large, near-lethal doses of toxic substances has been studied previously by G. N. Krasovskiy.

 UDC: 619:615:285.7.099

Of no less interest is the determination of the effect on the organism of a specifically active ingredient when it is given in single, small, threshold doses. Representative of such substances are organophosphorus compounds (OPC) which specifically inhibit the activity of cholinesterase (ChE). Atsetofos (AF), i.e., $(EtO)_2P(O)SCH_2COOEt$, was chosen for study because of its lack of noticeable cumulative properties, the markedness of its anti-ChE action, and its good solubility in water. Participants in the experiments were physician-volunteers, the authors of the present study, observing certain requirements ensuring the safety of the experiment in accordance with the resolution of the Helsinki Convention of the World Health Organization permitting such experiments. The participants were 3 women and 4 men 25—35 years of age. In each series of animal experiments, 3 males and 3 females were used. Twenty-five experiments were run on humans who were given solutions of AF in various concentrations. The animals were given the same solutions in volumes proportional to the weight of their body, thus ensuring not only identical doses of AF, but also relatively identical volumes of the solution of the substance. The activity of whole blood ChE was determined by the method of Fleishcher and Pope in a dynamics with intervals of 30 min, 1, 2, 3, and 5 hr, and, in testing the highest doses of the AF solution, also 24 hr after administration. All the doses of AF tested in man were preliminarily approved in laboratory animals. The doses were chosen on the basis of the results of

A. A. Komlev's previous chronic experiment on medical-toxicological evaluation of AF. In his experiment, it was shown that the minimum effective dose of AF is 0.5 mg/kg. In the first series of the author's experiments on 7 volunteers, a study was made of the effect of a single dose of AF of 0.16 mg/kg. No unpleasant sensations were noted and the activity of blood ChE varied within the limits of methodological error. No noticeable changes occurred in the ChE activity of guinea pigs and white rats given the same dose of AF. In rabbits, the activity of the enzyme

Table 1. Reaction of blood ChE of men and laboratory animals to single peroral administration of various doses of AF (in % of background taken as 100)

Dose, AF (in mg/kg)	Men						Rabbits			Guinea pigs			White rats			[illegible]		
	30 min	1 hr	2 hr	3 hr	5 hr	24 hr	1 hr	3 hr	24 hr	1 hr	3 hr	24 hr	1 hr	3 hr	24 hr	1 hr	3 hr	24 hr
0.16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	[illegible]	[illegible]	—	[illegible]	[illegible]	—	[illegible]	[illegible]	—	[illegible]	[illegible]	[illegible]
0.5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	—	[illegible]	[illegible]	—	[illegible]	[illegible]	—	[illegible]	[illegible]	—	[illegible]	[illegible]	[illegible]
2.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

decreased, on the average, by 15% 30 min after administration, and in some animals it decreased by 20—25%. When the rabbits were given tap

water in the same volumes (control experiment), the activity of ChE in some animals (in comparison with the natural background) varied within a range of 15—20%. In the second series of experiments, the volunteers received AF in a dose of 0.8 mg/kg. No significant changes occurred in the activity of blood ChE, but some of the subjects (especially the women) complained of unpleasant sensations in the epigastric region, slight nausea, and periodic pains in the region of the esophagus 30 min to 1 hr after taking AF. After receiving AF in a dose of 2 mg/kg, all the women complained of malaise in the form of vertigo, general weakness, eructation, a feeling of a "lump" in the esophagus and epigastric region, gastric pains, and urges to vomit. The feeling of discomfort in the epigastric region and the "lump in the esophagus also remained the next day. The men complained of practically the same symptoms, only less pronounced and of shorter duration. However, on the basis of objective investigations, the difference between the degree of inhibition of blood ChE activity in the men and the women was not so sharply pronounced. The difference in the degree of inhibition of ChE activity in male and female rabbits and guinea pigs was about 15—20%, and hardly any difference in inhibition was noted between female and male white rats. Since the AF sensitivity of the women was greater than that of the men, the next dose, 4 mg/kg, was tested only in the men. The clinical picture was similar to that described above. Especially characteristic was a painful feeling of a "lump" along the esophagus

30 Min	2 hr	5 hr	24 hr
	Men		
84,5	84,5	92,2	103,0
93,3	85,6	79,4	101,3
90,1	92,3	89,7	103,6
94,3	69,2	61,4	85,0
Average 90,5	83,0	80,7	98,2
	Women		
71,2	51,5	52,4	98,9
78,5	75,7	86,5	105,5
91	57,6	54,7	91,7
Average 80,3	61,5	64,5	98,7

Table 2. Inhibition of blood ChE activity in men and women given a single dose of AF of 2 mg/kg (in % of background taken as 100)

and in the epigastric region. But the general condition of the subjects was quite satisfactory. In all the subjects, the activity of the blood ChE decreased by 50—70%. However, one volunteer's ChE was inhibited by 75% by the second hour, and the inhibition was accompanied by a sharp decline in general well-being, intense pains in the gastric

region, and vomiting. Therefore, he was given subcutaneously 2 ml of 0.1% atropine, after which he felt noticeably better, but without normalization of the level of ChE. Twenty-four hours after administration of AF in a dose of 4 mg/kg, the activity of the enzyme in the volunteers was still 60—80% of the initial level and became normal only by the second day. Considerable inhibition of blood ChE activity from this dose occurred in rabbits (70—80%) and guinea pigs (30—40%), but outwardly the experimental animals hardly differed from the control ones. Just as in man, the activity of the enzyme in these animals was not completely restored by the first 24 hours. In white rats and white mice, the enzyme was inhibited by only 10—20% for the same dose. The quantitative treatment of this information was made difficult by the need to consider 3 interrelated factors: different doses, times of observation, and objects. Therefore, it was decided to use the method of probit analysis, which allows one to express information in the form of "time-effect" curves. There was no fear of losing the necessary accuracy in treating the results since the initial data had large scattering, with the percent of mean error, which reached 50, testifying to the pronounced individual sensitivity to AF of people and laboratory animals. For each time point in Fig. 1, it was possible to obtain a curve characterizing the degree of the anti-ChE effect in relation to the tested doses of AF for man and each kind of animal. The effective doses which caused a reduction in ChE activity of 50%, 30%, etc., were

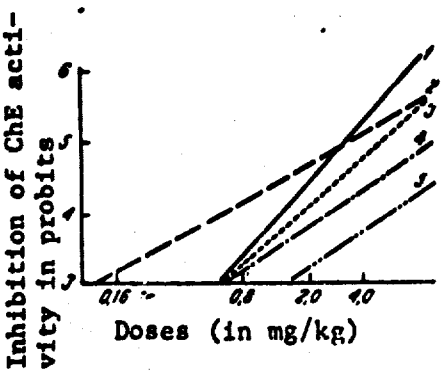


Fig. 1. Relation of anti-ChE effect to doses of AF 5 hr after administration

1 - Human; 2 - rabbits; 3 - guinea pig;
4 - white rat; 5 - white mouse.

determined from such graphs. Figure 2 shows the correlations of the levels of the effective doses which caused a 50 or 30% reduction of ChE activity in man and laboratory animals in relation to the doses

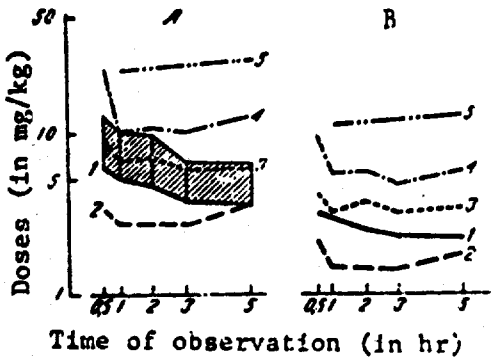


Fig. 2. Level of effective doses (ED) of AF with respect to its anti-ChE activity

A - Doses causing 50% inhibition of ChE (ED_{50});
B - doses causing 30% inhibition of ChE (ED_{50}).

and time of observation. The shaded area shows the upper confidence limits of the variation of the average values ($M \pm tm$) (calculated according to Miller and Teynter) for doses which caused 50% inhibition of ChE activity in man. A comparative study was made of the average

lethal doses of AF for laboratory animals. It was previously established that LD_{50} is 45 mg/kg for rabbits, 30 mg/kg for guinea pigs, 45 mg/kg for white rats, and 230 mg/kg for white mice. The low sensitivity of the white mice may be due to characteristics of the metabolism of AF in their liver (O'Brian). Thus, by relying on the results of acute experiments, it is possible to significantly level out possible differences in the sensitivity of man and laboratory animals to the action of a toxic substance when choosing animals for a chronic experiment. From the results of acute experiments, it is possible to say that all remaining animals are on approximately the same level of sensitivity. Nevertheless, the rabbits reacted most strongly to single, small doses of AF. These data may not be explained merely by the high reactivity of the ChE in these animals since, in the case of a dose of AF of 0.8 mg/kg, which did not affect the level of ChE in man, its percent decrease in rabbits reached 25—30. This is considerably greater than the normal level of variations of enzyme activity in rabbits. However, the rabbits did not display pronounced sensitivity to the action of comparatively large doses. Therefore, the slope of the "effect—dose" curves for rabbits noticeably differs from similar curves for man and other laboratory animals, suggesting a somewhat different mechanism of the toxic action of AF on rabbits. This may be due not so much to a different hydrolyzing capability of the rabbit liver as to inverse correlations of the content of true and pseudo ChE in the serum and the erythrocytes.

The quinea pigs and especially the rats differed somewhat from man in the degree and character of their ChE reaction. But these differences are insignificant and level out because of pronounced individual variations. Sex had no decisive significance in the scattering of the experimental data, although the women subjectively and objectively turned out to be somewhat more sensitive to AF than the men. The same degree of difference occurred in rabbits, guinea pigs, and white rats. However, the differences were not so pronounced as in the action of some other OPC. The humans displayed an earlier subjective reaction to AF in a dose of 0.8 mg/kg, which did not affect the level of the activity of blood ChE, the enzyme which is attacked specifically and earliest in OPC poisoning. It is difficult to say whether this effect is a manifestation of the local action of AF or whether it is characteristic of a general resorptive action. However, this factor must be considered in studying the toxicodynamics and standardization of OPC in the external environment. Thus, man does not significantly differ in sensitvity from most usual laboratory animals. By 24—48 hr, the reactivation time of ChE practically did not differ in man and laboratory animals. Thus, when man is given multiple threshold doses of AF, his sensitivity probably will not differ from that of laboratory animals. Orig. art. has: 2 tables and 2 figures. [WA-50; CBE No. 41] [FT]

SUB CODE: 06/ SUBM DATE: 19Mar68/ ORIG REF: 006/ OTH REF: 002

ACC NR: AP9010318 SOURCE CODE: UR/0079/69/039/002/0376/0379

AUTHOR: Kudinova, V. V.; Grinevich, V. V.; Foss, V. L.; Lutsenko, I. F.

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

TITLE: Carbalkoxymethylarsines

SOURCE: Zhurnal obshchey khimii, v. 39, no. 2, 1969, 376-379

TOPIC TAGS: arsine, arsenic sulfide, organic arsenic compound

ABSTRACT: Tris(carbomethoxymethyl)arsine (I) was prepared by adding $AsCl_3$ to $Et_3SnCH_2COOCH_3$ in argon in the cold and heating for 1 hr at 100°C. The compounds shown in Table 1 under Method A were similarly prepared. Dibutyl(carbomethoxymethyl)arsine (II) was prepared by adding $(Bu_2As)_2S$ in m-xylene to $Hg(CH_2COOCH_3)_2$ in m-xylene at 60—70°C

$$R_nAsCl_{3-n} + (3-n)(C_2H_5)_3SnCH_2COOR' \longrightarrow (3-n)(C_2H_5)_3SnCl + R_nAs(CH_2COOR')_{3-n}$$
$$n = 0, 1, 2.$$
(I—VIII, X)

 UDC: 547.242

Table 1. Carbalkoxymethylarsines

No.	Compound	Method	Yield, %	Bp, °C (p in mm)	n_D^{20}	d_4^{20}
I	$As(CH_2COOCH_3)_3$	A	94	132—133° (0.3)	1.5041	1.4221
II	$(C_4H_9)_2AsCH_2COOCH_3$	A	77	75—77 (0.2)	1.4831	—
		B	44	83—85 (1)	1.4834	1.1082
III	$(C_6H_5)_2AsCH_2COOCH_3$	A	83	125—127 ($5 \cdot 10^{-2}$)	1.6104	1.3221
IV	$C_6H_5As(CH_2COOCH_3)_2$	A	81	123—124 ($2.5 \cdot 10^{-2}$)	1.5581	1.3663
		B	53	109—111 ($5 \cdot 10^{-2}$)	1.5582	—
V	$C_6H_5As(CH_2COOC_2H_5)_2$	A	82	143—145 (0.3)	1.5117	1.2840
VI	$C_6H_5As(CH_2COOC_3H_7)_2$	A	90	144—146 ($8 \cdot 10^{-2}$)	1.5272	1.2175
VII	$p\text{-}ClC_6H_4As(CH_2COOCH_3)_2$	A	80	143—145 ($8 \cdot 10^{-2}$)	1.5668	1.4381
VIII	$p\text{-}ClC_6H_4As(CH_2COOC_3H_7)_2$	A	70	154—156 ($8 \cdot 10^{-2}$)	1.5331	1.2795
IX	$p\text{-}ClC_6H_4As(CH_2COOC_5H_{11}\text{-iso})_2$	B	41	170 ($7 \cdot 10^{-2}$)	1.5293	1.2377
X	$p\text{-}NO_2C_6H_4As(CH_2COOCH_3)_2$	A	68	194—202 ($8 \cdot 10^{-2}$)*	—	—

* Mp 53—54°.

and heating for 5 hr at 140°C. The compounds shown in Table 1 under Method B were similarly prepared. Dibutylarsenic sulfide (59% yield,

$$(ArAsS)_n + Hg(CH_2COOR')_2 \longrightarrow ArAsSHgCH_2COOR' \xrightarrow{t^\circ} ArAs(CH_2COOR')_2 + HgS$$
$$\downarrow CH_2COOR'$$
(IV, IX)

ACC NR: AP9010318

$$[(C_4H_9)_2As]_2S + Hg(CH_2COOR')_2 \rightarrow (C_4H_9)_2AsCH_2COOR' +$$
$$+ (C_4H_9)_2AsSHgCH_2COOR' \xrightarrow{t^\circ} (C_4H_9)_2AsCH_2COOR' + HgS$$
(II)

$bp_{0.015}$ 121—123°C, n_D^{20} 1.5325, d_4^{20} 1.3122) was obtained by passing H_2S into boiling Bu_2AsNEt_2 in CH_3OH for 8 hr. Orig. art. has: 1 table. [WA-50; CBE No. 41] [FT]

SUB CODE: 07/ SUBM DATE: 27Feb68/ ORIG REF: 004/ OTH REF: 003

Card 3/3

ACC NR: AP9010321 SOURCE CODE: UR/0079/69/039/002/0385/0387

AUTHOR: Kulakova, V. N.; Zinov'yev, Yu. M.; Shpanskiy, V. A.; Soborovskiy, L. Z.; Makarov, S. P.(deceased)

ORG: none

TITLE: Synthesis of N-trifluoromethylimidophosphates and phosphonates (N-trifluoromethylphosphazo compounds)

SOURCE: Zhurnal obshchey khimii, v. 39, no. 2, 1969, 385-387

TOPIC TAGS: phosphate ester, imide, fluorine compound, phosphazo compound, phosphonate ester

ABSTRACT: Triethyl N-trifluoromethyl)-imidophosphate (I) was prepared by passing CF_3N_3 through $(EtO)_3P$ in HPh in N for 30—40 min at 50—60°C and condensing the unconsumed azide at -78°C. Compounds II—VI were similarly prepared.

$$(ROP\langle^{X}_{Y} + CF_3N_3 \rightarrow ROP(=NCF_3)\langle^{X}_{Y}$$

Card 1/2 UDC: 547.1'554'547.241

Table 1

$ROP(=NCF_3)XY$

No.	R	X	Y	Yield, %	Bp, °C (p in mm)	n_D^{20}	d_4^{20}
I	C_2H_5	OC_2H_5	OC_2H_5	67	65—68° (2)	1.3942	1.2291
II	C_2H_5	OC_2H_5	F	16	34—35 (5)	1.3560	1.2726
III	C_3H_7	OC_3H_7	CH_3	65	74—75 (2)	—	1.1362
IV	iso-C_3H_7	OC_3H_7-iso	CH_3	82	56—58 (2)	1.3950	1.1180
V	C_2H_5	SC_2H_5	CH_3	19	60 (0.001)	1.4430	1.2290
VI	C_2H_5	F	CH_3	68	49—50 (15)	1.3572	1.2963

Orig. art. has; 1 table. [WA-50; CBE No. 41] [FT]

SUB CODE: 07/ SUBM DATE: 16Mar68/ ORIG REF: 004/ OTH REF: 001

Card 2/2

AP NR: AP9009961 SOURCE CODE: UR/0366/69/005/001/0162/0167

AUTHOR: Levshina, K. V.; Andrianova, T. A.; Safonova, T. S.

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

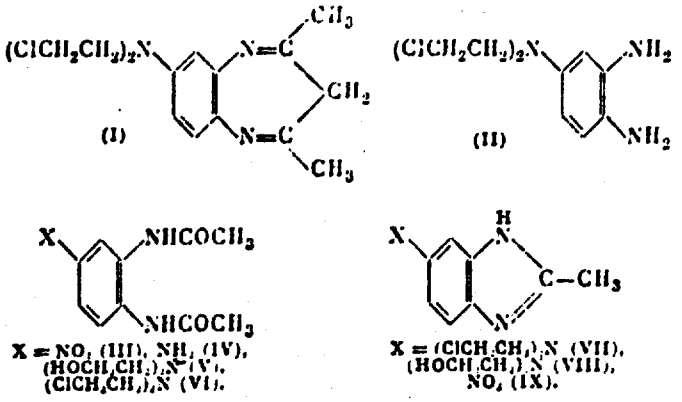
TITLE: Bis(β-chloroethyl)amines of bicyclic compounds. Synthesis of 2,4-dimethyl-7-bis(β-chloroethyl)-amino-1,5-benzodiazepine

SOURCE: Zhurnal organicheskoy khimii, v. 5, no. 1, 1969, 162-167

TOPIC TAGS: benzimidazole, chloroethane, amine derivative, azepine derivative

ABSTRACT: 2,4-Dimethyl-7-bis(β-chloroethyl)amino-1,5-benzodiazepine (I) (4.2 g from 6.3 g XIII, mp 118—122°C) was prepared by adding ethylene oxide to 2,4-dimethyl-7-amino-1,5-diazepine hydrochloride (XIII) in 25% HOAc at 2—5°C, stirring for 3 hr, treating with KOH and EtOAc, evaporating, dissolving the residue in HPh, adding $POCl_3$ at 10°C, and boiling for 1 hr. The preparation of I from 4-bis(β-chloroethyl)amino-1,2-phenylenediamine (II) proved impractical. 4-Amino-N,N'-diacetyl-o-phenylene-1,2-diamine (IV) (92% yield, mp 204—205°C) was obtained by shaking 4-nitro-N,N'-diacetyl-o-phenylene-1,2-diamine (III), Raney Ni, and CH_3OH in

Card 1/3 UDC: 547.892



H for 6 hr at 20°C. 4-Bis(β-hydroxyethyl)-N,N'-diacetyl-o-phenylene-1,2-diamine (V) (88% yield, mp 174—176°C) was prepared by adding ethylene oxide to IV in 25% HOAc at 2—3°C and stirring for 4 hr at 5°C. Attempts to obtain 4-bis(β-chloroethyl)-N,N'-diacetyl-o-phenylene-1,2-diamine (VI) from V and $POCl_3$ were unsuccessful. 5-Bis(β-chloroethyl)amino-2-methylbenzimidazole (VII) (80% yield, mp 126—128°C) was obtained by boiling V and $POCl_3$ for 2.5 hr. 5-Bis(β-hydroxyethyl)amino-2-methylbenzimidazole (VIII) (60% yield, mp 149—151°C) was prepared by boiling V in 18% HCl for 3 hr. 5-Nitro-2-methylbenzimidazole (IX) (0.6 g from 1 g III, mp 218—218.5°C) was obtained by boiling III and $POCl_3$ for 3 hr. Compound IX was also prepared by heating III and 40% KOH for 15 min at 100°C,

adding H_2O, and heating for 15 min. Compound IX was additionally obtained by boiling III in HCl for 2 hr. 4-Nitro-N-4'-oxo-2'-penten-2'-yl-o-phenylenediamine (XI) (45% yield, mp 156.5—158.5°C) was prepared by way of XII by adding 2,4-dimethyl-7-nitro-1,5-benzodiazepine hydrochloride (X) in H_2O to 20% NaOH at 2—4°C. Compound XI was deuterated at N with deuterated EtOH. Compound XIII (62% yield, mp 203—206°C) was obtained by hydrogenating X in EtOH in the presence of Raney Ni at 20°C for 2.5—3 hr. 2,4-Dimethyl-7-amino-1,5-benzodiazepine (XIV) (mp 179—180°C) was similarly prepared. The authors thank K. F. Turchin, Ye. M. Peresleni, and Yu. I. Pomerantsev for recording and interpreting the PMR, IR, and UV spectra. Orig. art. has: 2 figures.

[WA-50; CBE No. 41] [FT]

SUB CODE: 07/ SUBM DATE: 25Jul67/ ORIG REF: 002/ OTH REF: 003

ACC NR: AP9007919 SOURCE CODE: UR/0442/69/000/002/0125/0127

AUTHOR: Lozyns'kyy, M. O.; Karabanov, Yu. V.; Kudrya, T. N. Pel'kis, P. S.; Cherevchenko, T. M.

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

TITLE: New 1-(p-nitrophenyl)-2-amino-1,3-propanediol derivatives of urea and thiourea

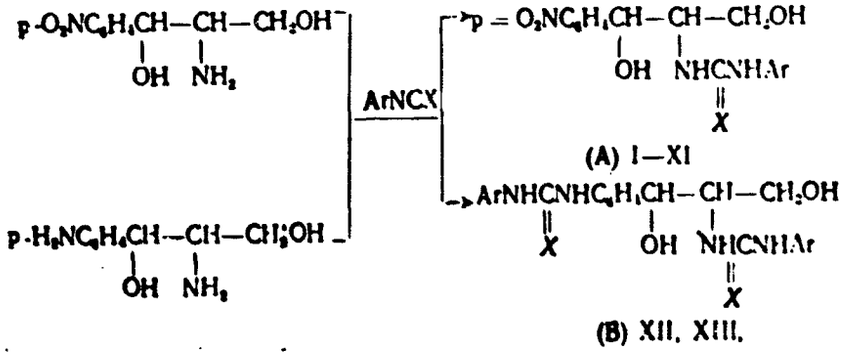
SOURCE: AN UkrRSR. Dopovidi. Seriya B. Heolohiya, heofizyka, khimiya ta biolohiya, no. 2, 1969, 125-127

TOPIC TAGS: urea derivative, thiourea, biologically active compound, amine derivative

ABSTRACT: Derivatives of urea and thiourea are widely used as herbicides and insecticides. In a search for new physiologically active compounds, a series of substituted arylureas and arylthioureas was synthesized by the condensation of 1-(p-nitrophenyl)-2-amino-1,3-propanediol with substituted phenylisothiocyanate as isocyanates in acetone solution with boiling for 8—9 hr.:

 UDC: 547.435:547.494:547.497

ACC NR: AP9007919



(where X = O or S). Compounds A are characterized in the table. Compound XII (melts with decomposition at 182°C) and XIII (melts at 212°C with decomposition) were synthesized by the reaction of 1-(p-aminophenyl)-2-amino-1,3-propanediol with phenylisocyanate and phenylisothiocyanate, respectively, on boiling for 8 hr in alcohol-acetone solution. Some of the new compounds showed high biological activity. The activity of compound I, as a plant-growth regulator, is close to

ACC NR: AP9007919

Table 1. N-1-(p-nitrophenyl)-1,3-propanediol-2-N'-arylurea (A)

№	Ar	Yield, %	Mp, °C	X	Isomer
I	C_6H_5	76	191—193	O	a
II	C_6H_5	65	173—174	O	b
III	C_6H_5	83	180—181	O	c
IV	C_6H_5	70	141—143	S	a
V	C_6H_5	84	160—161[2]	S	b
VI	p-$CH_3C_6H_4$	77	156—158	S	a
VII	p-$CH_3C_6H_4$	77	165—166	S	b
VIII	p-$CH_3C_6H_4$	93	158—160	S	c
IX	p-ClC_6H_4	80	160—161	S	c
X	p-$HOOCC_6H_4$	92	144—145	S	c
XI	p-$C_6H_5OOCC_6H_4$	94	109—110	S	c

a—c-isomer, b-treo-d+l-isomer, c-l-isomer

that of the well-known compound gibberellin. Presented by A. I. Kiprianov, Academician AN UkrSSR. [WA-50; CBE No. 41] [PS]

SUB CODE: 07/ SUBM DATE: 08Jul68/ ORIG REF: 003/ OTH REF: 001

Card 3/3

ACC NR: AP9008574 SOURCE CODE: UR/0020/69/184/002/0355/0357

AUTHOR: Luknitskiy, F. I.; Taube, D. O.; Vovsi, B. A.

ORG: Leningrad Chemical and Pharmaceutical Institute (Leningradskiy khimiko-farmatsevticheskiy institut)

TITLE: First compounds of the 1,3-selenazane and 1,4,2-tiaselene-1,1-dione series

SOURCE: AN SSSR. Doklady, v. 184, no. 2, 1969, 355-357

TOPIC TAGS: selenium compound, amine derivative, heterocyclic sulfur compound

ABSTRACT: Heterocyclic nitrogen-containing selenium compounds are of interest as potentially biologically active compounds. Unlike the reaction of β-trichloromethyl-β-propiolactone with alkylurea which proceeds with the elimination of mercaptans, the reaction of β-trichloromethyl-β-propiolactone with Se-ethylselenourea hydrochloride proceeds with the elimination of alcohol to form (47.5%) compound II (mp 208—210°C):

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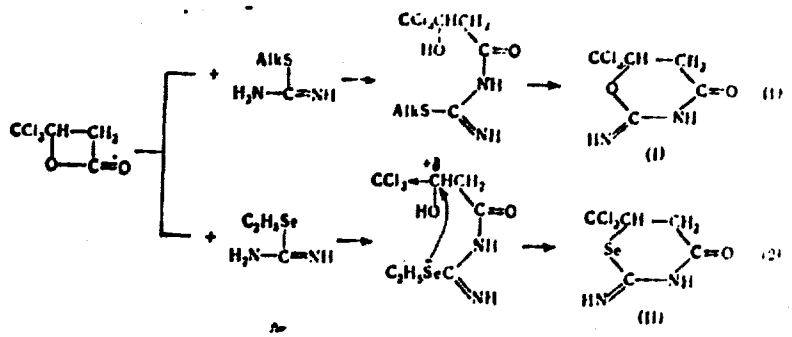
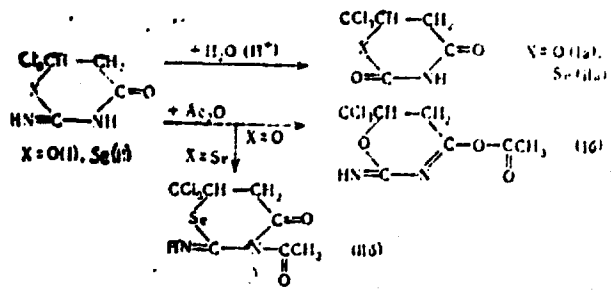
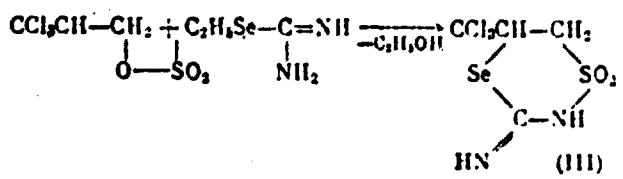


The acid hydrolysis and acetolysis of II to form compounds IIa and IIb proceeds similarly to the hydrolysis and acetolysis of I to form Ia and Ib:



Compound IIa (mp 188—192°C) is formed when II is boiled for 15 min with 3% HCl solution. Compound IIb (mp 134—135°C) is formed when a mixture of II and acetic anhydride is boiled for 1 hr. The reaction of Se-ethylselenourea with β-trichloromethyl-β-ethylsulfone in the presence of triethylamine in acetone solution gave (42%) compound III (melts above 250,°C):



The structure of the compounds II, IIa, IIb, and III, which are the first compounds in this series, was confirmed by IR spectra. Presented by Academician A. N. Nesmeyanov, 4 Apr 68. Orig. art. has: 1 table.

[WA-50; CBE No. 41] [PS]

SUB CODE: 07/ SUBM DATE: 14Apr68/ ORIG REF: 008/ OTH REF: 001

ACC NR: AP9010302 SOURCE CODE: UR/0079/69/039/002/0299/0301

AUTHOR: Malichenko, B. F.; Yazlovitskiy, A. V.

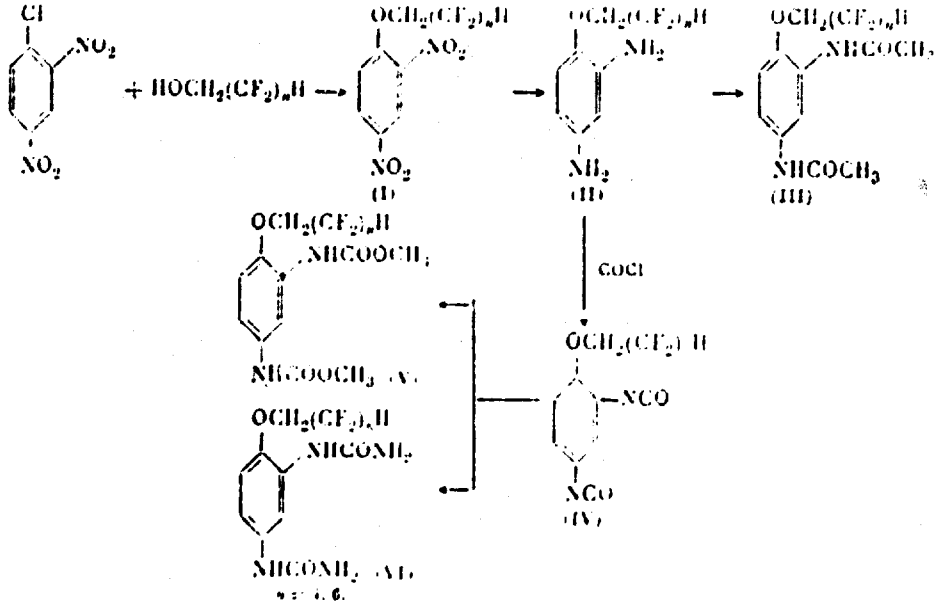
ORG: Institute of the Chemistry of Macromolecular Compounds, Academy of Sciences UkrSSR (Institut khimii vysokomolekulyarnykh soyedineniy Akademii nauk UkrSSR)

TITLE: Synthesis of α,α,ω-trihydroperfluoro-n-alkyl 2,4-diisocyanatophenyl ethers

SOURCE: Zhurnal obshchey khimii, v. 39, no. 2, 1969, 229-301

TOPIC TAGS: alkaryl ether, fluorinated hydrocarbon, organic isocyanate compound

ABSTRACT: 1,1,5-Trihydroperfluoro-n-pentyl 2,4-dinitrophenyl ether (I) (89.4% yield, mp 36—37°C) was prepared by adding 2 N NaOH to $HOCH_2(CF_2)_4H$ and 2,4-dinitrochlorobenzene in $(CH_3)_2SO$ and stirring for 15 min at 70°C. 1,1,7-Trihydroperfluoro-n-heptyl 2,4-dinitrophenyl ether (II) (81.3% yield, mp 72—73°C) was similarly prepared. 1,1,5-Trihydroperfluro-n-pentyl 2,4-diaminophenyl ether (III) (86% yield, mp 29—32°C) was obtained by heating I, EtOH, $SnCl_2$, and 30% HCl for 2 hr at 100°C. 1,1,7-Trihydroperfluoro-n-heptyl 2,4-diaminophenyl ether (IV) (78% yield, mp 64—67°C) was similarly prepared. 1,1,5-Trihydroperfluoro-n-pentyl 2,4-diacetylaminophenyl ether (V) (90.6% yield, mp 171—172°C) and 1,1,7-trihydroperfluoro-n-heptyl 2,4-diacetylaminophenyl ether (VI) (93% yield, mp 172—173°C) were obtained by a known procedure.



ACC NR: AP9010302

1,1,5-Trihydroperfluoro-n-pentyl 2,4-diisocyanatophenyl ether (VII) (70.8% yield, mp 41—43°C) was prepared by adding II in PhCl to PhCl and $COCl_2$, simultaneously passing $COCl_2$ into the mixture at 80—85°C for 3 hr, and boiling for 10 min. 1,1,7-Trihydroperfluoro-n-heptyl 2,4-diisocyanatophenyl ether (VIII) (85.2% yield, mp 61—62°C) was similarly prepared. The following compounds were obtained by known procedures: 1,1,5-trihydroperfluoro-n-pentyl 2,4-bis(methylurethano)phenyl ether (IX) (90% yield, mp 73—74°C), 1,1,7-trihydroperfluoro-n-heptyl 2,4-bis(methylurethano)phenyl ether (X) (86% yield, mp 74—75°C), 1,1,5-trihydroperfluoro-n-pentyl 2,4-di(urea)phenyl ether (XI) (96% yield, mp 173—174°C), and 1,1,7-trihydroperfluoro-n-heptyl 2,4-di(urea)phenyl ether (XII) (93% yield, mp 180—181°C). Orig. art. has: 1 table.

[WA-50; CBE No. 41] [ST]

SUB CODE: 07/ SUBM DATE: 05Mar68/ ORIG REF: 002/ OTH REF: 003

Card 3/3

ACC NR: AP9009760 SOURCE CODE: UR/0366/69/005/002/0337/0340

AUTHOR: Mamedov, Sh.; Khydyrov, D. N.; Bekirov, G. F.; Gadzhiyev, F. R.

ORG: Institute of Petrochemical Processes, Academy of Sciences AzerbSSR, Baku (Institut neftekhimicheskikh protsessov Akademii nauk AzerbSSR)

TITLE: Study of glycol ethers and their derivatives. CXXIX. Synthesis of alkoxymethyl 1-phenyl-3-chloropropyl ethers

SOURCE: Zhurnal organicheskoy khimii, v. 5, no. 2, 1969, 337-340

TOPIC TAGS: ether, chlorinated aliphatic compound, propanol, pest control

ABSTRACT: The title compounds were synthesized in a search for effective pesticides. Methoxymethyl 1-phenyl-3-chloropropyl ether (II) was prepared by adding $ClCH_2OCH_3$ in HPh to $PhN(CH_3)_2$ and $PhCH(OH)CH_2CH_2Cl$ (I) in HPh and stirring for 6 hr at 55—60°C. Compounds III—X, XXI, XXVI, and XXVII were similarly prepared. 1-Phenyl-1,3-dichloropropane (XI) was obtained by a known procedure. 1-Phenyl-3-chloro-1-propanone (XII) was prepared by adding $K_2Cr_2O_7$ and H_2SO_4 in H_2O to I in ether for 20 min at 25°C and stirring for

Card 1/5 UDC: 547.27:547.568

$C_6H_5CH(OH)CH_2CH_2Cl$ (I) $C_6H_5CH(OCH_2OR)CH_2CH_2Cl$ (II–X)

$C_6H_5CHClCH_2CH_2Cl$ (XI) $C_6H_5COCH_2CH_2Cl$ (XII)

R = CH_3 (II), C_2H_5 (III), n-C_3H_7 (IV), iso-C_3H_7 (V), n-C_4H_9 (VI), iso-C_4H_9 (VII), n-C_5H_{11} (VIII), iso-C_5H_{11} (IX), n-C_6H_{13} (X).

$C_6H_5CH(OCH_2CH_2OR)CH_2CH_2Cl$ (XX, XXI)

R = CH_2CH_2CN (XX), $CH_2OC_2H_5$ (XXI).

$C_6H_5CH(OR')CH_2CH_2OR$ (XXVI–XXVIII) R = C_6H_5, R' = $CH_2OC_6H_4$-n (XXVI); R = $COCH_3$, R' = $CH_2OC_6H_4$-n (XXVII); $CH_2N(C_2H_5)_2$ (XXVIII).

for 3 hr at 25°C. β-Cyanoethyl 1-phenyl-3-chloropropyl ether (XIII) was obtained by adding CH_2:CHCN to I and CH_3ONa in HPh at 20°C and stirring for 8 hr at 75—80°C. Compound XX was similarly prepared from β-hydroxyethyl 1-phenyl-3-chloropropyl ether (XIX). Diethylaminomethyl 1-phenyl-3-chloropropyl ether (XIV) was prepared by stirring I, HPh, Et_2NH, and paraform at 70—80°C for 25 hr. Compound XXVIII was similarly prepared from 1-phenyl-3-acetoxy-1-propanol

(XXV). Butyl 1-phenyl-3-chloropropyl ether (XVI) was obtained by adding H_2SO_4 to I, BuOH, and HPh and stirring for 8 hr at 85°C. Compounds XV and XVII—XIX were similarly prepared. 1-Phenyl-3-phe-

$C_6H_5CH(OR)CH_2CH_2Cl$ (XIII–XIX)

R = CH_2CH_2CN (XIII), $CH_2N(C_2H_5)_2$ (XIV), CH_3 (XV), n-C_4H_9 (XVI), $CH_2CH{=}CH_2$ (XVII), $COCH_2Cl$ (XVIII), CH_2CH_2OH (XIX).

noxy-1-propanol (XXII) was prepared by adding I in HPh to PhONa and stirring for 20 hr at 80—85°C. 1-Phenyl-3-N-piperidino-1-propanol (XXIII) was obtained by stirring I, piperidine, and H_2O for 15 hr at 100°C. Compounds XXIX and XXX were similarly prepared. 1-Phenyl-3-mercapto-1-propanol (XXIV) was prepared by boiling I, thiourea, and iso-PrOH for 8 hr, adding NaOH in H_2O, and boiling for 3 hr. 1-Phenyl-3-acetoxy-1-propanol (XXV) was obtained by allowing KOAc to react with I.

$C_6H_5CH(OH)CH_2CH_2R$ (XXII–XXV) R = OC_6H_5 (XXII), $N(CH_2)_5$ (XXIII), SH (XXIV), $OCOCH_3$ (XXV).

$C_6H_5CH(OCH_2OR)CH_2CH_2R'$ (XXIX, XXX) R = n-C_4H_9, R' = $N(C_2H_5)_2$ (XXIX); R = n-C_6H_{13}, R' = $N(CH_2)_5$ (XXX).

Table 1. Ethers and alcohol

No.	% Yield	Bp, °C (p in mm)	d_4^{20}	n_D^{20}
II	78	110—111°(4)	1.1240	1.5130
III	76	116—117(4)	1.0912	1.5040
IV	75	124—125(4)	1.0610	1.4974
V	73	119—120(4)	1.0582	1.4954
VI	72	132—133(4)	1.0450	1.4942
VII	69	127—128(4)	1.0420	1.4930
VIII	70	140—141(4)	1.0280	1.4918
IX	67	136—137(4)	1.0248	1.4902
X	65	151—153(4)	1.0178	1.4890
XII	71	—	—	—
XIII	62	141—146(3)	1.1162	1.5200
XIV	55	123—125(2)	1.0170	1.5012
XV	65	97—98(8)	1.0715	1.5112
XVI	62	121—122(4)	1.0186	1.4990
XVII	60	115—117(4)	1.0490	1.5146
XVIII	61	141—142(5)	1.2486	1.5300
XIX	60	140—141(3)	1.1300	1.5270
XX	55	175—177(4)	1.1080	1.5044

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Table 1 (cont'd)

XXI	64	175—176(7)	1.0600	1.4930
XXII	50	161—163(2)	—	—
XXIII	64	134—135(3)	—	—
XXIV	62	96—98(6)	1.0810	1.5520
XXVI	61	188—189(2)	1.0235	1.5235
XXVII	68	170—172(2)	1.0090	1.4780
XXVIII	54	154—155(5)	1.0074	1.4900
XXIX	48	143—144(4)	0.9500	1.4905
XXX	75	185—186(5)	0.9696	1.4900

Orig. art. has: 1 table. [WA-50; CBE No. 41] [FS]

SUB CODE: 02, 07/ SUBM DATE: 23Jan68/ ORIG REF: 009/ OTH REF: 002

Card 5/5

$C_6H_5CH(OCH_2OR)CH_2OC_6H_4CH_3$-м (III–X) $C_6H_5CH(OCOR)CH_2OC_6H_4CH_3$-м (XI–XV)

R = CH, (III, XI), C_2H_5 (IV, XII), n-C_3H_7 (V, XIII), iso-C_3H_7 (VI), n-C_4H_9 (VII, XIV), iso-C_4H_9 (VIII), n-C_5H_{11} (IX) iso-C_5H_{11} (X).

β-Cyanoethyl 1-phenyl-2-(m-cresyloxyl)ethyl ether (XV) was prepared by adding I in HPh to CH_2:CHCN and $NaOCH_3$ in HPh, stirring for 3 hr at 40—45°C, and allowing the mixture to stand for 15 hr. β-Cyanoethyl 1-phenyl-2-(2,4-dichlorophenoxy)ethyl ether (XVI) was similarly prepared from 1-phenyl-2-(2,4-dichlorophenoxy)-1-ethanol (II) (bp$_3$ 179—180°C, d_4^{20} 1.3113, n_D^{20} 1.5918). Allyl 1-phenyl-2-(m-cresloxy)ethyl ether (XVII) was prepared by heating I and NaOH in HPh to 70°C for 30 min, adding CH_2:$CHCH_2Br$ at 20°C, and stirring for 3 hr at 80°C. Benzyl 1-phenyl-2-(m-cresyloxy)ethyl ether (XVIII) was obtained by heating I and NaOH to 80°C for 30 min, adding $PhCH_2Cl$ at 20°C, and stirring for 8 hr at 120°C.

$C_6H_5CH(OR)CH_2OC_6H_4CH_3$-м (XV, XVII, XVIII) $C_6H_5CH(OCH_2CH_2CN)CH_2OC_6H_3Cl_2$-2,4 (XVI)

R = CH_2CH_2CN (XV), $CH_2CH{=}CH_2$ (XVII), $CH_2C_6H_5$ (XVIII).

Methoxymethyl 1-phenyl-2-(2,4-dichlorophenoxy)ethyl ether (XIX) was prepared by adding $ClCH_2OCH_3$ to II and $PhN(CH_3)_2$ in HPh and stirring

$C_6H_5CH(OCH_2OR)CH_2OC_6H_3Cl_2$-2,4 (XIX–XXII) $C_6H_5CH(OCOR)CH_2OC_6H_3Cl_2$-2,4 (XXIII–XXVI)

R = CH, (XIX, XXIII), C_2H_5 (XX, XXIV), n-C_3H_7 (XXI), n-C_4H_9 (XXII, XXV) iso-C_4H_9 (XXV)

Table 2. Ethers and esters

No.	% Yield	Bp, °C (P in mm)	d_4^{20}	n_D^{20}
XV	78	194—195 (1)	1.1046	1.5550
XVI	60	221—222 (2)	1.2689	1.5700
XVII	71	154 (2)	1.0584	1.5560
XVIII	70	202—203 (2)	1.0750	1.5700
XIX	80	181—182 (2)	1.2487	1.5583
XX	75	189—190 (2)	1.2287	1.5550
XXI	81	195—196 (2)	1.2005	1.5500

Table 2. (Cont.)

XXII	75	201—202 (2)	1.1827	1.5436
XXIII	52.5	185—186 (2)	1.2782	1.5602
XXIV	54	189—190 (2)	1.2567	1.5587
XXV	70	192—193 (1)	1.2200	1.5555
XXVI	74	204—205 (3)	1.1927	1.5410

for 5 hr at 50°C. Compounds XX—XXII were similarly prepared. 1-Phenyl-2-(2,4-dichlorophenoxy)ethyl acetate (XXIII) was obtained by adding Ac_2O and 2 drops of H_2SO_4 to II and HPh and stirring for 7 hr at 50°C. Compounds XXIV—XXVI were similarly prepared. Orig. art. has: 1 table.
[WA-50; CBE No. 41] [FT]

SUB CODE: 07/ SUBM DATE: 27Dec67/ ORIG REF: 005

ACC NR: AP9008169 SOURCE CODE: UR/0426/68/021/011/0998/0998

AUTHOR: Matsoyan, S. G.; Darbinyan, E. G.; Mitardzhyan, Yu. B.

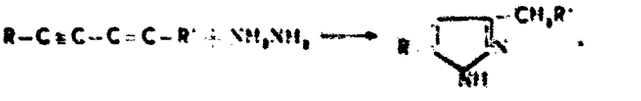
ORG: Institute of Organic Chemistry, AN ArmSSR (Institut organicheskoy khimii AN ArmSSR)

TITLE: Synthesis of substituted pyrazoles by the condensation of diacetylene compounds with hydrazine

SOURCE: Armyanskiy khimicheskiy zhurnal, v. 21, no. 11, 1968, 998

TOPIC TAGS: acetylene compound, pyrazole derivative, organic azole compound

ABSTRACT: A new method of synthesis of 3- and 5-substituted pyrazoles was developed. It consists of the condensation of diacetylene compounds with hydrazine:



 UDC: 547.914547.772

ACC NR: AP9008169

Depending on the structure of the initial diacetylene compound and on the concentration of hydrazine hydrate in the aqueous solution (25—100%), the reaction takes place at room temperature or with heating to 120°C in a solvent (alcohol or dioxane) or without a solvent. 3(5)-Methylpyrazole (bp 75—76°C at 4 mm, n_D^{20} 1.4940) and 3(5)-phenyl-3(5)-benzylpyrazole (mp 90—91°C) were obtained in yield of 60 and 91%, respectively. [WA-50; CBE No. 41] [PS]

SUB CODE: 07/ SUBM DATE: 09Aug68/ ORIG REF: 001

Card 2/2

ACC NR: AP9010326 SOURCE CODE: UR/0079/69/039/002/0461/0462

AUTHOR: Medvedeva, V. G.; Skoldinov, A. P.; Shapet'ko, N. N.

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

TITLE: Reaction of N,N'-disubstituted ureas with thionyl chloride

SOURCE: Zhurnal obshchey khimii, v. 39, no. 2, 1969, 461-462

TOPIC TAGS: phosphate ester, organic isocyante compound, acid chloride, amine derivative

ABSTRACT: Diphenyl isocyanatophosphate (I) (82% yield) and iso-PrNSO (15% yield) were prepared by boiling $(PhO)_2PONHCONH$-iso-Pr, $SOCl_2$, and PhCl for 8—9 hr. Compound I (65% yield) and PhNSO (50% yield) were similarly prepared. Isocyanatophosphoric dichloride (25% yield) and PhNSO (30% yield) were prepared by heating $Cl_2PONHCONHPh$ and $SOCl_2$ in HPh for 10—15 min at 60°C. The following compounds were similarly ob-

$$X_2PONHCONHR + SOCl_2 \rightarrow 2HCl + X_2PONCO + RNSO$$

tained: dimethyl isocyanatophosphate (II) (65% yield) and N-thionyl-N--p-methoxyphenylamine (50% yield); II (63% yield) and N-thionyl-N-p-chlorophenylamine (52% yield); phenylsulfonyl isocyanate (III) (70% yield) and

Card 1/2 UDC: 547.442

ACC NR: AP9010376

PhNSO (70% yield); and methylsulfenyl isocyanate (45% yield) and PhNSO (50% yield).

$$RSO_2NHCONHC_6H_5 + SOCl_2 \rightarrow 2HCl + RSO_2NCO + C_6H_5NSO$$

Compound III (82% yield) and CH_3CH (75% yield) were obtained by boiling $PhSO_2NHCONHAc$, $SOCl_2$, and PhCl for 2—3 hr.

$$C_6H_5SO_2NHCONHCOCH_3 + SOCl_2 \rightarrow 2HCl + C_6H_5SO_2NCO + CH_3CN + SO_2$$

Orig. art. has: 1 table. [WA-50; CBE No. 41] [FT]

SUB CODE: 07/ SUBM DATE: none

Card 2/2

ACC NR: AP9009950 SOURCE CODE: UR/0366/69/005/001/0098/0105

AUTHOR: Mel'nikov, N. N.; Lyalyakina, N. P.; Shvetsov-Shilovskiy, N. I.

ORG: none

TITLE: Synthesis and chemical transformations of 3,4-disubstituted anilides of N-alkylamino acids

SOURCE: Zhurnal organicheskoy khimii, v. 5, no. 1, 1969, 98-105

TOPIC TAGS: aniline, substituted amide, chlorinated aromatic compound, amino acid derivative

ABSTRACT: Some amide derivatives are active pesticides. The title compounds were synthesized to find biologically active substances. α-N,N-Diethylaminopropionic acid 3,4-dichloroanilide was prepared by adding Et_2NH and Et_3N to α-bromopropionic 3,4-dichloroanilide in dioxane at 20°C and heating for 6 hr at 80°C. Similarly prepared compounds are shown in Table 1 under Method A. α-N-Methylaminopropionic acid 3,4-dichloroanilide was obtained by adding 25% aqueous CH_3NH_2 to α-bromopropionic 3,4-dichloroanilide and heating for 5 hr at 50°C. Similarly

Card 1/10 UDC: 547.466

prepared compounds are shown in Table 1 under Method B. N-n-Butylaminoacetic acid 3,4-dichloroanilide was prepared by dissolving monochloroacetic 3,4-dichloroanilide in $BuNH_2$ and allowing the mixture to stand for 15 hr. Similarly prepared compounds are shown in Table 1 under Method C and in Table 2. Bis(3,4-dichlorophenylcarbamidomethylene)methylamine (Ia) (100% yield, mp 187°C) was prepared by boiling monochloroacetic 3,4-dichloroanilide and 25% CH_3NH_2 for 8 hr. Compounds Ib

Table 1.

4-X-3-$ClC_6H_3NHCOCHRNR_1R_2$

X	R_1	R_2	R	Method	Bp, °C (p in mm) or mp, °C	Yield, %
Cl	H	CH_3	H	B	162—164° (0.6)	72.6
Cl	H	CH_3	CH_3	B	68—70	89.9

Table 1. (Cont.)

Cl	CH_3	CH_3	H	B	152—153 (0.2)	62.5
Cl	CH_3	CH_3	CH_3	B	150—152 (0.075)	76.0
Cl	H	C_2H_5	H	B	54—55	77.0
Cl	H	C_2H_5	CH_3	B	72	91.0
Cl	C_2H_5	C_2H_5	H	A	151—152 (0.5)	52.0
Cl	C_2H_5	C_2H_5	CH_3	C	57	98.0
Cl	H	n-C_3H_7	H	C	56—57	89.7
Cl	H	C_3H_7	CH_3	C	152—154 (0.2)	79.2
Cl	n-C_3H_7	C_3H_7	H	A	155—156 (0.8)	56.2
Cl	n-C_3H_7	C_3H_7	CH_3	A	180—182 (0.2)	73.5

Table 1. (Cont.)

Cl	n-C_3H_7	H	H	C	195—197 (0.7)	73.5
Cl	iso C_4H_9	H	CH_3	C	184—185 (1)	77.0
Cl	N-morpholino		H	A	58	62.0
Cl	"		CH_3	A	88	80..
Cl	N-piperidino		H	A	69	58.0
Cl	"		CH_3	A	84	92.0
CH_3	H	CH_3	CH_3	B	182 (0.2)	84.2
CH_3	CH_3	CH_3	CH_3	B	125 (0.15)	89.0
CH_3	H	C_2H_5	CH_3	B	132 (0.3)	57.0
CH_3	H	iso C_3H_7	CH_3	C	190 (0.2)	77.7
CH_3	n-C_3H_7	n-C_3H_7	CH_3	A	145 (0.6)	73.0
CH_3	H	C_2H_5	CH_3	B	59	81.5

Table 1. (Cont.)

Br	H	CH_3	H	C	193 - 195 (0.33)	81.3
Br	CH_3	CH_3	H	B	53	57.0
Br	C_6H_5	C_6H_5	H	A	163—165 (0.073)	95.0
Br	H	C_6H_5	H	B	70	99.0
Br	n C_3H_7	H	H	C	168 - 170 (0.6)	89.0
Br	n-C_3H_7	n-C_3H_7	H	A	168 - 170 (0.5)	73.2
Br	iso C_4H_9	H	H	A	174 - 175 (0.2)	85.0
Br	N-morpholino		H	A	70	98.4

ACC NR: AP9009950

Table 1. (Cont.)

Br	N-piperidino		H	A	80	82.1
Br	H	CH_3	CH_3	C	57	67.2
Br	CH_3	CH_3	CH_3	C	156—157 (0.1)	74.7
Br	C_2H_5	H	CH_3	C	58	85.6 85.6
Br	C_2H_5	C_2H_5	CH_3	A	79	98.8
Br	iso-C_3H_7	H	CH_3	C	182—183 (0.7)	98.2
Br	iso-C_4H_9	H	CH_3	C	162—163 (0.3)	83.7
OCH_3	CH_3	CH_3	H	C	87	72.5

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ACC NR: AP9009950

Table 1. (Cont.)

OCH_3	C_2H_5	C_2H_5	H	A	205 (0.7)	65.8
OCH_3	H	n-C_3H_7	H	C	175 (0.075)	79.0
OCH_3	n-C_3H_7	n-C_3H_7	H	A	170 (0.7)	89.1
OCH_3	N-morpholino		H	A	146	58.2
OCH_3	H	CH_3	CH_3	C	95	50.6
OCH_3	CH_3	CH_3	CH_3	C	54	69.0
OCH_3	H	C_2H_5	CH_3	C	158 (0.8)	72.0
OCH_3	C_2H_5	C_2H_5	CH_3	A	72	68.0
OCH_3	H	n-C_3H_7	CH_3	C	140 (0.2)	59.2
OCH_3	C_3H_7	C_3H_7	CH_3	A	180 (0.15)	52.4
OCH_3	N-morpholino		CH_3	A	100	57.2
OCH_3	N-piperidino		CH_3	A	85	68.5

Card 7/10

Table 2.
4-X-3-ClC$_6$H$_3$NHCOCH$_2$CH$_2$R

X	R	Yield, %	Mp or bp, °C (p in mm)
Cl	$N(CH_3)_2$	79.4	65–66°
Cl	NHC_2H_5 (hydrochloride)	57.7	208–209
Cl	$N(C_2H_5)_2$ (hydrate)	94.5	49–50
Cl	NHC_3H_7-iso	99.0	54–55
Cl	NHC_4H_9-iso (hydrochloride)	49.4	194
Cl	N-morpholino	68.0	78
Cl	N-piperidino	72.0	89
Br	NHC_4H_9-iso	72.0	165 (0.2)
CH_3	NHC_2H_5	81.3	59
CH_3	$N(C_3H_7\text{-}n)_2$	62.0	153 (0.2)
Br	N-morpholino	55.7	162 (0.1)

Table 2. (Cont.)

Br	$N(C_2H_5)_2$	87.0	61
OCH_3	NHC_4H_9-iso (hydrate)	89.2	64
OCH_3	N-morpholino	71.0	105

(93.5% yield, mp 212°C) and Ic (mp 175°C) were similarly prepared.

$$3,4\text{-}Cl_2C_6H_3NHCO(CH_2)_nCl + RNH_2 \longrightarrow \underset{(I)}{[3,4\text{-}Cl_2C_6H_3NHCO(CH_2)_n]_2NR}$$

a) R = Me, n = 1; b) R = Me, n = 2; c) R = Et, n = 2.

Acrylic acid 3-chloro-4-methoxyanilide (83.3% yield, bp$_{0.2}$ 155°C, mp 118°C) was prepared by heating 3-chloropropionic 3-chloro-4-methoxyanilide and Pr_2NH for 2 hr at 60°C. γ-N,N-Diethylaminobutyric acid 3,4-dichloroanilide (IIa) (82.4% yield, the hydrochloride melts at 205°C) was obtained by heating γ-chlorobutyric 3,4-dichloroanilide (CBDA) in Et_2NH for 2 hr at 60°C and allowing the mixture to stand for 15 hr. γ-N-Isopropylaminobutyric acid 3,4-dichloroanilide (IIb)

(92.2% yield, mp 70°C) was prepared by refluxing CBDA and iso-$PrNH_2$ for 4 hr. γ-N-(Di-n-propyl)aminobutyric acid 3,4-dichloroanilide (IIc) (59.4% yield) was obtained by dissolving CBDA in Pr_2NH and allowing the mixture to stand for 4 hr at 100°C. N-(3,4-Dichlorophenyl)-α-pyrrolidone

$$\underset{\text{(II)}}{3,4\text{-}Cl_2C_6H_3NHCO(CH_2)_3NR_1R_2} \xrightarrow{t^\circ} \underset{\text{(III)}}{3,4\text{-}Cl_2C_6H_3N\overline{COCH_2CH_2CH_2}} + NHR_1R_2$$

a) $R_1 = R_2 = Et$; b) $R_1 = H$, R_2 = iso-Pr; c) $R_1 = R_2 = Pr$

(III) ($bp_{0.2}$ 215°C, mp 110°C) was obtained by heating II a—c. Orig. art. has: 2 tables. [WA-50; CBE No. 41] [FT]

SUB CODE: 02, 07, 06/ SUBM DATE: 05Feb68/ ORIG REF: 002/ OTH REF: 001

Card 10/10

ACC NR: AP9008168 SOURCE CODE: UR/0426/68/021/011/0981/0984

AUTHOR: Mndzhoyan, O. L.; Bagdasaryan, E. R.; Asratyan, S. N.

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

TITLE: Synthesis of derivatives of substituted acetic acids. XXVI. Some dialkylaminoalkyl esters of α-phenylcyclohexylacetic acid

SOURCE: Armyanskiy khimicheskiy zhurnal, v. 21, no. 1, 1968, 981-984

TOPIC TAGS: amine derivative, aromatic carboxylic acid, phenyl compound, aromatic ester

ABSTRACT: To study the relationship between the structure and cholinolytic activity of substituted acetic acid derivatives, a series of new esters of the general formula:

$$C_6H_5CHC_6H_{11}COOC_nH_{2n}NR_2,$$

where $R = CH_3, C_2H_5$; $C_nH_{2n} = (CH_2)_2, (CH_2)_3, CH(CH_3)(CH_2)_2, CH(CH_3)CH(CH_3)CH_2, CH_2C(CH_3)_2CH_2, Pr_2NCH_2CHCH_3$.

Card 1/4 UDC: 541.69

were synthesized and their physiological activity studied. The esters were synthesized by the reaction of α-phenylcyclohexylacetic chloride with the appropriate aminoalcohols on boiling for 15 hr in dry benzene. The esters were treated with HCl in ether to form the corresponding hydrochlorides. The yield and physical constants of the new esters and their hydrochlorides are given in the table. Pharmacological

Table 1.

C_6H_5>CHCOOR
C_6H_{11}

R	Yield, %	Bp, °C/mm	Formula	d_4^{20}	n_D^{20}	Mp, °C of hydrochlorides
$(CH_3)_2N(CH_2)_2$	91,2	165–7/0,5	$C_{19}H_{29}NO_2$	1,0122	1,5109	153–155
$(C_2H_5)_2N(CH_2)_2$	90,0	176–8/0,5	$C_{20}H_{31}NO_2$	1,0047	1,5091	140–142
$(CH_3)_2N(CH_2)_3$	95,1	178–80/0,5	$C_{20}H_{31}NO_2$	1,0139	1,5060	134–136
$(C_2H_5)_2N(CH_2)_3$	95,6	185–7/0,5	$C_{21}H_{33}NO_2$	0,2994	1,5040	139–141
$(CH_3)_2NCH_2C(CH_3)_2CH_2$	92,2	173–6/0,5	$C_{21}H_{33}NO_2$	0,9886	1,5012	144

Table 1. (Cont.)

$(C_2H_5)_2NCH_2C(CH_3)_2CH_2$	98,9	192–5/2	$C_{23}H_{37}NO_2$	0,9791	1,4993	•
$(CH_3)_2NCH_2CHCH_2N(CH_3)_2$ |	94,7	195–8/0,5	$C_{21}H_{34}N_2O_2$	0,9956	1,5031	210–212
$(C_2H_5)_2NCH_2CHCH_2N(C_2H_5)_2$ |	81,7	210–15/0,5	$C_{25}H_{42}N_2O_2$	0,9779	1,5010	156
$(CH_3)_2NCH_2CH(CH_3)CH(CH_3)$ |	95,5	188–91/0,5	$C_{21}H_{33}NO_2$	0,9894	1,5025	•
$(C_2H_5)_2NCH_2CH(CH_3)CH(CH_3)$ |	88,7	184–7/0,5	$C_{23}H_{37}NO_2$	0,9813	1,5001	•
$(CH_3)_2N(CH_2)_2CH(CH_3)$ |	98,7	178–80/0,5	$C_{20}H_{31}NO_2$	0,2964	1,5020	158–160
$(C_2H_5)_2N(CH_2)_2CH(CH_3)$ |	87,3	190–5/0,5	$C_{22}H_{35}NO_2$	0,9846	1,5020	•

• Viscous

study of the hydrochlorides revealed that they have a weak hypotensive effect. β,β-Dimethyl-γ-diethylaminopropyl phenylcyclohexylacetate has the highest hypotensive activity; a 5 mg/kg dose of it decreased blood pressure by 80%. The cholinolytic, and particularly, nicotinolytic activity of the esters increases with the transition from

ACC NR: AP9008168

β-diethyl- and β-dimethylaminoethyl esters to γ-diethyl and γ-dimethyl-aminopropyl esters of phenylcyclohexylacetic acid.
[WA-50; CBE No. 41] [PS]

SUB CODE: 07/ SUBM DATE: 22Nov67/ ORIG REF: 002/ OTH REF: 001

Card 4/4

ACC NR: AP9006697 SOURCE CODE: UR/0409/68/000/006/1068/1070

AUTHOR: Moshchitskiy, S. D.; Sologub, L. S.; Ivashchenko, Ya. N.

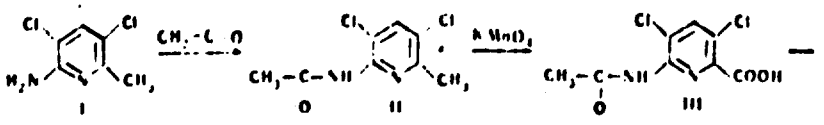
ORG: Institute of Organic Chemistry, Academy of Sciences UkrSSR, Kiev (Institut organicheskoy khimii Akademii nauk UkrSSR)

TITLE: Chlorination of α, α-prime-aminopicoline

SOURCE: Khimiya geterotsiklicheskikh soyedineniy, no. 6, 1968, 1068-1070

TOPIC TAGS: chlorinated organic compound, picoline, amine derivative

ABSTRACT: The chlorination of α,α'-aminopicoline with gaseous Cl in various solvents at various temperatures and the treatment with H_2O_2 in HCl yielded the same, previously unreported compound, 6-amino-3,5-dichloro-2-picoline (I) (mp 132°C). Its structure was established by conversion into the known compound (V):



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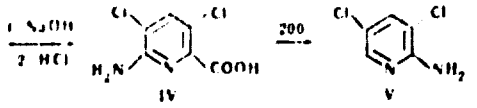
ACC NR: AP9006697



The reaction of α,α'-aminopicoline with Cl in 25% sulfuric acid solution at room temperatur gave the highest yield (64%). The treatment of α,α'-aminopicoline with hydrogen peroxide in HCl gave 90% I. Compound II (mp 122°C) was obtained by treating solution of I in dry ether with ketene at room temperature. Compound III (mp 162°C) was obtained by oxidation of II with $KMnO_4$ at 70°C. On boiling with 5% NaOH III was converted into acid IV (mp 197—198°C).

[WA-50; CBE No. 41] [PS]

SUB CODE: 07/ SUBM DATE: 28Aug68/ ORIG REF: 001/ OTH REF: 009

Card 2/2

ACC NR: AP9009943 SOURCE CODE: UR/0366/69/005/001/0058/0062

AUTHOR: Nesynov, Ye. P.; Besprozvannaya, M. M.; Pel'kis, P. S.

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

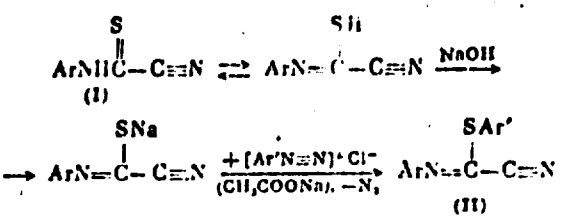
TITLE: Synthesis and study of aryl esters of N-arliminothiooxalic acid

SOURCE: Zhurnal organicheskoy khimii, v. 5, no. 1, 1969, 58-62

TOPIC TAGS: organic imine compound, aromatic ester, sulfur compound

ABSTRACT: Phenyl N-phenyliminothiooxalic mononitrile (II-1) was prepared by adding 8% NaOH, NaOAc, and PhNHC(S)CN (I) to acetone, cooling after 1 hr, adding ice and PhN_2Cl, diazotizing for 1 hr, evaporating after 12 hr, adding H_2O, and allowing the mixture to stand for 30 min. Compounds II-2—II-15 were similarly prepared. p-Chlorothiophenol (mp 51—52°C) and bis-(p-chlorophenyl) disulfide (III) (20% yield, mp 70—71°C) were obtained by adding II-4 to HCl in EtOH and boiling for 2 hr. Oxanilic acid nitrile (0.06 g from 1.5 g II-4, mp 120—121°C) and III were obtained by adding II-4 to NaOH in EtOH and boiling for 4 hr. p-Carbethoxyphenyl N-phenyliminoiminothiooxalic ethyleneimide (IVa) (22% yield, mp 116°C) was prepared by stirring II-14 with ethyleneimine and heating for 6 hr at 40—50°C. p-Ethoxyphenyl N-phenyliminoiminothiooxalic p-chloroanilide

Card 1/3 UDC: 547.461.3

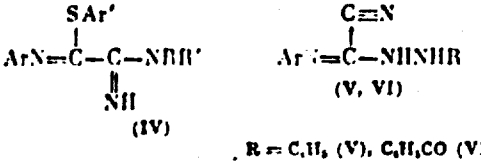


(II)

No.	R	Yield, %	Mp, °C
1	H	67	28—29[c]
2	o-Cl	25	53—54
3	m-Cl	32	
4	p-Cl	64	33—34
5	o-CH_3	40	54—55
6	m-CH_3	31	33—35
7	p-CH_3	50	65—66
8	o-CH_3O	60	64—66
9	p-CH_3O	55	87—88
10	m-NO_2	30	60—62
11	p-NO_2	23	84.5—85.5
12	p-Br	50	43—46

13	p-C_2H_5O	54	64
14	p-$C_2H_5CO_2$	63	58—60
15	p-SO_3Na	62	>320

(IV b) (75% yield, mp 36—37°C) and o-methoxyphenyl N-phenyliminoiminothiooxalic morpholide (76% yield, mp 51—53°C) were similarly prepared. N-phenyliminooxalic mononitrile phenylhydrazide (V) (30% yield, mp 153—155°C) was obtained by heating II-1 and $PhNHNH_2$ for 3 hr and allowing the mixture to stand for 12 hr. N-Phenyliminoxalic monotrile β-benzoylhydrazide (VI) (45% yield, mp 202—204°C) was similarly prepared.



(IV) (V, VI)

R = C_6H_5 (V), C_6H_5CO (VI).

Bis(p-bromophenyl) disulfide was also obtained by allowing II-12 to react with Et_2NH. Orig. art. has: 1 table. [WA-50; CBE No. 41] [FT]

SUB CODE: 07/ SUBM DATE: 29Jan68/ ORIG REF: 005/ OTH REF: 003

ACC NR: AP9008424 SOURCE CODE: UR/0062/69/000/002/0464/0466

AUTHOR: Nikonorova, L. K.; Grechkina, N. P.; Nuretdinov, I. A.

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 of amides of dialkylselenophosphoric acids

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 2, 1969, 464-466

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

ABSTRACT: A series of new O,O-dialkyl dialkylamidoselenophosphates was synthesized by the reaction of O,O-dialkyl dialkylamidophosphates with elemental Se powder at room temperature:

$$R_2NP(OR')_2 + Se \rightarrow R_2NP(Se)(OR')_2$$

The O,O-dialkyl dialkylamidoselenophosphates (I—VI) were isolated by distillation and are characterized in the table. The reaction of

Card 1/3 UDC: 542.91+661.718.1

ACC NR: AP9008424

Table 1.

$R_2NP(Se)(OR')(OR'')$

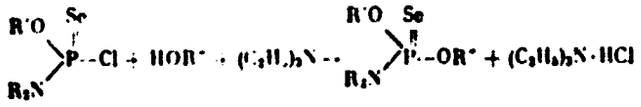
No.	R'	R	R''	Yield, %	Bp, °C (mm)	d_4^{20}	n_D^{20}
I	CH_3	C_2H_5	CH_3	81,5	65,5(0,02)	1,3197	1,5000
II	C_2H_5	C_2H_5	C_2H_5	78,3	[illegible]	1,2285	1,4837
III	$n\text{-}C_3H_7$	C_2H_5	$n\text{-}C_3H_7$	81	79,0,03)	1,1658	1,4810
IV	$i\text{-}C_3H_7$	C_2H_5	$i\text{-}C_3H_7$	70	57,5(0,05)	2,1516	1,4730
V	$n\text{-}C_3H_7$	C_2H_5	$n\text{-}C_3H_7$	84,2	99—99,5	1,1310	1,4792
VI	C_2H_5	CH_3	C_2H_5	71,5	(0,08,108(10	1,2207	1,4870
VII	C_2H_5	C_2H_5	$CH_2CH{=}CHCH_2$	90,9	91(0,01)	1,1883	1,4950
VIII*	C_2H_5	C_2H_5	$C_6H_5CH{=}CHCH_2$	97,8	—	1,2280	1,5902
IX	$i\text{-}C_3H_7$	C_2H_5	$CH_2CH{=}CHCH_2$	87,7	78(0,06)	1,1801	1,4928

* Raw product

O-alkyl dialkylamidochloroselenophosphates with alcohols at 0° to -5°C in the presence of triethylamine in petroleum ether gave O,O-dialkyl dialkylamidoselenophosphates VII, VIII, and IX:

Card 2/3

ACC NR: AP9008424



which are also characterized in the table. The structure of the amides was confirmed by IR spectra. [WA-50; CBE No. 41] [PS]

SUB CODE: 07/ SUBM DATE: 29Jul68/ ORIG REF: 005

Card 3/3

ACC NR: AP9009955 SOURCE CODE: UR/0366/69/005/001/0123/0130

AUTHOR: Olekhnovich, L. P.; Minkin, V. I.; Panyushkin, V. T.; Kriul'kov, V. A.

ORG: Rostov-na-Donu State University (Rostovskiy-na-Donu gosudarstvennyy universitet)

TITLE: Synthesis and IR spectra of N-substituted p-mercaptoaldimines

SOURCE: Zhurnal organicheskoy khimii, v. 5, no. 1, 1969, 123-130

TOPIC TAGS: organic imine compound, mercaptan, tautomerism, benzaldehyde

ABSTRACT: The title compounds were synthesized to study their position of benzoid-quinoid tautomeric equilibrium in the solid state and in solutions by IR spectroscopy. N-Phenyl-p-mercaptobenzaldimine was prepared by heating $PhCH_2NH_2$ and the Na salt of p-mercaptobenzaldehyde in EtOH or BuOH with subsequent acidulation with HOAc. Similarly prepared compounds are shown in Table 1. N-Phenyl-p-methyl-mercaptobenzaldimine and the compounds shown in Table 2 were obtained by a known

Card 1/4 UDC: 547.569+535.34:542.91

Table 1

p-HSC$_6$H$_4$CH=NR

R	Mp, °C
C_6H_5	64°
p-$CH_3C_6H_4$	57
β-$C_{10}H_7$	96
p-$CH_3OC_6H_4$	110
p-$N(CH_3)_2C_6H_4$	205–207
p-FC_6H_4	110
p-ClC_6H_4	66
p-$NO_2C_6H_4$	226–228
$CH_2C_6H_5$	Oil
n-$(CH_2)_3CH_3$	111
CH_2CH_2OH	

Table 2

p-$CH_3SC_6H_4CH$=NR

R	Mp, °C
C_6H_5	81°
p-$CH_3C_6H_4$	87
β-$C_{10}H_7$	118
p-$CH_3OC_6H_4$	129
p-$N(CH_3)_2C_6H_4$	169
p-ClC_6H_4	119
p-$NO_2C_6H_4$	103
n-$(CH_2)_4CH_3$	Bp 149 (3 mm)
CH_2CH_2OH	86

Card 2/4

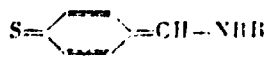
procedure. Some Na derivatives are shown in Table 3. p-Thioquinonylidene (diethylamino)methane was obtained by heating p-mercaptobenzaldehyde and Et_2NH in ether or HPh. Similarly prepared compounds are shown in Table 4. In nonpolar and weakly polar solvents and in

Table 3

p-NaSC$_6$H$_4$CH=NR

R	Mp, °C
C_6H_5	263–266°
p-$CH_3C_6H_4$	238–239
p-$NO_2C_6H_4$	117
n-$(CH_2)_3CH_3$	226–227

Table 4



NRR	Mp, °C
$N(C_2H_5)_2$	Oil
$N(n\text{-}C_6H_{13})_2$	38°
$N(CH_2)_4O$	74

Card 3/4

ACC NR: AP9009955

the solid state, p-mercaptoaldimines exist mostly in the form of benzoid structures. In strongly polar solvents (e.g., Me_2SO), p-mercaptoaldimines exist almost entirely in the quinoid form. Orig. art. has: 5 tables and 5 figures. [WA-50; CBE No. 41] [IT]

SUB CODE: 07/ SUBM DATE: 14Mar68/ ORIG REF: 005/ OTH REF: 008

Card 4/4

ACC NR: AP9009224 SOURCE CODE: UR/0251/68/052/003/0669/0672

AUTHOR: Palavandishvili, D. A.; Dvalishvili, A. I.; Lagidze, R. M.

ORG: Institute of Physical and Organic Chemistry im. P. G. Melikishvili, Academy of Sciences GruzSSR (Institut fizicheskoy i organicheskoy khimii, Akademiya nauk GruzSSR)

TITLE: Synthesis of quaternary ammonium compounds from 3-bromo-1-hydroxybutane

SOURCE: AN GruzSSR. Soobshcheniya, v. 52, no. 3, 1969, 669-672

TOPIC TAGS: ammonium salt, arrhythmia, bromine compound, butane, butanol

ABSTRACT: Quaternary ammonium salts prepared from 3-aryl-1-bromobutanes are of interest as hypotensive agents, antiarrhythmic substances, spasmolytics, etc. 3-Bromo-1-acetoxybutane (I) (bp 175—176°C, n_D^{20} 1.4539, d_1^{20} 1.3427) was prepared by adding $AlBr_3$ to $CH_3CH(OAc)CH_2CH_2OA$ in ligroin in the cold for 2 hr and heating for 6 hr at 85°C. 3-Bromo-1-hydroxybutane (II) (bp 172—177°C, n_D^{20} 1.4674, d_4^{20} 1.4056) was obtained by treating I with 42% HBr at 70—75°C for 6 hr. Trimethyl(3-acetoxy-1-methylpropyl)ammonium bromide (III) (mp 127.5°C) was prepared by saturating I with $N(CH_3)_3$, allowing the mixture to stand for several days at 20°C, and cooling the mixture for 2—3 days. Trimethyl(3-hydroxy-1-methylpropyl)am-

Card 1/5

ACC NR: AP9009224

Table 1.

$CH_2=CH-CH_2-CH(X)-CH_2-CH(X_1)-CH_2-CH=CH_2$

No.	x; x_1	Yield, %
I	x = Br	80
II	x_1 = Br	65
III	x = $\overset{+}{N}(CH_3)_3]$ Br	90
IV	x_1 = $\overset{+}{N}(CH_3)_3]$ Br	8.
V	x = $N(CH_3)_2$	72
VI	x_1 = $N(CH_3)_2$	88
VII	x = $N(C_2H_5)_2$	72
VIII	x = $\overset{+}{N}\begin{matrix}(CH_3)_2\\C_2H_5\end{matrix}]\bar{B}r$	82

Card 2/5

ACC NR: AP9009224

Table 1. (Cont.)

IX	$x_1 = \overset{+}{N}\begin{matrix}(CH_3)_2\\C_3H_7\text{-}n\end{matrix}]\bar{B}r$	80
X	$x = \overset{+}{N}\begin{matrix}(CH_3)_2\\(CH_2)_2-CH-C_6H_5\end{matrix}]\bar{B}r$	84
XI	$x = \overset{+}{N}\begin{matrix}(CH_3)_2\\(CH_2)_2-CH-C_6H_4-CH_3\end{matrix}]\bar{B}r$	83
XII	$x = \overset{+}{N}\begin{matrix}(CH_3)_2\\(CH_2)_2-CH-C_6H_3(CH_2)(CH_3)\end{matrix}]\bar{B}r$	78
XIII	$x = \overset{+}{N}\begin{matrix}(CH_3)_2\\(CH_2)_2-CH-C_6H_4-C_2H_5\end{matrix}]\bar{B}r$	75

Card 3/5

Table 1. (Cont.)

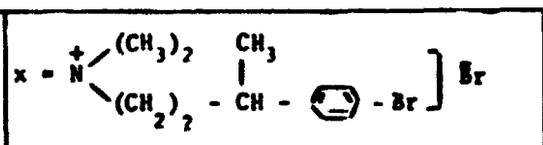
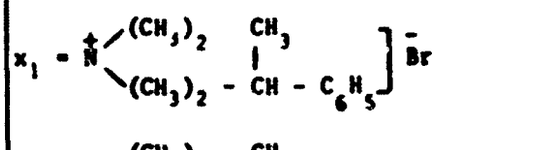
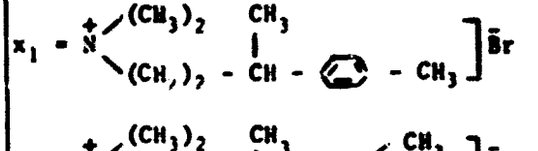
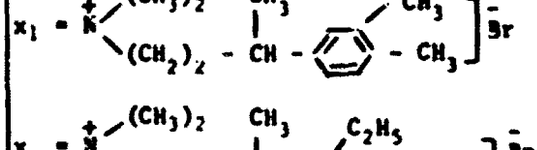
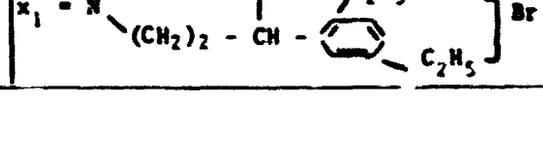
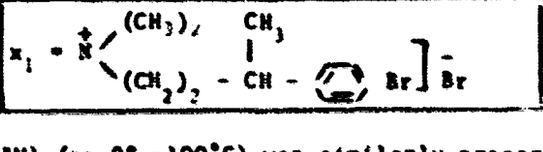
XIV		74
XV		81
XVI		84
XVII		72
XVIII		63

Table 1. (Cont.)

XIX		70

monium bromide (IV) (mp 98—100°C) was similarly prepared. 3-Dimethylamino-1-acetoxybutane (V) (bp 125—126°C, n_D^{20} 1.4331, d_4^{20} 0.9035) was obtained by saturating I with $(CH_3)_2NH$ and allowing the mixture to stand for several days at 20°C. 3-Dimethylamino-1-hydroxybutane (VI) (bp 120—121°C, n_D^{20} 1.4333, d_4^{20} 0.8633) and 3-diethylamino-1-acetoxybutane (VII) (bp 172—173°C, n_D^{20} 1.4287, d_4^{20} 0.8887) were similarly prepared. Dimethyl(ethyl-(-)-hydroxy-1-methylpropyl)ammonium bromide (VIII) was obtained by heating VI and EtBr to 40°C for 1 hr. Compounds IX—XIX were similarly prepared. The paper was presented by I. N. Gverdtsiteli, Corresponding Member of the Academy, 18 May 1968. Orig. art. has: 1 table. [MA-50; CBE No. 41] [FT]

SUB CODE: 06, 07/ SUBM DATE: 10Ju168/ ORIG REF: 004/ OTH REF: 001

ACC NR: AP9007762 SOURCE CODE: UR/0476/68/021/010/0864/0867

AUTHOR: Papayan, G. L.; Galstyan, L. S.; Davtyan, S. H.

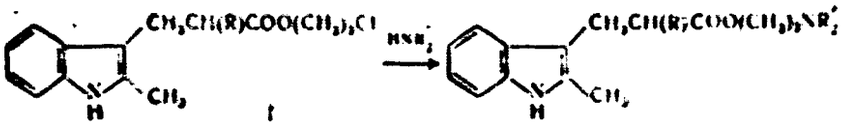
ORG: Institute of Fine Organic Chemicals, AN ArmSSR (Institut tonkoy organicheskoy khimii AN ArmSSR)

TITLE: Indole derivatives. β-(Dimethylamino-N-piperidino)ethyl and β-diethylaminoethoxyethyl esters of 1-alkyl-2-(2'methyl-3'-indolyl)propionic acids

SOURCE: Armyanskiy khimicheskiy zhurnal, v. 21, no. 10, 864-867

TOPIC TAGS: indole derivative, heterocyclic amino acid, halogenated organic compound

ABSTRACT: The title compounds were synthesized by the following reactions:



R = CH_3, C_2H_5, C_3H_7, C_4H_9, iso-C_4H_9, $C_6H_5CH_2$; R_2' = CH_3, C_2H_5, $(CH_2)_5$

 UDC: 542.91+547.757

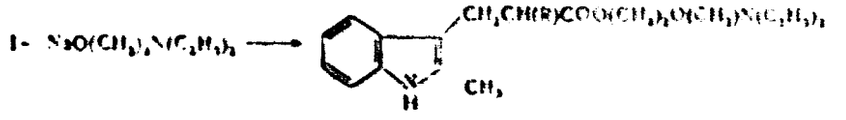
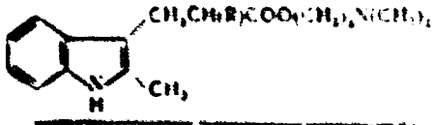
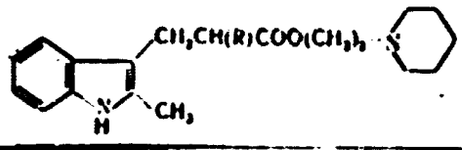


Table 1.



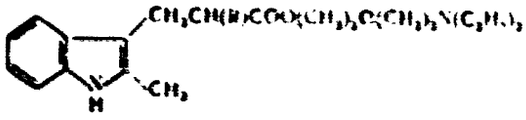
R	Mp, °C of salt	
	Hydrochloride	Oxalate
CH_3	170–172	–
C_2H_5	184–185	
C_3H_7	192–193	
C_4H_9	152–154	–
iso-C_4H_9	190–192	
$C_6H_5CH_2$	–	188–189

Table 2.



R	Mp, °C of salt		
	Hydrochloride	Sulfate	Picrate
CH_3	—	104–106	—
C_2H_5	—	53–55	—
C_3H_7	70–72	—	—
C_4H_9	—	—	94–100
iso-C_4H_9	147–148	—	—
$C_6H_5CH_2$	—	130–132	—

Table 3.



R	Mp, °C of salt	
	Citrate	Hydrobromide
CH_3	79–81	—
C_2H_5	—	110–113
C_3H_7	149–150	—
C_4H_9	90–92	—
iso-C_4H_9	111–113	
$C_6H_5CH_2$	61–66	—

The reactions of compounds I with the appropriate amines were carried out in benzene solution with heating for 6–8 hr on a water bath. The

ACC NR: AP9007762

reaction of I with sodium diethylaminoethoxide is also conducted in benzene solution with heating for 8—10 hr on a water bath. The new compounds are characterized in Tables 1, 2, and 3 in the form of their salts. Orig. art. has: 3 tables. [WA-50; CBE No. 41] [PS]

SUB CODE: 07/ SUBM DATE: 24Jul67/ ORIG REF: 001/ OTH REF: 004

Card 5/5

ACC NR: AP9010320 SOURCE CODE: UR/0079/69/039/002/0382/0384

AUTHOR: Ponomarenko, F. I.; Ivin, S. Z.; Karavanov, K. V.

ORG: none

TITLE: Study of complex compounds of chloroalkyltetrachlorophosphorus and phosphorus pentachloride. I. Reaction of a complex compound of trichloromethyltetrachlorophosphorus and phosphorus pentachloride with H_2O, SO_2, and H_2S

SOURCE: Zhurnal obshchey khimii, v. 39, no. 2, 1969, 382-384

TOPIC TAGS: phosphonic acid, acid chloride, chlorinated aliphatic compound, thiophosphonic acid derivative

ABSTRACT: Trichloromethylphosphonic dichloride (83% yield, bp_1 95°C, mp 156°C) was prepared by adding H_2O to $[CCl_3PCl_3] + [PCl_6]^-$ and CCl_4 at -20°C and allowing the mixture to stand for 30 min at -20°C. Trichloromethylphosphonic dichloride (75% yield, bp_1 95°C, mp 156°C) was obtained by passing SO_2 into $[CCl_3PCl_3] + [PCl_6]^-$ at 0°C. Trichloromethylthiophosphonic dichloride (87% yield, bp_{10} 95°C, mp 120°C,

Card 1/2 UDC: 547.241

$$[CCl_3PCl_3]^+[PCl_6]^- \xrightarrow{H_2O} CCl_3P(O)Cl_2 + H_3PO_4$$
$$\xrightarrow{SO_2} CCl_3P(O)Cl_2 + POCl_3 + SOCl_2$$
$$\xrightarrow{H_2S} CCl_3P(S)Cl_2 + HCl$$

sublimes) was prepared by passing H_2S into $[CCl_3PCl_3]$ + $[PCl_6]$ and HPh at 20°C. [WA-50; CBE No. 41] [FT]

SUB CODE: 07/ SUBM DATE: 11Mar68/ ORIG REF: 003

ACC NR: AP9009753 SOURCE CODE: UR/0366/69/005/002/0226/0229

AUTHOR: Ponomarev, F. G.; Chernousova, N. N.; Yashchenko, G. N.

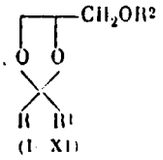
ORG: Voronezh State University (Voronezhskiy gosudarstvennyy universitet)

TITLE: Unsymmetrical organic α-oxides. XXIX. Synthesis of 1,3-dioxolanes from α-oxides

SOURCE: Zhurnal organicheskoy khimii, v. 5, no. 2, 1969, 226-229

TOPIC TAGS: organic oxide, heterocyclic oxygen compound

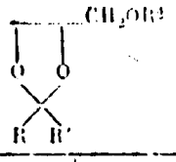
ABSTRACT: Earlier studies revealed that some 1,3-dioxolanes have a marked spasmolytic and antiarythmic activity and affect the central nervous system. In a search for new physiologically active compounds, 11 new 1,3-dioxolanes (I—XI):



(I—XI)

were synthesized by the condensation of methyl ethyl ketone and cyclohexanone with the appropriate α-oxides in the presence of $BF_3O(C_2H_5)_2$ at

 UDC: 547.729+547.422



Compound no.	R	R'	R''	Bp, °C (mm)	d_4^{20}	n_D^{20}
I	CH_3	C_2H_5	C_2H_5	64.5—65.5° (8)	0.9548	1.4220
II	CH_3	C_2H_5	C_3H_7	81.5—82.5 (10)	0.9430	1.4238
III	CH_3	C_2H_5	$isoC_3H_7$	74—75 (10)	0.9371	1.4215
IV	CH_3	C_2H_5	C_4H_9	96.5—97.5 (8)	0.9344	1.4272
V	CH_3	C_2H_5	$isoC_4H_9$	89—90 (9)	0.9279	1.4250
VI			C_2H_5	92—93 (4)	1.0190	1.4549
VII			C_3H_7	119.5—120 (10)	1.0020	1.4536
VIII			$iso\ C_3H_7$	109—110 (6—7)	0.9903	1.4581
IX			C_4H_9	133—134 (12)	0.9886	1.4552

X		$iso\ C_4H_9$	119—120 (5)	0.9850	1.4721
XI		C_5H_{11}	138—139 (8)	0.9788	1.4590

30—40°C. The new dioxolanes are colorless liquids with a pleasant odo soluble in organic solvents and slightly soluble in water. They are characterized in the Table. Their structure was established by IR spectra and by hydrolysis. [WA-50; CBE No. 41] [PS]

SUB CODE: 07/ SUBM DATE: 11Apr68/ ORIG REF: 007/ OTH REF: 001

ACC NR: AP9010308 SOURCE CODE: UR/0079/69/039/002/0334/0337

AUTHOR: Pudovik, A. N.; Batyyeva, E. 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: Reactions of aminophosphines and amidophosphines and amidophosphites with nitriles of α,β -unsaturated acids

SOURCE: Zhurnal obshchey khimii, v. 39, no. 2, 1969, 334-337

TOPIC TAGS: phosphine sulfide, aromatic phosphorus compound, phosphonic acid, aliphatic ester, imide, thiophosphonate ester, thiourea

ABSTRACT: Diphenyl-β-cyanoethylphosphine phenylimide (I) was prepared by heating $PhNHPPh_2$ and CH_2:CHCN in HPh for 15—20 min at 80°C. Compounds II—VI were similarly prepared.

$$(C_6H_5)_2\ddot{P}-NHArX + CH_2=CR-C\equiv N \longrightarrow (C_6H_5)_2\overset{+}{P}(H)-N(-ArX)-CH_2-CR=C=N^- \longrightarrow (C_6H_5)_2P(=N-ArX)-CH_2-CHR-CN$$

$ArX = C_6H_5, C_6H_4F, C_6H_4J, C_6H_4CH_3, \alpha\text{-}C_{10}H_7$; $R = H, CH_3$. (I—VI)

Card 1/4 UDC: 547.341+547.235

Table 1

$(C_6H_5)_2PCH_2CHRCN$
|
N-ArX

No.	R	ArX	Yield, %	Mp, °C
I	H	C_6H_5	73	157—158°
II	H	$C_6H_4CH_3$-p	94	126—127
III	H	C_6H_4F-p	97	174—175
IV	H	C_6H_4J-p	32	125—126
V	CH_3	C_6H_5	42	125—126
VI	H	$C_{10}H_7$-α	50	134—135

Diethyl N-p-tolylimido-β-cyanoethylphosphonate (VII) was obtained by stirring diethyl p-tolylamidophosphite and CH_2:CHCN for 40—50 min at 120—140°C. Compounds VIII—XI were similarly prepared.

$$(RO)_2P-NH-C_6H_4-X + CH_2=CR'-CN \longrightarrow (RO)_2P(=N-C_6H_4-X)-CH_2-CHR'-CN$$

R = C_2H_5, CH; R' = H, CH_3; X = CH_3, I, H. (VII—XI)

Card 2/4

Table 2

NC_6H_4X
‖
$(RO)_2P(O)CH_2CHR'CN$

No.	R	R'	X	Yield, %	Bp, °C (p in mm)	d_4^{20}	n_D^{20}
VII	C_2H_5	H	CH_3-p	50	170—171° (0.08)	1.0758	1.5130
VIII	C_2H_5	H	F-p	53	149—150 (0.06)	1.1190	1.5100
IX	C_2H_7	H	H	22	149—150 (0.08)	1.0517	1.5160
X	C_2H_5	CH_3	H	21	141—142 (0.07)	1.0758	1.5213
XI	C_2H_5	CH_3	CH_3-p	15	135—136 (0.06)	1.0878	1.5180

Diphenyl-β-cyanoethylphosphine sulfide (XII) (1.2 g from 4 g I, mp 125—127°C) was prepared by heating I in CS_2 for 30 min.

$$(C_6H_5)_2P(=N-C_6H_5)-CH_2-CH_2-CN + CS_2 \rightarrow (C_6H_5)_2P(=S)-CH_2-CH_2-CN + C_6H_5NCS$$

(XII)

Diphenylthiourea (mp 151—152°C) was obtained by adding $PhNH_2$ to PhNCS. Diethyl β-cyanoethylthiophosphonate (4 g from 9 g $(EtO)_2P(NPh)CH_2CH_2CN$, $bp_{0.06}$ 130—132°C, d_4^{20} 1.1010, n_D^{20} 1.4960) was prepared by heating

$(EtO)_2P(NPh)CH_2CH_2CN$ in CS_2 for 2 hr. Orig. art. has: 1 figure and 2 tables. [WA-50; CBE No. 41] [FT]

SUB CODE: 07/ SUBM DATE: 09Feb68/ ORIG REF: 002/ OTH REF: 001

AUTHOR: Pudovik, A. N.; Gur'yanova, I. V.; Perevezentseva, S. P.; Terent'yeva, S. A.

ORG: Kazan' State University (Kazanskiy gosudarstvennyy universitet)

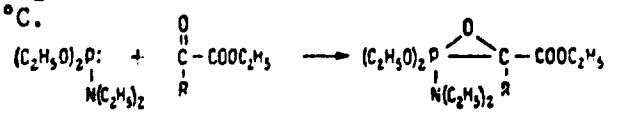
TITLE: Reactions of amido esters of phosphorous acid with carbonyl-containing compounds

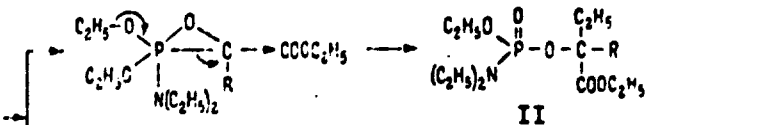
SOURCE: Zhurnal obshchey khimii, v. 39, no. 2, 1969, 337-340

TOPIC TAGS: substituted amide, phosphate ester, heterocyclic oxygen compound, heterocyclic phosphorus compound

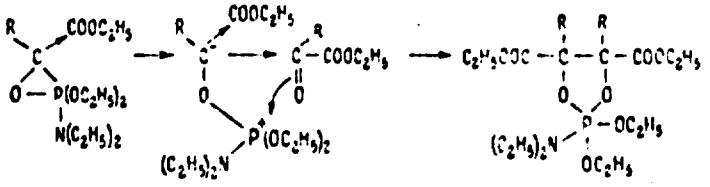
ABSTRACT: Diethyl N-N-diethylamidophosphate (I) (2 g from 10 g $(EtO)_2PNEt_2$, bp_9 92—94°C, n_D^{20} 1.4210, d_4^{20} 1.0320), ethyl α-ethyl-α-carbomethoxyethyl N-N-diethylamidophosphate (30% yield, bp_8 141—142°C, n_D^{20} 1.4335, d_4^{20} 1.0992), and 2,2-diethoxy-2-diethylamino-4,5-dimethyl-4,5-dicarbomethoxy-1,3,2-dioxaphospholane (25% yield, bp, 143—145°C, n_D^{20} 1.4515, d_4^{20} 1.1803) were prepared by adding $AcCOOCH_3$ to $(EtO)_2PNEt_2$ in N and allowing the mixture to stand for 15 hr at 20°C. Compound I (3.5 g from 16.9 g $(EtO)_2PNET_2$), ethyl α-ethyl-α-carbethoxyethyl N-N-diethylamidophosphate (II) (37% yield, bp_8 145°C, n_D^{20} 1.4339, d_4^{20} 1.0710), and 2,2-diethoxy-2-diethylamino-4,5-dimethyl-4,5-dicarbe-

thoxy-1,3,2-dioxaphospholane (III) (16% yield, $bp_{2.5}$ 158—160°C, n_D^{20} 1.4451, d_4^{20} 1.2251) were similarly prepared. Compounds II (16% yield) and III 960% yield) were also obtained by adding AcCOOEt in Et_2O to $(EtO)_2PNEt_2$ in Et_2O from -5 to 0°C and allowing the mixture to stand for 24 hr at 20°C.





II



R = CH_3 III

Dipropyl N-N-diethylamidophosphate (1.8 g from 12.6 g $(EtO)_2PNEt_2$, bp_1 113°C, n_D^{20} 1.4245), propyl α-propyl-α-carbomethyoxyethyl N-N-diethylamidophosphate (28% yield, bp_8 146—148°C, n_D^{20} 1.4349, d_4^{20} 1.0763), and

ACC NR: AP9010309

2,2-dipropoxy-2-diethylamino-4,5-dimethyl-4,5-dicarbomethoxy 1,3,2-dioxaphospholane (16% yield, bp, 150—155°C, n_D^{20} 1.4486, d_4^{20} 1.2056) were prepared by adding $AcCOOCH_3$ to $(PrO)_2PNEt_2$ at 80°C. 2,2-Diethoxy-2-diethylamino-4,5-dicarbobutoxy-1,3,2-dioxaphospholane (66% yield, $bp_{0.5}$ 158—160°C, n_D^{20} 1.4435, d_4^{20} 1.0562) was prepared by adding $HCOCOOBu$ in Et_2O to $(EtO)_2PNEt_2$ in Et_2O from -5 to 0°C. Triethyl phosphate (1.8 g from 5.5 g II, bp_{10} 91—92°C, n_D^{20} 1.4080, d_4^{20} 1.0679) was obtained by heating II and NaOEt. [WA-50; CBE No. 41] [FT]

SUB CODE: 07/ SUBM DATE: 12Feb68/ ORIG REF: 005/ OTH REF: 002

Card 3/3

ACC NR: AP9008425 SOURCE CODE: UR/0062/69/000/002/0466/0468

AUTHOR: Fedorik, V. N.; Khayrullin, V. K.; Kharitonova, N. I.

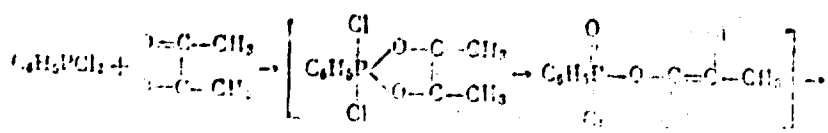
ORG: Institute of Organic and Physical Chemistry im. A. Ye. Arbuzov, Academy of Sciences SSSR (Institut organicheskoy i fizicheskoy khimii Akademii nauk SSSR)

TITLE: Reaction of phenyldichlorophosphine with biacetyl

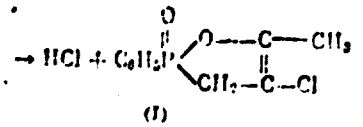
SOURCE: AN SSSR. Seriya khimicheskaya, no. 2, 1969, 466-468

TOPIC TAGS: halogenated organic compound, aromatic phosphorus compound

ABSTRACT: The exothermic reaction of phenyldichlorophosphine with biacetyl in dry CO_2 atmosphere at 39—42°C proceeds with Arbuzov's rearrangement to form (16.2%) 5-methyl-2-phenyl-4-chloro-2-oxo-1,2-oxaphospholene (I), bp 129—131°C (0.01 mm), d_4^{20} 1.30[illegible] n_D^{20} 1.5609:

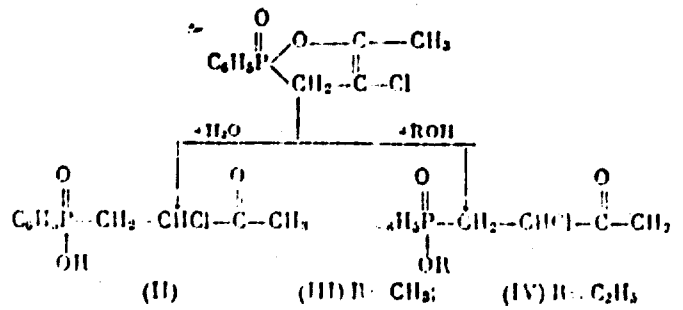


UDC: 542.91+661.718.1



(I)

Compound I is very reactive and with water and alcohols forms compounds: II (d_4^{20} 1.2976, n_D^{20} 1.5463), III (bp 121—124°C/0.007 mm); and IV (bp 142—144°C/0.01 mm):



Orig. art. has: 1 figure. [WA-50; CBE No. 41] [PS]

SUB CODE: 07/ SUBM DATE: 29Jul68/ ORIG REF: 002

2/2

AP9010323 SOURCE CODE: UR/0079/69/039/002/0392/0396

AUTHOR: Razumov, A. I.; Gurevich, P. A.; Liorber, B. G.; Borisova, T. B.

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

TITLE: Studies in a series of derivatives of phosphinic and phosphinous acids. LXVII. Synthesis of phosphorylated heterocyclic compounds

SOURCE: Zhurnal obshchey khimii, v. 39, no. 2, 1969, 392-396

TOPIC TAGS: heterocyclic oxygen compound, organic azole compound, phosphonic acid, aliphatic ester, phosphinic acid, oxazole, phosphonate ester

ABSTRACT: Diethyl 2-benzoxazolylphosphonate (I) was prepared by heating o-aminophenol and $(EtO)_2P(O)CH(OEt)_2$ in O_2 at 155—163°C. Compounds II—V were similarly prepared. p-Tolylmethyl(2-benzoxazolyl)phosph[illegible]

1/4 UDC: 547.783'118.07

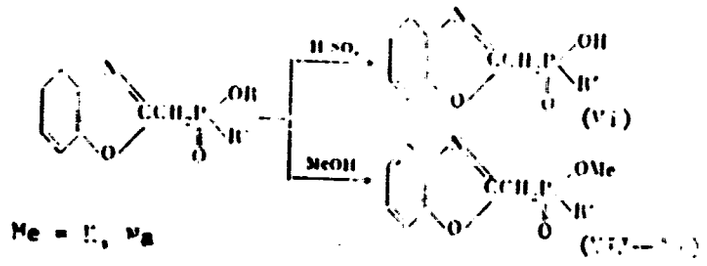
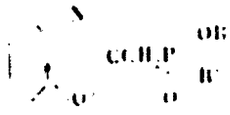
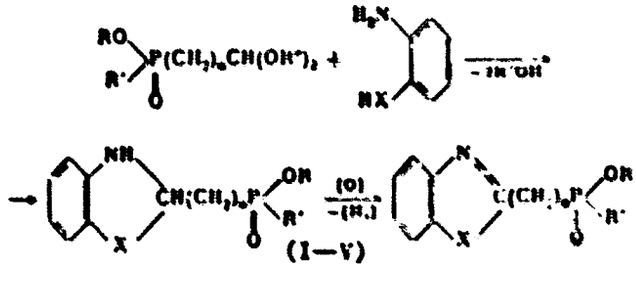


Table 1



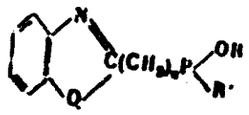
No.	R	R'	n	% Yield in inert gas	% Yield in O_2	T_m, °C (decomp)
I	C_2H_5	C_2H_5O	0	58.0	68.0	241–242
II	C_2H_5	C_2H_5O	1	24.6	47.0	161–162
III	C_2H_5	C_2H_5O	1	38.5	53.0	145–147
IV	C_2H_5	$C_6H_4CH_3$-n	1	32.0	43.0	154–155
V	C_2H_5	C_2H_5	1	28.0	42.0	106–108

acid (VI) was obtained by refluxing IV in 5% alcoholic H_2SO_4 for 3 hr. Potassium p-tolylmethyl(2-benzoxazolyl)phosphinate (VII) was prepared by refluxing IV in 5% alcoholic KOH for 3 hr. Compounds VIII-XI were similarly prepared.



ACC NR: AP9010323

Table 2



No.	R	R'	% Yield	Mp, °C (decomp)
VI	H	$C_6H_4CH_2$·p	84	183—185°
VII	K	$C_6H_4CH_2$·p	83	198—200
VIII	K	C_6H_4O·p	74	341—345
IX	Na	C_6H_4Cl·p	74	169—171
X	Na	C_6H_5	79	126—128
XI	Na	C_6H_5O	82	132—134

Orig. art. has: 2 tables. [WA-50; CBE No. 41] [FT]

UUB CODE: 07/ SUBM DATE: 05Feb68/ ORIG REF: 004

Card 4/4

ACC NR: AP9010311 SOURCE CODE: UR/0079/69/039/002/0346/0350

AUTHOR: Razumov, A. M.; Zykova, T. V.; Yafarova, R. L.

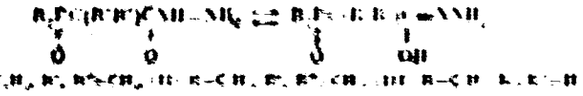
ORG: Kazan' Chemical Technology Institute im. S. M. Kirov (Kazanskiy khimiko-tekhnologicheskiy institut)

TITLE: Study in a series of phosphinic and phosphinous acids. LX. Amide-iminol tautomerism in a series of amides and hydrazides of phosphorylated carboxylic acids

SOURCE: Zhurnal obshchey khimii, v. 39, no. 2, 1969, 346-350

TOPIC TAGS: tautomerism, hydrazine compound, aliphatic phosphorus compound, hydrogen bonding, substituted amide

ABSTRACT: A study was made of the amide-iminol tautomerism of some hydrazides of phosphorylated carboxylic acids (I—III) by NMR spectroscopy.



Compounds I—III exist in both tautomeric forms (amide and iminol) in $CDCl_3$ irrespectively of temperature and concentration. When melted

Card 1/2 UDC: 547.295.6

150°C, I—III exist only as the iminol tautomer. No keto-enol tautomerism due to carbonyl methylene protons occurs in III. Intermolecular H bonds and intramolecular associations occur in I—III. Orig. art. has: 4 figures. [WA-50; CBE No. 41] [FT]

SUB CODE: 07/ SUBM DATE: 21Mar68/ ORIG REF: 009/ OTH REF: 009

ACC NR: AP9008414 SOURCE CODE: UR/0062/69/000/002/0370/0373

AUTHOR: Razpolozhenskiy, 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 trivalent phosphorus thio acids. 7. Reaction of esters of ethyl(phenyl)thiophosphinous acid with alkyl halides and acyl halides

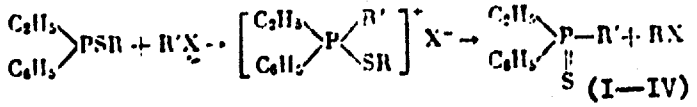
SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 2, 1969, 370-373

TOPIC TAGS: phosphine sulfide, aromatic phosphorus compound, aliphatic phosphorus compound

ABSTRACT: Diethyl(phenyl)phosphine sulfide (I) (58% yield, $bp_{0.08}$ 112—113°C, d_4^{20} 1.0869) was prepared by heating Et(Ph)PSEt and EtI for 1 hr in a sealed tube at 95—100°C. Ethyl(phenyl)allylphosphine sulfide (II) (66.7% yield, $bp_{0.05}$ 97—98°C, n_D^{20} 1.5912, d_4^{20} 1.0800) was obtained by stirrring Et(Ph) PSBu and CH_2:$CHCH_2Br$ in CO_2 at 20°C for 2 hr and allowing the mixture to stand for 100 hr. Ethyl(phenyl)benzylphosphine sulfide (III) (74.5% yield, $bp_{0.007}$ 157—159°C,

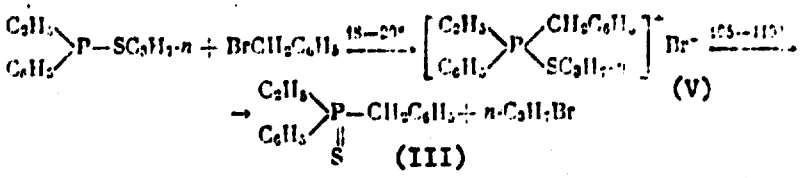
Card 2/2 UDC: 542.91+661.718.1

mp 79.5—80°C) was prepared by allowing Et(Ph)PSEt to react with $PhCH_2Br$ in N at 45—95°C. Methyl(ethyl)phenylphosphine sulfide (IV) (58% yield, $bp_{0.003}$ 87—89°C) was obtained by adding CH_3I to Et(Ph)PS(iso-Bu) in CO_2 at 20—22°C, stirring for 15—20 min, allowing the mixture to stand for 40—50 hr, and heating for 40 min at 120—125°C.



(I—IV)

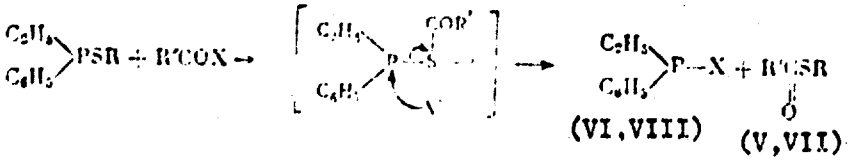
Ethyl(phenyl)(n-propylthio)benzylphosphonium bromide (V) (36% yield, mp 92—93°C, decomp) and III (61% yield) were obtained by adding $PhCH_2Br$ to Et(Ph)PSPr at 18—20°C and allowing the mixture to stand for 120 hr.



(V)

(III)

Compound III (73% yield) was also obtained by heating V for 10 min at 105—110°C. Ethyl thioacetate (V) (75% yield, bp_{185} 71—72°C, n_D^{20} 1.4602, d_4^{20} 0.9824) and ethyl(phenyl)chlorophosphine (VI) (78.7% yield, bp_8 90—91°C, n_D^{20} 1.5719, d_4^{20} 1.1186) were obtained by adding AcCl to Et(Ph)PSEt in CO_2 and heating for 1 hr at 100°C. Propyl thioacetate (VII) (62% yield, bp_{65} 65--66°C, n_D^{20} 1.4590, d_4^{20} 0.9628)



(VI,VIII) (V,VII)

and ethyl(phenyl)bromophosphine (VIII) (57% yield, $bp_{0.03}$ 58—59°C, n_D^{20} 1.6005, d_4^{20} 1.3705) were similarly prepared.

[WA-50; CBE No. 41] [FT]

SUB CODE: 07/ SUBM DATE: 28Mar68/ ORIG REF: 005/ OTH REF: 004
SOV REF: 010

ACC NR: AP9009954 SOURCE CODE: UR/0366/69/005/001/0119/0123

AUTHOR: Samaray, L. I.; Bondar', V. A.; Derkach, G. I.

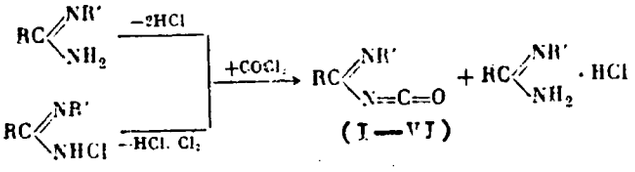
ORG: Institute of Organic Chemistry, Academy of Sciences UkrSSR (Institut organicheskoy khimii Akademii nauk UkrSSR)

TITLE: Isocyanates of iminocarboxylic acids

SOURCE: Zhurnal organicheskoy khimii, v. 5, no. 1, 1969, 119-123

TOPIC TAGS: organic isocyanate compound, organic imine compound, chlorinated aliphatic compound, urea derivative, phosphonate ester

ABSTRACT: N-Methyliminotrichloroacetyl isocyanate (I) was prepared by adding N-methyltrichloroacetamidine in $PhCH_3$ to $COCl_2$ in $PhCH_3$ in the cold and passing $COCl_2$ into the solution for 1.5—3.5 hr at 105—135°C. Compound II—VI were similarly prepared.



 UDC: 547.231.1+547.55

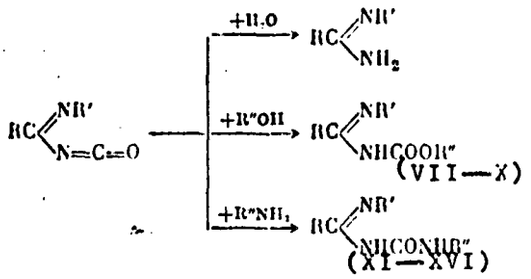
Table 1

RC(=NR')NCO

No.	R	R'	% Yield	Bp, °C (p in mm)	n_D^{20}	d_4^{20}
I	CCl_3	CH_3	40	63°(8)	1.5042	1.4658
II	CCl_3	C_2H_5	30	76 (12)	1.4954	1.3711
III	CCl_3	n C_4H_9	44	53 (0.2)	1.4892	1.2734
IV	CCl_3	$(CH_3)_2C_6H_3$	63	90 (0.03)	1.5498	1.3312
V	CCl_3	6-Br-2,4-$(CH_3)_2C_6H_2$	72	106 (0.06)	1.5765	—
VI	C_6H_5	$PO(OC_6H_5)_2$	90	Mp 49—51	—	—

N-(6-Bromo-2,4-dimethylphenyl)trichloroacetamidine (65 % yield, mp 131—132°C) was obtained by adding H_2O to V in acetone and allowing the mixture to stand for 30 min. Methyl N-(N'-methyliminotrichloroacetyl)urethan (VII) was prepared by adding CH_3OH in ether to I in ether in the cold and allowing the mixture to stand for 15 hr at 20°C. Compounds VIII—X were similarly prepared. N-(N''-Methyliminotrichloroacetyl)-N'-phenylurea (XI) was obtained by adding $PhNH_2$ in ether to I in ether in the cold and allowing the mixture to stand for 1—3 hr.

Compounds XII—XVI were similarly prepared. Diisopropyl N-(N'-methyl-



iminotrichloroacetyl)carbamoylphosphonate (XVII) was prepared by adding several drops of Et_3N to I and $(iso\text{-}Pr)_2POH$ in HPh and boiling for 2—3 hr. Compounds XVIII and XIX were similarly prepared.

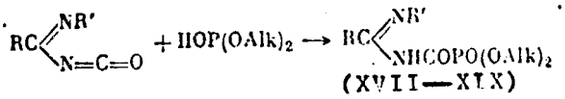


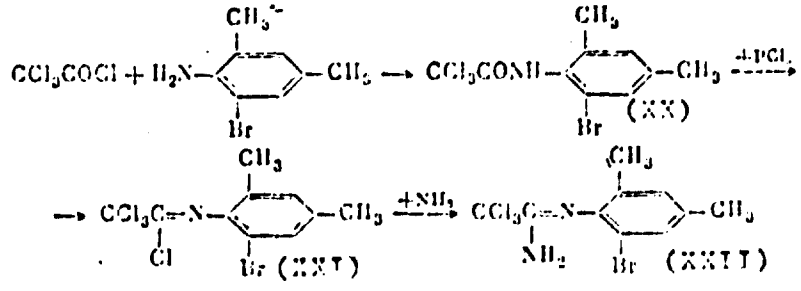
Table 2

$RC(=NR')NHCOX$

No.	R	R'	X	% Yield	Mp, °C
VII	CCl_3	CH_3	OCH_3	71	—
VIII	CCl_3	C_2H_5	OCH_3	97	—
IX	CCl_3	n-C_4H_9	OCH_3	98	—
X	CCl_3	$(CH_2)_2C_6H_5$	OCH_3	84	84—85°
XI	CCl_3	CH_3	NHC_6H_5	72	120—122
XII	CCl_3	C_2H_5	NHC_6H_4Cl-p	91	132—134
XIII	CCl_3	n-C_4H_9	NHC_6H_5	95	88—90
XIV	CCl_3	$(CH_2)_2C_6H_5$	NHC_6H_5	84	123—125
XV	CCl_3	6 Br 2,4-$(CH_3)_2C_6H_2$	NHC_6H_5	90	160—161
XVI	C_6H_5	$PO(OC_6H_5)_2$	NHC_6H_5	69	147—148
XVII	CCl_3	CH_3	$P(O)(OC_3H_7\text{-}iso)_2$	50	—
XVIII	CCl_3	n-C_4H_9	$P(O)(OC_3H_7\text{-}iso)_2$	94	—
XIX	CCl_3	$(CH_2)_2C_6H_5$	$P(O)(OC_3H_7\text{-}iso)_2$	64	—

ACC NR: AP9009956

6-Bromo-2,4-dimethyltrichloroacetanilide (XX) (of % yield, mp 125—126°C) was prepared by adding 6-bromo-2,4-dimethylaniline to CCl_3COCl at 0°C and heating at 115—125°C. N-(6-Bromo-2,4-dimethylphenyl)trichloroacetimidochloride (XXI) (76 % yield, $bp_{0.04}$ 127°C) was obtained by heating XX and PCl_5 at 130—140°C. N-(6-Bromo-2,4--dimethylphenyl)trichloroacetamidine (XXII) (43 % yield, mp 131—132°C) was prepared by adding XXI in $CHCl_3$ to NH_3 in $CHCl_3$ in the cold, passing NH_3 into the mixture for 3—4 hr, and allowing it to stand for 15 hr.



Orig. art. has: 2 tables. [WA-50; CBE No. 41] [FT]

SUB CODE: 07/ SUBM DATE: 19Dec67/ ORIG REF: 005/ OTH REF: 002

Card 5/5

ACC NR: AP9010123 SOURCE CODE: UR/0153/69/012/002/0157/0160

AUTHOR: Shklyayev, V. S.; Kalugina, Z. G.

ORG: Department of Organic and Analytical Chemistry, Perm' State Pharmaceutical Institute (Kafedra organicheskoy i analiticheskoy khimii, Permskiy gosudarstvennyy farmatsevticheskiy institut)

TITLE: Synthesis and properties of 1,1-diaryl-2-(phenylamino)ethanols

SOURCE: IVUZ. Khim i khimich tekhn, v. 12, no. 2, 1969, 157-160

TOPIC TAGS: amine derivative, aryl radical, anticonvulsant drug

ABSTRACT. Amino alcohols are very interesting compounds because of their considerable chemical activity and diverse biological action. It seemed of interest to develop a general procedure for synthesizing such compounds and to study their chemical properties and biological activity. 1,1-Diphenyl-2-(phenylamino)-1-ethanol (IVa) was prepared by adding $Ph_2C(OH)C(O)NHPh$ (III) (obtained from I and II) in HPh to $LiAlH_4$ in Et_2O for 40 min and heating for 20 hr at 58—60°C. Compounds IVb—IVl were similarly prepared. Compounds IVa—i were studied for anticonvulsant activity by tests for maximum electric shock and by the 6,7,8,9-tetrahydro-5-azepotetrazole test. They were

Card 1/3 UDC: 547.568.1'554:541.571.9

$$ArMgBr \xrightarrow{RNHCOC_6H_4(OH)} Ar_2C(OH)CONHR \xrightarrow{LiAlH_4} Ar_2C(OH)CH_2NHR$$
(I) (III) (IV a—i)

R = C_6H_5; p-ClC_6H_4; 2,6-$Cl_2C_6H_3$; 2-$CH_3OC_6H_4$.

Ar = C_6H_5; o-, m-, p-ClC_6H_4; o-, m-, p-$CH_3C_6H_4$; o-, p-$CH_3OC_6H_4$.

Table 1.

$RNHCH_2C(OH)Ar_2$

No.	R	Ar	Yield, %	Mp, °C
IV a	C_6H_5	C_6H_5	36,5	98—100
IV b	C_6H_5	p-ClC_6H_4	38,8	108—110
IV c	C_6H_5	o-ClC_6H_4	38,8	140—142
IV d	C_6H_5	m-ClC_6H_4	38,8	145—148
IV e	C_6H_5	p-$H_3CC_6H_4$	41,5	121—123
IV f	C_6H_5	o-$H_3CC_6H_4$	31,6	110—115

Table 1. (Cont.)

IV g	C_6H_5	m-$H_3CC_6H_4$	31,6	124 - 126
IV h	C_6H_5	p-$CH_3OC_6H_4$	41,2	98—100
IV i	C_6H_5	o-$CH_3OC_6H_4$	30,5	170(decomp)
IV j	4-ClC_6H_4	p-$H_3CC_6H_4$	32,3	90—94
IV k	2,6-diClC_6H_3	p-$H_3CC_6H_4$	32,8	123—124
IV l	2-$CH_3OC_6H_4$	p-$H_3CC_6H_4$	30,1	115 - 117

also tested for antitremor action by the nicotine and arecoline tests. Weak anticonvulsant action was displayed by IVi and IVe in the test for maximum electric shock and by IVd and IVg in the 6,7,8,9-tetrahydro-5-azepotetrazole test. Compounds IVa—i displayed no antitremor or soporific effect. Orig. art. has: 1 table.

[WA-50; CBE No. 41] [FT]

SUB CODE: 06,07/ SUBM DATE: 31Mar67/ ORIG REF: 007/ OTH REF: 001

ACC NR: AP9010305 SOURCE CODE: UR/0079/69/039/002/0316/0321

AUTHOR: Stepanov, B. I.; Korolev, B. A.; Bokanov, A. I.

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

TITLE: Acid-base properties of tertiary phosphine oxides in nitromethane

SOURCE: Zhurnal obshchey khimii, v. 39, no. 2, 1969, 316-321

TOPIC TAGS: aromatic phosphorus compound, aliphatic phosphorus compound, phosphine oxide derivative, acid base equilibrium

ABSTRACT: A study was made of the acid-base properties of some tertiary phosphine oxides in CH_3NO_2. Tertiary phosphine oxides titrate in CH_3NO_2, and a process of association of bonded acids and bases, i.e., $B + BH^+ \rightleftarrows BHB^+$, is imposed upon the process of protonation. Under the influence of association, the titration process is divided into two stages: the protonation of the initial phosphine oxide B (in the region of 0—50% neutralization) and the protonation of the BHB^+ complex (in the region of 50—100% neutralization). The titration curves for various phosphine oxides in 0.0025 M CH_3NO_2 are shown in Figure 1, where the broken line is the titration curve of the solvent. Some calculated equilibrium constants and association constants are shown in Table 1. The assocation energy of phosphine oxides (with

 UDC: 661.718.1+543.257.1

ACC NR: AP9010305

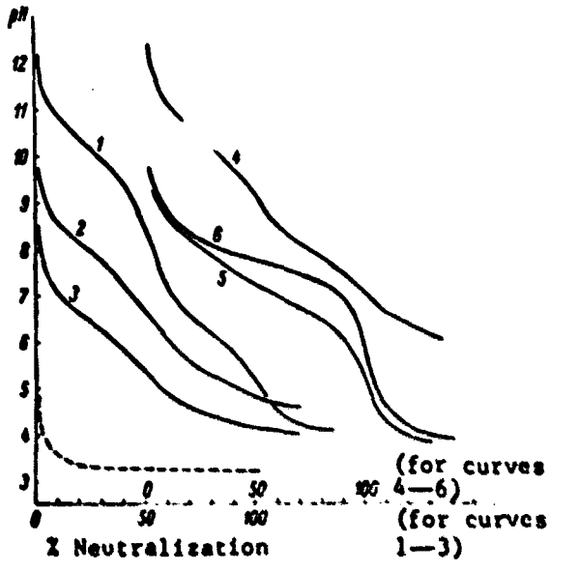


Fig. 1. Titration curves

1 - $(C_6H_5)_3PO$; 2 - $p\text{-}ClC_6H_4P(C_2H_5)_2O$; 3 - $(C_6H_5)_3PO$; 4 - $p\text{-}(CH_3)_2NC_6H_4P(C_2H_5)_2O$; 5 - $[2,4,6\text{-}(CH_3)_3C_6H_2]_3PO$; 6 - $(C_6H_5)_3P$.

Table 1. Constants

No.	Compound	pH_1	pH_2	pK_{a1}	pK_{a2}	pK_a	$\lg K_{ass}$	Σ_{σ_I}
I	$(C_2H_5)_3PO$	10.14	6.23	12.74	3.63	8.18	4.55	—3.303
II	$p\text{-}(CH_3)_2NC_6H_4P(C_2H_5)_2O$	10.32	7.85	12.92	—	—	—	—
III	$p\text{-}CH_3OC_6H_4P(C_2H_5)_2O$	9.03	5.68	11.63	3.08	7.35	4.28	—2.788
IV	$C_6H_5P(C_2H_5)_2O$	8.69	5.28	11.29	2.68	6.98	4.30	—2.919
V	$C_6H_5P(C_2H_5)_2O$	8.48	5.27	11.08	2.67	6.88	4.20	—2.684
VI	$p\text{-}ClC_6H_4P(C_2H_5)_2O$	7.85	5.24	10.45	2.64	6.55	3.90	—2.494
VII	$p\text{-}CH_3OOCC_6H_4P(C_2H_5)_2O$	7.77	5.26	10.37	2.66	6.51	3.85	—
VIII	$(C_6H_5)_3PO$	6.51	4.5	9.11	1.9	5.5	3.6	—1.776
Reproducibility		±0.1	±0.15	±0.1	±0.15	±0.15	±0.15	

the formation of the BHB^+ complex) is considerably greater than that of amines. The protonation of phosphine oxides is the only case of the titration of bases when the association is so great that it makes two discontinuities on the titration curves. The strong association causes a significant increase in pK_{a1}, making it easy to determine the analytical concentrations of very weakly basic phosphine oxides potentiometrically in CH_3NO_2. Orig. art. has: 1 table and 4 figures.

[WA-50; CBE No. 41] [FT]

SUB CODE: 07/ SUBM DATE: 18Jul67/ ORIG REF: 010/ OTH REF: 002

Card 3/3

ACC NR: AP9008416 SOURCE CODE: UR/0062/69/000/002/0387/0392

AUTHOR: Stoyanovich, F. M.; Gorushkina, G. I.; Gol'dfarb, Ya. L.

ORG: Institute of Organic Chemistry im. N. D. Zelinskiy, Academy of Sciences SSSR (Institut organicheskoy khimii Akademii nauk SSSR)

TITLE: Thiocyanation of thiophene and its derivatives. 1. Effect of conditions and the nature of the catalyst on thiocyanation with dithiocyanogen

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 2, 1969, 387-392

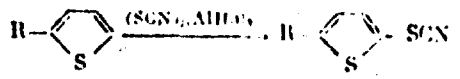
TOPIC TAGS: thiocyanate, heterocyclic sulfur compound, thiophene derivative, dithiocarbamate, weed killer, herbicide

ABSTRACT: Thiocyano derivatives of the thiophene series display highly pronounced herbicidal activity. 2-Thiocyanothiophene (I) (71% yield, bp_{10} 103—105°C, n_D^{20} 1.5959, d_4^{20} 1.300) was prepared by adding thiophene and $AlBr_3$ to $(SCN)_2$ in HPh at 0—6°C and stirring for 2 hr at 20°C. 5-Thiocyano-2-ethylthiophene (III) (81% yield, bp_{11} 126—129°C, n_D^{20} 1.5698, d_4^{20} 1.163) and 5-thiocyano-4-bromo-2-ethyl-thiophene (7[illegible] yield, $bp_{1.5}$ 136.5—137°C n_D^{20} 1.6060, [illegible] 578) were

Card 1/2

UDC: 542.974546.268.54547.73

similarly prepared. 5-Thiocyano-2-methylthiophene (II) (71% yield, bp_{14} 124—125°C, n_D^{20} 1.5792, d_4^{20} 1.230) was similarly prepared with $AlCl_3$ and stirring for 1 hr.



(I) R = H; (II) R = CH_3; (III) R = C_2H_5

5-Cyano-2-ethylthiophene (30% yield, bp_8 85—87°C, n_D^{20} 1.5455) and 5-mercapto-2-ethylthiophene (bp_8 68—72°C, n_D^{20} 1.5738) were obtained by adding $(SCN)_2$ in HPh to ethylthiophene and $SnCl_4$ in HPh at 0—3°C, stirring at 0—5°C for 30 min and at 20°C for 2 hr, adding 10% HCl, and allowing the mixture to stand for 15 hr. 5-Methyl-2-thienyl dithiocarbamate (0.3 g from 7 g 2-methylthiophene, mp 127—129°C) was similarly prepared. 2-Thiophenethiol (65% yield, bp_{12} 52°C, n_D^{20} 1.6160) was obtained by adding I to $LiAlH_4$ in ether in N for 45 min at 20°C, refluxing for 1 hr, cooling to 5°C, and adding 10% HCl. 2,2'-Dithienyl disulfide (72% yield, mp 51—53°C) was prepared by stirring I and $NaBH_4$ in CH_3OH for 2 hr at 20°C, pouring into H_2O, and adding iodine. Orig. art. has: 5 tables.

[WA-50; CBE No. 41] [FT]

SUB CODE: 02,07/ SUBM DATE: 27Mar68/ ORIG REF: 002/ OTH REF: 008

Card 2/2

ACC NR: AP9009754 SOURCE CODE: UR/0366/69/005/002/0272/0276

AUTHOR: Svirskaya, P. I.; Baskakov, Yu. A.; Strebulayeva, A. I.

ORG: none

TITLE: Herbicidal derivatives of hydroxylamine XXVI. O-acyl-N-alkylcarbomoyl-N-arylhydroxylamines

SOURCE: Zhurnal organicheskoy khimii, v. 5, no. 2, 1969, 272-276

TOPIC TAGS: herbicide, weed killer, amine derivative

ABSTRACT: The O-acyl-N-alkylcarbamoyl-N-arylhydroxylamines (II) were synthesized by the reactions:

$$ArN(OH)CONHAlk + RCOCl \rightarrow ArN(OCOR)CONHAlk$$
(III) (II)

$$(III) + CH_2{=}C{=}O \rightarrow (II)\ (R = CH_3)$$

$$(III) + (RCO)_2O \rightarrow (II) + RCOOH$$

The reaction of III with RCOCl takes place at -5 to 0°C in anhydrous organic solvent in the presence of triethylamine or pyridine. The reaction of III with ketene proceeds in at 35—40°C in dichloroethane. The reaction of III with the acid anhydrides takes place in the presence of hydrated sodium acetate. Compounds II are characterized in Table 1.

Card 1/6 UDC: 547.238

Table 1

$X_nC_6H_{5-n}N(OCOR)CONHAlk$ (II)

X_n	Alk	R	Mp, °C
H	CH_3	CH_3	102—103*
H	CH_3	C_2H_5	133—134
H	CH_3	C_3H_7	86—87
H	CH_3	C_3H_7-iso.	121—122
H	CH_3	C_4H_9	52—53
H	CH_3	C_4H_9-iso.	136—137
H	C_3H_7- iso.	CH_3	101—102
H	C_3H_7- iso.	C_2H_5	85—86
H	C_3H_7- iso.	C_3H_7 iso.	64—65
H	C_4H_9- sec.	CH_3	77—78
H	C_4H_9- sec.	C_2H_5	76
H	C_4H_9- tert.	CH_3	115—116

Table 1. (Cont.)

H	C_4H_9-tert.	C_2H_5	73.5
2-Cl	CH_3	CH_3	130—140
2-Cl	C_4H_9-tert.	CH_3	98—89
3-Cl	CH_3	CH_3	104—105
3-Cl	CH_3	C_2H_5	108
3-Cl	C_4H_9-tert.	CH_3	107—108
3-Cl	C_4H_9 tert.	C_2H_5	76—77
4-Cl	CH_3	CH_3	113—114
4-Cl	CH_3	C_2H_5	108—109
4-Cl	CH_3	C_3H_7	87—88
4-Cl	C_4H_9-tert.	CH_3	134—135
4-Cl	C_4H_9-tert.	C_2H_5	103—104
3,4-Cl_2	CH_3	CH_3	97—98
3,4-Cl_2	CH_3	C_2H_5	91
3,4-Cl_2	CH_3	C_3H_7	77—78
3,4-Cl_2	C_4H_9-tert.	CH_3	102—103

Table 1. (Cont.)

3,4-Cl_2	C_4H_9-tert.	C_2H_5	79—80
2-CH_3	CH_3	CH_3	113—114
3-CH_3	CH_3	CH_3	114
3-CH_3	CH_3	C_2H_5	107.5
3-CH_3	CH_3	C_3H_7	45—47
3-CH_3	C_3H_7-iso.	CH_3	97—98
3-CH_3	C_3H_7-iso.	C_2H_5	82—81
3-CH_3	C_3H_7-iso.	C_3H_7	39—42
4-CH_3	CH_3	CH_3	89—90
4-CH_3	CH_3	C_2H_5	89
4-CH_3	CH_3	C_3H_7	58
4-CH_3	C_3H_7-iso.	CH_3	73—75
4-CH_3	C_3H_7-iso.	C_2H_5	87—88

Compounds II reacted with HCl and HBr at 18—40°C to form compounds IV which are characterized in Table 2. All O-Acyl derivatives showed

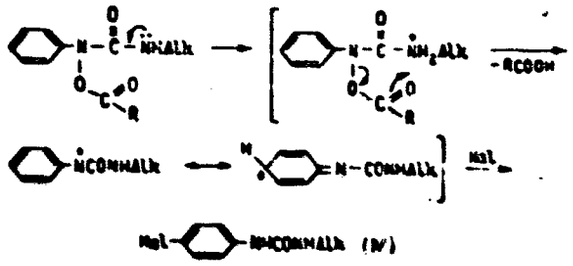


Table 2

$X_nC_6H_{5-n}NHCONHAlk$ (IV)*

X_n	Alk	Yield, %	Mp, °C
4-Cl	CH_3	93	206—207 [*]
4-Br **	CH_3	90	216 [*]
4-Cl	C_3H_7 iso	91	220—221 [*]
2,4-Cl_2	CH_3	70	220
2-Cl-4-Br **	CH_3	62	225—226
3,4-Cl_2	CH_3	82	157 [*]
2,4-Cl_2	CH_3	86	220

Table 2. (Cont.)

2-CH_3-4-Cl	CH_3	80	225–226
3-CH_3-4-Cl	CH_3	80	160–161
3-Cl-4-CH_3	CH_3	10	174–175

* Conversion in the presence of HCl
** Conversion in the presence of HBr

strong herbicidal activity. Data on the herbicidal activity of compounds II were published earlier (Yu. A. Baskakov, S. S. Kol'tsova, Avt. svid, No. 184062; Byull. izobr. No. 14, 121, 1966).

[WA-50; CBE No. 41] [PS]

SUB CODE: 07/ SUBM DATE: 29Jan68/ ORIG REF: 003/ OTH REF: 004

Card 6/6

ACC NR: AP9010313 SOURCE CODE: UR/0079/69/039/002/0354/0360

AUTHOR: Timofeyeva, T. N.; Ionin, B. I.; Petrov, A. A.

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

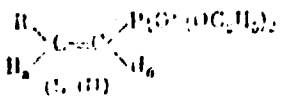
TITLE: Study of organophosphorus compounds by the NMR method. Effect of the diethylphosphonic group on protonic chemical shifts in esters of unsaturated phosphonic acids

SOURCE: Zhurnal obshchey khimii, v. 39, no. 2, 1969, 354-360

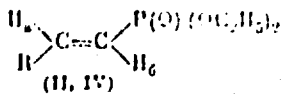
TOPIC TAGS: diene compound, phosphonic acid, aliphatic ester, magnetic anisotropy, hydrogen bonding, NMR, phosphonate ester

ABSTRACT: In previous studies of unsaturated organophosphorus compounds, a series of spectra of cis- and trans-alkenylphosphonates were obtained, and the dipole moments of the diethylphosphonic group and the P:O bond in the phosphonates were evaluated. These data were used to evaluate the polar effect and magnetic anisotropy of the diethylphosphonic group in I—VI. The chemical shifts of the methyl

Card 1/4 UDC: 547.241:538.27

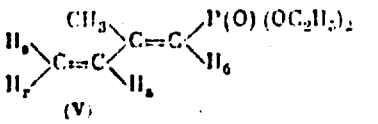


(I, II)

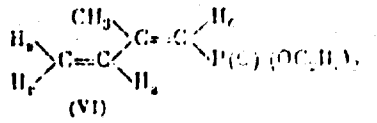


(II, IV)

(I, II) R = CH_3, (III, IV) R = C_2H_5



(V)



(VI)

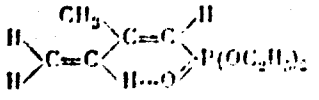
Table 1. Chemical shifts of protons in I—VI

No.	Nucleus	Chemical shift	Difference of chemical shifts
I	H_a	6.95	} 0.31
II	H_a	6.64	
III	H_a	6.74	} 0.39
IV	H_a	6.35	
V	H_a	6.58	} 0.92
VI	H_a	7.50	

Table 1. (Cont.)

I	CH_3	2.08	} 0.19
II	CH_3	1.89	
V	CH_3	2.27	} 0.15
VI	CH_3	2.12	

and ethylene protons in I—VI are shown in Table 1. The difference in the chemical shifts of the corresponding protons in the cis and trans isomers of I—VI indicates the insignificant magnetic anisotropy of the diethylphosphonic group. This difference is due to the polar effect of the phosphonic group and to the formation of a hydrogen bond. The formation of the hydrogen bond is especially significant in the cis arrangement of the phosphonic group and -proton in the



(VIa)

CC NR: AP9010313

1,3-dienylphosphonate when a planar six-membered ring (VIa) can be formed. Orig. art. has: 2 tables and 3 figures.
[VA-50; CBE No. 41] [FT]

SUB CODE: 07/ SUBM DATE: 08Jan68/ ORIG REF: 009/ OTH REF: 008

Card 4/4

ACC NR: AP9009956 SOURCE CODE: UR/0366/69/005/001/0133/0135

AUTHOR: Topchiy, V. A.; Zavgorodniy, S. V.

ORG: none

TITLE: Condensation of alkyl phenyl sulfides with α-chloroalkyl ethers

SOURCE: Zhurnal organicheskoy khimii, v. 5, 1969, 133-135

TOPIC TAGS: ethane, aromatic sulfur compound

ABSTRACT: Bis(p-methylthiophenyl)ethane (I) was prepared by adding $ClCH_2OCH_3$ to MeSPh for 1 hr and stirring in the presence of $BF_3 \cdot H_3PO_4$ for 10 hr at 80°C. Bis(p-ethylthiophenyl)methane (II) was similarly prepared in the presence of $BF_3 \cdot OEt_2$. 1,1-Bis(p-methylthiophenyl)-ethane (III) was obtained by adding $CH_3CHClOBu$ to MeSPh for 1 hr and stirring in the presence of $BF_3 \cdot H_3PO_4$ for 5 hr at 60°C. 1,1-Bis(p-ethylthiophenyl)ethane (IV) was similarly prepared. Bis(p-methylsulfonylphenyl)methane (V) was obtained by oxidizing I with H_2O_2 in HOAc. Bis(p-ethylsulfonylphenyl)methane (VI), 1,1-bis(p-methylsulfonyl)ethane (VII), and 1,1-bis(p-ethylsulfonylphenyl)ethane (VIII) were similarly

$C_6H_5SR + ClCHRCOCl \rightarrow p\text{-}RSC_6H_4CHRCOR' \xrightarrow{HCl}$

$\rightarrow p\text{-}RSC_6H_4CH_2R \xrightarrow{CH_3SR} RCH(C_6H_4SR\text{-}p)_2$

Card 1/2 UDC: 547.631.2:547.569.2

Table 1

No.	% Yield	Bp, °C (p in mm)	Mp, °C
I	86	197 (0.5)	63.5–64
II	78	208 (1.5)	40.5–41.3
III	97	212 (1.5)	43.5–44
IV	90	217 (1.0)	44.7–45.2
V	97	—	206–207
VI	87	—	179–180
VII	85	—	174.5–175.5
VIII	95	—	123–124

prepared. p,p'-Dimethylsulfonylbenzophenone (IX) (93% yield, mp 236—237°C) was obtained by oxidizing V with a Beckmann mixture for 8 hr. p,p'-Diethylsulfonylbenzophenone (X) (91% yield, mp 149—150°C) was similarly prepared. Orig. art. has: 2 tables. [WA-50; CBE No.41] [FT]

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

ACC NR: AP9009994 SOURCE CODE: UR/0078/69/014/003/0795/0797

AUTHOR: Vorsina, I. A.; Levin, I. S.

ORG: none

TITLE: Interpretation of the IR spectra of dialkyl hydrogen phosphates

SOURCE: Zhurnal neorganicheskoy khimii, v. 14, no. 3, 1969, 795-797

TOPIC TAGS: phosphate ester, IR absorption spectrum, gallium compound

ABSTRACT: A study was made of the IR absorption spectra of deuterated and non-deuterated bis(2-ethylhexyl) hydrogen phosphate and alkyl phosphates of indium and gallium. The validity was confirmed of the hypothesis of attributing the band in the region of 500 cm^{-1} to P:O vibration. Orig. art. has: 2 figures. [WA-50; CBE No. 41] [FT]

SUB CODE: 07/ SUBM DATE: 31Jul67/ ORIG REF: 003/ OTH REF: 007

ACC NR: AP9008421 SOURCE CODE: UR/0062/69/000/002/0447/0449

AUTHOR: Yarmukhametova, D. K.; Cheplanova, I. V.

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

TITLE: Reactions of chlorides of pentachlorophenylalkylamidothiophosphoric acids with substituted and unsubstituted acetamide

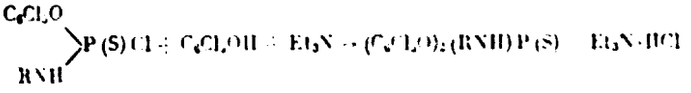
SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 2, 1969, 447-449

TOPIC TAGS: halogenated organic compound, aromatic phosphorus compound, aromatic sulfur compound, substituted amide, thiophosphoric acid derivative

ABSTRACT: A series of bis(pentachlorophenyl) alkylamidothiophosphates was synthesized by the reactions of chlorides of pentachlorophenylalkylamidothiophosphoric acids with acetamide (I), chloracetamide (II), and acetylacetamide (III) in benzene solution at ~80°C in the presence of triethylamine. The formation of the bis(pentachlorophenyl) alkylamidothiophosphates was confirmed by parallel synthesis:

Card 1/2 UDC: 542.91+661.718.1

ACC NR: AP9008421



Bis(pentachlorophenyl) propylamidothiophosphate (IV), mp 145—147°C was synthesized (31.3%) by the reaction of pentachlorophenylpropylamidophosphoric chloride (V) with acetamide. Compound IV is also formed (27.8%) in the reaction of V with II. Bis(pentachlorophenyl)butylamidothiophosphate (VI) (mp 152—154°C) was obtained by the reaction of pentachlorophenylbutylamidothiophosphoric chloride (VII) with I. The reaction of VII with II also gave (16.5%) compound VI. Compound IV is also formed in the reaction of V with water in the presence of pyridine. The reaction of VII with water in the presence of pyridine gave (22%) compound VI. Compound VI was also obtained (38.4%) by the reaction of VII with urethan in benzene solution in the presence of triethylamine. [WA-50; CBE No. 41] [PS]

SUB CODE: 07/ SUBM DATE: 15Jul68/ ORIG REF: 007/ OTH REF: 003

Card 2/2

ACC NR: AP9007637 SOURCE CODE: UR/0391/69/000/001/0042/0045

AUTHOR: Yavorovskaya, S. F. (Moscow)

ORG: Institute of Industrial Hygiene and Occupational Diseases AMN SSSR (Institut gigiyeny truda i profzabolevaniy AMN SSSR)

TITLE: Gas chromatography- a new method for studying the degree of contamination of air

SOURCE: Gigiyena truda i professional'nyye zabolevaniya, no. 1, 1969, 42-45

TOPIC TAGS: gas chromatography, air pollution

ABSTRACT: Gas chromatography is a rapid method of determining impurities in the air both quantitatively and qualitatively, is highly sensitive and has a good separation. Gas chromatographs are less expensive than mass spectrometers, but special chromatographs for determining micro-impurities in air are very expensive. The most satisfactory Soviet pieces of equipment are LKhM7-A, Tsvet-2, Tsvet-3 and KhG-1302 (all available in very limited production). Gas chromatography can be used to detect toxic contaminants and metabolites in exhaled air, in urine, blood and other living substances. Identification and quantitation of very small air contaminants, frequently of unknown composition, is

 UDC: 614.72-074:543.544.25

difficult, especially if the air sample contains substances with close chromatographic characteristics. Gas chromatography deviates the necessity of concentrating microimpurities of toxic substances from air which can be a source of error. Orig. art. has: 1 figure.

[WA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: 21Apr67

ACC NR: AP9009991 SOURCE CODE: UR/0252/69/047/005/0290/0294

AUTHOR: Yesayan, N. A.; Arakelyan, L. N.

ORG: Institute of Biochemistry, Academy of Sciences ArmSSR (Institut biokhimii Akademii nauk ArmSSR)

TITLE: Effect of γ-aminobutyric acid on the subcellular distribution of noradrenaline in the brain of rats

SOURCE: AN ArmSSR. Doklady, v. 47, no. 5, 1969, 290-294

TOPIC TAGS: aminobutyric acid, brain tissue, male rat, white rat, centrifugation, homogenization

ABSTRACT: It is of great interest to explain the relationships which exist among the endogenous neuroactive substances acetylcholine, noradrenaline (NA), serotonin (5-GT), Dofamin, and γ-aminobutyric acid (GABA). A study was made of the effect of GABA on the content of NA in subcellular particles of brain tissue. Comparative studies were also made with reserpine and amphetamine, which exhaust the reserves of NA. The studies were made on white male rats weighing 100—150 g. The animals were decapitated, and the brain was washed in H_2O on ice and immediately homogenized in a cold solution of 0.32 M saccharose containing 1% ethylenediamine tetraacetate in a ratio of 1:5. A blender was used with a Ftoroplast pestle with a clearance of 0.25 mm. The pestle

Card 1/6 UDC: 612.8.015

ACC NR: AP9009991

revolved at 840 rpm. The pestle moved up and down 12 times per 2 min or 4 times per 40 sec. The subcellular particles were separated by differential centrifugation. The nuclear fraction was precipitated by twofold centrifugation at 900 g for 10 min, and the mitochondrial fraction was precipitated at 50000 g for 60 min and, in some experiments, at 13000—40000 g for 40—90 min. In experiments *in vivo*, the rats were given ip 5 mg/kg GABA, 3 mg/kg reserpine, and 20 mg/kg amphetamine. In experiments *in vitro*, 10, 100, 200, and 1000 µg/ml GABA were added to the homogenate after the nuclear fraction was removed from it, and it was incubated at 37°C for 30 min. The subcellular distribution of NA in the rat brain under various conditions of homogenization and centrifugation is shown in Figure 1, where 1 is homogenization for 2 min, 12 pestle movements, and centrifugation at 13000 g for 40 min; 2 is the same at 17000 g for 60 min; 3 is the same at 40000 g for 90 min; 4 is homogenization for 40 sec, 4 pestle movements, and centrifugation at 50000 g for 60 min; I is fraction P, i.e., the unpurified mitochondrial fraction; II is fraction S, i.e., the superprecipitate fraction; and III is the ratio P/S. A study was made of the effect of GABA on the content of NA in the P and S fractions during milder homogenization. The effect of GABA in comparison with the effect of reserpine and amphetamine on the subcellular distribution of NA in the brain of rats 40 min after intraperitoneal administration is shown in Figure 2, where 1 is fraction P; 2 is fraction S; 3 is the ratio P/S; I is the control; II is reserpine

Card 2/6

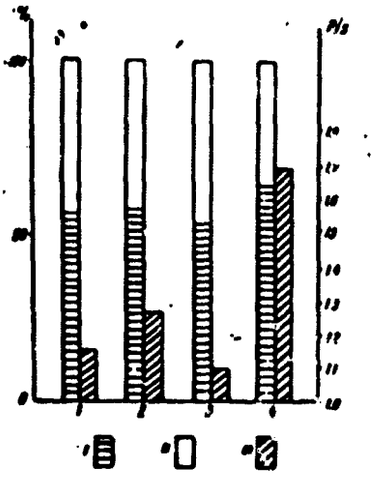


Fig. 1. Subcellular distribution of NA in the rat brain

(3 mg/kg); III is amphetamine (20 mg/kg); and IV is GABA (5 mg/kg). These data indicate that the liberation of NA from the brain of rats under the influence of GABA also occurs from the fraction of the nerve endings. A study was made of the spontaneous liberation of NA from the brain fractions P and S. During 30 min incubation at 20°C, about 23% of the NA was liberated from fraction P, and 34% was liberated at 37°C. The

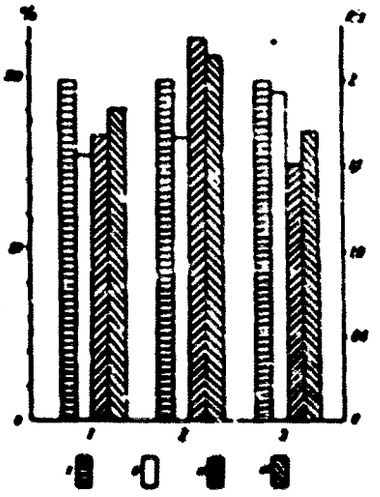


Fig. 2. Effect of GABA in comparison with the effect of reserpine and amphetamine

effect of GABA on the liberation of NA from the P fraction of the rat brain after 30 min incubation at 37°C (µg/ml fresh tissue) is shown in Table 1. These data are in disagreement with the assumed action of GABA on the liberation of NA from the intracellular granules, the vesicles. The main factor which affects the subcellular distribution of NA in brain tissue is the degree of homogenization. The degree of centrifugation

Table 1. Effect of GABA on the liberation of NA

Conditions	Fractions			
	P+S	P	S	P/S
Control	0,375±0,012 (5)*	0,151±0,0124 (5)	0,224±0,0068 (5)	0,66±0,0077 (5)
10 µg/ml	0,348±0,0057 (4)	0,140±0,0259 (4)	0,205±0,0165 (4)	0,68±0,01 (4)
100 µg/ml	0,366±0,0173 (4)	0,145±0,0045 (4)	0,221±0,0136 (4)	0,66±0,026 (4)
200 µg/ml	0,393±0,0074 (4)	0,154±0,0039 (4)	0,239±0,0033 (4)	0,63±0,0187 (4)
1000 µg/ml	0,381±0,0153 (4)	0,153±0,0059 (4)	0,729±0,0099 (4)	0,64±0,028 (4)

* No. of experiments

does not affect the process. The change in the content of NA in the S and P fractions which occurred with reserpine probably indicates the uniform effect of reserpine on the liberation of NA from the vesicles of the nerve endings of the corpuscles and axons as well as its binding with these particles. On the other hand, the decrease in the amount of NA in the P fraction with the simultaneous increase in its level in the

S fraction when amphetamine and GABA were used was probably due to their specific effect on the NA of the nerve endings, which take direct part in synaptic transmission. The effect of GABA on the liberation of NA does not occur when it is added to brain tissue homogenate. The action of GABA occurs on the level of cellular membranes. The paper was presented by Academician G. Kh. Bunyatyan, AN ArmSSR, 9 Jul; 1969. Orig. art. has: 2 figures and 1 table. [MA-50; CBE No. 41] [FT]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 002/ OTH REF: 004

ACC NR: AP9009959 SOURCE CODE: UR/0366/69/005/001/0142/0143

AUTHOR: Zalukayev, L. P.; Anokhina, I. K.; Kozlayasheva, L. Ya.

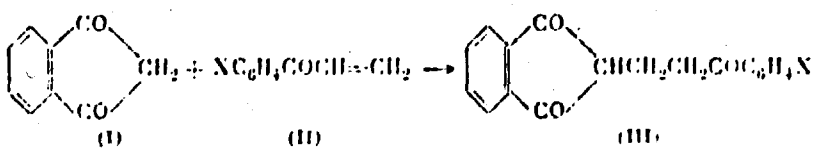
ORG: Voronezh State University (Voronezhskiy gosudarstvennyy universitet)

TITLE: Synthesis of 1-aroyl-3-phthalylpropanes

SOURCE: Zhurnal organicheskoy khimii, v. 5, no. 1, 1969, 142-143

TOPIC TAGS: carbonyl compound, dicarboxylic acid, dicarboxylic acid derivative

ABSTRACT: The title compounds (III) (shown in Table 1) were synthesized by an earlier developed method which involves the following addition reaction:



(I) (II) (III)

Card 1/2 UDC: 547.665

ACC NR: AP9009959

Table 1.

X in compd III	Mp, °C	Yield, %
H	103*	36
CH_3	116	26
C_2H_5	79.5	23
n-C_3H_7	96.5	21
n-C_4H_9	94	20
OCH_3	101	31
Br	130	40

The reaction proceeds at room temperature in the presence of sodium methoxide in methanol. Some of compounds III showed high anti-K-vitamine activity. [WA-50; CBE No. 41]

SUB CODE: 07/ SUBM DATE: 24Nov67/ ORIG REF: 002

Card 2/2

ACC NR: AP9008415 SOURCE CODE: UR/0062/69/000/002/0373/0380

AUTHOR: Zyablikova, T. A.; Panteleyeva, A. R.; Shermergorn, I. M.

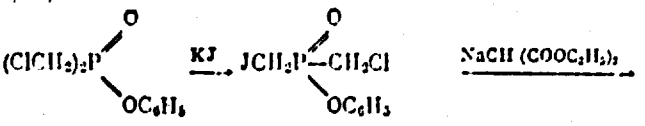
ORG: Institute of Organic and Physical Chemistry im. A. Ye. Arbuzov, Academy of Sciences SSSR (Institut organicheskoy i fizicheskoy khimii Akademii nauk SSSR)

TITLE: Synthesis of phosphetane derivatives by condensing esters of bis(chloromethyl)phosphinic acid with diethyl sodium malonate

SOURCE: AN SSSR. Izvestiya. Seriya khimicheskaya, no. 2, 1969, 373-380

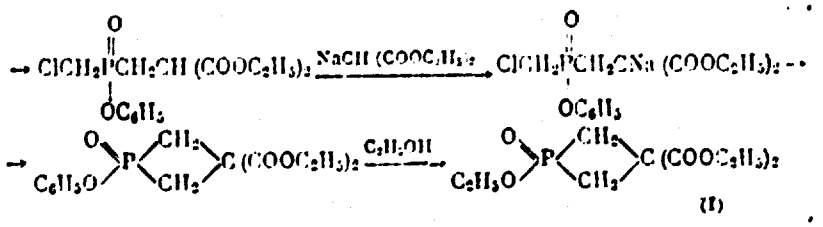
TOPIC TAGS: phosphorus compound, heterocyclic phosphorus compound, phosphinic acid, aliphatic ester

ABSTRACT: 1-Oxo-1-ethoxy-3,3-dicarbethoxyphosphetane (I) was prepared by boiling diethyl malonate, Na, phenyl bis(chloromethyl)phosphinate, and KI in tetrahydrofuran for 17 hr, neutralizing with HCl, centrifuging, distilling, dissolving the residue in EtOH, and boiling for 1 hr.



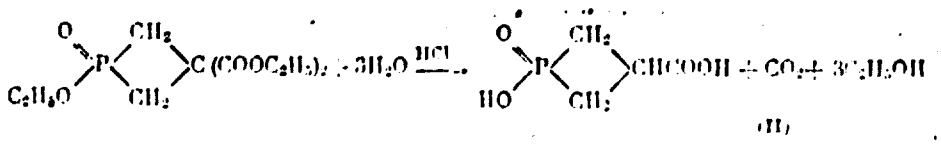
Card 1/5 UDC: 542.91+661.718.1

ACC NR: AP9008415



(I)

1-Oxo-1-hydroxy-3-carboxyphosphetane (II) was obtained by refluxing I with excess 15% HCl for 4 hr. 1-Oxo-1-hydroxy-3-carbethoxyphosphetane (III) was similarly prepared by dissolving the reaction product in EtOH.

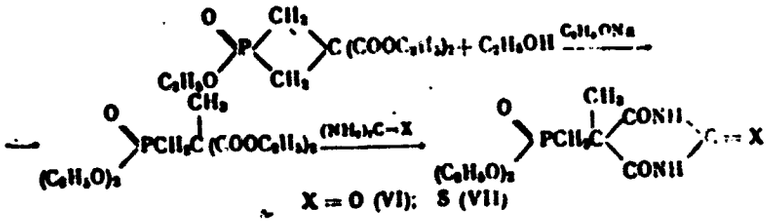


(II)

1-Oxo-1-ethoxy-3-carbethoxyphosphetane (IV) was obtained by heating III and $(EtO)_3P$ for 2.5 hr at 120—145°C. 1-Oxo-1-methoxy-3-carbomethoxyphosphetane (V) was prepared by heating II and $(CH_3O)_3P$ for 2 hr at 120°C. 5-Methyl-5-(diethylphosphonomethyl)barbituric acid (VI) was

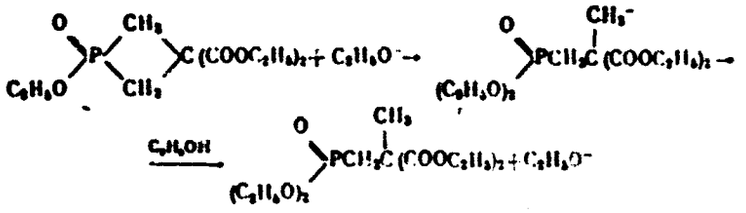
Card 2/5

obtained by adding urea and I to Na in EtOH and boiling for 2.5 hr. 5-Methyl-5-(diethylphosphonomethyl)thiobarbituric acid (VII) was similarly prepared.



X = O (VI); S (VII)

Diethyl 2,2-dicarbethoxypropylphosphinate (VIII) was prepared by adding I to Na in EtOH and boiling for 4 hr.



White crystalline Na bis(phenoxymethyl)phosphinate (15.1% yield) was obtained like I but without neutralization. Bis(phenoxymethyl)phosphinic acid (IX) was prepared by adding HCl to Na bis(phenoxymethyl)phosphinate. Ethyl bis(phenoxymethyl)phosphinate (X) was obtained

Table 1. Compounds I—X

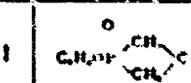
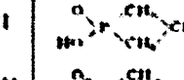
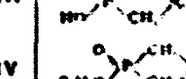
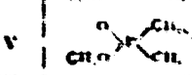
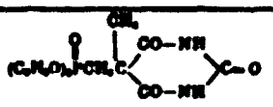
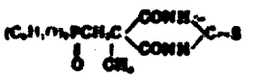
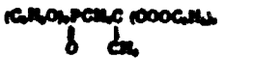
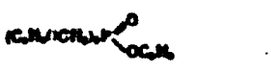
Compd No.	Formula	Yield %	Mp, °C, or bp, °C (p in mm)	n_D^{20}	d_4^{20}	MR
I		60.5	119 [illegible]	1.4720	1.2943	64.64 64.45
II		61.0	135 - 136			
III		63.5	101 - 102			
IV		86.5	84 (0.01)	1.4933	1.1577	44.99 44.91
V		50.0	81 (0.05)	1.4879	1.2214	39.35 39.20

Table 1. (Cont.)

VI		50,8	202—203	—	—	—
VII		50,5	163—164	—	—	—
VIII		64,2	102 (10^{-4})	1,4412	1,1194	76,54 76,41
IX		80,9	131—132	—	—	—
X		79,3	170 (10^{-4})	1,5548	1,1894	82,64 82,50

by boiling IX and $(EtO)_3P$ for 4 hr. Orig. art. has: 1 table and 2 figures. [MA-50; CBE No. 41] [FT]

SUB CODE: 07/ SUBM DATE: 02Apr68/ ORIG REF: 004/ OTH REF: 006

Card 5/5

II. BIOLOGICAL FACTORS

ACC NR. AT9008868 SOURCE CODE: UR/3463/68/000/008/0148/0158

AUTHOR: Adamovich, V. L.

ORG: none

TITLE: Geographic study of tularemia foci on the Volyna using cartographic analysis methods

SOURCE: Geograficheskoye obshchestvo SSSR. Doklady otdeleniy i komissiy, no. 8, 1968. Meditsinskaya geografiya (Medical geography), 148-158

TOPIC TAGS: medical geography, epidemiologic map, tularemia, human ailment

ABSTRACT: The use of cartographic analysis in establishing subregions of a tularemia focus is described. The first subregion is the actively focal region. The Volyna forest region was studied between 1950—1958. In this region there is a large population of water voles or small shrews, especially during dry summers. The characteristics of the summer outbreaks are sporadic. There are also autumn outbreaks. The second subregion is an area of sporadic epidemic foci, usually in which

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ACC NR. AT9008868

massive outbreaks of tularemia have not been noticed because Ixodid ticks are not common to this area. The third subregion is a region of epidemic inertia. Orig. art. has: 1 figure. [WA-50; CBR No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 024

Card 2/2

ACC NR: AP9010661 SOURCE CODE: UR/0301/69/015/001/0033/0038

AUTHOR: Alimova, Ye. K.; Murakhovskaya, V. A.; Pustovalova, L. M.; Ol'shteyn, S. Ye.

ORG: Department of Biochemistry, Medical Institute, Rostov-na-Donu (Kafedra biokhimii meditsinskogo instituta); Scientific Research Institute of Epidemiology, Microbiology and Hygiene, Rostov-na-Donu (Nauchno-issledovatel'skiy institut epidemiologii, mikrobiologii i gigieny)

TITLE: Decarboxylase activity of *Salmonella typhi*

SOURCE: Voprosy meditsinskoy khimii, v. 15, no. 1, 1969, 33-38

TOPIC TAGS: salmonella, bacterial enzume, amino acid, activity, virulence

ABSTRACT: Decarboxylase activity was studied by the method of Gubarev and Galayev in 40 strains of *Salmonella typhi* isolated from patients with typhoid, from *S. typhi* carriers, and in standard strain Ty2. Decarboxylase distribution was determined in relation to seven amino acids: arginine, lysine, histidine, ornithine, tyrosine, aspartic acid and glutamic acid. Arginine decarboxylase was detected in all 41 *S. typhi* strains, lysine and aspartic acid decarboxylases were found simultaneously in 40 strains, ornithine decarboxylase in 39, histidine decarobxylase in 58, and tyrosine decarboxylase in only 37 strains. Glutamic acid decarboxylase

Card 1/2 UDC: 576.851.48.098.31:577.158.345

ACC NR: AP9010661

was absent in all strains. A relationship between arginine and histidine decarboxylase activity and periods of isolation of the strains (during the disease or during the carrier state) was established. Lower arginine, histidine and ornithine decarboxylase activity was demonstrated in strains isolated from patients and from carriers than in the virulent Ty2 strain. Orig. art. has: 3 tables and 3 figures.

[WA-50; CBE No. 41] [XF]

SUB CODE: 06/ SUBM DATE: 18Dec67/ ORIG REF: 005/ OTH REF: 003

Card 2/2

ACC NR: AT9010096 SOURCE CODE: UR/3479/65/005/000/0306/0311

AUTHOR: Aliyev, M. N.; Akhundov, M. G.; Baragamova, E. Ye.; Kakhramanova, S. A.; Vasil'chenko, A. I.

ORG: Azerbaydzhan Antiplague Station (Azerbaydzhanskaya protivochumnaya stantsiya)

TITLE: Blood parasites of rodents in Azerbaydzhan

SOURCE: Baku. Azerbaydzhanskiy nauchno-issledovatel'skiy institut meditsinskoy parazitologii i tropicheskoy meditsiny. Trudy, v. 5, 1965, 306-311

TOPIC TAGS: parasite, animal parasite, rodent, insect vector

ABSTRACT: Smears were prepared from blood, brain tissue and viscera of 5558 rodents captured in rayons of Azerbaydzhan and in Baku. Species studied included gerbils, mice, voles, migratory hamsters, dormice, jerboas and rats. *Trypanosoma lewisi* was detected in 12.6% of all rats examined. *Trypanosoma lewisi*, usually transmitted by fleas, especially *Neopsyllus fasciatus*, was detected only in a single *Ceratophyllus fasciatus* specimen. *Hepatozoon muris* (Haemogregarina) was detected in 29 of 981 (2.9%) rats. This parasite is transmitted by the vector *Laelaps echidninus*. Parasites which were very similar morphologically

Card 1/2

ACC NR: AT9010096

to *Theileria* were detected in rodents inhabiting the Pushkin and Shamkhor rayons. Larvae of *Filaria* were found in the organs of rodents captured in the lowlands and foothills of the republic; however, no adult forms were found. Infestation was encountered most frequently in spring, and in rodents inhabiting the Zangelan rayon in an area bordering the Aker River valley. Examination of a large number of mites and fleas as possible vectors revealed *Filaria* in only a single *Ceratophyllus consimilis* flea. Haemogregarinae were detected in the blood of red-tailed gerbils. Spirochetes, pathogens of tickborne relapsing typhus, were also detected in red-tailed gerbils captured in the area around Lake Arkhangel and the village of Salmanbeyl' in the Agdam rayon. A detailed study of the natural foci of spirochetosis is indicated.

[WA-50; CBE No. 41] [XF]

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

Card 2/2

ACC NR: AT9010085 SOURCE CODE: UR/3479/65/005/000/0217/0221

AUTHOR: Anan'in, V. V.

ORG: Institute of Epidemiology and Microbiology im. N. F. Gamaleya AMN SSSR (Institut epidemiologii i mikrobiologii AMN SSSR)

TITLE: Experimental production of a combined infection by tickborne relapsing typhus spirochetes and by icterohemorrhagic leptospira in guinea pigs

SOURCE: Baku. Azerbaydzhanskiy nauchno-issledovatel'skiy institut meditsinskoy parazitologii i tropicheskoy meditsiny. Trudy, v. 5, 1965, 217-221

TOPIC TAGS: experimental medicine, tick, disease vector, animal disease, animal vector research

ABSTRACT: Results are reported on the first of three series of experiments (February 1947) designed to produce simultaneous tickborne relapsing typhus and icterohemorrhagic fever in four guinea pigs. A culture of *Leptospira icterohaemorrhagiae* strain KpM 19 isolated from rats in Moscow, and blood from the heart of a guinea pig infected with spirochetes of tickborne relapsing thyphus, Uzbekistan type, Dzhulangar

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ACC NR: AT9010085

strain, were used for infecting the animals. Guinea pig 1, infected intraperitoneally with 1 ml of a culture of *Leptospira icterohaemorrhagiae* died seven days after infection. Guinea pig 2, infected intraperitoneally with 1 ml of guinea pig blood infected with the agent of tickborne relapsing typhus, died 15 days after infection. Guinea pig 3, infected subcutaneously by simultaneous administration of 1 ml of *Leptospira icterohemorrhagiae* culture and 1 ml of guinea pig blood infected with the agent of tickborne relapsing typhus, died eight days after infection. Guinea pig 4, infected intraperitoneally, by simultaneous administration of the pathogens as in guinea pig 3, died seven days after infection. Pathological and anatomical changes in guinea pigs with mixed infection generally resembled the picture of icterohemorrhagic leptospirosis. The presence of tickborne relapsing typhus in icterohemorrhagic leptospirosis aggravates the clinical course of the disease. Orig. art. has: 4 figures and 1 table.

[WA-50; CBE No. 41] [XF]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 001/ OTH REF: 001

Card 2/2

ACC NR: AP9008055 SOURCE CODE: UR/0016/69/000/001/0035/0040

AUTHOR: [illegible] P.; Sukhoroslova, L. I.

ORG: First Moscow Medical Institute im. I. M. Sechenov (I Moskovskiy meditsinskiy institut)

TITLE: The effect of complex immunological and antibiotic therapy including typhoid Vi antigen on the bactericidal activity of serum of typhoid patients

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 1, 1969, 35-40

TOPIC TAGS: blood serum, typhoid fever, bactericide

ABSTRACT: The bactericidal activity of the serum of typhoid patients with respect to typhoid bacteria increased from the first to the second week of the disease. Serum of patients with severe and moderately severe forms of the disease had a more pronounced bactericidal effect than the serum of patients with mild typhoid fever. Combined therapy utilizing both Vi antigen from typhoid bacteria and antibiotics helped to retain bactericidal activity of the serum at a higher level than the serum of patients treated only with chloramphenicol. The bactericidal

Card 1/2 UDC: 616.927-085.371-059:615.779.9]-07.612.118.223

ACC NR: AP9008055

index tended to decrease during the year after the disease and normalization of this index was not observed during the observation period. Patients with severe or moderately severe typhoid and with concurrent low bactericidal indices (with a tendency to decrease by the time of release from the hospital) should be considered potential candidates for relapse and formation of the typhoid carrier state. Orig. art. has: 2 tables and 2 figures. [WA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: 26Mar68/ ORIG REF: 010/ OTH REF: 003

Card 2/2

ACC NR: AT9010093 SOURCE CODE: UR/3479/65/005/000/0277/0283

AUTHOR: Babayev, D. G.

ORG: Institute for the Advanced Training of Physicians im. A. M. Aliyev (Institut usovershenstvovaniya vrachey im. Aliyev A. M.)

TITLE: Lesions of the nervous system in brucellosis

SOURCE: Baku. Azerbaydzhanskiy nauchno-issledovatel'skiy institut meditsinskoy parazitologii i tropicheskoy meditsiny. Trudy, v. 5, 1965, 277-283

TOPIC TAGS: brucellosis, nervous system disease, neuropathology

ABSTRACT: Study of the functional state of the nervous system in brucellosis in Azerbaydzhan showed that peripheral nervous system disorders, usually accompanied by disorders of the musculoskeletal system, were present in 13.5% of cases, and that central nervous system involvement was present in 1.3% of cases. Neuralgia and neuritis of the sciatic nerve, and involvement of the lumbar nerve roots were frequent manifestations. Clinically, these disorders were easily recognized, had a tendency to recur, and responded to vaccine therapy. Central nervous system disorders showed unusual polymorphism. These disorders were more persistent, were not easily treated, and contributed

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ACC NR: AT9010093

to decreased work capacity. Structural-morphological changes in the central nervous system, depending on the clinical course of brucellosis, were sometimes manifested as thromboembolism, as specific vasculitis, or as granulomatous changes. The latter were sometimes revealed even in the absence of clinical manifestations of organic central nervous system disorder. [WA-50; CBE No. 41] [XF]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AT9010082 SOURCE CODE: UR/3479/65/005/000/0198/0202

AUTHOR: Bagirov, G. A.

ORG: none

TITLE: Material on the ecology and biology of bloodsucking mosquitos, components of the bloodsucking flying diptera of the Kura-Araks lowland of Azerbaydzhan

SOURCE: Baku. Azerbaydzhanskiy nauchno-issledovatel'skiy institut meditsinskoy parazitologii i tropicheskoy meditsiny. Trudy, v. 5, 1965, 198-202

TOPIC TAGS: ecology, insect ecology, mosquito, disease vector, zoology

ABSTRACT: Study of 7368 imagos and 3670 larvae of mosquitoes collected during 1962 in the territory of Ali-Bayramlin Rayon, a characteristic area of the Kura-Araks lowland, and of specimens collected during 1962 in Sabirabad, Kyurdamir, Akhsuin and Agdzhabedin revealed nine species belonging to six genuses as follows:

Anopheles: *A. maculipennis* Meig; *A. hyrcanus* Pall.
Culex : *C. pipiens* L.; *C. modestus* Fic.

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Aedes : *Ae caspius* Pall.; *Ae vexans* Meig.
Uranotaenia: *U. unguiculata* Edw.
Mansonia : *M. richiardii* Fic.
Theobaldia : *Th. annulata* Schr.

The principal breeding areas were the numerous river beds, roadside ditches, and natural depressions which were periodically filled with water. Foci developed during summer in temporary accumulations of water formed during watering of cotton fields. The number of mosquitoes in a given area was in direct proportion to conditions of the irrigation network and its proper utilization. Although irrigation is done scientifically, many cases of improper use resulted in the formation of reservoirs, which, with favorable temperature conditions, produced large numbers of mosquitoes. Larvae of *Uranotaenia* and *Theobaldia* were observed during spring and fall when the water temperature was low. Planted areas, cattle pastures, and areas along irrigation canals were summer day-resting areas; during spring and fall, day-resting areas were located around buildings, attics and sheds. [WA-50; CBE No. 41] [XF]

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

Card 2/2

ACC NR: AT9010084 SOURCE CODE: UR/3479/65/005/000/0210/0213

AUTHOR: Bagirov, G. A.

ORG: none

TITLE: Agricultural aerial spraying for combatting *Aedes* mosquito larvae in the Kura-Araks lowland of Azerbaydzhan

SOURCE: Baku. Azerbaydzhanskiy nauchno-issledovatel'skiy institut meditsinskoy parazitologii i tropicheskoy meditsiny. Trudy, v. 5, 1965, 210-213

TOPIC TAGS: aerial application, aerosol spraying, mosquito, disease vector

ABSTRACT: Aerial spray treatment of the Kura-Araks lowlands for non-malarial mosquito control has not affected the numbers of *Aedes caspius* and *Aedes vexans* significantly, because the larvae appeared at different times than the treatment times. Aerial pesticide spray treatment usually begins in May and is finished in August while the spring generation of *Aedes* mosquitos usually emerges in late March or early April, depending on weather conditions, and the autumnal flight occurs in September and October. Therefore, two series of spray treatments

Card 1/2

ACC NR: AT9010084

for mosquito control were advised, the first series--in spring during the appearance of the first larvae and the second series--in the early autumn. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 009

Card 2/2

ACC NR: AP9007964

control of a trained physician is likely to encourage secondary infections. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AP9007282 SOURCE CODE: UR/0475/68/000/010/0153/0153

AUTHOR: Chernysheva, A. V.; Staugaytene, O. K.

ORG: Kaunas Infectious Disease Hospital (Kaunasskaya infektsionnaya bol'nitsa)

TITLE: A rare case of rabies

SOURCE: Vrachebnoye delo, no. 10, 1968, 153

TOPIC TAGS: rabies, human ailment

ABSTRACT: This article describes the case of a 6 yr old girl infected with rabies who was brought into the Kaunas Infectious Disease Hospital with a diagnosis of acute encephalitis and reactive psychosis and who was suffering from intense headaches. The case was not recognized as rabies and no rabies therapy had been given. It is possible that, six days before onset of the disease, the child was bitten by an unknown cat. At the site of the bite was a small-reddening area which was painful. The child had a temperature of 39°C, was pale, bit her lips until they bled, was extremely fearful and had highly developed aerophobia and hydrophobia. Temperature rose to 40° and fear and

Card 1/2 UDC: 616.988.21-036.23

ACC NR: AP9007262

hallucinations increased by the 7th day. The child was in a semi-comatose state, fearful, crying, struggling and without sensation in the extremities. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AP9009903 SOURCE CODE: UR/0453/69/003/001/0068/0071

AUTHOR: Chizhov, S. V.; Shaydorova, V. V.; Gel'tser, Yu. G.; Krasnoshchekov, V. V.

ORG: none

TITLE: Bactericidal effect of silver-coated activated charcoal and ion-exchange resins

SOURCE: Kosmicheskaya biologiya i meditsina, v. 3, no. 1, 1969, 68-71

TOPIC TAGS: bactericide, bacteriostasis, ion exchange resin

ABSTRACT: Various techniques of reducing silver located on the surface of activated charcoal and ion-exchange resins were investigated. The silver coated sorbents were significantly bactericidal to E. coli but to different degrees (see Figure 1). The bactericidal effect of the

Card 1/3 UDC: 615.28:615.254.6+615.246.2:546.57

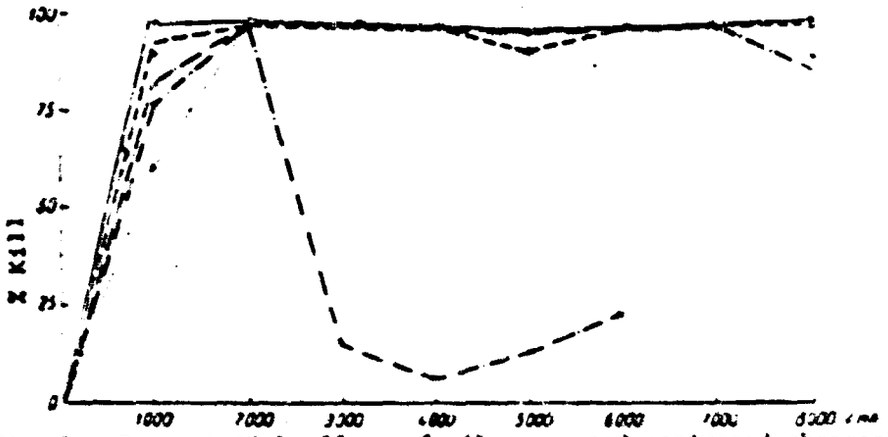

Fig. 1. Bactericidal effect of silver coated activated charcoals of different types.

1 - SKT-2 (reducing formaldehyde); 2 - SKT-2 (reducing in an $AgNO_3$ solution); 3 - SKT-2 (reduction in potassium sodium tartrate); 4 - AG-5 (reduction in $AgNO_3$); 5 - AG-5 (reduction by formaldehyde); 6 - AR-3 reduction by potasium sodium tartrate in solution); 7 - AR-3 (reduction by potassium sodium tartrate on a filter).

silvered charcoal correlates well with the concentration of silver ion in filtrates. Orig. art. has: 3 tables and 1 figure.

[MA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: 20May68/ ORIG REF: 011/ OTH REF: 002

ACC NR: AP9008067 SOURCE CODE: UR/0016/69/000/001/0128/0129

AUTHOR: Dandurov, Yu. V.; Tundin, V. B.

ORG: none

TITLE: Trypsinized antigen from *R. tsutsugamushi* prepared on chick fibroblast tissue culture

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 1, 1969, 128-129

TOPIC TAGS: rickettsia tsutsugamushi, tissue culture, serologic test

ABSTRACT: Specific antigen was prepared from *R. tsutsugamushi* for the complement fixation reaction by cultivation of rickettsia on chick embryo fibroblasts with subsequent trypsinization. This method is simple and cheap and permits preparation of antigen in the laboratory for diagnostic serological reactions. Trypsinization was conducted on the 10th day of cultivation. Antigen kept well at -20°C. Trypsinized antigen in a 1:2 dilution gave a strong positive reaction in the complement fixation test. Orig. art. has: 1 table.

[WA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: 01Apr68/ ORIG REF: 001/ OTH REF: 001

Card 1/1 UDC: 576.851.71.097.2

ACC NR: AP9007641 SOURCE CODE: UR/0325/69/000/001/0094/0098

AUTHOR: Dilanyan, Z. Kh.; Ter-Kazar'yan, S. Sh./Ter-Simonyan, P. S.

ORG: Dairy Industry Laboratory, Yerevan Zoological and Veterinary Institute (Laboratoriya molochnogodela, Yerevanskogo zooveterinarinogo instituta)

TITLE: Properties of *Streptococcus faecalis*

SOURCE: Nauchnyye doklady vysshey shkoly. Biologicheskiye nauki, no. 1, 1969, 94-98

TOPIC TAGS: Streptococcus, human ailment, dysentery

ABSTRACT: Tests of milk and milk products were made at several points in Armenia in December 1966. Results of these tests showed that *Streptococcus faecalis* was present in many of these products. Almost all the strains grew between temperatures of 10—45°C. Of these, 47 strains grew at both temperatures and in a 6.5% salt medium and formed ammonia from peptone. Some strains grew in a alkaline medium, decarboxylating tyrosine. All 47 strains did not produce β-homolysin and did not multiply in gelatin. In these respects they are different from standard strains of *Streptococcus faecalis*. All 47 strains ferment polysaccharides, pentoses, multiatomic alcohols and glucosides. They ferment

Card 1/2 UDC: 576.851.21

ACC NR: AP9007641

lactose more strongly than maltose, saccharose or glucose. Orig. art. has: 6 tables. WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: 28Feb68/ ORIG REF: 005/ OTH REF: 005

Card 2/2

ACC NR: AP9009478 SOURCE CODE: UR/0433/69/000/001/0049/0050

AUTHOR: Dmitriyeva, M. I. (Senior research associate)

ORG: NIISKh of the Southeast (NIISKh Yugo-Vostoka)

TITLE: Thrips--a rye pest

SOURCE: Zashchita rasteniy, no. 1, 1969, 49-50

TOPIC TAGS: cereal crop, plant disease, plant disease control, pest control, pesticide

ABSTRACT: Winter rye crops in Saratov Oblast have been decreased due to infestation with *Haplothrips aculeatus* and *Limothrips denticornis*. Germination in the Saratovskaya 1 variety was decreased from 90 to 76%, and in the Volzhanok variety from 95.5 to 59% in 1966. Dusting with metaphos 20 kg/hectare at the beginning of ear formations resulted in a 1.5—2-fold decrease in the number of *Haplothrips aculeatus*, and an increase in the absolute weight of the grain. Treatment with organic pesticides decreased the number of stalks with dead upper leaves. Natural regulators of the numbers of thrips are predatory insects, which eliminate them at all stages of their development.

Card 1/2 UDC: 632.9:633.14

ACC NR: AP9009478

Early removal of corn crops to silos, and plowing under of stalks after harvesting the rye should be carried out to prevent development of second generations of the insects and to destroy overwintering sites. [WA-50; CBE No. 41] [XF]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AP9007225 SOURCE CODE: UR/0433/68/000/012/0008/0012

AUTHOR: Dobrovol'skiy, B. V. (Professor)

ORG: none

TITLE: Agricultural entomology and acarology

SOURCE: Zashchita rasteniy, no. 12, 1968, 8-12

TOPIC TAGS: entomology, acarology

ABSTRACT: A seminar on agricultural entomology and acarology was held at the Thirteenth International Entomological Conference. Participants were entomologists from the West, Czechoslovakia, Bulgaria, Poland, Yugoslavia, and the Soviet Union who presented 77 reports, 100—300 persons participated. The opening address was Progress and Perspectives in the Study of Locusts. B. P. Uzarov noted that in the last 20 years grasshoppers have been studied extensively and cited the publication of over 7000 papers. He also stated that good results in locust control could not have been achieved without the use of aircraft and highly effective insecticides. A paper on the Ecological Conditions Affecting the Life of the Asiatic Locust was given by L. V. Zaharov. Several authors described field studies and life cycles of several rare species and V. S. Gusev and Ye. P. Lyplenkova described procedures for

Card 1/2 UDC: 632.7

ACC NR: AP9007225

eliminating locust foci in Orenberg Oblast. Several papers by Soviet and foreign authors describe efforts at correcting losses caused by predatory insects in different regions. The adaptation of local locust species to introduced plants in Southern Kazakhstan was discussed by N. G. Skopin. There were many reports on the effect of human activity, especially the introduction of agriculture on the development and life cycles of agricultural pests including a report on the effect of harvesting on pest development, sugar beet pests and tea pests in the Soviet subtropics. Another session delt with the problem of biological bases for plant resistance to predatory insects and ticks. The conclusion of the seminar was devoted to discussion of pest control measures particularly of specific regions. V. N. Rekach discussed protection of field crops in the southern steppe zone of the Ukrainian SSR. Orig. art. has: 2 figures. [WA-50; CBE No. 41]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AT9009413 SOURCE CODE: UR/3473/67/000/018/0027/0030

AUTHOR: Dremova, V. P.; Lugovik, B. A.; Kost, A. N.; Yudin, L. G.; Agafonova, G. V.

ORG: none

TITLE: Repellent activity of acyl derivatives of 1,2,3,4-tetrahydroquinoline and 1,2-dihydroquinoline

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut. Trudy, no. 18, pt. 3, 1967, 27-30

TOPIC TAGS: repellent, pest control, chemical pest control method

ABSTRACT: The repellent activity of these compounds was tested on *X. cheopis*, *I. persulcatus*, and *Aedes sp.* When three methyl groups appeared in the 8-position, the repellent properties of the derivative decreased. In the 1-acetyl-2-methyl tetrahydroquinoline series, the activity of compounds with a long acetyl radical was low, while those with substitutions in the benzyl radical had high activity. Significant repellent activity was found in compounds with methoxy and ethoxy groups in the benzyl ring. The duration of repellent activity of each compound tested is shown in a table. Orig. art. has: 1 table. [WA-50; CBE No. 41]

SUB CODE: 06/ SUBM DATE: none

Card 1/1

ACC NR: AT9010078 SOURCE CODE: UR/3479/65/005/000/0095/0098

AUTHOR: Dzhafarov, A. A.

ORG: none

TITLE: Clinical aspects of quartan malaria acquired by inoculation

SOURCE: Baku. Azerbaydzhanskiy nauchno-issledovatel'skiy institut meditsinskoy parazitologii i tropicheskoy meditsiny. Trudy, v. 5, 1965, 95-98

TOPIC TAGS: malaria, human ailment, clinical medicine

ABSTRACT: The clinical aspects of quartan malaria in six children infected via maternal blood is described. The incubation period lasts 21—67 days. In all cases, paroxysm characteristic of this form of the disease is marked. Enlarged spleens were observed in four patients, enlargement of the liver in three, and herpes labialis in one. *Plasmodium* was isolated from the blood of all patients. Temperatures rose to 39—40°C during the febrile part of the cycle. Therapy reduced the course of the disease to 4.5 days. Orig. art. has: 1 figure.
[WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 1/1

ACC NR: AT9010079 SOURCE CODE: UR/3479/65/005/000/0102/0105

AUTHOR: Dzhafarov, A. A.

ORG: none

TITLE: Quartan malaria and its prophylaxis in the Azerbaydzhan SSR

SOURCE: Baku. Azerbaydzhanskiy nauchno-issledovatel'skiy institut meditsinskoy parazitologii i tropicheskoy meditsiny. Trudy, v. 5, 1965, 102-105

TOPIC TAGS: malaria, human ailment, disease therapeutics, communicable disease

ABSTRACT: Epidemiological studies on quartan malaria show that the incidence in Azerbaydzhan was 22.76—29% between 1941 and 1943, and 8.09—21.48% between 1944 and 1949. There was a sharp decrease to 3.3—7.2% between 1950 and 1953, and to 0.07—0.86% between 1954 and 1960. No cases were registered in 1961 and 1962. In 1963, quartan malaria was registered in five children from Sabatlyar and in one child from Darachichi in the Kubin Rayon. All children had received twenty hemoprophylaxis with 10 ml of maternal blood. Since 1964, quartan malaria prophylaxis has been carried out in Azerbaydzhan in accordance with the decrees of the Ministry of Public Health. These inclu-

Card 1/2

dispensary supervision of subjects with a past history of quartan malaria in areas where it has been registered since 1954, and of members of their families. Blood examination at least once each month is recommended for recipients of blood from donors with a history of quartan malaria. Continuous observations on subjects residing in areas of focal infection are recommended. Prevention of malaria transmission by blood donors for transfusion and hemotherapy is discussed.

[WA-50; CBE No. 41] [XF]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 011

ACC NR: AP9008229 SOURCE CODE: UR/0346/69/000/002/0036/0037

AUTHOR: Fang, Tkhan' Fyong (Aspirant)

ORG: Moscow Veterinary Academy (Moskovskaya veterinarnaya akademiya)

TITLE: Protein fractions in the serum of chickens vaccinated against pasteurellosis

SOURCE: Veterinariya, no. 2, 1969, 36-37

TOPIC TAGS: pasteurellosis, blood serum, animal disease

ABSTRACT: The content of protein and protein fractions in the serum of chickens changed significantly during immunization against pasteurellosis. The total protein content and the γ-globulin content in the serum of chickens vaccinated by aerosol was always higher, on the 10th, 20th and 30th days after vaccination, than corresponding levels in chickens vaccinated subcutaneously. On the 5th day after vaccination, however, the total protein content in the serum of chickens vaccinated subcutaneously was higher than in the blood of chickens vaccinated by aerosol. The aerosol method was recommended for vaccination of chickens against pasteurellosis, especially since

UDC: 619:616.981.459-092:636.52/.58

ACC NR: AP9008229

a carrier state did not develop after aerosol immunization. Orig. art. has: 1 table. [WA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AP9007208 SOURCE CODE: UR/0177/68/000/011/0052/0054

AUTHOR: Filippovich, Yu. V. (Major; Medical service); Kondrashov, G. F. (Captain; Medical service); Zagvozdkin, L. M.; Bushlyakov, M. S.; Chernysheva, M. G.

ORG: none

TITLE: Rapid determination of the infectivity of rodents in natural foci of tularemia

SOURCE: Voyenno-meditsinskiy zhurnal, no. 11, 1968, 52-54

TOPIC TAGS: rodent, tularemia, animal disease, epidemiologic focus, agglutination

ABSTRACT: The charcoal agglutination method was found to be a highly sensitive and simple method for rapid determination of infectivity in rodents in a natural tularemia focus. Tularemia antigen in the bodies of decomposing animals can be detected by this method when the bacteriological method is inappropriate. The agglutination reaction with tularemia cultures grown from the organs of infected rodents on yolk medium was positive in 1:1600 dilutions of sera (tularemia agglutinating sera of the Irkutsk Antiplague Institute of Siberia and the Far East, series no. 17-1, titer 1:2000). [WA-50; CBE No. 41] [KF]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 008

Card 1/1 UDC: 616.981.455-084

ACC NR: AP9006825 SOURCE CODE: UR/9091/69/000/001/0043/0048

AUTHOR: Fradkina, D. L.; Kazachenko, R. F.

ORG: All-Union Institute of Sugar Beets (Vsesoyuznyy institut sakharnoy svekly); Mezhotnenskaya Experimental Selection Station (Mezhnotnenskaya selektsionno-opytnaya stantsiya)

TITLE: Local and diffuse peronosporosis of sugar beets

SOURCE: Vestnik sel'skokhozyaystvennoy nauki, no. 1, 1969, 43-48

TOPIC TAGS: plant parasite, fungus, agriculture crop seed, vegetable

ABSTRACT: A study of peronosporosis of sugar beets in the Ukraine and Baltic areas showed that the incubation period before the appearance of local blemishes was from 4—15 days, while the period from the appearance of local blemishes to diffuse manifestations was from 1—18 days. Sugar beet plants artificially infected at the Mezhotnenskaya Selection Station showed that the Ramonskaya 06 variety, used in the LatSSR, had the largest number of plants with local *Peronospora* blemishes on the grown leaves. Mezhomenskaya varieties M070, M080, and M095 showed increased resistance to *Peronospora* infection. A dynamic relation was noted between the local infection seen on grown leaves, and the diffuse

Card 1/2 UDC: 633.63+616-092

ACC NR: AP9006825

infection seen on young leaves of the central rosette. It was suggested that the mycelia penetrate from primary local infections in the head of the roots. However, this has not been histologically confirmed. Orig. art. has: 3 tables. [WA-50; CBE No. 41] [XF]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 011/ OTH REF: 003

Card 2/2

ACC NR: AT9007971 SOURCE CODE: UR/3472/67/042/000/0055/0058

AUTHOR: Frank, E. V. (Aspirant)

ORG: Department of General Biology /Head - Professor I. A. Gontar'/, Kirgiz State Medical Institute (Kafedra obshchey biologii Kirgizgosmed-institut)

TITLE: The focal character of toxoplasmosis on wild-animal (fur) farms

SOURCE: Frunze. Kirgizskiy gosudarstvennyy meditsinskiy institut. Sbornik nauchnykh rabot, v. 42, 1967. Nauchnyye raboty aspirantov i klinicheskikh ordinatorov (Scientific papers of postgraduate students and staff physicians), 55-58

TOPIC TAGS: toxoplasmosis, epidemiologic focus

ABSTRACT: A total of 28.9% of the silver-black foxes, 41.8% of the minks, and 13.5% of the rabbits on a Frunze wild animal farm were infected with toxoplasmosis. Wild animals on this farm could apparently be infected only by the alimentary route, since the arrangement of cages precluded contact with other wild animals. Foxes and minks were fed raw meat, which may have been the source of infection. Infected wild animals can infect man, since man is in contact with the animals

Card 1/2

ACC NR: AT9007971

during trapping, feeding, and especially during slaughter and preparation of skins. Symptoms of toxoplasmosis among wild animals at the farm include abortions and early death of young. Serological study of fur farm personnel in the intracutaneous allergic test with toxoplasmin gave 13 out of 42 positive reactions, with 4 sharply positive. [WA-50; CBE no. 43] [JS]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 006

Card 2/2

ACC NR: AP9006956 SOURCE CODE: UR/0238/65/014/005/0704/0711

AUTHOR: Pavel'-Osipova, S. I.

ORG: All-Union Scientific Research Institute of Hygiene and Toxicology of Pesticides and Polymers (Vsesoyuznyy naukovo-doslidniy institut gigiyeni i toksikologii pestitsidiv ta polimernikh mas)

TITLE: Effects of some pesticides on the permeability of cell membranes

SOURCE: Fiziolochichnyy zhurnal, v. 14, no. 5, 1968, 704-711

TOPIC TAGS: tissue culture, pesticide effect, DDT

ABSTRACT: This survey article, based primarily on Western sources, discusses the effects of pesticides on nerve endings and on cellular permeability in general. DDT blocks Ca^{++} and K^{+} transport across cell membranes and increases neural transmission times. The article presents details of poisoning symptoms observed in animals, insects, and humans. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: 15May68/ ORIG REF: 021/ OTH REF: 041

Card 1/1

ACC NR: AT9010097 SOURCE CODE: UR/3479/65/005/000/0317/0319

AUTHOR: Gasanov, S. N.

ORG: none

TITLE: The danger to man of the tick *Ornithodorus lahorensis*

SOURCE: Baku. Azerbaydzhanskiy nauchno-issledovatel'skiy institut meditsinskoy parazitologii i tropicheskoy meditsiny. Trudy, v. 5, 1965, 317-319

TOPIC TAGS: disease vector, tick, animal parasite, parasitic disease

ABSTRACT: *Ornithodorus lahorensis* is widespread in Azerbaydzhan especially in the Nakhichevan ASSR. It is primarily a sheep parasite, although it is known to parasitize cattle as well [illegible] does not transmit tickborne spirochaetosis to humans. However, illness has been reported in humans who have been bitten by them. Stings (or bites) are followed by allergic symptoms which depend upon the [illegible]city of the tick saliva and on the susceptibility of the person bitten. Orig. art. has: 1 figure. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 013

Card 1/1

ACC NR: AT9009153 SOURCE CODE: UR/3473/67/000/028/0140/0144

AUTHOR: Genov, I.

ORG: none

TITLE: The effect of bactericidal substances on dehydrogenase activity of *Brucella*, *Bac. anthracis* and *M. tuberculosis* at different temperatures

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut. Trudy, no. 18, pt. 1, 1967, 140-144

TOPIC TAGS: bactericide, dehydrogenase, enzyme, Brucella anthrax, tuberculosis

ABSTRACT: Results of experiments performed on *Brucella*, tuberculosis bacilli and anthrax bacilli showed the different microorganisms have differing dehydrogenase activity, with anthrax bacilli having the highest and tuberculosis bacilli the lowest. These differences also depend on the temperature conditions of the experiment. Maximum dehydrogenase activity occurred at 37.5°C. Formaldehyde, calcium hypochlorite, iodine monochloride, and 1-chloro-2-naphthol further enhance the effects of unfavorable temperatures. The bacteriostatic and bactericidal concentrations of these compounds are close together. [WA-50; CBE No. 41] [LP]

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

Card 1/1

ACC NR: AP9006765 SOURCE CODE: UR/0346/69/000/001/0117/0119

AUTHOR: Genov, Iv.; Syrtmadzhiyev, Kr.

ORG: Veterinary Institute for Infectious and Parasitic Diseases, Sofia (Veterinarnyy institut po zaraznym i parazitarnym boleznyam)

TITLE: Immunofluorescent detection in tissue cultures of adenoviruses isolated from swine

SOURCE: Veterinariya, no. 1, 1969, 117-119

TOPIC TAGS: tissue culture, adenovirus, animal virus, animal disease, swine

ABSTRACT: The direct immunofluorescence method of Coons and Kaplan was used to detect SA-3 adenoviruses isolated from swine and cultured in swine kidney for 5—10 days. Antiadenovirus sera were prepared from rabbits hyperimmunized with the same adenovirus strain with a titer of 10^{-3}. Sera were produced with an average titer of virus neutralizing antibodies of from 1:512 to 1:1024. Contrast staining of the tissues was done with bovine albumin with a conjugate of lyzaminerhodamine B-200. A phosphate buffer with pH 7.2 was used. Three types of fluorescence were observed. There were fluorescent granular formations in the clearly defined cell nuclei, and no fluorescence in the cytoplasm. There were

Card 1/2 UDC: 619:616.988.5-073.4:636.4

ACC NR: AP9006765

no granulations, although fluorescence was well distributed through the nuclei, in cultures studied on the fifth day after infection. In the third group of cultures, fluorescence was present in the cytoplasm but only in some areas of the cell nuclei; destructive changes were also noted. The adenoviruses studied in the tissue culture had the properties of DNA viruses and were concentrated in the cell nuclei. Orig. art. has: 4 figures. [WA-50; CBE No. 41] [XF]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 005/ OTH REF: 013

Card 2/2

ACC NR: AP9007642 SOURCE CODE: UR/0325/69/000/001/0099/0105

AUTHOR: Gerasenkova, Ye. D.; Makasheva, R. Kh.

ORG: All Union-Scientific Research Institute of Plant Breeding im. M. I. Vavilov (Vsesoyuznyy nauchno-issledovatel'skiy institut rasteniyevodstva)

TITLE: New virus diseases of peas

SOURCE: Nauchnyye doklady vysshey shkoly. Biologicheskiye nauki, no. 1, 1969, 99-105

TOPIC TAGS: plant virus, pea, agriculture crop

ABSTRACT: A new virus disease, called "warting", first observed on peas at the VNIIR in 1945 has cancer-like symptoms and attacks the poliferating cells of the epidermis of the plant stalk. The infection is transmitted by juices of infected plants, by *Chenopodium quinoa* and *Nicotiana tabacum*. Transmission is also via the seeds of infected pea plants and also by pollen. This virus is now widely distributed and has been discovered in countries of the five continents, but the causative virus has not yet been identified. Orig. art. has: 1 figure and 5 tables. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: 30Apr68/ ORIG REF: 002/ OTH REF: 003

Card 1/1 UDC: 635.656:632.38

ACC NR: AP9010303 SOURCE CODE: UR/0079/69/039/002/0301/0303

AUTHOR: Gitel', P. O.; Osipova, L. F.; Solovova, O. P.;
Yakubovich, A. Ya.

ORG: none

TITLE: Synthesis and some transformations of tris(α,α,ω-trichloroperfluoroalkyl) phosphates

SOURCE: Zhurnal obshchey khimii, v. 39, no. 2, 1969, 301-303

TOPIC TAGS: fluorine compound, chlorinated aliphatic compound, phosphate ester

ABSTRACT: Tris(α,α,ω-trihydroperfluoropropyl) phosphate (I) was prepared by adding telomeric $HCF_2CF_2CH_2OH$ to Na in Et_2O boiling, replacing the Et_2O with $PhCH_3$, adding $POCl_3$ in $PhCH_3$ at 40°C, and boiling for 10 hr. Compounds II and III were similarly prepared. Tris(α,α,ω-trichloroperfluoropropyl) phosphate (IV) was obtained by chlorinating I with Cl in the presence of UV radiation at 80—100°C in an inert solvent or without the solvent. Compounds V and VI were similarly prepared. ω-Chloroperfluoropropionic acid (VII) was prepared by heating IV and H_2O in an ampule for 6 hr at 100°C. Compound VIII was similarly prepared. Ethyl ω-chloroperfluoropropionate (IX) was obtained by heating IV and

Table 1. Phosphates

No.	Compound		Bp, °C (p in mm)	Mp, °C	d_4^{20}	n_D^{20}
I	[illegible]	[illegible]	[illegible]	—	[illegible]	[illegible]
II	[illegible]	[illegible]	[illegible]	—	[illegible]	[illegible]
III	[illegible]	[illegible]	[illegible]	—	[illegible]	[illegible]
IV	[illegible]	[illegible]	—	[illegible]	—	—
V	[illegible]	[illegible]	—	[illegible]	—	—
VI	[illegible]	[illegible]	—	[illegible]	—	—
VII	[illegible]	[illegible]	[illegible]	—	—	[illegible]
VIII	[illegible]	[illegible]	—	[illegible]	—	—
IX	[illegible]	[illegible]	[illegible]	—	[illegible]	[illegible]
X	[illegible]	[illegible]	[illegible]	—	—	[illegible]
XI	[illegible]	[illegible]	[illegible]	—	—	—

EtOH for 6 hr in a sealed tube at 100°C. Compound X was similarly prepared. ω-Chloroperfluoropropionyl chloride (XI) was prepared by heating IV and KF at 180—200°C with concurrent distillation of the reaction products and subsequent treatment of them with $AlCl_3$ at 50°C. Orig. art. has: 1 table. [WA-50; CBE No. 41] [PT]

SUB CODE: 07/ SUBM DATE: none

ACC NR: AP9008283 SOURCE CODE: UR/0439/69/048/001/0149/0150

AUTHOR: Gonchar-ov, A. I.; Vasil'yev, G. A.; Zonov, G. B.; Kirillov, V. V.

ORG: Stavropol' Branch, All-Union Scientific Research Antiplague Institute "Mikrob" (Stavropol'skiy filial vsesoyuznogo nauchno-issledovatel'skogo protivochumnogo instituta); Irkutsk State Antiplague Institute (Irkutskiy gosudarstvennyy protivochumnyy institut)

TITLE: The fauna of fleas in Eastern Siberia

SOURCE: Zoologicheskiy zhurnal, v. 48, no. 1, 1969, 149-150

TOPIC TAGS: flea, animal vector research

ABSTRACT: Collection of fleas from different parts of Eastern Siberia revealed some species new to this area. *Ceratophyllus chefdeae* was found on a yellow-headed wagtail: this species was formerly known in the Caucasus and Central Tyan-Shan'. *Ceratophyllus rossittensis* was found in the nest of a magpie: this species was formerly recorded in Kaliningrad Oblast. A census of fleas in bird nests in Yakutsk ASSR was also made, with the following genuses represented; *Tarsopsylla*,

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ACC NR: AP9008283

Ceratophyllus, *Citellophilus* (narrow-skulled vole), *Frontopsylla* (narrow-skulled vole), *Orfrontia*, *Amphipsylla* (vole), *Rhadinopsylla* (northern redbacked vole), *Neotofrontia* (narrow-skulled vole), *Neopsyllamana* (narrow-skulled vole), and *Catallagia* (northern redbacked vole). In addition a few specimens of *Frontopsylla* sp. were collected from a suslik and a narrow-skulled vole, and a few specimens of *Rhadinopsylla* sp. from a Siberian chipmunk. The following species were new to this area; *C. riparius*, *C. shevtyi*, *C. tamadumus*, *F. lapponica* and *Rh. dahurica*. [NA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 006

Card 2/2

ACC NR: AT9009411 SOURCE CODE: UR/3473/67/000/018/0021/0024

AUTHOR: Gonskaya, G. G.; Chudnova, L. B.

ORG: none

TITLE: Method of analyzing organophosphorus insecticides (trichlorometaphos-3 and carbophos) in aerosol tanks and in the air

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut. Trudy, no. 18, pt. 3, 1967, 21-24

TOPIC TAGS: aerosol dispenser, organophosphorus insecticide, analytical chemistry

ABSTRACT: A step-by-step method with calibrated curve formulas is presented for analysis of organophosphorus compounds in aerosol chambers and in the atmosphere. The method is based on the decomposition of organophosphorus insecticides (50% mixtures of the title compounds) by nitric and sulfuric acids. The result of the reaction is that colored products are formed whose relative concentration can be obtained photocolorimetrically and compared with a precalibrated standard curve. Trikhlormetafoc-3 is O-methyl O-ethyl O-(2,4,5-trichlorophenyl)thiophosphate. [WA-50; CBE No. 41] [LP]

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

Card 1/1

ACC NR: AT9007976 SOURCE CODE: UR/0000/67/000/000/0134/0136

AUTHOR: Gorokhov, V. I.

ORG: Department of Microbiology /Head-Docent R. N. Rebrov/ (Kafedra mikrobiologii)

TITLE: Antagonistic properties of E. coli M-17 and its antibiotic-resistant variant

SOURCE: Ryazan. Meditsinskiy institut. Tsentral'naya nauchno-issledovatel'skaya laboratoriya. Nauchnaya konferentsiya, 1st, 1967. Voprosy teoreticheskoy i klinicheskoy meditsiny; materialy konferentsii (Problems in theoretical and clinical medicine; materials of the conference). Ryazan, 1967, 134-136

TOPIC TAGS: escherichia coli, streptomycin, erythromycin, staphylococcus

ABSTRACT: The antagonistic activity of E. coli M-17 and its variant (resistant to streptomycin, erythromycin and chloramphenicol) was greater with respect to dysentery bacteria than with respect to pathogenic Staphylococcus. The antagonistic activity of the antibiotic-resistant variant of E. coli M-17 with respect to both types of bacteria was either retained (in about 50% of cases) or slightly

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ACC NR: AT9007976

decreased (in the remaining 50%). An antibiotic-resistant variant of *E. coli* M-17 is desirable for use during prophylactic antibiotic therapy of medicinal disbacteriosis (depletion of the normal microflora in the intestinal tract and multiplication of conditionally pathogenic bacteria). [WA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AT9007977 SOURCE CODE: UR/0000/67/000/000/0137/0139

AUTHOR: Gorokhov, V. I.

ORG: Department of Microbiology /Head-Docent R. N. Rebrova/, Ryazan' Medical Institute im. Akademika I. P. Pavlov (Kafedra mikrobiologii, Ryazanskiy meditsinskiy institut)

TITLE: The joint effect of some antibiotics and *E. coli* M-17 resistant to them on pathogenic *staphylococcus* and dysentery bacteria

SOURCE: Ryazan. Meditsinskiy institut. Tsentral'naya nauchno-issledovatel'skaya laboratoriya. Nauchnaya konferentsiya, 1st, 1967. Voprosy teoreticheskoy i klinicheskoy meditsiny; materialy konferentsii (Problems in theoretical and clinical medicine; materials of the conference). Ryazan, 1967, 137-139

TOPIC TAGS: escherichia coli, staphylococcus, shigella, streptomycin

ABSTRACT: A polyresistant varient of *E. coli* M-17 not only retained its antagonistic properties with respect to pathogenic *Staphylococcus* and dysentery bacteria (5 strains each of *Sh. flexneri* and *Sh. sonnei*) in the presence of antibiotics, but intensified the bactericidal effect of the antibiotics. Bactericidal properties of antibiotic combinations -- streptomycin with chloramphenicol and streptomycin with

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ACC NR: AT9007977

erythromycin -- in the presence of the polyresistant variant *E. coli* M-17 were intensified in 9 out of 10 cultures of both types of bacteria 2 to 50 times. The joint action of the antibiotic-resistant *E. coli* strain and streptomycin increased the bactericidal effect of streptomycin 95 times with respect to one *Shigella* strain and 375 times with respect to 2 other strains. The bactericidal properties of erythromycin in combination with *E. coli* were increased 63 and 129 times with respect to 2 cultures of dysentery bacteria. Joint action of *E. coli* M-17 and antibiotic combinations on pathogenic *Staphylococcus* did not produce any intensification of bactericidal activity with respect to 3 *Staphylococcus* strains. [WA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AT9009345 SOURCE CODE: UR/3481/67/000/015/0093/0099

AUTHOR: Gur'yanova, T. M.

ORG: Moscow Forest Technology Institute (Moskovskiy lesotekhnicheskiy institut)

TITLE: Forest caterpillars, destroyers of forests in the Caucasus

SOURCE: Moscow. Lesotekhnicheskiy institut. Sbornik rabot, no. 15, 1967. Voprosy zashchity lesa (Aspects of forest protection), 93-99

TOPIC TAGS: plant pest, forestry, pest control

ABSTRACT: A population survey of little-known softwood borers was performed in a forest preserve in the Caucasus. The pests were captured, classified and described morphologically and geographically. They were more common at altitudes above 1300 m and most common between 1800—2000 m. The most common species encountered were *Abies nordmanniana* and *Serropalpus barbatus*. Orig. art. has: 2 tables. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 007/ OTH REF: 004

Card 1/1

ACC NR. AP900?263 SOURCE CODE: UR/0475/68/000/008/0112/0116

AUTHOR: Gzhegotskiy, M. I. (Candidate of medical sciences; Lvov); Martynyuk, V. Z. (Professor; Lvov)

ORG: Central Scientific Research Laboratory for Biologically Active Compounds /Head--Prof. B. M. Chernov/, L'vov Medical Institute (Tsentral'naya nauchno-issledovatel'skaya laboratoriya biologicheski aktivnykh soyedineniy L'vovskogo meditsinskogo instituta)

TITLE: Toxicological and hygienic evaluation of a new chlorine-containing herbicide, Pyramine

SOURCE: Vrachebnoye delo, no. 8, 1968, 112-116

TOPIC TAGS: herbicide, herbicide intoxication, hygiene

ABSTRACT: Pyramine $C_{10}H_8N_3OCl$ (synonyms: chlorazon, KhS-119, PTsA) is a new chloroorganic herbicide. This compound 1-phenyl-4-amino-5-chloro-pyridazone-6 is usually sprayed as an 80% mixed powder, and is recommended for agricultural application in combatting rot and seed damage. This compound is a dark grey powder with a melting point of 132.2°C and a mol wt. of 221.65. It is extremely soluble in gastric juice, oils, alcohol, organic solvents and in water at 22°C (to 40%). It partially decomposes on heating in an aqueous solution, but can be stored for

Card 1/2 UDC: 613.63:632.954:615.778-099

ACC NR: AP9007263

more than six months. Tests were made on white rats, white mice, guinea pigs and cats to determine the effect of this compound on skin, eyes and other systems and organs of these animals. The study showed that the lethal dose (LD_{100}) of the technical grade preparation was 5600 mg/kg for rats, 5000 mg/kg for guinea pigs, 1000—500 mg/kg for cats and some white rats. The average lethal dose (LD_{50}) is 3600 mg/kg for white rats given orally, for guinea pigs, 3200 mg/kg and for mice, 2500 mg/kg. In all, 263 animals were tested. It was found to cause acute and chronic liver and blood intoxication and irritates the ocular mucosa and has other negative effects. Although the lethal dose is high, pyramine concentration in water should not exceed 3 mg/l, or 2 mg/l in beet roots. [WA-50; CBE No. 41] [IP]

SUB CODE: 06 SUBM DATE: none

Card 2/2

ACC NR: AP9004530 SOURCE CODE: UR/0358/68/037/006/0708/0710

AUTHOR: Ignatovich, V. F.; Grokhovskaya, I. M.

ORG: Institute of Epidemiology and Microbiology im. N. F. Gamaleya AMN SSSR, Moscow (Institut epidemiologii i mikrobiologii AMN SSSR)

TITLE: Study of possible routes of transmission of *Rickettsia prowazeki* by Ixodid ticks

SOURCE: Meditsinskaya parazitologiya i parazitarnyye bolezni, v. 37, no. 6, 1968, 708-710

TOPIC TAGS: animal vector research, tick, rickettsia

ABSTRACT: Results of experimental infection of guinea pigs and cotton rats with *Rickettsia prowazeki* via ticks are shown in Table 1. Experimental results show that transmission of *R. prowazeki* by infected ticks is difficult, but this is partially explained by the low sensitivity of guinea pigs and cotton rats to the agent of scrub typhus when rubbed on scarified skin. Preliminary results indicate

Card 1/3 UDC: 576.851.71:895.42

ACC NR: AP9004530

Table 1. Experimental data

Description of experiment	Species and developmental phase of ticks	No. of experiments: total	No. of experiments: with positive results	species and developmental phase of ticks, periods of infection of ticks in experiments with positive results	No. of ticks in experiments with positive results
feeding of infected ticks on animals	*O. moubata* N_1—N_2 *H. asiaticum* Im *O. papillipes* N_1—N_3	2 2 12	1 0 0	*O. moubata* N_2: 1 month/s after infection	95 ticks
rubbing of ground-up infected ticks into scarified skin of animals	*H. asiaticum* Im *A. lahorensis* N_3 *O. papillipes* L—N_1	1 3 8	1 1 0	*H. asiaticum* Im: 3 month/s after infection *A. lahorensis* N_3 1 month/s after infection	1 tick 1 tick
study of excretions from infected ticks	*O. papillipes* L—Im *O. moubata* N_1—N_2 *A. lahorensis* Im.	19 4 3	2 0 0	*O. papillipes* L—N_1 6 days after infection	500 ticks

Card 2/3

ACC NR: AP9004530

that animals can be infected with *R. prowazeki* from ticks and their excretions, but more data on the frequency of transmission of rickettsia by ticks is necessary. Orig. art. has: 1 table.
[WA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: 05Mar68/ ORIG REF: 005/ OTH REF: 006

Card 3/3

ACC NR: AT9008864 SOURCE CODE: UR/3463/68/000/008/0088/009

AUTHOR: Ignat'yev, Ye. I.; Simonovich, V. K.

ORG: Geographical Society SSSR (Geograficheskoye obshchestvo SSSR)

TITLE: Basic trends of medical-geographical mapping in the Soviet Union

SOURCE: Geograficheskoye obshchestvo SSSR. Doklady otdeleniy i komissiy, no. 8, '968. Meditsinskaya geografiya (Medical geography), 88-99

TOPIC TAGS: medical geography, epidemiologic map, mapping

ABSTRACT: This paper was presented at the Second Scientific Conference on Problems of Medical Geography, 26 November 1965. Until recently, most epidemiological maps existed only in the form of author's originals with the exception of the three volume world atlas of the distribution of infectious diseases published in Hamberg Germany between 1952 and 1957. Medical geographical maps to be published in the Soviet Union will show geographical (natural, social, productive) aspects of human disease and also territorial and geographical and geological relationships in addition to usual climatic, plant cover, and standard

Card 1/3

ACC NR: AT9008864

maps. Also, another goal is the showing of the presence of natural therapeutic resources. Thus, medical geographical maps show the zonal and regional medical geographical features of a territory and in some cases of cities and rayons. In a map already published mapping the epidemiological features of a mountain taiga region of the northern Chita oblast, a great deal of material on epidemiology, microbiology and hydiene of this area has been collected and shown graphically. Other maps of the southern regions of central Siberia show the relationship, from a medical geographical viewpoint, of various components of the environment within a geosystem of isolated landscape zones and climate zones of this territory. The authors classify medical geographical maps into five basic types: a) medical geographical maps of natural environments within the boundaries of a given geosystem; b) medical geographical maps of production and common social conditions within the boundaries of a territory; c) purely medical geographical maps; d) compound medical geographical maps; e) maps for medical geographical forecasting (for example for predicting influenza epidemics). Recent medical geographical studies of south central Siberia involved mapping of four components namely: climate evaluation, soils, surface and underground water, and medical geographical distribution of naturally focal diseases. Soils are evaluated according to their capacity for biological self-purification. Studies of open water sources were

Card 2/3

ACC NR: AT9008864

done with a view to their influence on human intestinal infection. They were divided into two groups: safe water, water not producing unpleasant physiological reactions; and unsafe water which produces intestinal upset. Underground waters were also evaluated according to their possible effect on the human digestive tract (lightly and heavily mineralized). Future tasks of medical geographers will be the further development and study of data of naturally transmissible human diseases, the effect of topography, biogeochemistry, parasitology, climate and social effects on man. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 012/ OTH REF: 001

Card 3/3

ACC NR. AP900720? SOURCE CODE: UR/0177/68/000/011/0016/0022

AUTHOR: Ivanov, A. I. (Lieutenant colonel; Medical service; Docent)

ORG: none

TITLE: Coccidioidomycosis. Review of literature

SOURCE: Voyenno-meditsinskiy zhurnal, no. 11, 1968, 16-22

TOPIC TAGS: coccidiodes immitis, fungal disease

ABSTRACT: Coccidioidomycosis is rare in the Soviet Union (only 50 cases reported) and usually occurs in chronic form. The generalized form of the disease is relatively rare worldwide. Primary acute coccidioidomycosis can occur in pulmonary form (as symptomless, influenza-like or pneumonic type), in the extrapulmonary form, and in the disseminated or septic form. Diagnostic symptoms vary with the different types of disease. At present, the only antibiotic effective against coccidioidomycosis is amphotericin B or fungizone (obtained from *Streptomyces nodosus*). Fungizone is unfortunately highly toxic. Amphotericin B is best given intravenously in daily doses of 1 mg/kg (with a total dose of not more than 3 g). Fort

Card 1/2 UDC: 616.192.1

ACC NR. AP900720?

Detrick has allegedly developed a vaccine from live attenuated *C. immitis*, but it is very reactive and must be combined with killed vaccine and given with amphotericin B. A gas mask provides effective protection from attack with *C. immitis*. [MA-50; CBR No. 41] [JS]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 003/ OTH REF: 006

Card 2/2

ACC NR: AT9008492 SOURCE CODE: UR/3275/67/000/124/0157/0161

AUTHOR: Kalimullina, K. K. (Aspirant); Bagayev, V. B. (Docent, Candidate of agricultural sciences)

ORG: none

TITLE: Effect of propazine(triazine) on phosphorus compounds in plants resistant and sensitive to them

SOURCE: Moscow. Sel'skokhozyaystvennaya akademiya. Doklady, no. 124, 1967. Agrokhimiya, fiziologiya rasteniy, pochvovedeniya (Agrochemistry, plant physiology and soil science), 157-161

TOPIC TAGS: organophosphorus compound, plant physiology, herbicide

ABSTRACT: The inclusion of propazine (triazine), in plants sensitive to it, inhibits the inclusion of mineral phosphates and organic phosphorus-containing compounds such as sugar phosphates. In this respect, propazine is a good herbicide. In all cases there was a measurable difference in the phosphorus composition and amount of ionic interaction between the control and the experimental plants. In most experimental cases there was a higher percentage of nucleic phosphorus than in untreated plants. Sugar phosphates were higher in untreated and resistant plants. Orig. art. has: 2 tables. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 005/ OTH REF: 001

Card 1/1

ACC NR: AP9007648 SOURCE CODE: UR/0240/69/000/001/0054/0057

AUTHOR: Kalina, G. P. (Professor)

ORG: Moscow Scientific Research Institute of Hygiene im. F. F. Erisman (Moskovskiy nauchno-issledovatel'skiy institut gigiyeny)

TITLE: Comparative study of methods of determining enterococci in water

SOURCE: Gigiyena i sanitariya, no. 1, 1969, 54-57

TOPIC TAGS: water pollution, escherichia coli, streptococcus

ABSTRACT: An improved method for isolating enterococci from water consists of sowing a diluted water sample on liquid alkaline polymyxin medium, incubation at 37°C for 48 hr, and cultivation on Kalina's selective medium. This method is superior to the standard procedure because inhibitors suppress the development of E. coli and prevent shift of the bacterial flora toward the less representative enterococci (Str. faecalis durans and Str. [illegible]). The common use of an azide medium can also introduce errors, since [illegible] and spore-forming anaerobes tend to multiply. The proportion of Str. faecalis in

Card 1/2 UDC: 614.777:543.39:576.851.49

ACC NR: AP9007648

water samples is an index of recent fecal contamination, since this strain accounts for 72.8—100% of the enterococci in the human intestinal tract. *Str. faecium* durans and *Str. innominatus* are more common in animal intestins and in the environment. Orig. art. has: 2 tables. [WA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: 25Feb67/ ORIG REF: 003/ OTH REF: 003

Card 2/2

ACC NR: AP9008109 SOURCE CODE: UR/0177/69/000/001/0051/0053

AUTHOR: Kalinin, Ye. I. (Major; Medical service); Ivakhnenko, A. G. (Captain; Medical service)

ORG: none

TITLE: Ural hemorrhagic fever

SOURCE: Voyenno-meditsinskiy zhurnal, no. 1, 1969, 51-53

TOPIC TAGS: hemorrhagic fever, human ailment

ABSTRACT: Since 1952, a hemorrhagic fever has been reported in the Urals. In August 1965, a patient was brought into the hospital and was diagnosed as having hemorrhagic nephroso-nephritis. He came from an area which had been identified as an epidemic focus of Ural hemorrhagic fever. Between December 1965—March 1966, 17 cases (16 men and 1 woman) of varying ages between 16 and 45 were examined. These persons had all been in a forest region and had had some contact with small mammals. Four of the patients were extremely ill with this disease, 5 had a moderate form, 4 had a light form, and 4 had a latent form of the disease. The disease is divided into three periods; the initial in which first symptoms and symptoms of toxication appear, the feverish, and the recovery. Fourteen of the patients complained of headaches, 8—aches in

Card 1/2 UDC: 616.911

ACC NR: AP9008109

the eyes, 10—stomachs, 3—nose bleeds, 9—vomiting, 7—nausea; 7—anorexia, and 6—sweating. The average length of the feverish period was 8 days, sometimes 4—5 days. In three cases there was a homorrhagic rash and in two persons bleeding from the eyes. Bradycardia and hypertonia was reported in several cases, as was leucopenia and hyperleucocytosis. In persons suffering from the severe form of the disease, recovery often took 30 days. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AP9008074 SOURCE CODE: UR/0016/69/000/001/0151/0151

AUTHOR: Kalinina, K. I.

ORG: Rostov-na-Donu Institute of Epidemiology, Microbiology and Hygiene (Rostovskiy-na-Donu institut epidemiologii, mikrobiologii i gigiyeny)

TITLE: Experimental typhoid carrier state and dynamics of phagocytosis

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 1, 1969, 151

TOPIC TAGS: disease carrier state, typhoid fever, phagocytosis

ABSTRACT: Within one week of reinfection of rabbits formerly infected with typhoid, the percent of phagocytosis, the phagocytic index and the intensity of phagocytosis increased 11 to 14 times, while in carrier rabbits these indices increased only 6 to 10 times (and the subsequent increase in phagocytic activity was slower and insignificant). Phagocytic activity in non-carriers gradually decreased, while among carriers it remained substantially at the prior level and exceeded phagocytic activity of animals cleared of the bacteria. Similar shifts were noted in infected guinea pigs. Thus, a prolonged carrier

Card 1/2 UDC: 616.927-008.97-092.9

ACC NR: AP9008074

state was formed among animals with decreased phagocytic reactions during the acute period of the infection. [WA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: 25Dec67

Card 2/2

ACC NR: AP9008751 SOURCE CODE: UR/0321/69/030/001/0080/0086

AUTHOR: Kalinina, L. V.

ORG: Laboratory of Tumor Cell Genetics, Institute of Cytology, AN SSSR, Leningrad (Laboratoriya genetiki opukholevykh kletok Instituta tsitologii AN SSSR)

TITLE: Hereditary changes in amoebas induced by RNAase

SOURCE: Zhurnal obshchey biologii, v. 30, no. 1, 1969, 80-86

TOPIC TAGS: RNA, RNAase, enzyme kinetics, amoeba, protozoology

ABSTRACT: Progeny of strains L and S of *Amoeba proteus*, treated with ribonuclease (0.1 mg/ml), exhibited heritable destabilization in their resistance to the effects of 0.15 M methionine and 7% ethyl alcohol. The high frequency of these induced changes suggests that they are epignomic in nature. This instability, sometimes with an incidence of 100%, was repeated in *Paramecium caudatum* and in *Zea mays*. Orig. art. has: 4 tables. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: 27Oct67/ ORIG REF: 013/ OTH REF: 006

Card 1/1 UDC: 575.1:693.121:001.8

ACC NR: AT9009151 SOURCE CODE: UR/3473/67/000/018/0113/011

AUTHOR: Kamennov, N. A.; Starkov, A.; Latyshev, V. I.; Skvortsova, Ye. K.; Savel'yeva, A. R.

ORG: none

TITLE: Investigation of bactericidal compounds in the benzylated phenol series

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut. Trudy, no. 18, pt. 1, 1967, 113-121

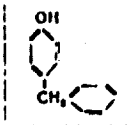
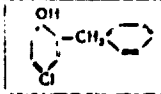
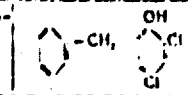
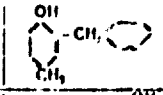
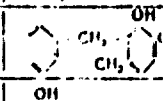
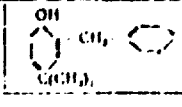
TOPIC TAGS: bactericide, bacteriostasis

ABSTRACT: The introduction of a benzyl radical into the phenol nucleus sharply increases its bactericidal properties. The most active of the compounds shown in Tables 1 and 2 is benzyl-p-tributylphenol, not previously studied, which kills microorganisms after 10—20 minute exposure in 0.05% solution. Benzylphenol itself is a highly effective bactericide which is effective as a 0.1% solution in 5 min. Adding more

Card 1/6

ACC NR: AT9009151

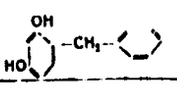
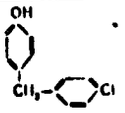
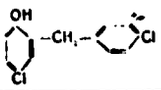
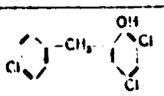
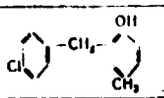
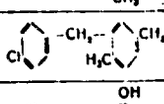
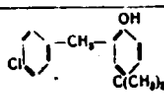
Table 1. Bactericidal activity of benzylphenols

Compound name	Formula	Boiling point °C/mm	Melting point °C	Yield, %	Concentration in %	Probe kill in minutes: Staphylococcus aureus	Probe kill in minutes: E. coli
Benzylphenol		176—181/10	52	70,0	1,0 0,5 0,1 0,01	5 5 30 more than 30	5 5 30 more than 30
Benzyl-p-chlorophenol		165—170/3	45	49,0	0,1 0,01	15 20	15 15
Benzyl-2,4-dichlorophenol		199—200/12	45	82,0	1,0 0,5	15 60	15 60
Benzyl-p-cresol		190—192/11	—	80,0	1,0 0,5 0,25	15 15 more than 60	15 15 15
Benzyl-2,5-xylenol		194—201/20	47	20,0	0,5 0,25 0,1	20 20 20	20 15 —
Benzyl-p-tributylphenol		171—173/4	—	30,0	1,0 0,1 0,05	5 5 10	5 5 more than 30

Card 2/6

ACC NR: AT9009151

Table 1. (Cont.)

Benzylresorcinol		232/12	78	27,0	0,5 0,25 0,1	15 30 30	5 5 10
P-chlorobenzylphenol		218,10	44	82,0	1,0 0,5 0,1 0,01	5 15 30 more 60 than	15 15 5 15
P-chlorobenzyl-p-chlorophenol		219 12	30	42,0	1,0 0,1 0,05 0,01	5 5 10 more 60 than	5 10 30 more 60 than
P-chlorobenzyl-2,4-dichlorophenol		227/32	31	50,0	1,0 0,5	20 more 60 than	25 more 60 than
P-chlorobenzyl-p-cresol		207/10	43	43,9	1,0	more 60 than	more 60 than
P-chlorobenzyl-2,5-xylenol		218/14	61	29,0	1,0 0,25	15 15	15 15
P-chlorobenzyl-p-tributylphenol		190,4	40	39,8	1,0 0,1 0,05 0,01	5 5 5 more 30 than	5 5 20 more 30 than

Card 3/6

ACC NR: AT9009151

Table 2. Bactericidal activity of benzylphenols

Compound name	Concentration in %	Kill of microbes in min	
		Staphylococcus aureus	*E. coli*
Benzylphenol	1,0 0,5 0,1 0,01	5 5 30 more 30	5 5 30 more 30
Benzyl-p-chlorophenol	0,1 0,01	than 15 20	than 15 15
Benzyl-2,4-dichlorophenol	1,0 0,5	15 60	15 more 60
Benzyl-p-cresol	1,0 0,5 0,25	15 15 more 60	than 15 15 15
Benzyl-2,5-xylenol	0,5 0,25 0,1	than 20 20 20	20 15 —
Benzyl-p-tributylphenol	1,0 0,1 0,05	5 5 10	5 5 more 30
Benzylresorcinol	0,5 0,25 0,1	15 30 30	than 5 5 10

Card 4/6

Table 2. (Cont.)

P-chlorobenzylphenol	1,0	5	15
	0,5	15	15
	0,1	30	5
	0,01	more than 60	15
P-chlorobenzyl-p-chlorophenol	1,0	5	5
	0,1	5	10
	0,05	30	30
	0,01	more than 60	more than 60
P-chlorobenzyl-2,4-dichlorophenol	1,0	20	25
	0,5	more than 60	more than 60
P-chlorobenzyl-p-cresol	1,0	more than 60	more than 60
P-chlorobenzyl-2,5-xylenol	1,0	15	15
	0,25	15	15
P-chlorobenzyl-p-tributylphenol	1,0	5	5
	0,1	5	5
	0,05	5	20
	0,01	more than 30	more than 30

than one chlorine molecule to the phenol nucleus results in decreased antibacterial effect. Orig. art. has: 2 tables.

[WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none

ACC NR: AT9008869 SOURCE CODE: UR/3463/68/000/008/0159/0167

AUTHOR: Keller, A. A.

ORG: none

TITLE: Epidemiological geography and mapping

SOURCE: Geograficheskoye obshchestvo SSSR. Doklady otdeleniy i komissiy, no. 8, 1968. Meditsinskaya geografiya (Medical geography), 159-167

TOPIC TAGS: medical geography, epidemiology, epidemiologic map, epizootiology

ABSTRACT: In response to requests for more detailed study of the medical geographical aspects of infectious disease, an epidemiological mapping program has been carried out by the Soviet Geographical Society. Several maps, atlases and monographs in this field have been published since the party directive of 1960. In this study, sources, features, and spreading of infections can be understood more rapidly with the aid of maps. Soviet experts claim that epidemiological geography studies and compares geographic features affecting the development of epidemic processes from isolated endemic foci of human infection. The World Health Organization has often referred to it as global

Card 1/2

ACC NR: AT9008869

epidemiology. The statements of several prominent Soviet experts on the proposed goals of epidemiological mapping are presented.
[WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 019/ OTH REF: 007

Card 2/2

ACC NR: AT9000414 SOURCE CODE: UR/3473/67/000/018/0030/0035

AUTHOR: Kerbabayev, E. B.; Starikov, A. Ye.; Sadovskiy, V. N.

ORG: none

TITLE: Experimental simultaneous control of both the great gerbil and its parasites by aerosol spraying of colonies

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut. Trudy, no. 18, pt. 3, 1967, 30-35

TOPIC TAGS: gerbil, animal, zoology, pest control, aerosol application, chemical aerosol

ABSTRACT: An experimental aerosol-gas generator developed by the Central Scientific Research Disinfection Institute was used in an attempt at simultaneous control of the great gerbil and the ectoparasites which inhabit its nests. A mixture of hexachlorane, CO_2 and ammonium chloride vapors were sprayed into gerbil colonies. Gerbils were reduced from an average of 8 to 2 animals per colony and parasites were also reduced; no mosquitos were observed in flight from treated colonies. The cost of extermination/colony was estimated at 8 kopecks. Orig. art. has: 2 tables. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 006

Card 1/1

ACC NR: AP9008063 SOURCE CODE: UR/0016/69/000/001/0112/0117

AUTHOR: Knyazeva, E. N.; Genig, V. A.; Beletskaya, G. A.; Voshchakina, N. V.; Yegorova, L. S.; Kostyukov, V. L.; Panina, N. V.; Tsel'nikov, P. S.

ORG: Institute of Epidemiology and Microbiology im. Gamaleya AMN SSSR (Institut epidemiologii i mikrobiologii AMN SSSR); Omsk Institute of Infections of Natural Foci (Omskiy institut prirodnoochagovykh infektsiy); Chita Institute of Epidemiology and Hygiene (Chitinskiy institut epidemiologii i gigiyeny)

TITLE: Simultaneous immunization of people with live brucellosis and Q-fever vaccines

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 1, 1969, 112-117

TOPIC TAGS: brucellosis, Q fever, Q fever vaccine, brucellosis vaccine

ABSTRACT: Selected healthy workers aged 14—50 were vaccinated simultaneously with live brucellosis and Q-fever vaccines by three methods, subcutaneous, cutaneous (through shoulder incisions) and combined methods (subcutaneous injection of Q-fever vaccine and cutaneous

Card 1/2 UDC: 616.981.42-084.47-059:616.981.718-084.47]:615.371

ACC NR: AP9008063

injection of brucellosis vaccine). All methods caused immunological response with respect to both vaccines. The best immunological effect with an insignificant reaction was provided by cutaneous vaccination with both vaccines (with a dose of Q-fever vaccine of 5×10^7—5×10^8 Mide (minimum infective doses for embryos). Simultaneous, cutaneous vaccination with live brucellosis and Q-fever vaccines can be recommended for vaccination of such high risk groups as were included in the experiment (slaughterhouse workers, dairy workers and other agricultural and veterinary workers). Orig. art. has: 4 tables.

[WA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: 10Jan68/ ORIG REF: 007

Card 2/2

ACC NR: AP9007433 SOURCE CODE: BU/0019/68/000/004/0323/0325

AUTHOR: Koen, R.; Lishev, A.; Kostova, V.; Sharankov, N.; Koyen, R.

ORG: Scientific Research Institute of Epidemiology and Microbiology, Sofia, /Director, Senior scientific associate St. Rangelova/ (Nauchno-issledovatel'skiy institut po epidemiologiya i mikrobiologiya); Hygiene and Epidemiology Institute, Pleven, /Director M. Kuchev/ (Khigiyenno-epidemiologichen institut)

TITLE: *Salmonella virchow*, discovered for the first time in our country [Bulgaria]

SOURCE: Epidemiologiya, mikrobiologiya i infektsiozni bolesti, no. 4, 1968, 323-325

TOPIC TAGS: Salmonella, enterocolitis, epidemic

ABSTRACT: Five cases caused by *Salmonella virchow*, isolated for the first time in Bulgaria, were described. These cases were types of moderately severe gastroenterocolitis or enterocolitis. Three epidemiological surveys did not reveal the source of infection. The fact that the disease outbreaks began simultaneously in the same place allows the assumption that this is an epidemic outbreak with a common source and a mechanism of infection transmission. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: 00Jun68/ ORIG REF: 003/ OTH REF: 006

Card 1/1

ACC NR: AP9008230 SOURCE CODE: UR/0346/69/000/002/0039/0040

AUTHOR: Konovalov, N. N. (Prosector)

ORG: Voronezh Agricultural Institute (Voronezhskiy sel'skokhozyaystvennyy institut)

TITLE: Pathological diagnosis of erysipelas of turkeys

SOURCE: Veterinariya, no. 2, 1969, 39-40

TOPIC TAGS: animal disease, pathology

ABSTRACT: Pathological and anatomical changes during erysipelas of turkeys are characterized by pronounced hyperemia of the skin, the subcutaneous cells, mucosa and internal organs. Single or multiple intense hemorrhages are observed in the skeletal muscles, subcutaneous cellular tissue, under the serosa of the egg cells, in the muscular part of the stomach, in the breastbone area, and in the mesentery, intestines and ovaries. The spleen was enlarged and hyperemic. Acute catarrhal gastroenteritis and typhlitis was observed with occasional hemorrhagic and catarrhal-necrotic changes in the stomach. The liver was dystrophic and hyperemic, and the egg cells showed

Card 1/2 UDC: 619:616.982.17-091:636.592

ACC NR: AP9008230

acute catarrhal and subserous hematomas. Material was taken from 94 turkeys dead of erysipelas after a 2 to 3 day illness.
[MA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AP9008103 SOURCE CODE: UR/0020/69/184/004/0979/0981

AUTHOR: Forableva, N. P.; Morozova, E. V.; Popova, L. V.; Metlitskiy, L. V.

ORG: Institute of Biochemistry im. A. N. Bakh, Academy of Sciences SSSR (Institut biokhimii Akademii nauk SSSR)

TITLE: The study of specific growth inhibitors in connection with rest and immunity in plants

SOURCE: AN SSSR. Doklady, v. 184, no. 4, 1969, 979-981

TOPIC TAGS: plant physiology, plant extract, growth inhibitor, plant growth regulator

ABSTRACT: The metabolism of phenolic compounds in potato tubers is closely related to the physiological state of the tuber and its resistance to phytopathogenic microorganisms. The largest quantity of phenols are detected at the time of deep rest. At the end of the resting stage the phenol content falls sharply especially in the meristem tissues. These compounds exert a protective effect on the tuber and increase its resistance to pathogenic organisms. This inhibiting effect

Card 1/2 UDC: 581.24+577.15/.17

ACC NR: AP9008103

drops with the end of the resting stage. Presented by Academician A. I. Oparin, 19 Aug 68. Orig. art. has: 2 figures.
[WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: 19Aug68/ ORIG REF: 004/ OTH REF: 002

ACC NR: AP9007234 SOURCE CODE: UR/0433/68/000/012/0036/0037

AUTHOR: Kornilova, V. N. (Senior research associate)

ORG: Experimental Station for Vinoculture and Pomology (Dereventskaya opytnaya stantsiaya vinogradarstva i ovofhchevodstva)

TITLE: New developments in mildew control

SOURCE: Zashchita rasteniy, no. 12, 1968, 36-37

TOPIC TAGS: mildew, pest control, agricultural sprayer

ABSTRACT: Insecticide spraying has been an effective method of controlling mildew in vineyards and orchards in Dagestan, Moldavia, and other places. Copper compounds are the usual control medium and serve as effective fungicides. Concentrations of 0.15% are usually applied at a rate of 1000—1200 l/ha. Higher concentrations damaged the leaves. Often, calcium chloride in small concentrations is added to the spray mixture. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 1/1 UDC: 632.4:634.836

ACC NR: AP9008225 SOURCE CODE: UR/0346/69/000/002/0027/0028

AUTHOR: Kotenko, I. I. (Candidate of veterinarian sciences)

ORG: Khar'kov Zootechnical and Veterinary Institute (Khar'kovskiy zootekhnichesko-veterinarnyy institut)

TITLE: The effect of antibiotics on phagocytosis and agglutinin titer in pigs with salmonellosis

SOURCE: Veterinariya, no. 2, 1969, 27-28

TOPIC TAGS: salmonella, phagocytosis, agglutination

ABSTRACT: Experiments with piglets on unsafe farms spontaneously infected with salmonellosis showed that oxytetracycline, streptomycin and combinations of the two increased phagocytosis (as measured by the phagocytic index) but inhibited an increase of agglutinin titer in the blood. Inhibition of the increase in agglutinin titer was more pronounced in acutely ill animals. The phagocytic index is the number of phagocytised cells per neutrophilic leukocyte. Antigen for the agglutination reaction was prepared from *Salmonella cholerae* suis. [WA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: none

Card 1/1 UDC: 619:616.981.49-085.779.9:636.4

ACC NR: AP9009529 SOURCE CODE: UR/0438/69/031/001/0053/0058

AUTHOR: Kovalenko, O. H.; Kovalenko, A. G.

ORG: Institute of Microbiology and Virology,AN URSR (Institut mikrobiologii i virusologii AN URSR)

TITLE: Effect of yeast metabolic products on the infectivity of potato X virus

SOURCE: Mikrobiolohichnyy zhurnal, v. 31, no. 1, 1969, 53-58

TOPIC TAGS: potato X virus, metabolic product, yeast, plant virus

ABSTRACT: Metabolic products of 9 of 15 yeast and fungus cultures applied as culture fluid extracts inhibited the infectivity of potato X-virus. The moxt active culture extracts were from *P. membranaefaciens*, *Candida tropicalis* 3v, *Cand. arborea* KAM-1, *T. utilis* h_2, and *Saech. cerevisiae*. In nearly all the cultures tested, antiviral activity increased with increased concentration of and exposure to the metabolic products. Antiviral concentrations of these products were not toxic to young potato plants. Orig. art. has: 2 figures and 3 tables.
[WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 006/ OTH REF: 006

Card 1/1 UDC: 665.521.6

ACC NR: AP9008223 SOURCE CODE: UR/0346/69/000/002/0018/0025

AUTHOR: Kovalenko, Ya. R. (Professor, Academician); Sidorov, M. A. (Candidate of veterinarian sciences); Yablonskaya, I. Ya. (Candidate of veterinarian sciences)

ORG: All-Union Institute of Experimental Veterinary Medicine (Vsesoyuznyy institut eksperimental'noy veterinarii)

TITLE: Role of mycoplasms (PPLO's) in animal pathology

SOURCE: Veterinariya, no. 2, 1969, 18-25

TOPIC TAGS: veterinary medicine, mycoplasm, animal disease, epizootiology

ABSTRACT: Mycoplasms are the agents of peripneumonia and other diseases in cattle which primarily effect respiratory tissue and lymph nodes. There are more than 18 known species of mycoplasms. They differ from bacterial L-forms, which they resemble closely, in that they do not revert to bacterial form. They are also responsible for many upper respiratory diseases in birds as well as cattle. They can be grown in both bouillon cultures and in tissue cultures and can be isolated from birds and kept in the cold, or freeze dried, for 10 months. In addition to peripneumonia in cattle, these organisms also cause infectious pleuropneumonia, contagious agalactosis in sheep and goats epizootic

Card 1/2 UDC: 619:616.986.9-02

ACC NR: AP9008223

pneumonia and arthritis, various diseases of the reproductive organs, mastitis infectious atrophic rhinitis, epizootic viral pneumonia, respiratory mycoplasmosis of fowl, and various mycoplasmal infections of tissue cultures. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AP9007646 SOURCE CODE: UR/0240/69/000/001/0045/0049

AUTHOR: Krasovskiy, G. N.; Korolev, A. A.; Belyayeva, N. G.; Varshavskaya, S. P.; Kutakov, K. V.; Malikova, R. T.; Trakhtman, M. B.

ORG: Department of Communal Hygiene, First Moscow Medical Institute im. I. M. Sechenov (Kafedra kommunal'noy gigiyeny Pervogo Moskovskogo meditsinskogo instituta)

TITLE: Comparative sensitivity of man and laboratory animals to chemical factors (Atsetofos) in an experiment

SOURCE: Gigiyena i sanitariya, no. 1, 1969, 45-49

TOPIC TAGS: poison effect, phosphorus compound, cholinesterase, human survival, guinea pig, white rat, white mouse, gastroenterology

ABSTRACT: This article appears in Chemical Factors

Card 1/1 UDC: 619:615:285.099

ACC NR: AT9010732 SOURCE CODE: UR/3490/66/023/000/0439/0446

AUTHOR: Kudaybergenov, K. K.

ORG: Chair of Microbiology /Head--K. A. Makirov/ Alma-Ata State Medical Institute (Kafedra mikrobiologii Alma-Atinskogo gosudarstvennogo meditsinskogo instituta)

TITLE: Toxoplasmosis control and prophylaxis

SOURCE: AlmaAta. Gosudarstvennyy meditsinskiy institut. Trudy, v. 23, 1966, 439-446

TOPIC TAGS: toxoplasmosis, animal disease, pest control, epizootiology, disease vector

ABSTRACT: Infected animals, usually dogs and cats, are the primary sources of toxoplasmosis infection in women. They can be made harmless by treatment with chloricidin and sulfanilamides, but the most effective means of control is the elimination of *Toxoplasma* sources, since all animals are potential vectors of the organisms, if they come in contact. The following prophylactic measures are recommended: the introduction of a planned, serological examination program for milk and meat animals; the immediate isolation of all healthy animals

Card 1/2

ACC NR: AT9010732

showing positive reactions. The products of these animals should be rendered harmless by heat or other disinfectant treatment; milk and milk products should be pasteurized and eggs should be boiled for five minutes; strict veterinary sanitation controls should be in effect immediately after the discovery of infection; if any milk or meat product is suspected, it should be decontaminated. In the case of human infection with *Toxoplasma*, the following measures should be taken: immediate hospitalization but without strict isolation; confirm the diagnosis and begin therapy; determine the source of infection; a history of toxoplasmosis should be taken into account in future medical consultations; therapy of women of childbearing age should be especially thorough. Toxoplasmosis tests should be made of all women, especially those in rural areas, and if positive, serological examination of family, pets and farm animals should be made to determine the source of infection as fast as possible. Since toxoplasma infection of medical workers is frequent, extra strict controls should be maintained in laboratory work.

[WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AP9005098 SOURCE CODE: UR/0390/68/031/005/0549/0552

AUTHOR: Kudrin, A. N. (Head, Professor); Davydova, O. N.

ORG: Department of Pharmacology /Head -- Professor A. N. Kudrin/, Pharmaceutical Faculty, First Moscow Medical Institute im. I. M. Sechenov (Kafedra farmakologii farmatsevticheskogo fakul'teta I Moskovskogo meditsinskogo instituta)

TITLE: Removal of the effect of hashish in dogs with phenitron

SOURCE: Farmakologiya i toksikologiya, v. 31, no. 5, 1968, 549-552

TOPIC TAGS: psychopharmacology, psychotomimetic compound

ABSTRACT: Experiments with dogs showed that hashish has a small range of toxic effects. It causes definite disruption of the activity of autonomic nervous centers, disruption of behavioral responses and with a slight increase in dose, ataxia and catalepsy accompanied by severe inhibition of autonomic and somatic nervous centers. Phenitron, a β-aminoketone, prevents developments of all symptoms of mild, moderate, or severe hashish intoxication. Phenitron removes all symptoms of severe hashish intoxication and stops catalepsy. Dogs given 15 mg/kg of phenitron 30 min before inhalation of hashish vapors did not show

Card 1/2 UDC: 615.783.3-099-092.9-085.785

ACC NR: AP9005098

physiological changes with hashish doses of 0.6 and 3 g/kg. Dogs with pronounced catalepsy were completely cured in 6 to 10 min after intraperitoneal administration of phenitron in a dose of 20 mg/kg. The dose of hashish received by a dog upon inhalation in a chamber with a single burning of hashish can be calculated according to the formula

$$D=\frac{K\cdot V\cdot N\cdot t}{Q\cdot m\cdot 1000},$$

where D - the dose of substance entering the organism (in g/kg), V - the minute volume of respiration (in ml); N - the number of breaths per minute; t - time of exposure (in min); m - weight of the animal (in kg); K - amount of hashish burned in the chamber (in g); and Q - chamber volume (in ml). Orig. art. has: 1 table. [WA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: 11June67/ ORIG REF: 003

Card 2/2

ACC NR: AP9008887 SOURCE CODE: BU/9011/69/000/001/0075/0078

AUTHOR: Kurudimov, P.

ORG: none

TITLE: Successes in the fight against rodent pests

SOURCE: Veterinarno meditsinski nauki, no. 1, 1969, 75-78

TOPIC TAGS: disease vector, disease carrying rodent, pesticide application, pest control

ABSTRACT: Chemical pesticides have been applied to large areas of Bulgaria with great success. *Rattus norvegious* and *Rattus rattus* have been eliminated from many agricultural areas, meat packing plants, and food processing industries. Spreading of murine typhus bacteria has contributed to a decrease in the populations of *Microtus arvalis*, *Clethrionomys glareolus*, *Apodemus flavicolis*, *Apodemus sylvatius* and to a lesser extent has controlled *Mus musculus*, *Citellius citellus* and *Arvicola terrestris*. In response to state directives, several veterinary and public health institutes are developing more effective rodent control methods. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 1/1

ACC NR: AT9009118 SOURCE CODE: UR/3473/67/000/0018/0042/0047

AUTHOR: Larionova, V. D.; Vashkov, V. I.; Alekseyev, A. N.; Shimanskaya, S. A.

ORG: none

TITLE: Practical use of methylacetophos and its ovicidal properties in a mixture of certain substances

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut. Trudy, no. 18, pt. 2, 1967, 42-47

TOPIC TAGS: pest control, pesticide application, ovicide

ABSTRACT: The ovicidal properties of methylacetophos on different surfaces when applied in different mixtures was determined. The formulas of the preparations and the type of surfaces tested are shown in Tables 1 and 2. In the experiment, methylacetophos was applied in 1% water solutions and 5% insecticide oil solutions and as 10% emulsions. When used in the concentrations shown in the table, these ovicidal compounds

Card 1/3

ACC NR: AT9009118

Table 1. Kill of nits (in %) under the effects of various mixtures containing methylacetophos

Form	% Concentration of methylacetophos	Additive: Preparation	Additive: %	Kill of nits upon exposure (in min): 15	30	60	120
Oil	0,5			1,0	5,0	5,0	22,0
	0,25	Chlorophos	0,25	40,0	45,0	62,0	70,0
	0,25	Acetic acid	0,25	46	52	58	68
	0,5	Chlorophos	0,5	80	92	98	100
	0,5	Acetic acid	0,5	86	96	100	100
Emulsion	0,5			0	6	120	20
	0,25	Chlorophos	0,25	36	48	56	68
	0,25	Acetic acid	0,25	32	44	52	60
	0,5	Chlorophos	0,5	86	91	100	100
	0,5	Acetic acid	0,5	90,5	98	100	100
Control				0	0	0	1

Legend: Chlorophos and acetic acid in 0.5% concentration does not have ovicidal activity

Card 2/3

ACC NR: AT9009118

Table 2. Kill of nits (in %) on different surface treated with mixture of methylacetophos and chlorophos

Surface on which the nits alight	% Kill
Fabric	95,0
Wool mesh	80,0
Human hair	65,0
Control	0,0

are harmless for humans. The ovicidal activity of methylacetophos-chlorophos or acetic acid mixtures is best at a 1:1 ratio. Orig. art. has: 2 tables. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 005/ OTH REF: 001

Card 3/3

ACC NR: AP9008070 SOURCE CODE: UR/0016/69/000/001/0137/0140

AUTHOR: Lebedev, V. N.; Strelyayeva, V. M.

ORG: Lipetsk Oblast Sanitation and Epidemiological Station (Lipetskaya oblastnaya sanitarno-epidemiologicheskaya stantsiya)

TITLE: Spontaneous infection of murine rodents with *Bac. anthracis*

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 1, 1969, 137-140

TOPIC TAGS: bacillus anthracis, epizootiology

ABSTRACT: Anthrax bacteria were isolated from a common vole (*Microtus arvalis*) and two field mice (*Apodemus agrarius*) in January and October, 1967, during a study of 494 murine rodents. Isolated cultures of *Bac. anthracis* differed from standard anthrax cultures only in the absence of a capsule. White mice infected with 250 million cells of the isolated cultures died on the 3rd to 4th day, indicating decreased virulence of the anthrax strain. The absence of pathological changes in rodents harboring anthrax bacteria indicates the existence of a chronic infect There is still not enough information to determine the role of spontan infection of murine rodents in the epizootiology and epidemiology of anthrax in this area. Were the rodents infected by anthrax strains of

Card 1/2 UDC: 616.981.51-008.97:599.323.4

ACC NR: AP9008070

decreased virulence due to an unfavorable environment, or did the decrease in virulence come about in the resistant rodents? Orig. art. has: 1 table. [WA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: 16Jan68/ ORIG REF: 026/ OTH REF: 003

Card 2/2

ACC NR: AT9009142 SOURCE CODE: UR/3473/67/000/018/0059/0065

AUTHOR: Lebedeva, N. S.; Verkholetova, G. P.

ORG: none

TITLE: Disinfection properties of chlorosuccinimide and dichlorocyanuric acid

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut. Trudy, no. 18, pt. 1, 1967, 59-65

TOPIC TAGS: bactericide, bacteria spore, Escherichia coli, staphylococcus, chemical decontamination

ABSTRACT: A study of the bactericidal and sporocidal activity of chlorosuccinimide and dichloroisocyanuric acid on batiste test objects, linen yarn, dishes, and various surfaces contaminated with *Escherichia coli*, *Staphylococcus aureus*, and spores of anthracoid microorganisms according to the method proposed by TsNIDI showed that the objects contaminated with vegetative forms of the microorganisms were successfully disinfected following exposure for 30 min to a 0.1—0.2% solution of chlorosuccinimide and dichloroisocyanuric acid. Linen yarn and

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ACC NR: AT9009142

surfaces contaminated with anthracoid spores were successfully disinfected following exposure for 1 hr to a 1.6% solution of chlorosuccinimide or for 2 hr to a 1% solution. Linen yarn contaminated with anthracoid spores was successfully disinfected following exposure for 30 min to a 0.5% solution of dichloroisocyanuric acid. Disinfection of surfaces contaminated with spores was not 100% effective with dichloroisocyanuric acid. Orig. art. has: 4 tables. [WA-50; CBE No. 41] [XF]

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

Card 2/2

ACC NR: AP9007652 SOURCE CODE: UR/0240/69/000/001/0100/0101

AUTHOR: Litvinov, A. P.; Peskov, V. G.

ORG: Municipal Sanitation and Epidemiological Station, Yalta (Gorodskaya sanepidstantsiya)

TITLE: Cases of botulism from eating home-canned mushrooms

SOURCE: Gigiyena i sanitariya, no. 1, 1969, 100-101

TOPIC TAGS: botulism, clostridium botulinum

ABSTRACT: Two outbreaks of botulism involving 11 people from 2 families were caused by mushrooms improperly washed, insufficiently cooked, and then stored for a long period at room temperature. Typical botulism symptoms, -- stomach pain, nausea, difficulty in swallowing, and visual difficulty -- were reported. The incubation period in one outbreak was 24—48 hours, although important symptoms did not appear until the 4th day after consumption of the mushrooms. Patients were hospitalized with a diagnosis of botulism on the 7th day. All patients received polyvalent antibotulinus serum type A+E. The neutralization reaction of white mice with a mixture of antibotulinus diagnostic sera

Card 1/2 UDC: 616.981.552-02:[613.262:635.878

ACC NR: AP9007652

types ABCE was positive and the reaction with type specific serum B was also positive. *Cl. botulinum* type B was isolated from both batches of mushrooms. [WA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: 22Nov67

Card 2/2

ACC NR: AT9008866 SOURCE CODE: UR/3463/68/000/008/0130/0138

AUTHOR: Lysenko, A. Ya.; Semashko, I. N.; Fonareva, K. S.

ORG: none

TITLE: Structure and dynamics of world malaria areas

SOURCE: Geograficheskoye obshchestvo SSSR. Doklady otdeleniy i komissiy, no. 8, 1968. Meditsinskaya geografiya (Medical geography), 130-138

TOPIC TAGS: malaria, medical geography, epidemiologic map, medical conference

ABSTRACT: This paper was read at the Second Scientific Conference of Medical Geography, 25 November 1965. The Institute of Medical Parasitology and Tropical Medicine im. Ya. I. Martsinovskiy has been studying world distribution of parasitic diseases; this report discusses some of its findings on malaria areas of the world. The article discusses the establishment of malaria areas, the characteristics of malaria areas and the dynamics of "noso-areas" and their regression. Figure 1 shows primary, secondary, tertiary malaria areas and the

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ACC NR: AT9008866

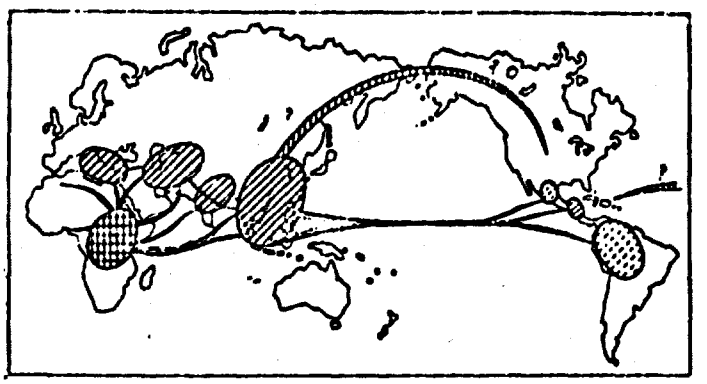

Fig. 1. Distribution routes of malaria in prehistoric and early historical times (according to Bruce Chwatt, 1965)

1. Primary area
2. Ancient Secondary areas
3. Recent secondary areas
4. Verified routes
5. Possible routes

possible means of spread of this disease. Orig. art. has: 2 figures. [WA-50; CBE No. 41]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 010/ OTH REF: 006

Card 2/2

ACC NR: AP9008224 SOURCE CODE: UR/0346/69/000/002/0025/0027

AUTHOR: Makarov, V. V.; Sergeyev, V. A.; Chumakov, M. P.

ORG: All-Union Institute of Veterinary Virology and Microbiology (Vsesoyuznyy institut veterinarnoy virusologii i mikrobiologii); Institute of Poliomyelitis and Viral Encephalitides AMN SSSR (Institut poliomyelita i virusnykh entsefalitov AMN SSSR)

TITLE: The effect of treatment of an infected culture on the reproductive cycle of smallpox vaccine virus (Vaccinia)

SOURCE: Veterinariya, no. 2, 1969, 25-27

TOPIC TAGS: smallpox vaccine, virus reproduction

ABSTRACT: In spite of differences in adsorption kinetics, after three hours 91—94% of smallpox vaccine virus (Vaccinia) was adsorbed independent of the temperature (22°C and 37°C) and cytopathic dose. Triple washing of cultures with a Versene solution (0.02% with subsequent neutralization (with antisera) and an additional double washing decreased the residual infectivity of vaccinia virus in the eclipse phase in culture fluid and cells to 0.00005 and 0.0048 TCD_{50} per cell.

Card 1/2 UDC: 619:616.988.13-095.6:636.22/.28

ACC NR: AP9008224

The greatest yield of virus in chick embryo culture in the period of maximum development of the cytopathic dose noted with an infective dose of 0.2-2 TCD_{50}/cell. Preliminary incubation of the infected culture at room temperature for 24 hours permitted synchronization of the infectious process and reduction of the latent period to 4 hours. The yield of virus after 9 and 16 hours of cultivation, respectively was 1 and 50 TCD_{50} per cell. Orig. art. has: 1 table.

[WA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 001/ OTH REF: 003

Card 2/2

ACC NR: AT9010095 SOURCE CODE: UR/3479/65/005/000/0290/0295

AUTHOR: Makhmudova, Sh. A.

ORG: none

TITLE: The functional state of the cardiovascular system in brucellosis

SOURCE: Baku. Azerbaydzhanskiy nauchno-issledovatel'skiy institut meditsinskoy parazitologii i tropicheskoy meditsiny. Trudy, v. 5, 1965, 290-295

TOPIC TAGS: brucellosis, cardiovascular system disease

ABSTRACT: The functional state of the cardiovascular system was studied in 36 patients with brucellosis by electrocardiography, roentgenoscopy, and changes in arterial pressure during the course of the disease. Myocardial disorders of a dystonic character were found in more than 50% of cases, including patients with primary and recurrent brucellosis. These changes were not connected only with the febrile state, because they persisted after the body temperature became normal. Disorders of vegetative innervation were

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ACC NR: AT9010095

also noted in primary and recurrent brucellosis. Endocarditis of the aortic valves was noted in two patients. [WA-50; CBE No. 41] [XF]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 010

Card 2/2

ACC NR: AT9010731 SOURCE CODE: UR/3490/66/023/000/0436/0438

AUTHOR: Makirov, K. A. (Head; Professor); Terlikbayev, A. A.; Kantarbayeva, Zh. K.; Blonskaya, L. I.; Khorsova, N. I.

ORG: Department of Microbiology /Head -- Professor K. A. Makirov/Alma-Ata State Medical Insitute (Kafedra mikrobiologii Alma-Atinskogo gosudarstvennogo meditsinskogo instituta)

TITLE: Susceptibility of chicken farm workers to infection by avian type mycobacteria

SOURCE: Alma-Ata. Gosudarstvennyy meditsinskiy institut. Trudy, v. 23, 1966, 436-438

TOPIC TAGS: disease vector, bird, epizootiology, human ailment, animal disease

ABSTRACT: Infection of humans and animals with avian-type tuberculosis is higher on farms because of the close contact with infected birds. Infection occurs via the aerogenic route, but infection via contact and eggs was also demonstrated. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 1/1

ACC NR: AT9007967 SOURCE CODE: UR/3471/67/006/000/0321/0324

AUTHOR: Malozemova, L. A.

ORG: none

TITLE: Experimental aerial chemical control of rusts in forested areas of Kokchetavskaya Oblast

SOURCE: Barmashino. Kazakhskiy nauchno-issledovatel'skiy institut lesnogo khozyaystva. Trudy, v. 6, 1967. Issledovaniya po lesnomu khozyaystvu i agrolesomelioratsii, 321-324

TOPIC TAGS: plant disease, plant disease control, chemical spraying

ABSTRACT: Rust control in the forests of the Barmashinskiy reservation and on a hunting reservation was controlled by aerial chemical spraying of 5% DDT dust with vofatox applied to first—third instar larvae. An application of 15 kg/ha gave 100% kills of first—third instar larvae. Untreated areas were found to have 10—85 cocoons per square m, illustrating the effectiveness of aerial spraying methods. However, there was evidence that some of the pests had developed resistance to the poison. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 011

Card 1/1

ACC NR: AP9006766 SOURCE CODE: UR/0346/69/000/001/0121/0124

AUTHOR: Malygin, A.

ORG: none

TITLE: All-Union Scientific-Industrial Conference on Respiratory Diseases in Poultry

SOURCE: Veterinariya, no. 1, 1969, 121-124

TOPIC TAGS: animal husbandry, respiratory system disease, respiratory virus disease, poultry disease

ABSTRACT: More than 200 veterinary scientists attended the conference on respiratory diseases in poultry held in Tbilisi. Recommended measures for liquidation of the disease included mechanized methods of insect and rat control, careful disinfection of large poultry farms to eliminate sources of infection, and improvement in feeding regimens and housing conditions to eliminate avitaminoses and upper respiratory catarrh due to exposure. Good therapeutic results in respiratory diseases were reported with aerosols of turpentine chloride, aluminum oxide and iodine monochloride. Other reports included aspects of transmission and therapy of mycoplasmosis, the effectiveness of 7% drugs for decontaminating eggs intended for incubation, vaccination and aerogenic immunization

Card 1/2

ACC NR: AP9006766

against pseudopest, variola and laryngotracheitis, the immunofluorescent method of identifying pathogens of respiratory diseases, viral and bacterial contamination of incubators, and aerosol vaccination against pseudopest in the northern Caucasus. [WA-50; CBE No. 41] [XF]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AT9010092 SOURCE CODE: UR/3479/65/005/000/0264/0267

AUTHOR: Mardanly, A. S.

ORG: Azerbaydzhan State Medical Institute im. N. Narimanov (Azerbaydzhanskiy gosudarstvennyy meditsinskiy institut)

TITLE: Epidemiology of amebiasis in Azerbaydzhan

SOURCE: Baku. Azerbaydzhanskiy nauchno-issledovatel'skiy institut meditsinskoy parazitologii i tropicheskoy meditsiny. Trudy, v. 5, 1965, 264-267

TOPIC TAGS: epidemiology, amebiasis, human ailment, dysentery

ABSTRACT: The role was investigated of oocyst carriers, fruits and vegetables, in the spread of amebiasis in Azerbaydzhan. Examination of 710 persons showed that, among normal persons (603) the infection rate was 1.3%, among convalescents the rate was 4.7%, and among persons suffering from gastrointestinal diseases the rate was 3.1%. The rate of infection with *Entamoeba histolytica* among food industry workers was 1.7%. Examination of fruits, vegetables and greens revealed no *Entamoeba histolytica* cysts but did show helminth eggs. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 015

Card 1/1

ACC NR: AT9009343 SOURCE CODE: UR/3481/67/000/015/0035/0040

AUTHOR: Martynova, G. G.

ORG: Moscow Forest Technology Institute (Moskovskiy lesotekhnicheskiy institut)

TITLE: Decreases in populations caused by coccoon parasites

SOURCE: Moscow. Lesotekhnicheskiy institut. Sbornik rabot, no. 15, 1967. Voprosy zashchity lesa (Aspects of forest protection), 35-40

TOPIC TAGS: population study, parasite, host parasite relationship, biologic pest control

ABSTRACT: Coccoon parasites can cause significant decreases in host populations. Of the parasites shown in Table 1, *Cratichneimon*

Table 1. Various causes of lethality in coccoons of tree parasites

Lethal factor	Lethality in %	No. affected by parasites in %
Parasites		
Cem. Tachinidae		
Blondellia nigripes Fall	14,5	15,5
Carsellia rutila B. B.	2,5	2,6
Totals	17,0	18,1

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ACC NR: AT9009343

Table 1. (Cont.)

Cem. Ichneumonidae		
Gratichneumon nigritarius Grav.	15,9	16,9
Heterocpelma calcator Wesm.	39,2	41,9
Erigorgus biguttatum Grav.	20,3	21,7
Totals	75,4	80,5
Secondary parasites	1,3	1,4
Total parasites	93,7	100,0
Predators (Elateridae)	3,0	
Bacterial diseases	0,1	
Total lethality	98,8	

nigritarius is the most common and widespread parasite. In general, parasites cause 93% of coccoon deaths. Orig. art. has: 1 table. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 009/ OTH REF: 009

Card 2/2

ACC NR: AP9006911 SOURCE CODE: CZ/9048/68/012/004/0431/0444

AUTHOR: Matejovska, V.

ORG: Institute of Epidemiology and Microbiology. Prague

TITLE: Staphylococcus surveillance in Czechoslovakia

SOURCE: Journal of hygiene, epidemiology, microbiology and immunology, v. 12, no, 4, 1968, 431-444

TOPIC TAGS: staphylococcus infection, bacteriophage, epidemiology, focus

ABSTRACT: Phage typing is made on all investigated staphylococci and the relation of phage types to antibiotic and Hg resistance is closely monitored by the National Reference Laboratory of the Institute of Epidemiology and Microbiology in Prague in an attempt to study the epidemiology and prevent the spread of staphylococcal infections. Phage typing is carried out by menas of the international set of bacteriophages obtained from the International Reference Laboratory in London. To define the possible further differentiation with more precision, an antibiotogram is drawn to differentiate between resistance and sensitive strains. Results of the surveillance of staphylococcal infections observed in 1964 and 1965 showed that the most affected age was that up

Card 1/2

ACC NR: AP9006911

to one year. Staphylococcal infections occurred in all regions of the country; prevalence of some phage types was clearly demonstrated. A regular tendency directed to an increase of new types accumulating in groups B5/77 Ad and NT was noted. Orig. art. has: 18 tables and 3 figures. [WA-50; CBE No. 41] [XF]

SUB CODE: 06/ SUBM DATE: 23Sep66/ OTH REF: 005

Card 2/2

ACC NR: AP9008000 SOURCE CODE: UR/0479/68/000/010/0021/0022

AUTHOR: Mel'kumyants, N. B.

ORG: Republic Sanitation and Epidemiological Station /Chief Physician V. I. Mamayev (Respublikanskaya sanitarno-epidemiologicheskaya stantsiya)

TITLE: Typhoid-like disease caused by *Salmonella oranienburg*

SOURCE: Zdravookhraneniye Turkmenistana, no. 10, 1968, 21-22

TOPIC TAGS: salmonella, etiology

ABSTRACT: An unusual case of salmonellosis, characterized by sporadic typhoid-type symptoms but caused by *S. oranienburg*, a common agent of food poisoning, was reported. The patient, a child of 8, was hospitalized with a temperature of 38.8°C, rapid pulse, pale skin, severe headache, and weakness. Bacteria could not be isolated from urine or feces, but *S. oranienburg* was recovered from the blood on the sixth day of illness. The agglutination reaction with patient serum was positive in a titer of 1:3200. Treatment with streptomycin and chloramphenicol was successful. The source of infection was

Card 1/2

ACC NR: AP9008000

never determined, as there were no cases of salmonellosis in the patients' home or school. [MA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AP9007226 SOURCE CODE: UR/0433/68/000/012/0012/0014

AUTHOR: Mel'nikov, N. N. (Doctor of chemical sciences)

ORG: VNIIKhSZR

TITLE: Chemical control and toxicology

SOURCE: Zashchita rasteniy, no. 12, 1968, 12-14

TOPIC TAGS: toxicology, pest control, chemical pest control method, insecticide application

ABSTRACT: Methods of chemical pest controls and their toxicology were discussed at the 13th Entomological Congress. Separate seminars dealt with: chemical control and toxicology; physiology and biochemistry; biophysics and bionics; biological controls; agricultural entomology and acarology; forest entomology; medical and veterinary entomology and acarology. More than 150 reports were presented in all, of which 70 dealt with chemical pest control and toxicology. Most of the experts consider that pest control will be impossible without some means of chemical control even though the risks are known. A suggestion was made that, in the future, biomethods be combined with pesticides. A new development in chemical pest control is that of attractants which, when present in minimal concentrations, are effective over a 1—4 km square

Card 1/3 UDC: 632.95

ACC NR: AP9007226

area. Thus, some insect species are able to detect the attractants in concentrations of 10^{-13} gram, and even less in some cases, a concentration for below the toxic level. These attractants can lure the insects to a baited trap. They have been tested successfully on cotton pests, the Siberian silk worm, a number of moths and miscellaneous insects. Chemical sterilization was also discussed and its possible application to control of rapidly multiplying insects considered. Some of the compounds suggested were a number of organophosphorus compounds and derivatives of ethylenimine and methylethyleneimine. These chemosterilants are generally very toxic for vertebrates and must be applied with care. The discussions of chemical toxicology consisted of a general discussion; new preparations and the use of pesticides; synergism; the type of action and metabolism of these compounds; attractants and repellants; and the resistance of insects and ticks to pesticides and means of avoiding this. Other reports given by Soviet delegates to the Congress were Ya. N. Kozlova: Residual Insecticides and their Effect on Predators and Agricultural Animals; P. V. Sazonova: Toxicological Studies of Granulated Insecticides; G. Braasha: Attractant and Repellant Properties of Pesticides and F. M. Ustenskiy: The Effectiveness of Granulated Insecticides and Acaricides Against Cotton Pests. The relationship between structure and insecticidal activity of oximecarbamates and their analogs and phosphanate analogs were discussed. Some of these newly synthesized analogs, for example

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ACC NR: AP9007226

those of mercarbam, are more toxic than the parent compound. A. Stankovich and D. Kamperaga discussed new insecticides which displayed both insecticidal and fungicidal properties. The problem of synergism in a series of organophosphorus compounds was discussed by the Bulgarian scientists A. Staneva, S. Gayer, Vh. Drabek, and A. D. Balevskiy. Papers on the action mechanisms of insecticides were presented by S. A. Ruslavtseva, P. V. Popova, and A. S. Sedykh, who reported on a study of esterases specific for the common housefly resistant to organophosphorus insecticides. F. A. Zhuravskaya presented a paper on the effect of insecticides on insect metabolism--cotton pests.
[WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 3/3

ACC NR: AP9007432 SOURCE CODE: BU/0019/68/000/004/0319/0323

AUTHOR: Mikhovski, M.

ORG: KHEI

TITLE: Phage resistance and antibiotic resistance in *Sh. sonnei*

SOURCE: Epidemiologiya, mikrobiologiya i infektsiozni bolesti, no. 4, 1968, 319-323

TOPIC TAGS: Shigella, antibiotic resistance, dysentery

ABSTRACT: During epidemics *Shigella sonnei* strains have a high phage resistance -- 39% in 1963 and 37.6% in 1966; while, in non-epidemic times, phage resistance is lower -- 14% in 1964 and 6% in 1965. Resistant strains were treated with streptomycin, chlorocide, sigmamycin, and synthomycin; 5—12 days were required for a cure. However, antibiotic resistance in this organism was consistently higher, generally running: streptomycin 35.2%, chloricydin 41.1% in some regions. Orig. art. has: 4 tables. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: 00Mar68 ORIG REF: 008

Card 1/1

ACC NR: AT9009120 SOURCE CODE: UR/3473/67/000/018/0054/0060

AUTHOR: Misnik, Yu. N.

ORG: none

TITLE: The combined action of octachlorodipropyl ether and some insecticides from various classes of chemical compounds on the housefly (Musca domestica)

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut. Trudy, no. 18, pt. 2, 1967, 54-60

TOPIC TAGS: insecticide application, insecticide biologic effect, pest control

ABSTRACT: A binary mixture of pyrethrin with octachlorodipropyl ether in 1:10 and 1:20 ratios is synergistic with respect to the housefly sensitive to insecticide mixtures and in 1:20 ratios, is synergistic to more resistant and polyresistant flies. The mixture showed an insignificant effect in the remainder of the tests. A binary mixture of the γ-isomer of HCCH and octachlorodipropyl ether has a synergistic effect on polyresistant flies, but is not effective against other flies used in the experiment. Mixtures of octachlorodipropyl ether with DDT, Dipterex and DDVP are not very effective. Therefore the use of binary

Card 1/2

ACC NR: AT9009120

mixtures of pyrethrin and the γ-isomer of HCCH with octachlorodipropyl ether is recommended for control of sensitive and some resistant colonies of houseflies. Orig. art. has: 4 tables. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AT9009121 SOURCE CODE: UR/3473/67/000/018/0060/0064

AUTHOR: Misnik, Yu. N.; Sukhova, M. N.; Tsetlin, V. M.; Zhuk, Ye. B.; Starkov, A. V.; Lurik, B. B.

ORG: none

TITLE: The effect of some insecticides and their mixtures with octachlorodipropyl ether (ODE) in aerosol form on the housefly (*Musca domestica*)

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut. Trudy, no. 18, pt. 2, 1967, 60-64

TOPIC TAGS: disease vector, disease carrying insect, fly, insecticide effect, chemical aerosol

ABSTRACT: The effects of the insecticides and synergists shown in Table 1 were determined with specimens of houseflies (*Musca domestica*) obtained from widely separated points. Houseflies resistant to the individual insecticides tested were also resistant to them when applied in aerosol form. Mixtures of insecticides, containing three components -- pyrethrin, the γ-isomer of HCCH and ODE in ratios of 1:16:8 -- can be used as an aerosol for disinfection of an area infested

Table 1. Effect of insecticides and their mixtures with ODE (a synergist) in aerosol form on the housefly

Preparations studied	Standard laboratory insect culture		Orekhovskiy culture		Tashkent culture		Mytishchinskiy culture	
	1	2	1	2	1	2	1	2
Pyrethrin	260		745		755		1474	
γ-Isomers of HCCH	3422		20995		32468		17913	
ODE	3122		8194		13883		26349	
γ-Isomer of HCCH + pyrethrin	2851	51.1	13519	38.5	2981	192.2	7818	103.5
γ-Isomer of HCCH + ODE	4371	75.9	17261	80.1	24296	92.4	16794	120.8
Pyrethrin + ODE	2378	59.1	4930	78.7	11298	41.9	7429	123.4
Pyrethrin + γ-isomer of HCCH + ODE	1315	171.[illegible]	[illegible]	60.7	9647	108.2	7538	177.0

Legend 1—C · 100 [illegible] min

2— Cotoxicity coefficient

ACC NR: AT9009121

with the housefly, since this mixture is a synergistic mixture and is effective at eliminating colonies of flies resistant to the insecticides alone. Orig. art. has: 1 table. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 002/ OTH REF: 004

Card 3/3

ACC NR: AP9009528 SOURCE CODE: UR/0438/69/031/001/0047/0052

AUTHOR: Noskovets', S. M.; Anokhin, V. M.

ORG: Institute of Microbiology and Virology AN URSR (Institut mikrobiologii i virusologii AN URSR)

TITLE: Effect of radiation on X-virus accumulation and potato development

SOURCE: Mikrobiolohichnyy zhurnal, v. 31, no. 1, 1969, 47-52

TOPIC TAGS: potato X-virus, potato, plant virus

ABSTRACT: Doses of gamma- or x-rays which stimulate potato growth inhibit the replication of X-virus when other viruses are present in the plant. This was shown by comparison to non-irradiated controls. When tubers were treated with neutrons, the radiostimulation effect was absent and serological titers and infectivity indices of potato X-virus were the highest. There is a possibility of harmful virus mutation as a result of radiation treatment. Orig. art. has: 3 tables. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: 18Jan68/ ORIG REF: 013/ OTH REF: 003

Card 1/1

ACC NR: AP9007277 SOURCE CODE: UR/0475/68/000/010/0068/0071

AUTHOR: Mostovoy, S. I. (Professor; Member; Kiev); Treshchinskiy, A. I. (Professor; Member; Kiev); Trotsevich, V. A. (Member; Kiev); Shchegel'skiy, D. A. (Member; Kiev); Yashchuk, F. S. (Member; Kiev); Pogodayev, B. G. (Member; Kiev); Samonin, N. M. (Member; Kiev)

ORG: Kiev Institute of Postgraduate Medicine (Kiyevskiy institut usovershenstvovaniya vrachey); Kiev Regional Clinical Hospital (Kiyevskaya oblastnaya klinicheskaya bol'nitsa)

TITLE: Clinical and experimental studies of the effect of phentanil, dihydrobenzperodol and thalamonal on pain sensitivity and subjective sensations of man

SOURCE: Vrachebnoye delo, no. 10, 1968, 68-71

TOPIC TAGS: psychotropic drug, vestibular apparatus, sensation

ABSTRACT: Three drugs used in treating disorders of the vestibular apparatus and in the surgical restoration of hearing possess neuroleptoanalgesic properties. They are phentanil, dehydrobenzperidol and thalamonal. They affect pain sensitivity and objective

Card 1/2 UDC: 612.844:612.821.8:616-092.4:576.8-098

ACC NR: AP9007277

sensations in humans. The maximum analgesic effect of these drugs after 0.05—5 mg doses occurs after 30 min. [MA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none

ACC NR: AP9007195 SOURCE CODE: UR/0399/68/000/011/0094/0100

AUTHOR: Musabayev, I. K.

ORG: Uzbek Scientific Research Institute of Epidemiology, Microbiology and Infectious Diseases, Tashkent (Uzbekskiy nauchno-issledovatel'skiy institut epidemiologii, mikrobiologii i infektsionnykh zabolevaniy)

TITLE: Features of the clinical course, some biochemical and immunological indices in typhoid and paratyphoid fevers

SOURCE: Sovetskaya meditsina, no. 11, 1968, 94-100

TOPIC TAGS: typhoid fever, salmonella, bacterial disease, paratyphoid fever, acquired immunity, natural immunity, vaccine, antibiotic drug effect

ABSTRACT: An analysis of the course of typhoid and paratyphoid fevers for a 10-year period showed that the highest incidence was among subjects 15—19 yr (29.6%) and 20—29 yr (40.8%), that the diseases were characterized by a milder course, and that severe forms of the diseases decreased. The introduction of combined typhoid-paratyphoid vaccine therapy resulted in a decrease in the number of bacterial carriers, a reduction in the number of cardiovascular complications among patients, and a decrease in the incidence of recurrences.

Card 1/2 UDC: 616.927-036+616.927-07

ACC NR: AP9007195

Combined vaccine—antibiotic therapy was associated with nonspecific disorders of trace elements in the body, and a vitamin B_{12} deficit. The properdin and complement titers and phagocytosis were increased following combined therapy. There were no changes in the immunochemical properties of blood proteins of patients with typhoid and paratyphoid fever; however, qualitative changes were noted in α- and β-globulin fractions. These changes could not be demonstrated in γ-globulin and albumin fractions. A disproportional change in blood and urine amino acids was noted during the course of the diseases; there was an increased excretion in the urine of most of the amino acids investigated. [WA-50; CBE No. 41] [XF]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 012/ OTH REF: 001

Card 2/2

ACC NR: AP9008050 SOURCE CODE: UR/0016/69/000/001/0009/0012

AUTHOR: Noskov, F. S.; Avdeyenko, M. M.; Ertte, A. P.

ORG: Military Medical Academy im. S. M. Kirov (Voyenno-meditsinskaya akademiya)

TITLE: Conjugates of serum albumins with azo dyes and their use for removing nonspecific reactions during immunofluorescent analysis

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 1, 1969, 9-12

TOPIC TAGS: fluorescent microscopy, blood serum

ABSTRACT: A new method of obtaining conjugates of serum albumin with azo dyes (acid chromium black, acid chromium black C, acid chromium red and acid violet C) is described. These conjugates can be used to contrast the nonspecific fluorescence which arises when antibodies are conjugated with fluorescein isothiocyanate. Conjugation of serum protein with rhodamine derivatives is also a good way to contrast albumin with antibodies, but fluorochromes of suitable quality are not always available and the method is difficult for laboratory workers.

Card 1/2 UDC: 576.8.077.3:576.8.073.4

ACC NR: AP9008050

The suggested method is simple, easy and cheap. Conjugates of serum albumins with acid chromium red and acid chromium black C color the ground of preparations brownish-yellow or reddish-orange, respectively. Conjugates of serum albumins with acid chromium black and acid violet C block autofluorescence of tissues and also nonspecific adsorption of labeled antibodies. These conjugates do not fluoresce in blue-violet light. The dyes used combined well with serum albumins, did not denature them, and were stable upon storage with conjugates. Orig. art. has: 1 figure. [WA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: 15Apr68/ ORIG REF: 004/ OTH REF: 001

Card 2/2

ACC NR: AT9009112 SOURCE CODE: UR/3473/67/000/018/0013/0017

AUTHOR: Odinets, A. A.

ORG: none

TITLE: Experimental use of carbophos in combating fleas

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionyy institut. Trudy. no. 18, pt. 2, 1967, 13-17

TOPIC TAGS: disease vector, flea, pest control, pesticide application

ABSTRACT: Carbophos has been used successfully in combating fleas as a 0.5% water emulsion and as a 2, 4 and 10% dust. It has to be prepared before each use since the water emulsions last for about 8 hr. In the tests, fleas (*Pediculus humanus*) were kept in a chamber at which the temperature was 30°C and the relative humidity 66—70%. Results were evaluated after 24 hr and each experiment was repeated at least four times. The first series of experiments was designed to test the effectiveness of a carbophos emulsion at different concentrations. Experiments showed that the most effective method of flea control, one which produced 100% kill, was exposure for 0.05% water emulsion for five min. Carbophos was compared with DDT and was significantly more effective. Carbophos produced 100% kill of insects (0.0011 g/m^2) and

Card 1/2

ACC NR: AT9009112

Table 1. Insecticidal activity for fleas of various dilusions of carbophos in water emulsions after three hr of exposure

Solution no.	ADV in the concentrate (in %)	No. of insects	% Kill of insects per quantity of emulsions in g/m^2			
			0,023	0,071	0,11	0,23
1*	32,5	600	12,4±3,00	27,5±1,07	80±3,64	10 ±0,28
2*	[illegible]	700	20,0±3,37	32,5±3,95	78,7±3,3	98,7±0,30
3*	33,1	600	8,7±2,55	28,2±3,01	67,5±4,27	90,0±2,73
5*	30,0	600	8,7±2,55	28,5±1,12	83,7±3,37	100±0,28
5*	31,5	600	13,6±3,12	35,0±4,35	93,7±2,21	100±0,28
5*	30,0	700	15,0±3,01	27,5±2,75	77,5±3,52	100±0,28

DDT 0.23 g/m^2 at the same exposure time. Toxicity studies on rabbits, white mice and rats showed that they can withstand 5% dust. This concentration is recommended for flea treatment. Orig. art. has: 4 tables.

[WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 007/ OTH REF: 003

Card 2/2

ACC NR. AP9007640 SOURCE CODE: UR/0325/69/000/001/0041/0044

AUTHOR: Omarov, Sh. M.

ORG: none

TITLE: Anticoagulating properties of bee and cobra venom

SOURCE: Nauchnyye doklady vysshey shkoly. Biologicheskiye nauki, no. 1, 1969, 41-44

TOPIC TAGS: bee venom, snake venom, anticoagulant

ABSTRACT: Bee and snake venom slow the clotting of blood; lengthen prothrombin time and inhibit thromboplastic activity of the blood. The inhibition of blood clotting in vitro occurs at the expense of inactivation of tissue thromboplastin and flowing of plasma thromboplastin formation. Serum factors V, VII, VIII, XI, XII, are also inhibited. The data from thromboelastography show that lower fibrinogen content are related to changes in thrombocyte activity and lessened thromboplastin formation. Orig. art. has: 2 tables and 1 figure. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: 13Jun67/ ORIG REF: 006/ OTH REF: 010

Card 1/1 UDC: 547.993+638.178.8

ACC NR: AT9007958 SOURCE CODE: UR/3472/67/043/000/0106/0108

AUTHOR: Ostapenko, O. F.

ORG: Department of Hospital Therapy, Kirgiz State Medical Institute (Kafedra gospital'noy terapii; Kirgizskiy gosudarstvennyy meditsinskiy institut)

TITLE: The problem of some biochemical shifts in the body caused by the toxic effect of the chemical poison granosan

SOURCE: Frunze. Kirgizskiy gosudarstvennyy meditsinskiy institut. Sbornik nauchnykh rabot. v. 43, 1967. Vliyaniye na organizm fizicheskikh i khimicheskikh faktorov vneshney sredy (Effect of physical and chemical factors of the external environment on the organism); sbornik rabot po materialam nauchnoy konferentsii, 106-108

TOPIC TAGS: poison effect, insecticide intoxication

ABSTRACT: Biochemical shifts in 151 persons poisoned by the organomercury compound, granosan were investigated. Of these, 132 patients were treated soon after poisoning and the other 19 at some time after poisoning. Blood samples were taken from 104 of the patients of which 37 were men and 67 were women between the ages of 2[illegible]—75 yrs. These patients were investigated at the height of intoxication, during the

Card 1/2

ACC NR: AT9007958

recovery period, and between 1—3.5 yr after the first poisoning symptoms appeared. At the height of intoxication the protein content of the blood was abnormal in the majority of the patients. More than two-thirds of them had disproteinemia, characterized by a lowered albumin content (4.0—2.5 g%) in 41 persons, and an increase in globulin (from 2.65—4.15 g%) in 73 persons; these occurred at the expense of the gamma-fraction. In 28 of the patients total protein decreased from 6.5—5.0 g%. Forty-three people experienced hyperbilrubinemia. An increase in blood nitrogen was observed in 55 persons. Blood calcium and chlorides did not change, but remained at the upper normal limit in most persons. Cholesterol content increased, and most patients experienced hypertonia, headaches, reflex disorders, lowered arterial pressure and other typical symptoms of granosan poisoning. The cholesterol content of the blood and the prothrombin index decreased. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AP9007237 SOURCE CODE: UR/0433/68/000/012/0054/0054

AUTHOR: Panchukova, V. S. (Senior research associate); Grigor'yeva, A. T. (Senior laboratory technician)

ORG: KazIZR

TITLE: The resistance of wheat to smut

SOURCE: Zashchita rasteniy, no. 12, 1968, 54

TOPIC TAGS: wheat, plant disease

ABSTRACT: Study of the resistance of 30 varieties of spring wheat to different geographical populations of wheat smut collected from Alma-Ata, Karaganda, Ural, and Semipalatinsk Oblasts in 1964—1966 showed that the wheat variety Kyzl-bas was highly resistant to the fungus. The Markiz variety was only 2.6% damaged, and the Saratovskaya 29 variety was nonsusceptible to all except 2 fungus populations. Resistant varieties of soft wheat included the Slava and Zolotaya volna varieties (the latter was only 1.6% damaged during tests in 1966). The varieties tested were very resistant to infection, but sometimes showed differing resistance to different fungus populations.
[WA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: none

Card 1/1 UDC: 632.4:582.285.1:633.11

ACC NR: AP9007431 SOURCE CODE: BU/0019/68/000/004/0316/0319

AUTHOR: Petrov, D.

ORG: Hygiene and Epidemiology Institute (Khigiyenno-epidemiologichen institut)

TITLE: Distribution and epidemiological significance of enteropathogenic *E. coli* in various stored food products of the Shumen region

SOURCE: Epidemiologiya, mikrobiologiya i infektsiozni bolesti, no. 4, 1968, 316-319

TOPIC TAGS: epidemiology, dysentery, E. coli

ABSTRACT: Enteropathogenic strains of *E. coli*, serotype OK, are widely distributed in stored food products in the Shumen region. The most common serotype found during the research period was 0135. Milk and dairy products were the most common source of pathogenic *E. coli*. This was usually caused by improper sanitation methods at milk processing plants and by the fact that some strains of *E. coli* were highly resistant to pasteurization. Orig. art. has: 1 table.
[WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: 00Jul68/ ORIG REF: 004/ OTH REF: 003

Card 1/1

ACC NR: AT9010077 SOURCE CODE: UR/3479/65/005/000/0091/0094

AUTHOR: Pirumov, K. N.

ORG: Institute of Epidemiology and Hygiene. Ministry of Public Health, ArmSSR (Institut epidemiologii i gigieny minzdrava ArmSSR)

TITLE: Organizing means of combatting malaria and the scientific and methodological aids facilitating its liquidation in the Soviet Union

SOURCE: Baku. Azerbaydzhanskiy nauchno-issledovatel'skiy institut meditsinskoy parazitologii i tropicheskoy meditsiny. Trudy, v. 5, 1965, 91-94

TOPIC TAGS: malaria, epidemic, public health

ABSTRACT: Historical aspects of malaria control in the Armenian SSR since 1920 are reviewed. Coordination of all efforts began in 1927 with establishment of the Transcaucasian Malaria Committee of the Transcaucasian Council of People's Commissars and similar Committees of Councils of People's Commissars in Transcaucasian Republics. A department of tropical diseases was established at the Yerevan Medical Institute in 1927. This later became the Institute of Malaria and Medical Parasitology and remained in existence until 1955. New

Card 1/2

ACC NR: AT9010077

organizational methods for malaria control have been introduced into the Armenian SSR; these methods should be used for control of all parasitic and infectious diseases. [WA-50; CBE No. 41] [XF]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AT9009415 SOURCE CODE: UR/3473/67/000/018/0038/0043

AUTHOR: Polezhayev, V. G. (Candidate of biological sciences); Konosh, L. I.; Zalezhskiy, G. V.; Nikitin, G. N.; Vel'tishcheva, V. V.; Ioffe, G. D.; Meyster, B. V.; Paas, U. A.; Semenov, F. A.; Bessmertnaya, R. K.; Vostrikov, L. A.; Sovetova, M. I.

ORG: none

TITLE: The use of zinc salt complex in rodent control

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut. Trudy, no. 18, pt. 3, 1967, 38-43

TOPIC TAGS: rodent, poison effect, raticide, toxicology

ABSTRACT: A zinc salt of dimethyldithiocarbamic acid appears to be a good rodent repellent since field tests of this compound reduced a rodent population and prevented resettling of their habitat. This compound has been successful where previous efforts at chemical rodent control have failed. In one test, the treatment of objects with this compound repelled rodents for twelve months. This compound is most effective when applied to dry places. Orig. art. has: 2 tables. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 002/ OTH REF: 007

Card 1/1

ACC NR: AP9005099 SOURCE CODE: UR/0370/68/031/005/0553/0556

AUTHOR: Prozorovskiy, V. B.

ORG: Central Scientific Research Laboratory, Leningrad Pediatric Medical Institute (Tsentral'naya nauchno-issledovatel'skaya laboratoriya Leningradskogo pediatricheskogo meditsinskogo instituta)

TITLE: Study of the effectiveness of cholinolytics as antidotes during poisoning of mice and rats with anticholinesterase compounds

SOURCE: Farmakologiya i toksikologiya, v. 31, no. 5, 1968, 553-556

TOPIC TAGS: cholinolytic, cholinesterase inhibitor

ABSTRACT: Differences in the effectiveness of cholinolytics as antidotes during poisoning of mice and rats with various choline-potentiating agents (such as proserine) depend chiefly on the degree of N-effects (nicotine-like) during intoxication. The order of substances by degree of N-effects and relative capacity to excite N-cholinoreactive systems under the influence of lethal doses of choline-potentiating agents is as follows: ezerin, phosphacol, armin, galanthamine, pyrophos and proserine. To increase the effectiveness

Card 1/3 UDC: 615.785.4-015.25:615.786

ACC NR: AP9005099

Table 1. LD_{50} of proserine (in mg/kg) upon intraperitoneal injection of mice with preliminary (15 min before) subcutaneous use of cholinolytics in a dose of 1/10 D/M (other doses are shown in brackets)

Cholinolytics	Dose (in mg/kg)	LD_{50} of proserine		Increase of LD_{50}
		Control	After cholinolytic	
Atropine	20	0,61±0,16	0,77±0,13	1,26
	(50)	0,40±0,06	0,82±0,11	2,05
	(100)	0,40±0,06	0,96±0,08	2,40
Scopolamine	10	0,61±0,16	0,31±0,08	2,14
Metamysil	5	0,61±0,16	1,56±0,53	2,56
Amysil	8	0,61±0,16	1,61±0,36	2,64
Metacin	10	0,61±0,16	1,52±0,52	2,50
Pedifen	15	0,36±0,10	0,56±0,08	1,56
Pachycarpine	10	0,61±0,16	0,60±0,09	0,98
Dimecoline	5	0,61±0,16	0,70±0,06	1,15
Dicoline	5	0,61±0,16	0,87±0,13	1,43
Gangleron	5	0,41±0,05	0,56±0,12	1,38
Hexonium dilodide	10	0,61±0,16	1,17±0,10	1,93
d-Tubocurarine	0,02	0,36±0,10	0,68±0,18	1,89

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Table 1. (Cont.)

Tropacin	3	0,37±0,12	0,56±0,19	1,51
Aprophen	6	0,61±0,16	1,14±0,06	1,87
Mepanit	(5)	0,44±0,03	0,74±0,04	1,69
	9	0,36±0,10	1,42±0,08	3,91
Arpenal	(25,0)	0,44±0,03	3,10±0,10	7,05
	(0,5)	0,44±0,03	0,45±0,04	1,02
	(5,0)	0,44±0,03	1,32±0,06	3,00
Methylaprophen[1]	10	0,36±0,10	3,30±0,47	9,17
	6	0,61±0,16	3,34±0,76	5,48

[1]Compounds containing quaternary nitrogen

of atropine as an antidote during poisoning with the choline-potentiating substances listed above, it should be mixed with arpenal or a similar preparation. Experimental results are summarized in Table 1. Orig. art. has: 2 tables. [WA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: 08Apr67/ ORIG REF: 001/ OTH REF: 001

ACC NR: AP9007196 SOURCE CODE: UR/0399/68/000/011/0106/0110

AUTHOR: Pupkevich-Diamant, Ya. S. (Head of laboratory; Candidate of medical sciences); Boguslavskiy, V. S. (Member of laboratory)

ORG: Second Infectious Disease Hospital /Chief Physician B.L. Nimevich/ and Laboratory /Head--Candidate of Medical Sciences Ya. S. Pupkevich-Diamant/, Novocherkassk Pulmonary and Surgical Sanitarium /Chief Physician Ya. G. Rozinov/ (2-ya Infektsionnaya bol'nitsa i laboratoriya Novocherkasskogo legochno-khirurgicheskogo sanatoriya)

TITLE: Aspects of the epidemiology and clinical course of leptospirosis in Novocherkassk

SOURCE: Sovetskaya meditsina, no. 11, 1968, 106-110

TOPIC TAGS: leptospirosis, epidemiology

ABSTRACT: Leptospirosis in Novocherkassk has been incorrectly diagnosed for a long time. In the 1958—1965 period, 30 sporadic cases of leptospirosis were reported. Leptospirosis caused by *L. bataviae* was first recorded in Rostov Oblast. (Leptospirosis caused by *L. bataviae* is rarer than other types in the Soviet Union). Natural conditions around Novocherkassk favor the development and spread of

ACC NR: AP9007196

leptospirosis, since pig farms, cattle pastures and summer pastures are located along river banks. People become infected while swimming in the river. The clinical course of leptospirosis infections caused by different serotypes of *Leptospira* in this area were identical. Tetracyclines ensured a mild course of the disease. [WA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 018/ OTH REF: 006

Card 2/2

ACC NR: AT9009146 SOURCE CODE: UR/3473/67/000/018/0083/0084

AUTHOR: Ramkova, N. V. (Candidate of medical sciences)

ORG: none

TITLE: Effectiveness of aerosols of some foreign compounds as water decontaminants

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut. Trudy, no. 18, pt. 1, 1967, 83-84

TOPIC TAGS: decontamination, disinfectant, bacteriostasis, chemical aerosol

ABSTRACT: The effectiveness of several classes of disinfectants: chlorine-containing compounds (chloramine, dichloramine, hypochlorites); phenol derivatives (resorcin and others); glycolates, and organic acid compounds were made in the form of aerosols. Tests were conducted in an aerosol chamber with a 2 m^3 capacity. A bacterial culture was released (*staph. aureus* strain 906); the average density of particles was about 12 $\pm$ 5 million per m^3 of air. The aerosol had settled 12% after 10 min and 66.9% after 20 min. Disinfection solutions were sprayed into the chamber using a french spraying apparatus in 5—7 sec bursts; 20 mm samples were taken for analysis. Several of the organic acids

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ACC NR: AT9009146

were the most effective disinfectants, removing about 94—99.7% microbes from the air. Full kills came after 20 min using concentrations of these acids from 537—1970 mg/m^3. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AT9009143 SOURCE CODE: UR/3473/67/000/018/0065/0071

AUTHOR: Fogatina, L. N.; Foddubnaya, L. T.

ORG: none

TITLE: Toxic substances and microflora of feces during storage

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut. Trudy, no. 18, pt. 1, 1967, 65-71

TOPIC TAGS: toxicology, microorganism, preservation method

ABSTRACT: Feces samples which have been stored are sources of various toxic substances: hydrocarbons, ammonia and its compounds, phenols, volatile fatty acids, nitrous oxide and carbon dioxide. The number of microorganisms in the feces samples does not diminish upon storage, in fact sporulating microorganisms, *E. coli* and cocci increased. Feces were preserved in preparation B retained 99.99% of the microflora. However, the production of toxic substances, ammonia, nitrous oxides, and hydrocarbons decreased significantly and the evolution of carbon dioxide increased. Orig. art. has: 4 tables. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 1/1

ACC NR: AP9007650 SOURCE CODE: UR/0240/69/000/001/0091/0093

AUTHOR: Romanenko, N. A.; Gorbov, V. A. (Moscow)

ORG: none

TITLE: Sanitary evaluation of underground filtration equipment

SOURCE: Gigiyena i sanitariya, no. 1, 1969, 91-93

TOPIC TAGS: biologic agent filter, sanitary engineering, hygiene

ABSTRACT: The freeing of soil from helminth ova, which are usually present to a depth of 0.8—2 m, depending on the soil type, is discussed. Any water-soil filtration method increases the danger of deep penetration of viable helminth ova and unpurified outflow from such an installation could also contaminate new surface areas with these ova. An underground channel purification system is highly effective at removing helminth ova and such a setup was tested in the Moscow region. Ascarid ova often preserve their viability in soil up to 5—7 yr. In an investigation of a standard underground filtration system, 28 helminth ova were discovered. In six soil samples taken in wet ground, 177 ascarid ova were found, of which 84 were still viable. *E. coli* was also found in 90—95% of the examined samples. This sewage is often more dangerous from an epidemiological point of view since it concentrates

Card 1/2 UDC: 628.364:614.455:576.851.49](049.3)

ACC NR: AP9007650

viable helminth ova and other organisms. A soil purification method described by the Institute of Medical Parasitology and Tropical Medicines in 1965—1967 gave good results. This system was especially adapted to remove ova. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: 11Jun68

Card 2/2

ACC NR: AP9007233 SOURCE CODE: UR/0433/68/000/012/0034/0035

AUTHOR: Ryakhovskiy, V. V. (Candidate of agricultural sciences)

ORG: Lugansk Experimental Agricultural Station (Luganskaya opytnaya sel'skokhozyaystvennaya stantsiya)

TITLE: Extermination of cabbage aphids in primary foci

SOURCE: Zashchita rasteniy, no. 12, 1968, 34-35

TOPIC TAGS: plant disease control, pest control, pesticide

ABSTRACT: Foci of cabbage aphids are the cabbage stumps, shoots, and leaf rosettes remaining after the plants are harvested, and the soil of seedboxes for cabbage seedlings. These provide an ideal environment for development of the larvae which hatch from eggs remaining on the plant remnants during the winter. A 2.5% metaphos dust applied to affected cabbage plants during the early phase of their development resulted in 98—99% death of aphids. Young cabbage plants should be treated with a 12% hexachlorane dust before transplanting to prevent development of an aphid focus. [WA-50; CBE No. 41] [XF]

SUB CODE: 06/ SUBM DATE: none

Card 1/1 UDC: 632.9:595.752.2:635.34

ACC NR: AT9009155 SOURCE CODE: UR/3473/67/000/018/0156/0163

AUTHOR: Serebryakova, Ye. K.; Subbotin, A. A.

ORG: none

TITLE: Decontamination of infections caused by Coxsackie virus

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut. Trudy, no. 18, pt. 1, 1967, 156-163

TOPIC TAGS: Coxsackie virus, human ailment, disease therapeutics

ABSTRACT: Linens and other material infected with Coxsackie B_3 virus were disinfected by exposure to 1% chloramine for 3 hr, a 3% solution for 30 min, or a 0.5% activated solution for 30 min. Linen also contaminated with feces required longer exposure and stronger solutions (3% for 2 hr). Heating the contaminated objects for 30 min (boiling) also inactivated the virus completely. Boiling glass vessels for 10 min was also effective. Paraformalin was also used to disinfect rooms. Orig. art. has: 3 tables. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 007

Card 1/1

ACC NR: AT9010730 SOURCE CODE: UR/3490/66/023/000/0207/0212

AUTHOR: Sergazin, A. G. (Docent; Head); Balmukhanov, S. B. (Professor)

ORG: Department of Roentgenology and Radiology [Head--docent A. G. Sergazin] Alma-Ata State Medical Institute (Kafedra rentgenologii i radiologii Alma-Atinskogo gosudarstvennogo meditsinskogo instituta)

TITLE: Effect of membrane thickening substances of toad poison on summation permeability of vessel-tissue barriers and sorption capacity in tissues of irradiated animals

SOURCE: Alma-Ata. Gosudarstvennyy meditsinskiy institut. Trudy, v. 23, 1966, 207-212

TOPIC TAGS: toad poison, poison effect, radiation biologic effect

ABSTRACT: Preliminary investigations showed that when toad poison is injected subcutaneously in 0.5 ml/kg doses (dilution 1:1000/hr) before injection of P^{32} in irradiated rabbits, the poison inhibits the penetration of labeled phosphorus into the stomach and through tissue-vessel barriers. Further experiments on the sorptive properties of the poison were arranged as follows. Rabbits which had been given P^{32} and irradiated with 450 r were given toad poison (0.5 ml/kg in

Card 1/2

ACC NR: AT9010730

1:1000 dilution) either before or after administration of P^{32}. One hour after administration of P^{32}, the rabbits were sacrificed by air embolism. Permeability of blood-tissue barriers in different organs was determined, and it was found that the poison decreased permeability in almost all organ systems; in some cases P^{32} content in irradiated unpoisoned animals was one third that of irradiated poisoned animals. In the adrenals there was a 70% decrease. This experiment was repeated in white mice and rats and the sorptive properties of the tissues normalized after 72 hr. Orig. art. has: 4 tables. [MA-50; CBE No. 41] [LP]

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

Card 2/2

ACC NR: AP9007273 SOURCE CODE: UR/0475/68/000/012/0097/0100

AUTHOR: Shaykhet, G. Kh. (Kiev); Zhalko-Titarenko, V. P. (Kiev); Tovbin, M. V. (Kiev); Roytman, Ye. M. (Kiev)

ORG: Kiev Scientific Research Institute of Epidemiology, Microbiology and Parasitology, Kiev University im. T. G. Chevchenko (Kiyevskiy nauchno-issledovatel'skiy institut epidemiologii, mikrobiologii i parazitologii, Kiyevskiy universitet)

TITLE: Using the theory of chain processes for predicting the development of influenza epidemics

SOURCE: [Vrachebnoye] delo, no. 12, 1968, 97-100

TOPIC TAGS: influenza, epidemic, biologic modelling, epidemiology

ABSTRACT: An application of the theory of chain processes is used in predicting the development of influenza epidemics.

$$N_t = \frac{N_\infty}{1 + e^{-k(t-c)}} \qquad (1)$$

where N_t is the total number of patients at period t from the start of the epidemic, n_∞ is the total number of patients during the entire

 UDC: 616.921.5—036.12—036.8

ACC NR: AP9007273

epidemic, c is the halfway period of the epidemic (that is, at which time $N_t = \frac{N_\infty}{2}$). In solving for n_1, n_2, n_3 at time t_1, t_2 and t_3,

$$\left.\begin{aligned} N_1 &= \frac{N_\infty}{1 + e^{-k(t_1-c)}} \\ N_2 &= \frac{N_\infty}{1 + e^{-k(t_2-c)}} \\ N_3 &= \frac{N_\infty}{1 + e^{-k(t_3-c)}} \end{aligned}\right\} \qquad (2)$$

can be written. This theoretical treatment was tested against actual figures for the cities of Odessa and Khar'kov in the 1967 epidemic. Data showed that these equations are very useful for predicting an epidemic or any series of events that can be treated statistically.

ACC NR: AP9007273

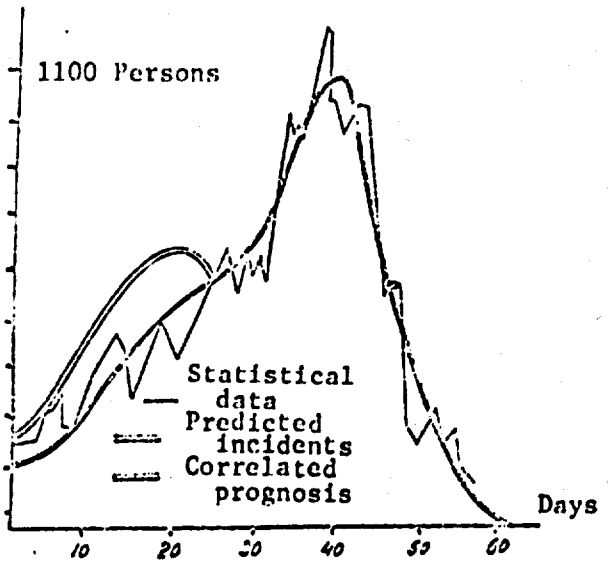


Fig. 1. Statistical and calculated curve for the development of the influenza epidemic in Kiev (1967)

The relationship of the statistical prediction and the actual case is shown in Fig. 1. Orig. art. has: 1 table and 1 figure.
[WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 3/3

ACC NR: AP9005101 SOURCE CODE: UR/0390/68/031/005/0559/0563

AUTHOR: Shchelkunov, Ye. L.

ORG: Department of Psychopharmacology /Head--Candidate of Medical Sciences I. P. Lapin/, Leningrad Scientific Research Institute of Psychoneurology im. V. M. Vekhterev (Otdel psikhofarmakologii Leningradskogo nauchno-issledovatel'skogo psikhonevrologicheskogo instituta)

TITLE: The pharmacological effects of apomorphine on mice as a test for differentiation of antidepressants, cholinolytics and neuroleptics

SOURCE: Farmakologiya i toksikologiya, v. 31, no. 5, 1968, 559-563

TOPIC TAGS: cholinolytic, pharmacology

ABSTRACT: The apomorphine effect was used to differentiate 3 related classes of drugs, antidepressants, cholinolytics and neuroleptic agents. Imipramine-like antidepressants, including imipramine, DMI (nonmethylimipramine) amitriptyline, nortriptyline and propionyl derivatives of 2-chlorophenothiazine (such as OP-206, L-90 and chloratsizin), and also some neuroleptic agents prevent or decrease apomorphine hypothermia. Cholinolytics (atropine, scopolamine, amysil, metamysil,

Card 1/2 UDC: 615.214.2/.3.076.9

ACC NR: AP9005101

diphacyl, methyldiphacyl, mepanit, tropacine, benzacine, arpenal and thiphen) did not diminish apomorphine-induced hypothermia. Antidepressants, as distinguished from cholinolytics and neuroleptics, intensify the toxicity of apomorphine. Neuroleptics, as distinguished from cholinolytics and antidepressants, either completely prevent or considerably decrease the duration of the apomorphine sterotype. The pharmacological effects of apomorphine are good tests for differentiating cholinolytics, antidepressants and neuroleptics. The propyl antidepressants (imipramine, etc.) decrease the hypothermic effect of apomorphine in doses of approximately 3 mg/kg, while the propionyl derivatives are usually effective in doses of 10 mg/kg. Orig. art. has: 2 tables. [WA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: 12May67/ ORIG REF: 004/ OTH REF: 011

Card 2/2

ACC NR: AP9010672 SOURCE CODE: UR/0433/69/000/002/0052/0052

AUTHOR: Shevchenko, Z. P. (Assistant)

ORG: Umanskiy SKhI (Umanskiy SKhI)

TITLE: Barley streak mosaic

SOURCE: Zashchita rasteniy, no. 2, 1969, 52

TOPIC TAGS: plant virus, barley

ABSTRACT: Barley varieties Pallidum 45, Pallidum 11/39 and Rikotenze at an Umanskiy agricultural institute were found to be infected with barley streak mosaic in 1965. Healthy plants in the stage of 1—2 true leaves were successfully infected with mosaic from the sap of infected plants. Characteristic necrotic spots appeared on *Chenopodium amaranticolor* indicator plants on the eighth day after inoculation. Transmission of barley streak mosaic through seeds (unique for th grain virus) was established. The disease was probably brought into this area from the Ukraine in seeds, and is not yet widespread. Orig. art. has: 1 figure. [WA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: none

Card 1/1 UDC: 632.38A/%:633.16

ACC NR: AP9008071 SOURCE CODE: UR/0016/69/000/001/0140/0145

AUTHOR: Shevkunova, Ye. A.

ORG: Institute of Epidemiology and Microbiology im. Gamaleya AMN SSSR, Moscow (Institut epidemiologii i mikrobiologii)

TITLE: Experimental contact transmission of toxoplasmosis

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 1, 1969, 140-145

TOPIC TAGS: toxoplasmosis, animal parasite, protozoology

ABSTRACT: White mice became infected with toxoplasmosis when kept in contact with infected animals. Infection was most frequently observed from mice infected subcutaneously and intranasally and less frequently from mice infected orally. No transmission of toxoplasmosis from mice infected intraperitoneally was observed. Peritoneal exudate from infected white mice (strain RH) was used for initial infection. Doses of 50,000—500,000 *Toxoplasma* per 0.1 ml of diluted exudate were used. All 25 mice infected intranasally died in 7—11 days. Three of the healthy mice kept with them died on the 19th and 21st days, one mouse

Card 1/2 UDC: 616.993.19-022.3

ACC NR: AP9008071

became ill but survived and six mice gave positive complement fixation reactions, although they did not show clear symptoms. All 27 mice infected subcutaneously died on the 5th—9th day. Of the 25 healthy mice kept with them, 5 died on the 14th—15th days and five mice gave positive complement fixation reactions. One mouse became ill but survived. Since the complement fixation reaction for toxoplasmosis is not very sensitive, the number of infected mice was probably greater than indicated. Orig. art. has: 2 tables. [MA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: 02Apr68/ ORIG REF: 005

Card 2/2

ACC NR: AP9005100 SOURCE CODE: UR/0390/68/031/005/0556/0559

AUTHOR: Shigan, S. A.; Korolev, A. A.

ORG: Department of Municipal Hygiene /Head--Corresponding Member AMN SSSR Professor S. N. Cherkinskiy/ First Moscow Medical Institute im. I. M. Sechenov (Kafedra kommunal'noy gigiyeny I Moskovskogo meditsinskogo instituta)

TITLE: Change in the cholinesterase activity and conditioned reflex activity of animals intoxicated with methylnitrophos

SOURCE: Farmakologiya i toksikologiya, v. 31, no. 5, 1968, 556-559

TOPIC TAGS: cholinesterase, insecticide damage

ABSTRACT: Inhibition of cholinesterase activity is the principal and earliest indication of intoxication with organophosphorus insecticides. Disruption of conditioned reflex activity can occur in parallel with changes in cholinesterase activity, although it appears more often on a background of considerable enzymatic inhibition. In spite of the progressive decrease in the activity of serum cholinesterase and the considerable decrease in the activity of brain cholinesterase,

Card 1/2 UDC: 615.285.7.099:[612.015.1:577.153.9+612.825.1

ACC NR: AP9005100

normalization of conditioned reflexes can take place. Complete inhibition of cholinesterase activity in the blood and liver is not always accompanied by visible symptoms of intoxication. White rats were given three doses of methylnitrophos (MNP) [0-0-dimethyl 0-3-methyl-4-nitrophenyl thiophosphate] in amounts of 0.11 or 10 mg/kg. MNP was given orally in vegetable oil six times a week for six months. Animals given a dose of 10 mg/kg showed a 30% inhibition of serum cholinesterase activity at the end of the first month of intoxication. Animals receiving 10 mg/kg of MNP required 24 conditioning passes to develop a conditioned reflex, as compared with 6 passes in controls. Consolidation of the conditioned reflex occurred later in intoxicated animals. In spite of the stable low level of cholinesterase activity in these animals, normalization of conditioned reflex activity did occur. Serum cholinesterase activity remained at 30% of the initial value until six months after the beginning of poisoning, when it dropped close to zero. Even at this time there were no noticeable outward signs of intoxication. Orig. art. has: 1 figure.
[WA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: 19May67/ ORIG REF: 009

Card 2/2

ACC NR: AP9007651 SOURCE CODE: UR/0240/69/000/001/0099/0100

AUTHOR: Shulyarenko, V. I. (Chief epidemiologist); Ponomarenko, V. N. (Doctor; Epidemiologist of regional sanitary substations; Rovno, UkrSSR)

ORG: none

TITLE: Deciphering a waterborne outbreak of typhoid with the help of fluorescein

SOURCE: Gigiyena i sanitariya, no. 1, 1969, 99-100

TOPIC TAGS: water pollution, typhoid fever

ABSTRACT: An outbreak of typhoid involving 11 people in a village in Stepan' Sarnenskiy Rayon in January and February, 1966, was traced to consumption of contaminated drinking water from the river Goryn'. Nine out of eleven of the affected people lived in a small area near the river and had used an icehole in the river for drinking water. Untreated sewage from a rest home was dumped into the river 600 m upstream from the typhoid focus. The current determined with fluorescein carried the sewage across the river from icehole # 1, so that local

Card 1/2 UDC: 616.927-036.22-022.35]-07:628.39:551.482.215

ACC NR: AP9007651

inhabitants drinking from other iceholes were not affected. S. typhi phage type A was isolated from the blood of six patients, confirming the common source of infection. Orig. art. has: 1 figure.

[NA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: 04Sep67/ ORIG REF: 002

ACC NR: AP9007271 SOURCE CODE: UR/0475/68/000/012/0084/0088

AUTHOR: Shutov, A. A. (Candidate of medical sciences; Perm); Varankina, T. T. (Perm)

ORG: Nervous Disease Clinic /Head--Prof. A. N. Shapoval/, Perm' Medical Institute (Klinika nervnykh bolezney permskogo meditsinskogo instituta)

TITLE: Neurological disorders a long time after acute granosan poisoning

SOURCE: Vrachebnoye delo, no. 12, 1968, 84-88

TOPIC TAGS: granosan insecticide, intoxication, poison effect, toxicology, CNS disease

ABSTRACT: Thirty-six patients, were studied nine years after intoxication with granosan and a clinical analysis was made of their neurological disorders. In addition, 11 children born to mothers previously poisoned by granosan were examined. Two of these children were in the uterus at the time of intoxication. Disorders involved included cerebral asthenia, toxic encephalitis, definite symptoms of CNS poisoning,

 UDC: 615.778.38-099-036.12-07:616.8-07

(although in five of these patients no CNS disorder was observed), uritis, reflex disorders, and psychological disorders. In 11 patients, dynamic ataxia was observed and, in nearly all patients, serious functional disorders of the sympathetic nervous system were present. Sixteen patients had arterial hypotonia. Thirty of the patients had dry itchy skin. Some neural disorder persisted up to three months after the onset of intoxication. Central paresis of muscles innervating the face and slowing of reflex time were noted in 20 patients. Twenty patients reported headaches and also aches in the lower extremities, and seven reported a continuous ache in the hands. There were absent or diminished axillary reflexes in 22 patients. Sixteen patients reported pains in the upper and lower extremities and tingling pains in the fingers. In a majority of the cases, polyradiculoneuritis appeared. Similar symptoms have been reported in poisoning cases resulting from intake of organomercury compounds. Comparison of literature data shows that children suffer more severely from the effects of this type of poisoning. Some of them experiencing pains in the region of the liver and emphysema of the lungs in the course of poisoning. Also, diminution of intelligence and reflex response was noted as well as nystagmus, ataxia and generalized slow movements. [MA-50; CBE No. 41] [BT]

SUB CODE: 06/ SUBM DATE: none

ACC NR: AT9009342 SOURCE CODE: UR/3481/67/000/015/0029/0034

AUTHOR: Simonova, A. S.

ORG: Moscow Forest Technology Institute (Moskovskiy lesotekhnicheskiy institut)

TITLE: Possibility of using nuclear polyhedrosis viruses to control some forest insects

SOURCE: Moscow. Lesotekhnicheskiy institut. Sbornik rabot, no. 15, 1967. Voprosy zashchity lesa (Aspects of forest protection), 29-34

TOPIC TAGS: nuclear polyhedrosis virus, biologic pest control, forestry, entomology, economic entomology

ABSTRACT: This article summarizes many instances of experimental use of polyhedrosis viruses to control agricultural and forest pests sensitive to them. Species such as *Porthetria dispar, Phigalia pedaria, Biston hispidaria* and *B. hirtaria* have been sharply reduced in numbers as a result of spraying infested areas with nuclear and cytoplasmic polyhedroses agent preparations. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 008/ OTH REF: 004

Card 1/1

ACC NR: AP9006764 SOURCE CODE: UR/0346/69/000/001/0106/0107

AUTHOR: Sivash, N. Ye.

ORG: Uzbek Republic Veterinary Laboratory (Uzbekskaya respublikanskaya veterinarnaya laboratoriya)

TITLE: Device for filtration

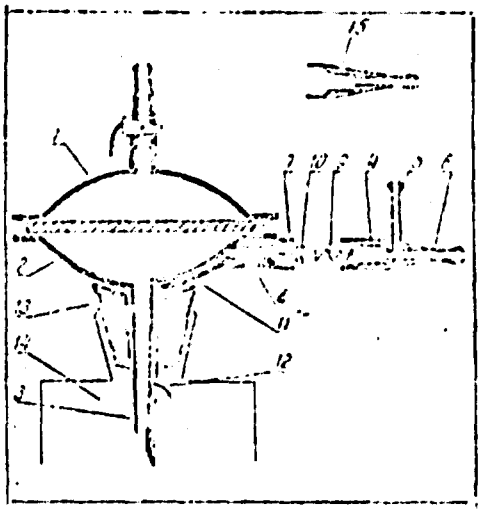
SOURCE: Veterinariya, no. 1, 1969, 106-107

TOPIC TAGS: bacteriologic laboratory instrument, filtration

ABSTRACT: An apparatus is described which may be used for filters with 30—300 mm diameter asbestos plates. It may be used for filtering nutrient media, sera, bacterial cultures, antigens and toxins. The apparatus consists of metallic disks (1-2), a T-bar (4) for connecting with the manometer (5) and a vacuum pump (6). An adapter (15) allows the filter to be used without the manometer. The T-bar or adapter is connected with a connecting sleeve (7), which is a continuation of the conduit (8). Between the T-bar and the connecting sleeve, there are a spring (9) and a semicircular rubber valve (10). The connecting sleeve, a continuation of disk (2) is joined with the conduit (11) through an opening in the disk wall. There is a window in the overflow tube (12). Hermetic sealing of the vessel (14) is accomplished with a

Card 1/2 UDC: 619:616.981-093.1

ACC NR: AP9006764



Device for asbestos filters

rubber stopper (13) placed in an opening in the overflow tube (3). The mechanism of operation of the device is described.

[WA-50; CBE No. 41] [XF]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AP9007276 SOURCE CODE: UR/0475/68/000/010/0019/0025

AUTHOR: Skvortsova, V. A. (Moscow)

ORG: none

TITLE: Literature survey of the role of allergy in virus infections

SOURCE: Vrachebnoye delo, no. 10, 1968, 19-25

TOPIC TAGS: allergy, virus disease, encephalomyelitis, tickborne encephalitis, rabies, serology

ABSTRACT: The effects of vaccination against certain virus diseases often show similarities to the autoimmune reaction. The mechanism of this pathological process is unknown but, since the virus behaves like an intracellular parasite, the process of cell destruction can be followed. Some of the severe effects of vaccine approach denaturation of tissues. Some of the diseases whose vaccines produce an endoallergic reaction are rabies (e Fermi antirabbies vaccine) which often is accompanied by an anaphylactic reaction accompanied by desensitization. Other vaccines include poliomyelitis vaccine, herpes vaccines and hepatitis virus which behaves like an endoallergen in the liver. Often

Card 1/2 UDC: 616-056.3:616.988(047)

whooping cough and lymphogranulomas appear as autoimmune diseases. Infectious mononucleosis is yet another of these diseases which include viral kerato-conjunctivitis, encephalitis, and influenza. Trachoma, mumps virus, psittacosis virus, ornathosis virus, denge fever, acute equine encephalomyelitis and acute human encephalitis are other such diseases. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 041

AUTHOR: Skvortsova, Ye. K.; Putyatina, T. I.; Mikhaylov, B. M.; Dorokhov, V. A.; Shchegoleva, T. I.; Kamennov, N. A.; Limanov, V. Ye.

ORG: none

TITLE: The search for disinfectants among organoboron compounds

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut. Trudy, no. 18, pt. 1, 1967, 154-156

TOPIC TAGS: organoboron compound, disinfectant, hygiene

ABSTRACT: The organoboron compounds shown in Table 1 were tested for their disinfectant activity. Of these 17 compounds the most

Table 1. Bactericidal activity of 1% solutions of boron derviatives

Preparation	Structural formula	Kill time (in min)	
		E. coli	*Staphylococcus*
Bis(methylamino)boronium chloride	$[H_2B(NH_2CH_3)_2]Cl$	Inactive	

Table 1. (Cont.)

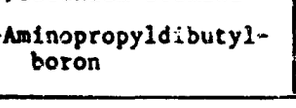
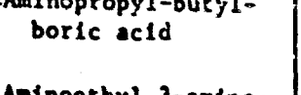
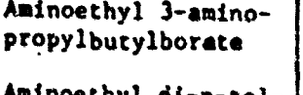
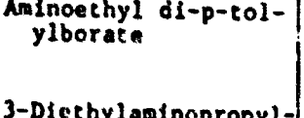
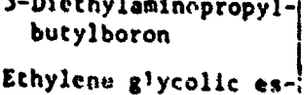
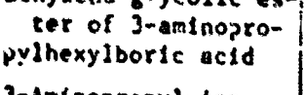
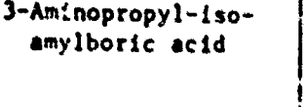
Bis(dimethylamino)boronium chloride	$\{H_2B[NH_2(CH_3)_2]_2\}Cl$	15	Inactive
Bis(dimethylamino)boronium bromide	$\{H_2B[NH(CH_3)_2]_2\}Br$	Inactive	
Bis(propylamino)boronium chloride	$[H_2B(NH_2C_3H_7)_2]Cl$	Inactive	
Bis(tert-butylamino)boronium chloride	$[H_2B(NH_2C_4H_9)_2]Cl$	5 15	15 —
Bis(amylamino)boronium chloride	$[H_2B(NH_2C_5H_{11})_2]Cl$	5	15
Bis(benzylamino)boronium chloride	$[H_2B(NH_2CH_2C_6H_5)_2]Cl$	5	Inactive
Dibutylbis(ethylamino)boronium chloride	$[(C_4H_9)_2B(NH_2C_2H_5)_2]Cl$	5	60
Dichlorobis(dimethylamino)boronium chloride	$\{Cl_2B[NH_2(CH_3)_2]_2\}Cl$	Inactive	
Dibromobis(dimethylamino)boronium bromide	$\{Br_2B[NH(CH_3)_2]_2\}Br$	5	60
3-Aminopropyldibutylboron		15	Inactive

Table 1. (Cont.)

3-Aminopropyl-butylboric acid		5	Inactive
Aminoethyl 3-aminopropylbutylborate		5	Inactive
Aminoethyl di-p-tolylborate		Inactive	
3-Diethylaminopropylbutylboron		30	Inactive
Ethylene glycolic ester of 3-aminopropylhexylboric acid		5	30
3-Aminopropyl-isoamylboric acid		30	Inactive
			

ACC NR: AT9009154

active was bis(amylamino)boronium chloride. The other compounds also have potential as bactericides. Orig. art. has: 1 table.
[WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 4/4

ACC NR: AT9009148 SOURCE CODE: UR/3473/67/000/018/0091/0096

AUTHOR: Skvortsova, Ye. K.; Tyagunova, N. I.; Karpova, Ye. A.; Shumayeva, Yu. F.

ORG: none

TITLE: Comparative evaluation of the activity of certain quaternary ammonium compounds by various methods

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut. Trudy, no. 18, pt. 1, 1967, 91-96

TOPIC TAGS: analytic chemistry, quaternary ammonium compound, disinfectant, bacteriostasis

ABSTRACT: According to the data shown in Tables 1, 2, and 3, cetyl(octadecyl)triethylammonium bromide and cetyl(octadecyl)pyridinium bromide have bactericidal effects in 15 min when applied as 0.5% solutions, and cetyl(octadecyl)trimethylammonium bromide is effective as a 0.25% solution. Evaluation of culture data from specimens plated on optimal

Card 1/5

Table 1. Antibacterial activity of quaternary ammonium compounds (determined by experiments)

Preparation	Concentration in %	Growth of *Staphylococcus aureus* on media after (min)							Kill of *E. coli* on media after (min)							
		5	10	15	20	25	30	Control	5	10	15	20	25	30	35	Control
Cetyl(octadecyl)triethylammonium bromide	0,05	−	−	−	−	−	−	+	−	−	−	−	−	−	−	+
	0,025	−	−	−	−	−	−	+	−	−	−	−	−	−	−	+
	0,01	−	−	−	−	−	−	+	+	−	−	−	−	−	−	+
		+	+	−	−	−	−	+	+	+	+	+	+	+	+	+
		+	+	−	−	−	−	+								
Cetyl(octadecyl)trimethylammonium bromide	0,05	−	−	−	−	−	−	+	−	−	−	−	−	−	−	+
	0,025	−	−	−	−	−	−	+	−	−	−	−	−	−	−	+
		+	−	−	−	−	−	+	+	−	−	+	−	−	−	+
		+	−	+	−	−	−	+	−	−	−	−	−	−	−	+
Cetyl(octadecyl)pyridinium bromide	0,05	−	−	−	−	−	−	+	−	−	−	−	−	−	−	+
	0,025	−	−	−	−	−	−	+	−	−	−	−	−	−	−	+
		−	−	−	−	−	−	+	+	−	−	−	+	−	−	+
		−	−	−	−	−	−	+	−	−	−	−	−	−	−	+

Legend: + growth
— no growth

Table 2. Activity of quaternary ammonium compounds according to bioassay methods (exposure of anthrax cultures to compound for 15 min)

Preparation	Concentration in %	Growth on media	White mice			
			Infected	Collapse	Anthrax cultures isolated	Died
Cetyl(octadecyl)triethylammonium bromide	1	none	4	0	0	4
	0,5	"	4	0	0	4
	0,25	"	8	1	0	7
Cetyl(octadecyl)trimethylammonium bromide	1	"	4	0	0	4
	0,5	"	4	0	0	4
	0,25	"	8	0	0	8
Cetyl(octadecyl)pyridinium bromide	1	"	4	1	0	3
	0,5	"	4	0	0	4
	0,25	"	10	3	2	5

Table 3. Activity of quaternary ammonium compounds upon study of them by various methods

Preparation	Test method		Suspension method				Biochemical method		Biological method	
			Seeding on meat-peptone agar		Autolysate and congo red medium					
	Concentration in %	Exposure in min	Concentration in %	Exposure in min	Concentration in %	Exposure in min	Concentration in %	Enzyme activity	Concentration in %	Exposure in min
Cetyl(octadecyl)triethylammonium bromide	0,05	5	0,1	5	0,1	30	2	Not weighed	0,5	15
Cetyl(octadecyl)trimethylammonium bromide	0,05	5	0,1	5	0,1	15	2	Not weighed	0,25	15
Cetyl(octadecyl)pyridinium bromide	0 05	5	0,1	5	0,1	30	2	Not weighed	0,5	15

media was the most sensitive method for determining the effectiveness of the tested compounds. Orig. art. has: 3 tables.

[WA-50; CBE No. 41] [IP]

SUB CODE: 06/ SUBM DATE: none

ACC NR: AT9009137 SOURCE CODE: UR/3473/67/000/018/0014/0021

AUTHOR: Sokolova, N. F.; Molozhavaya, Ye. I.; Leont'yeva, N. F.; Volkova, A. P.; Grin', N. R.; Virnik, A. D.; Mal'tseva, T. A.; Ragovina, Z. A.

ORG: TsNIDI, Combined Scientific Laboratory of the Moscow Textile Institute (TsNIDI, Kompleksnaya nauchnaya laboratoriya Moskovskogo tekstil'nogo instituta)

TITLE: Study of the possibilities of water purification by filtration through antimicrobial cloth containing silver

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut. Trudy, no. 18, pt. 1, 1967, 14-21

TOPIC TAGS: water pollution control, silver, bactericide, bacteriostasis

ABSTRACT: A study of the possibility of water decontamination by filtration through cloth containing silver bound with functional groups of modified cellulose showed that *Escherichia coli* were completely eliminated after 3 hr, while *Bacillus anthracis* remained viable after 24 hr. Additional filtration studies with cloth impregnated with 4.3% silver showed that water was completely decontaminated after storage for 24, 48 and 72 hr, indicating that the silver ions pass from the

Card 1/2

ACC NR: AT9009137

cloth into the water and continue to act on the microorganisms. Comparative studies on appetite, body weight, work capacity, reproductive function, white blood count, blood cholinesterase, liver function, and pathoanatomical and histological studies in rabbits, rats and mice indicated that 3 mg of silver in 1 l of water was threshold, while 0.3 mg/l was nontoxic. Water decontamination by filtration through silver-impregnated antimicrobial cloth is recommended for pollution control of small reservoirs. Orig. art. has: 2 tables.
[WA-50; CBE No. 41] [XF]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 008

Card 2/2

ACC NR: AT9007968 SOURCE CODE: UR/3471/67/006/000/0325/0327

AUTHOR: Solov'yev, A. M.

ORG: none

TITLE: Determining the action of preparations of the fungus Trichoderma in controlling butt-rot fungus

SOURCE: Barnashino. Kazakhskiy nauchno-issledovatel'skiy institut lesnogo khozyaystva. Trudy, v. 6, 1967. Issledovaniya po lesnomu khozyaystvu i agrolesomelioratsii, 325-327

TOPIC TAGS: fungus, pest control method, biologic pest control method

ABSTRACT: The application of a preparation of the fungus *Trichoderma lignorum* was effective in controlling butt-rot fungus in the forests of the Kazakhstan Altay region. The preparation was applied to the rhizosphere in areas infected with *Fomitopsis annosa*. *Trichoderma* multiplied well not only in the root zone but also in the aerial portion of the plant and competed with the destructive soil fungi. Orig. art. has: 3 tables. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 1/1

ACC NR: AP9005778 SOURCE CODE: UR/0390/68/031/006/0731/0733

AUTHOR: Strelkov, R. B.; Khasabova, V. A.

ORG: Institute of Experimental Pathology and Therapy, AMN SSSR, Sukhumi (Institut eksperimental'noy patologii i terapii AMN SSSR)

TITLE: The toxicology of mexamine

SOURCE: Farmakologiya i toksikologiya, v. 31, no. 6, 1968, 731-733

TOPIC TAGS: toxicology, lysergic acid diethylamide

ABSTRACT: Since experimental data have indicated that mexamine (5-methoxytryptamine hydrochloride) normalizes nervous processes disrupted by LSD, the toxicity of mexamine in humans was studied. Enteral administration of mexamine in a dose of 7.5 mg/kg (with preliminary introduction of 1 mg/kg of mexamine 30 min before the main dose) did not produce any pronounced side effects. Subjects were two men and two women aged 25 to 39 and healthy. Mexamine was taken before eating and subjects remained lying down during the [illegible]. Some volunteers did note fleeting nausea, intoxication and slight headache after the 7.5 mg/kg dose, but these reactions are not considered significant

Card 1/2 UDC: 615.214.31.099

since similar complaints were voiced by controls. EEG's were normal and two out of four subjects adapted to intermittent light stimuli in the range of 1 to 20 flashes per second. EKG's were also normal. Blood and urine analyses were normal although some increase in blood pressure was noted. The tolerance of these doses of mexamine by people clears the way for further tests of this substance as an LSD antagonist in psychiatric practice. Orig. art. has: 1 table.
[WA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: 16Apr67/ ORIG REF: 004/ OTH REF: 002

AUTHOR: Strokov, V. Ye.--Strokov, Ye. V.

ORG: ISUL, Sofia, Chair of Microbiology /Head--Professor D. Khadchicimova/ (ISUL, Katedra po mikrobiologiya)

TITLE: Transmission of colicinogenic factors

SOURCE: Epidemiologiya, mikrobiologiya i infektsiozni bolesti, no. 4, 1968, 311-316

TOPIC TAGS: dysentery, genetics, bacterial genetics

ABSTRACT: The possibility of transmission of colicinogenic factors 1 C and group E from donor to recipient *E. coli* strains was investigated. Of the four donor strains tested, strain *E. coli* 10590, isolated from the feces of a patient with colitis, and producing colicins 1 C was the most efficient. This strain transmitted its colicinogenic factors to recipient strains *E. coli* 5016 and R 678. No group E colicinogenic factors were transmitted strain, R 678 was the most suitable recipient for 1 g factors and unsuitable for group E factors. Orig. art. has: 2 figures.
[WA-50; CBE No. 41] [JP]

SUB CODE: 06/ SUBM DATE: 00Aug68/ ORIG REF: 005/ OTH REF: 009

ACC NR: AP9006647 SOURCE CODE: UR/0242/68/000/011/0035/0040

AUTHOR: Sukhova, M. N.; Zairov, K. S.; Teterovskaya, T. O.; Stepanova, M. N.; Frolkov, I. P.; Pitanina, N. I.; Urazimbetov, D.

ORG: Central Scientific Disinfection Institute, Ministry of Public Health SSSR (Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionniy institut, Minzdrava SSSR); Ministry of Public Health UzSSR (Minzdrava UzSSR); Sanitary Epidemiological Station of the Karakalpak ASSR (Sanitarno-epidemiologicheskaya stantsiya Karakalpakskoy ASSR)

TITLE: Synanthropic flies of the Muynaksk region of the Karakalpak ASSR and means of combating them

SOURCE: Meditsinskiy zhurnal Uzbekistana, no. 11, 1968, 35-40

TOPIC TAGS: disease vector, disease carrying insect, pest control

ABSTRACT: Results of population studies of synanthropic flies trapped in two villages of the Muynak peninsula indicated that there are 28 species of which those shown in Table 1 are most common. Rotten meat impregnated with a chemosterilant (thiophosphamid) was ineffective

Card 1/3

ACC NR: AP9006647

Table 1. Relative proportions of the predominating fly species collected in the village of Uchsay in 1967 on chlorophos-treated traps in buildings

Fly species	May—June				August—September			
	Bait				Bait			
	Sugar		Sugar & fish		Sugar		Sugar & fish	
	1	2	1	2	1	2	1	2
M. domestica vicina	0,8	2,0	22,3	5,6	10,5	43,8	12,7	33,1
M. stabulans	5,1	14,1	114,8	27,3	0,7	2,9	1,0	2,7
F. canicularis	5,0	13,0	22,0	5,5	1,1	23,5	5,2	13,5
L. sericata	18,0	47,0	230,5	56,4	0,05	0,2	0,6	1,5
B. haemorrhoidalis	0,5	1,3	1,7	0,4	0,1	0,4	0,5	1,3
R. striata	0,2	0,5	2,2	0,5	0,05	0,2	0,04	0,1
Прочие	8,1	22,1	19,4	4,6	7,2	30,0	8,3	21,8
Total	38,3	100	419,9	100	24,0	100	38,34	100

Legend: 1 - average number of flies per count; 2 - percentage composition of captured insects

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ACC NR: AP9006647

at reducing the fly population because the flies were frightened away, a factor which could not be remedied in the laboratory. Orig. art. has: 1 table and 3 figures. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: 22Apr68/ ORIG REF: 003/ OTH REF: 001

Card 3/3

ACC NR: AT9007929 SOURCE CODE: UR/3430/67/000/004/0085/0090

AUTHOR: Syroyegin, Yu. V.

ORG: none

TITLE: Preliminary data on the effects of weather on the effective application of herbicides to millet seeds

SOURCE: Gorkiy. Gidrometeorologicheskaya observatoriya. Sbornik rabot Gor'kovskoy i Volzhskoy gidrometeorologicheskikh observatoriy, no. 4, 1967, 85-90

TOPIC TAGS: seed, insecticide application, weather, meteorology

ABSTRACT: Experimental application of herbicides and pesticides to seeds has shown that the greatest increases in harvest occur when such application is done in cold wet weather; it is less evident when rusts are present. The least effective treatments were applied when the weather was warm and dry during the initial growth of the plant, i.e., at a time when it is least resistant to the effects of high temperature. The butyl ester of 2,4-D was the most effective compound for application. Orig. art. has: 6 tables. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 007

Card 1/ 1 UDC: 551.480+632.0

ACC NR: AT9010087 SOURCE CODE: UR/3479/65/005/000/0225/0231

AUTHOR: Tagi-Zade, T. A. (Doctor of medical sciences)

ORG: none

TITLE: Results of retrospective examination for leptospirosis of the Kura-Araks lowland population

SOURCE: Baku. Azerbaydzhanskiy nauchno-issledovatel'skiy institut meditsinskoy parazitologii i tropicheskoy meditsiny. Trudy, v. 5, 1965, 225-231

TOPIC TAGS: serologic test, leptospirosis, epidemiology

ABSTRACT: A retrospective serological examination of persons, primarily children and agricultural workers, for the presence of antibodies to *Leptospira* was conducted in the Kura-Araks lowland region. There were 111 positive agglutination-and-lysis reactions in 4900 serum samples taken. Thirty-five of the 111 positive reactions were caused by *L. azerbaydzhanica*; all of the persons concerned were employed as agricultural workers. Men were infected more often than women and school-age children. Better water use control measures and vaccination against leptospirosis with a polyvalent vaccine effective against

Card 1/2

ACC NR: AT9010087

L. azerbaydzhanica and other *Leptospira* is recommended. Orig. art. has: 4 tables. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AT9010088 SOURCE CODE: UR/3479/65/005/000/0232/0236

AUTHOR: Tagi-Zade, T. A. (Doctor of medical sciences); Borisova, L. P.; Alekperov, F. P.; Mamedov, G. S.

ORG: [Tagi-Zade, Borisova, Alekperov] Scientific Research Institute of Medical Parasitology and Tropical Medicine (n/i Institut Medparazitologii i tropicheskoy meditsiny); [Mamedov] Lenkoran Department of Anti-plague Station (Lenkoranskoye otdeleniye protivochumnoy stantsii)

TITLE: Natural focus of leptospirosis in the Lenkoran physical geographical zone

SOURCE: Baku. Azerbaydzhanskiy nauchno-issledovatel'skiy institut meditsinskoy parazitologii i tropicheskoy meditsiny. Trudy, v. 5, 1965, 232-236

TOPIC TAGS: epizootiology, leptospirosis, animal disease, medical geography

ABSTRACT: Examination of rodents in a leptospirosis focus in the Lenkoran zone in 1964 yielded 792 specimens of 19 species; included were 17 Rodentia, 1 Insectivora and 1 Carnivora. The number of rodents caught was less than expected since the preceeding winter had

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ACC NR: AT9010088

been severe. Of these, 743 rodents were examined bacteriologically and serologically. Kidney and urine suspensions gave positive results in 43 cases, and 9 *Leptospira* cultures were isolated. Seven strains were identified including 6 laboratory strains and a local strain. The presence of antibodies against *L. canicola* in voles was established for the first time. Orig. art. has: 4 tables.

[WA-50; CBE No. 41] [LP]

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

Card 2/2

ACC NR: AP9007643 SOURCE CODE: UR/0325/69/000/001/0125/0127

AUTHOR: Tamarina, N. A.

ORG: Zoological and Entomological Laboratory, Moscow State University im. M. V. Lomonosov (Zoologo-entomologicheskaya laboratoriya Moskovskogo gosudarstvennogo universiteta)

TITLE: Preparation of food for *Culex* larvae

SOURCE: Nauchnyye doklady vysshey shkoly. Biologicheskiye nauki, no. 1, 1969, 125-127

TOPIC TAGS: mosquito, disease carrying insect, culture medium

ABSTRACT: A device for mechanical preparation of food for larvae of *Culex pipiens molectus* is described (see Figure 1). For feed, a mixture of dry yeast and dry milk mixed with warm water was used. This mixture was then strained. This device prepares food with an average particle

Card 1/2 UDC: 595.771:578.082

ACC NR: AP9007643

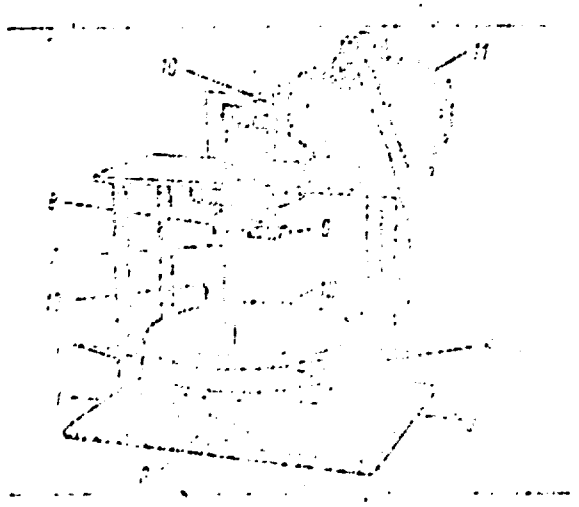


Fig. 1. Device for preparing food for mosquito larvae

1 - Sieve: diameter 235 cm, height 60 mm, made of rust-proof metal or silk screen (no. 43 mesh); 2 - collection vessel; 3 - supporting column; 4 - wind nut; 5 - clamp; 6 - 10 mm diameter drainage pipe; 7 - feed tube; 8 - vice; 9 - adjustment wheel; 10 - transformer; 11 - electric motor, type AOL 011-4; 12 - perforated metal pipe; 13 - water feed

size of 30 μ. Also, 15—20 to 120—180 μ particles can be prepared by using different filters. Orig. art. has: 1 figure.

[WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: 28Feb68

Card 2/2

ACC NR: AP9007117 SOURCE CODE: UR/0297/69/014/001/0003/0009

AUTHOR: Telesnina, G. N.; Novikova, M. A.; Ryabova, I. D.; Kolosov, M. N.; Shemyakin, M. M.

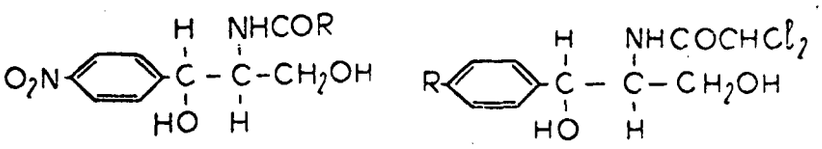
ORG: Institute of the Chemistry of Naturally Occurring Compounds, AN SSSR, Moscow (Institut khimii prirodnykh soyedineniy AN SSSR)

TITLE: Inhibition of protein synthesis by chloramphenicol and its analogs

SOURCE: Antibiotiki, v. 14, no. 1, 1969, 3-9

TOPIC TAGS: chloramphenicol antibiotic, protein synthesis, disease therapeutics

ABSTRACT: The effects of the following compounds on protein synthesis in *E. coli* C and *E. coli* B were investigated.



Card 1/9 UDC: 615.332(Chloramphenicolum).015.42:612.015.348

ACC NR: AP9007117

(I)

(Ia) : R=$CHCl_2$ (chloramphenicol)
(Ib) : R=$CHBr_2$
(Ic) : R=CH_2Cl
(Id) : R=CCl_3
(Ie) : R=$CH{=}CHCHCl_2$
(If) : R=CH_3

(II)

(IIa) : R=CH_3SO_2
(IIb) : R=NH_2SO_2
(IIc) : R=CH_3CONH

Table 1. Experimental results

Compound	Concentration (μM/ℓ) which produces growth inhibition			
	E. coli C		E. coli B	
	50%	100%	50%	100%
(Ia):R=$CHCl_2$ (chloramphenicol)	1,5	4,7	0,15	0,26
(Ib):R=$CHBr_2$	1,4	4,8	0,17	0,84
(Ic):R=CH_2Cl	2,2	13	0,61	1,04
(Id):R=CCl_3	17	70	0,8	2,2
(Ie):R=$CH{=}CHCHCl_2$	23	107	1,7	2,3
(If):R=CH_3	47	190	8,5	47
(IIa):R=CH_3SO_2	17	87	4,2	9,8
(IIb):R=NH_2SO_2	130	140	76	87
(IIc):R=CH_3CONH	196	235	75	105

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Table 2. Growth inhibition by chloramphenicol and its derivatives

Compound	Relative growth suppression in *E. coli* B		Inhibition of amino acid uptake in protein of ribosomes in an acellular system of *E. coli* B				
	To 50%	To 100%	Concentration (in μM/ℓ) 0.048	0.39	3.13	25	400
(Ia): R = $CHCl_2$ (chloramphenicol)[1]	100	100	−100[2]	100	100	100	100
(Ib): R = $CHBr_2$	88	30	+	352	106	104	100
(Ic): R = CH_2Cl	25	25	±	119	80	97	97
(Id): R = CCl_3	18	11	−184	—	57	80	99
(Ie): R = $CH{=}CHCHCl_2$	9	10	− 86	100	43	73	96
(If): R = CH_3	0,6	0,5	−258	71	97	100	100
(IIa): R = CH_3SO_2	4	3	−900	—	8	74	100
(IIb): R = NH_2SO_2	0,3	0,3	−130	—	2	19	86
(IIc): R = CH_3CONH	0,2	0,2	−190	56	24	37	54

1 - Chloramphenicol produces 50—100% inhibition of growth in *E. coli* B in relation to its concentration (between 0.155—0.261 μM/ℓ). At concentrations of 0.39, 3.13, 25 and 400 μM/ℓ it inhibits the uptake of protein in ribosomes in acellular systems of *E. coli* B, in the following proportions: 15.1 ± 3.2; 61.8 ± 5.1; 82.6 ± 8.1; and 92.5 ± 1.4%.

2 - minus sign indicates stimulation of uptake, plus sign indicates suppression

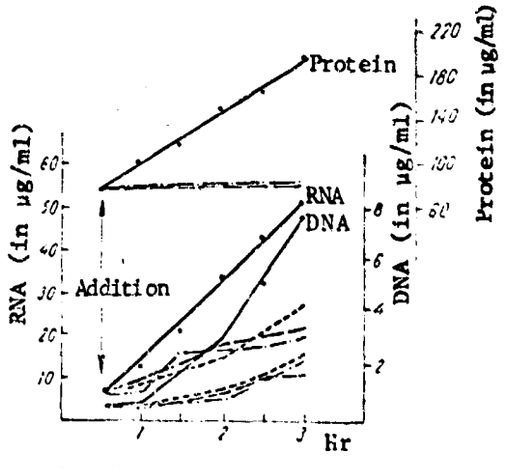

Fig. 1. Effect of chloramphenicol and its analogs on protein and nucleic acid content in *E. coli* C

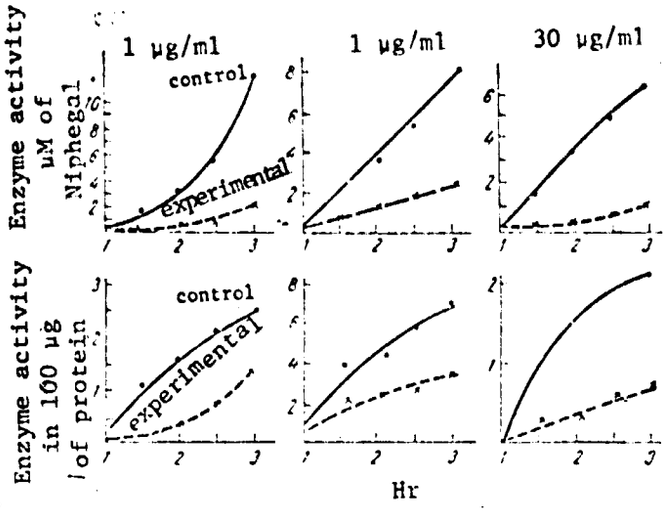

Fig. 2. Effect of chloramphenicol and its analogs on the synthesis of β-galactosidase in *E. coli* C

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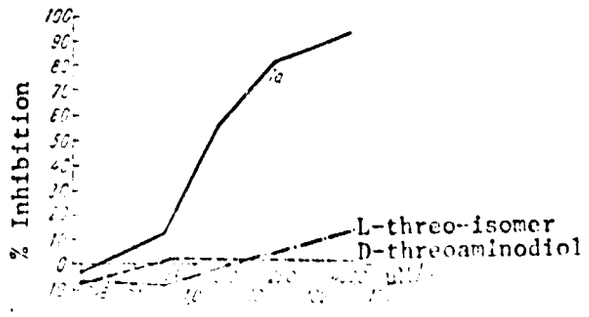

Fig. 3. Effect of chloramphenicol and closely related compounds on protein synthesis in acellular sytems of *E. coli* B

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ACC NR: AP9007117

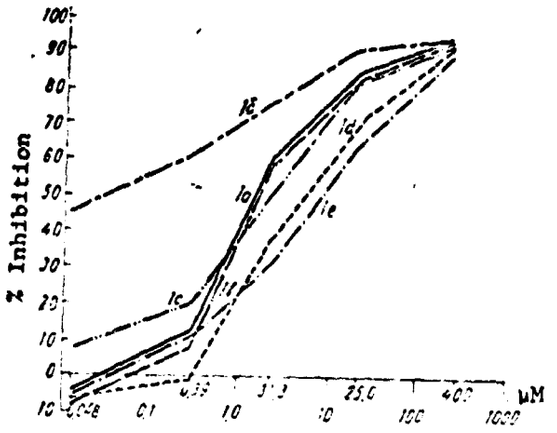

Fig. 4. Effect of chloramphenicol and its analogs (type I) on the biosynthesis of proteins in an acellular system of *E. coli* B

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ACC NR: AP9007117

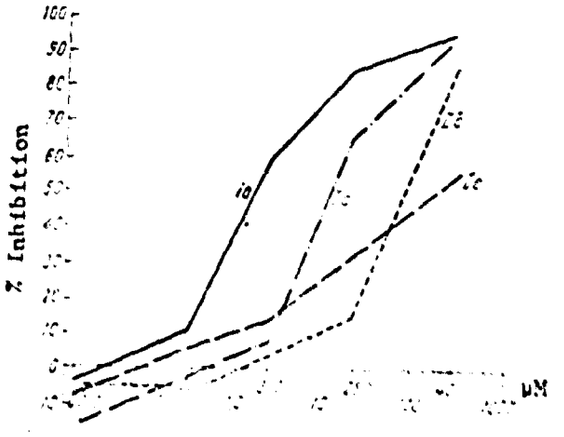

Fig. 5. Effect of chloramphenicol and its analogs (type II) on protein biosynthesis in an acellular system of [illegible] B

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ACC NR: AP9007117

The antibacterial activity of these compounds was evaluated in 18 hr cultures containing approximately 50,000 cells/ml, and protein determinations were made spectrophotometrically. The results of the experiment are shown in Tables 1 and 2 and in Figures 1—5. As shown by the tables and figures, type II compounds were less active and type I compounds had about the same effects as chloramphenicol. Orig. art. has: 2 tables and 5 figures. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: 14Nov67/ ORIG REF: 015/ OTH REF: 003

Card 9/9

ACC NR: AT9008867 SOURCE CODE: UR/3463/68/000/008/0139/0147

AUTHOR: Tokarevich, K. N.

ORG: none

TITLE: Problems of studying zooanthoponoses in the northwest and northern regions of the European part of the Soviet Union

SOURCE: Geograficheskoye obshchestvo SSSR. Doklady otdeleniy i komissiy, no. 8, 1968. Meditsinskaya geografiya (Medical geography), 139-147

TOPIC TAGS: epidemiology, medical geography, arbovirus, rickettsiosis, tularemia, leptospirosis, serology, serologic test

ABSTRACT: The northwest Soviet Union is characterized by differing climate, soil and plant covers which determine a series of topographic zones: the tundra, forest tundra, taiga and mixed forests. There are many significant lake and river systems which support a varied complex of wild mammals, birds and blood sucking invertebrates which form the reservoirs and vectors of various infectious disease agents. Because of this, the northwest area is a natural focus of zooanthroponoses such as rickettsioses and other types of disease. Some of these diseases

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such as anthrax and difillobotryosis have been known for hundreds of years, others have been discovered comparatively recently such as tularemia, leptospirosis, Q-fever and ornithosis. Still others will probably be discovered in the future. Currently, at least 15 infectious diseases classified as zooanthroponoses are known in this area and are composed of bacteriological diseases (tularemia, brucellosis, anthrax, salmonelloses, listeriosis and others); Spirochete-borne diseases (for example leptospirosis); viral and rickettsial diseases (tickborne encephalitis, rabies, hemorrhagic fevers, ornithosis, Q rickettsiosis, typhus); protozoal and helminth infections (toxoplasmosis, difillobotryosis, opisthochlorosis, alveococcosis and others). Some diseases are widespread and others have a regional or a zonal character; for example "tundra rabies" of foxes and alveococcal diseases which are usually restricted to certain zones in the taiga. This area is bounded on the southwest and west by the Leningrad, Pskov, Novgorod and Kaliningrad oblasts and on the north by Murmansk, Arkhangel'sk and Vologda oblasts. A series of epidemiological stations has been established so that their laboratories can carry out detailed investigation of leptospirosis, arbovirus infections, epidemic rickettsioses and other natural focal disease foci. The least investigated complex of zooanthroponosis is in the northern and polar regions of the European part of the Soviet Union, especially the forms of these

diseases prevailing in the Far North. The form of the diseases depends on the climate, population density, and species composition of the local fuana consisting of both wild and domestic animals (foxes, lemming, colonial birds, and reindeer). Current problems in investigating such diseases in the far northwest consist of gathering and analysing factual material with the aim of establishing definite areas especially the northern area of a disease focus common for animals and man, and determining the effects of local natural and economical factors on spread of disease. The Institute im. Pasteur, the Arkhangel Institute of Epidemiology and Microbiology and the Arkhangel Regional Sanitary Epidemiological Station have carried out extensive investigation of leptospirosis in the far northern provinces especially above 64° north latitude. Also they have made studies of reindeer in the Nenets National Region and discovered *Leptospira* reactions in 1.8% per thousand head tested in titers of 1:100—1:512. Serotyping of dogs, humans and deer revealed antibodies to *Leptospira australis* A, and in northern reindeer to the *grippotyphosa* type. Most of the 1300 persons discovered who had antibodies to *Leptospira* had acquired the infection through professional contact with animals (herdsmen, veterinarians). It is difficult to establish the boundaries of Q-fever infection because of its similarity in symptoms to influenza and pneumonia which is common in northern populations. Tularemia is another fairly widespread naturally focal

disease in Murmansk, Kaliningrad and adjacent oblasts. In northern parts of Arkhangel'sk oblast there have been two large tularemia outbreaks: in 1949—1950 and in 1957. The northern limit of tularemia foci has not been established because of its dependence on abiotic factors and because the northern range limit of the *Ixodica* tick carrier is not known. In this area the primary mammal host is the lemming. There is a definite correlation between lemming migrations and outbreaks of tularemia among humans in the tundra regions. Detailed study of toxoplasmoasis in the Far North has not been made, although occasional massive invasions of toxoplasma in wild mammals and domestic animals has been reported. Complement fixing antibodies have been detected in 4.2% of 500 nomads. Also, positive reactions have been detected in silver foxes, cattle and deer. Extensive study has been made of tundra rabies ("dikovania," tundra encephalitis, other names) which infects foxes, dogs, and some other wild animals. Ten strains of neurotropic virus similar to rabies virus and also to encephalitis virus have been isolated. Foxes are thought to be the reservoir in nature.

[WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 020/ OTH REF: 001

ACC NR: AP9007435 SOURCE CODE: BU/0019/68/000/004/0330/0335

AUTHOR: Tomov, A.; Kebedzhiev, G.--Kebedzhiyev, G.; Tsvetkova, E.--Tsvetkova, Ye.; Ivanov, S.

ORG: Higher Military Medical Institute, Sofia, /Head--Docent I. Khariyev/ (Visshyy voyenno-meditsinskiy institut); Scientific Research Institute of Epidemiology and Microbiology, Sofia /Director--Senior Scientific Associate St. Rangelova/ (Nauchno-issledovatel'skiy institut po epidemiologiya i mikrobioloiya)

TITLE: The presence of anthrax spores in soils of a stationary anthrax focus

SOURCE: Epidemiologiya, mikrobiologiya i infektsionni bolesti, no. 4, 1968, 330-335

TOPIC TAGS: soil biology, soil bacteriology, anthrax

ABSTRACT: An examination was made of 246 samples of soil from 78 locations where animals suffering from anthrax were killed and buried. The combined immunofluorescent method plus biopsy in white rats were used. Anthrax spores were discovered in 48 samples (20%) from 22 locations (28.2%); all isolated anthrax strains showed properties typical of anthrax bacillus. This method is recommended for the examination and

ACC NR: AP9007435

control of stationary anthrax foci. Orig. art. has: 2 tables and 1 figure. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: 00Jul68/ ORIG REF: 016/ OTH REF: 003

Card 2/2

ACC NR: AT9009419 SOURCE CODE: UR/3473/67/000/018/0066/0074

AUTHOR: Toshchigin, Yu. V.; Kharchenko, A. P.; Agafonov, A. V.; Pushnitsa, F. A.; Besedin, M. Ye.; Labinova, M. M.; Pod"yemshchikova, L. G.; Beskhlebnaya, R. K.; Ioffe, G. D.

ORG: [Toshchigin] TsNIDI; [Kharchenko] Odessa, PChL; [Labinova, Besedin] Chernovtsy, Gor. SES; [Pod"yemshchikova] Tula, obl. SES; [Beskhlebnaya] Donetsk, obl. SES; [Ioffe] Lugansk, obl. SES; [Agafonov, Pushnitsa] Rostovskiy PChI

TITLE: Distribution, nesting and feeding conditions of the gray rat in coal mines and in city sewer systems

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut. Trudy, no. 18, pt. 3, 1967, 66-74

TOPIC TAGS: rat, disease vector, population study, ecology, nutrition

ABSTRACT: Coal mine shafts are widely settled by rodents, particularly the gray rat, which find the climate agreeable and the sites convenient to food sources. The gray rat is the dominant species and inhabits 277 of the 673 shafts studied, the common mouse inhabiting only 124. The black rat, a new species for mines, was found in two

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ACC NR: AT9009419

shafts in the Podmoskovnyy basin. In the mines the rats are closely associated with people, and mix with them while they search for food. In cities with old-fashioned sewers the rats are quite common, while rats are not found in more modern cities with advanced sewer systems. Human excrement is part of the rat diet in both mines and cities. Orig. art. has: 5 tables. [WA-50; CBE No. 41] [LP]

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

Card 2/2

ACC NR: AP9010670 SOURCE CODE: UR/0433/69/000/002/0044/0045

AUTHOR: Trofimets, L. N. (Candidate of biological sciences); Yegorova, L. I. (Junior research associate)

ORG: Institute of Potato Farming (Institut kartofel'nogo khozyaystva)

TITLE: Indicator plant for diagnosing viruses

SOURCE: Zashchita rasteniy, no. 2, 1969, 44-45

TOPIC TAGS: plant virus, potato, tobacco mosaic virus

ABSTRACT: Seedlings obtained from free pollination of wild *S. chaocense* (Glabrescentia series) are recommended for diagnosis of potato Y virus and tobacco mosaic virus. *S. chaocense* leaves develop potato Y virus infection in daylight at 19—26°, while the difficult standard method with hybrid A-6 requires fluorescent lamps and thermostatic control. *S. chaocense* is a more sensitive indicator of tobacco mosaic virus than *Nicotiana glutinosa*. These indicator plants do not require isolation because of their high field resistance to both viruses. Differential diagnosis between potato Y virus and

Card 1/2 UDC: 632.384/7

ACC NR: AP9010670

TMV is possible because of the different time of appearance of necroses and differences in their form. Use of *S. chacoense* as an indicator for selection of virus-free and resistant potatoes and tobacco is highly recommended. Orig. art. has: 1 figure.

[WA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AT9010081 SOURCE CODE: UR/3479/65/005/000/0182/0185

AUTHOR: Trofimov, G. K. (Candidate of biological sciences)

ORG: none

TITLE: Synanthropic flies of the genus Dasyphora (family Muscidae) in Azerbaydzhan

SOURCE: Baku. Azerbaydzhanskiy nauchno-issledovatel'skiy institut meditsinskoy parazitologii i tropicheskoy meditsiny. Trudy, v. 5, 1965, 182-185

TOPIC TAGS: disease vector, fly, zoology, taxonomy

ABSTRACT: Five species of flies of genus *Dasyphora* (Muscidae) have been identified in Azerbaydzhan. *D. saltuum*, the most numerous and most widely disseminated, was found on human and animal excrement and decaying meat in the Kura-Araks lowland and Apsheron Peninsula, in the Greater and Lesser Caucasus, and the Lenkoranskaya Oblast. The larvae were bred mostly on cattle dung. *D. pratorum pratorum* Mg was found mainly in the humid forest areas of the Greater and Lesser Caucasus, and in the Lenkoranskaya oblasts. *D. cyanella* Mg, which has not been in Azerbaydzhan, was collected from the Central Steppe and Lenkoranskaya oblasts. Two specimens of *D. versicolor* Mg were collected in Arykh from

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Meplius germanica blossoms in 1956. *D. serena* Mg (*Dyrellia serena* Mg) were collected in Mingechaur, Evlakh in the Kura-Araks lowland, and in the Greater Caucasus, from fecal materials. Orig. art. has: 2 tables. [WA-50; CBE No. 41] [XF]

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

ACC NR: AT9007972 SOURCE CODE: UR/3472/67/042/000/0070/0073

AUTHOR: Tulebekov, B. T. (Aspirant)

ORG: Department of Epidemiology /Head-Docent T. L. Proreshnaya/, Kirgiz State Medical Institute (Kafedra epidemiologii Kirgizgosmed-institut)

TITLE: Results of serological study of various population groups for Q fever

SOURCE: Frunze. Kirgizskiy gosudarstvennyy meditsinskiy institut. Sbornik nauchnykh rabot, v. 42, 1967. Nauchnyye raboty aspirantov i klinicheskikh ordinatorov (Scientific papers of postgraduate students and staff physicians), 70-73

TOPIC TAGS: Q fever, epidemiology

ABSTRACT: Serological study of the population of three regions of the Chuya Valley in 1965—1966 showed that 90 out of 1162 sera were positive in the cold complement fixation reaction with *R. burneti* antigen. The percentages of positively reacting people were nearly identical in the three studied areas, Frunze and Kantskiy and Sokulukskiy Rayons. In the city of Frunze the highest percentage

ACC NR: AT9007972

of positive sera was found among tannery workers (10.8%). A total of 8.4% of agricultural workers in rural localities had antibodies to Q fever; 6% of school children and 6.2% of poultry-farm workers also had antibodies. Orig. art. has: 2 tables. [WA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AP9008073 SOURCE CODE: UR/0016/69/000/001/0150/0151

AUTHOR: Ukhov, A. Ya.

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

TITLE: Factors promoting formation of the typhoid-paratyphoid carrier state during convalescence

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 1, 1969, 150-151

TOPIC TAGS: disease carrier state, typhoid fever

ABSTRACT: A 22 year study (1946—1967) of 1495 patients with typhoid fever, 103 with paratyphoid A and 137 with paratyphoid B showed that in most cases excretion of typhoid or paratyphoid bacteria in convalescence was accompanied by various other diseases or complications of the principal infection which weakened the patient's resistance and promoted formation of the carrier state. A total of 42% of patients with accompanying diseases became carriers, as compared with 22% of patients without accompanying diseases. The carrier rate reached 78% for patients with urinary tract infections (cholecystitis,

Card 1/2 UDC: 616.927-036.82-008.97

ACC NR: AP9008073

cholangitis and others) and 88% when urinary tract infections were combined with other somatic diseases. During relapses of typhoid or paratyphoid fever a temporary carrier state was formed 2.2 times more often than during the primary attack. It is well known that the typhoid-paratyphoid carrier state in the convalescent period is more frequently encountered among women and older people. Prolonged hospitalization promotes development of the carrier state to some extent. The rate of carrier formation was lower among patients given chloramphenicol and syntomycin in the first week of illness than among patients given the drugs later during the disease.

[WA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: 29Jan68

Card 2/2

ACC NR: AP9008001 SOURCE CODE: UR/0479/68/000/010/0022/0022

AUTHOR: Uskov, N. Ye.

ORG: none

TITLE: An outbreak of *staphylococcal* food poisoning

SOURCE CODE: Zdravookhraneniye Turkmenistana, no. 10, 1968, 22

TOPIC TAGS: staphylococcus infection, bacterial toxin

ABSTRACT: An outbreak of food poisoning caused by *Staphylococcus* toxin involved 15% of people eating sour milk. A food worker with purulent lesions on the fingers who was directly involved in mixing the milk was the source of infection. The latent period of the infection, from consumption of sour milk to appearance of symptoms, was 2—11 hours (with 57.6% of the patients reporting symptoms within 2 to 5 hours). A total of 26% of the patients suffered a mild form of intoxication, characterized by stomach pains, headache and liquid stool, while 73.9% suffered a moderate infection, characterized by nausea and vomiting, severe headaches and general weakness. Seizures of the gastrocnemius muscle were noted in 4 patients and a temperature of

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ACC NR: AP9008001

37.2—38.2°C in 8 patients. Symptoms disappeared on the second day after treatment. Identical pathogenic *Staphylococcus* cultures were isolated from the sour milk, from the vomit of patients and from the lesions on the food worker's finger. [WA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AP9008072 SOURCE CODE: UR/0016/69/000/001/0145/0149

AUTHOR: Val'kov, B. G.; Agafonov, A. V.; Saleyeva, V. N.; Suvorov, V. S.

ORG: Volgograd Branch, Rostov Antiplague Institute (Volgogradskiy filial Rostovskogo protivochumnogo instituta)

TITLE: The fungistatic and fungicidal action of phenol, lysol and formaldehyde on *Coccidioides immitis* 7/86, *Histoplasma capsulatum* 6652 and *Blastomyces dermatitidis* 6064

SOURCE: Zhurnal mikrobiologii, epidemiologii i immunobiologii, no. 1, 1969, 145-149

TOPIC TAGS: fungicide, coccidiodes immitis, fungal disease

ABSTRACT: Phenol, lysol and formaldehyde demonstrated disinfecting properties with respect to *Coccidioides immitis* 7/86, *Histoplasma capsulatum*, and *Blastomyces dermatitidis* 6064 and can be recommended as disinfectants. Saprophytic fungi and facultative parasites (*Ch. gladosum*, *Penicillium brevi*, *Aspergillus niger*) were more resistant to the 3 disinfectants than the pathogenic fungi. Phenol is recommended as the standard fungicide for comparison of other chemical compounds

Card 1/2 UDC: 615.282:[547.562.1+547.281.1

ACC NR: AP9008072

because of the clear limits of its fungistatic and fungicidal effect. Disinfecting action depended on the concentration of the preparation and exposure, although there were some deviations for short exposure times. Orig. art. has: 2 tables. [WA-50; CBE No. 41] [JS]

SUB CODE: 06/ SUBM DATE: 25Dec67/ ORIG REF: 007/ OTH REF: 004

Card 2/2

ACC NR: AT9009111 SOURCE CODE: UR/3473/67/000/018/0003/0013

AUTHOR: Vashkov, V. I. (Professor)

ORG: none

TITLE: Modern methods and media for combating anthropods

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut. Trudy, no. 18, pt. 2, 1967, 3-13

TOPIC TAGS: pest control, pesticide application, insecticide application, insecticide intoxication, arthropod

ABSTRACT: There are five principal groups of substances used in veterinary practice to eliminate arthropods. They are: chlorinated hydrocarbons, organophosphorus compounds, carbamates, other chemical compounds and plant insecticides. Each of these groups can be divided into subgroups, in particular, chlorinated hydrocarbons can be divided into the following three sub groups: hexachlordane, DDT analogs, and chlorinated terpenes. The most effective agents are DDT, aldrin, hexachlordane and its γ-isomer. All of these compounds are cumulative poisons and have contaminated bread, cheese, tobacco, the air itself, meat, milk, and butter and are therefore rather dangerous to use. Nevertheless, production of these compounds is increasing, and by 1970 the output of industrial grade DDT and the hexachlordane γ-isomer is expected

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to double. However, more than 50 species of insects and arthropods have shown high resistance to these chlorinated hydrocarbons, among these arthropods are those that are vectors of infectious diseases. Organophosphorus compounds are recommended as being superior from a hygienic point of view because they are quickly decomposable by the environment and are therefore less likely to accumulate in lower animals and plants used for food. They are more dangerous, on the other hand, because they inhibit most important vital enzymes such as esterases, particularly cholinesterase. These compounds also act on trypsin, a human liver esterase, the lipase of milk and other enzymes. In addition to the more standard insecticides, the following are used in arthropod control: Chlorophos (dipterex), carbophos (malathion), trichlophos (trichlorometaphos-3), metaphos (volatox), diazinon, thiophos (parathion), dimethyldichlorovinyl phosphate (DDVP), and acetone. The most satisfactory of these is chlorophos. Soviet industry has produced many analogs of carbophos, but they are not standardized since they contain up to 50% of undetermined by-products. Also, the foreign product malathion is used in emulsions. Methylnitrophos is a superior insecticide to chlorophos but its toxicity for mammals is high, although it can be used for arthropod control outside human living areas. DDVP and thiophos are also highly effective insecticides. DDVP has strong fumagating properties and is most promising for application as a mist. Its vapor retains strong insecticidal properties in concentrations of 0.2 mg/lm^3 of air

in which, during a test, a 100% kill of mosquitoes resulted. Flies are killed in the presence of a 0.3 mg/m^3 concentration. Because of its high toxicity, it is usually packed in aerosol cans mixed with freon, in which form it is useful in combatting flying insects. Organophosphorus compounds used in the vicinity of humans must be highly toxic for insects and only slightly toxic for mammals. Another advantage of organophosphorus compounds over the older chlorinated hydrocarbon compounds is that they retain their effectiveness in warm weather when the effectiveness of compounds such as DDT decreases, in fact, the effectiveness of chlorophos especially increases. In a program of combined insecticide use, DDT is recommended for spring and fall treatment and chlorphos for summer treatment. The toxicity of carbamates, one of which is sevin, is about 0.5—0.6 g/kg for rats and 0.25 g/kg for cats; it is slightly toxic for birds and is highly effective against fleas, although being only slightly toxic for flies. Pyrethrins are the most common plant insecticides. Contemporary studies have shown that, currently, the greatest amount of resistance is to four principal groups of insecticides: 1) DDT and its analogs; insects resistant to DDT are resistant to its analogs but are not resistant to organophosphorus compounds, dienes, and other poisons. 2) Hexachlorane or its γ-isomer confers resistance to γ-HCCH and to insecticides obtained by diene synthesis reactions, and also to chlorinated terpenes; insects resistant to dichldrin are resistant to cyclodiene derivatives.

ACC NR: AT9009111

3) Resistance to DDT and related compounds is usually not spread to organophosphorus compounds. Resistance to organophosphorus compounds is generally divided into resistance to malathion and resistance to parathion; resistance to malathion is clearly different to resistance to thiophos. 4) Resistance to pyrithrines, allethrin and its analogs. Because of some of the defects of some of these chemical insecticides, the use of these insecticides is recommended in connection with biological methods, attractants or repellants, sterile males, or sterilizing chemicals, infection of mature adults with pathogens which they transmit to their progeny and use of natural enemies of these pests.
[WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 4/4

ACC NR: AT9009144 SOURCE CODE: UR/3473/67/000/018/0076/0081

AUTHOR: Vashkov, V. I.; Ginzburg, R. M.

ORG: none

TITLE: Decontamination of air permeated with microbes and spores by ultraviolet irradiation

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut. Trudy, no. 18, pt. 1, 1967, 76-81

TOPIC TAGS: decontamination, spore, microorganism, UV radiation biologic effect

ABSTRACT: The effectiveness of a new device using ultraviolet rays to sterilize air was tested in a chamber artificially infected with a *Staphylococcus aureus* dispersion. Air flow through the device was about 0.5—0.8 m/sec. The device containing 54 ultraviolet lamps killed about 99.9% of the organisms; in analogous conditions, the kill of vegetative normal air fauna was about 93% and the kill of sporulating microorganisms about 47%. Orig. art. has: 3 tables.
[WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 1/1

ACC NR: AT9009139 SOURCE CODE: UR/3473/67/000/018/0029/0035

AUTHOR: Vashkov, V. I.; Prishchep, A. G.

ORG: none

TITLE: Sterilization with chemical substances

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut. Trudy, no. 18, pt. 1, 1967, 29-35

TOPIC TAGS: chemical decontamination, sterilization, ethylene oxide, medical equipment, surgical equipment

ABSTRACT: Comparative evaluation of the bactericidal properties of ethylene oxide, methyl bromide, a mixture of both compounds designated OB mixture, and of Krioksid (ethylene oxide 11%, difluorochloromethane 44.5%, fluorotrichloromethane 44.5%) against various soil microflora showed that the OB mixture was 5—6 times more effective than Krioksid against spores of microorganisms attacking vegetables and three times more effective against *Escherichia coli*, *Staphylococcus aureus* and *Bacillus subtilis*. Study of the effectiveness of the recommended sterilization regimens with the four agents noted above was tested on substances used for internal prostheses, metal instruments and synthetic substances used in medicine and surgery, showed that the equipment was

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ACC NR: AT9009139

sterile after exposure to the OB mixture at 40°C at 80—90% humidity. No toxic tissue reactions to high polymer polyethylene sterelized in OB mixture were noted in rats following subcutaneous implantation. Thus, the OB mixture is recommended for sterilization of internal prostheses. Orig. art. has: 1 table. [WA-50; CBE No. 41] [XF]

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

Card 2/2

ACC NR: AT900941 SOURCE CODE: UR/5473/67/000/018/0025/0026

AUTHOR: Vashkov, V. I. (Professor); Rabinovich, M. V.; Volkova, A. P.; Izotova, Ye. P.

ORG: none

TITLE: Toxicity of methylinotrophos for warm blooded animals

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut. Trudy, no. 18, pt. 3, 1967, 25-26

TOPIC TAGS: poison effect, animal, insecticide toxicology

ABSTRACT: The toxic effects of methylnitrophos(0,0-dimethyl-0-0-3-methyl-4-nitrophenylthiophosphate) via peroral, subcutaneous and inhalation administration were determined in white mice and rabbits. In white mice the LD_{50} varied between 112—600 mg/kg and the LD_{100} between 200—1100 mg/kg. Rabbits were more sensitive to methylnitrophos than were white mice with an LD_{100} of 150 mg/kg. This compound was given subcutaneously to rabbits and white mice in 2, 10 and 30% concentrations for one month, once a day. Concentrations of 0.5—1% did not produce any adverse effects in animals. Any reactions encountered were of a transitory or localized nature. Concentrations of 30% applied to rabbit eyes produced severe conjunctivitis while a 2% solution caused only slight

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ACC NR: AT900941

irritation. Slight lymphopenia and neutrophilesis were noted in the blood after inhalation administration. While the compound is relatively harmless, its use is forbidden in inhabited buildings because of its irritating properties. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AT9009147 SOURCE CODE: UR/3473/67/000/018/0089/0091

AUTHOR: Vashkov, V. I.; Skala, L. Z.; Gracheva, I. N.; Verkholetova, G. P.

ORG: none

TITLE: Bactericidal and sporicidal compounds of some iodofors

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut. Trudy, no. 18, pt. 1, 1967, 89-91

TOPIC TAGS: bactericide, sporicide, bacteriostasis

ABSTRACT: The bactericidal and sporacidal effects of some Iodofors were determined. Iodofors are complexes of iodine and a carrier which in aqueous systems increases the solubility of iodine in water and enhances its germicidal effects. Effective concentrations of Iodofor complexes are often very low; 0.001% is active against vegetative forms of microorganisms after exposure up to 5—10 min and 0.5—0.6% solutions are effective against sporulating forms after 10—12 hr exposure at a pH lower than 4. In all, 22 samples of Iodofors were tested: polyvinylpyrrolidone (9 mixtures), sulfanol (2 mixtures), OP (2 mixtures),

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ACC NR: AT9009147

emulsions (5 mixtures), caprolactam, polyglycyl alcohol and cetyl(octadecyl)triethylammonium bromide (1 mixture with each of these substances). [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AT9009117 SOURCE CODE: UR/3473/67/000/018/0037/0042

AUTHOR: Vashkov, V. I.; Slonov, M. N.; Bogdanova, R. A.

ORG: none

TITLE: Insecticidal properties of sevin in relation to common parasites

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut. Trudy, no. 18, pt. 2, 1967, 37-42

TOPIC TAGS: parasitology, parasite, insecticide application, insecticide intoxication

ABSTRACT: The effectiveness of sevin was tested against common parasites: fleas, bedbugs, beetles, and flies. It was most effective against fleas and bedbugs, while flies and beetles were more resistant to its action. Sevin is highly insecticidal when applied to glass and painted plywood. Plywood panels were painted and the wooden panels were left unpainted. The application of sevin for bedbug and flea control is best accomplished when the insecticide is applied as a water suspension. Recommended concentration of the solution is 30—50 ml of 1% solution per m^2 of surface area. Orig. art. has: 2 tables. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 003/ OTH REF: 005

Card 1/1

ACC NR: AY9008865 SOURCE CODE: UR/3463/68/000/008/0100/0129

AUTHOR: Vershinskiy, B. V.; Karpenko, A. S.

ORG: none

TITLE: Possibilities and means of using forestation maps for medical geographical purposes

SOURCE: Geograficheskoye obshchestvo SSSR. Doklady otdeleniy i komissiy, no. 8, 1968. Meditsinskaya geografiya (Medical geography), 100-129

TOPIC TAGS: medical geography, epidemiologic map, forestry, mapping

ABSTRACT: Individual maps such as the four discussed in the text (plant cover of the Transbaikal, mammal hosts of naturally focal diseases, Ixodid tick carriers of disease, and naturally focal diseases) can be superimposed on more standard geobotanical maps of an area to obtain meaningful data on the interreactions of plant cover, human habitation

Card 1/3

ACC NR: AT9008865

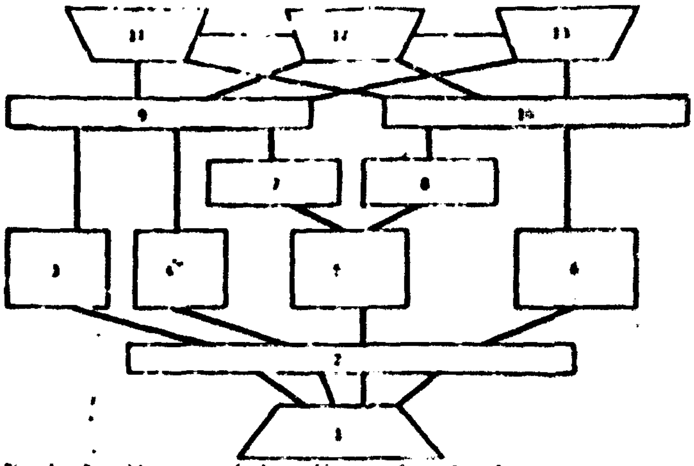

Fig. 1. Possible routes of plant effects on human health

1 - Healthy population; 2 - features of the economy, habits, and nutrition of a population; 3 - formation of a ground air layer (by production, airborne biologically active allergens); 4 - formation of balneological media (peat bog and ground litter); 5 - formation of the nutritional scale of a population; 6 - formation of a habitat environment of a [illegible] hosts of pathogenic parasites (natural disease foci); 7 - plants as a [illegible] source for nutritive and medicinal substances for humans; 8 - plants as a source for microelements and vitamins for animals; 9 - elements of direct influence by plants on the human body; 10 - indirect effect of plants on the human body; 11 - indirect plant relationships; 12 - the type of economy utilizing a locality; 13 - [illegible] plant relationships.

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ACC NR: AT9008865

and animal disease carriers as shown in Figure 1. A survey of the literature on this subjects follows. Orig. art. has: 2 figures.
[WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 071/ OTH REF: 009

Card 3/3

ACC NR: AP9009231 SOURCE CODE: UR/0290/68/000/003/0120/0124

AUTHOR: Vinitskiy, I. M.

ORG: Institute of Cytology and Genetics, Siberian Department, AN SSSR, Novosibirsk (Institut tsitologii i genetiki Sibirskogo otdeleniya AN SSSR)

TITLE: The mechanism of the convulsive action of picrotoxin

SOURCE: AN SSSR. Sib otd. Izv. Ser biolog-med n., no. 3, 1968, 120-124

TOPIC TAGS: analeptic drug, cerebral cortex, nervous system drug effect, cat

ABSTRACT: The role of different segments of the brain in the development of picrotoxin-induced generalized convulsions was studied in rabbits and cats with intact brains and sectioned brain stems. Brain biocurrents were studied with bipolar electrodes implanted in the bone in areas corresponding to projections of the sensorimotor and visual cortical areas. The EEG was registered with the 8-channel apparatus made by the Kaizer Factory. A 25% solution of picrotoxin was administered intravenously to rabbits at 1 mg/kg and to cats at 0.5 mg/kg. Picrotoxin administered to animals with intact brains

Card 1/2 UDC: 615.78

ACC NR: AP9009231

caused characteristic changes in brain bioelectrical activity of a convulsive nature. The experiments showed that the spinal cord does not play an important role in picrotoxin-induced convulsions. Convulsions were induced in animals with trigeminal sections with the same doses as were used in intact animals. The ponto-mesencephalic segment of the brain stem and the diencephalon were found to play an important role in the mechanism of the convulsive action of picrotoxin. A significant increase in the picrotoxin dose necessary to produce convulsions in the cerebral cortex in high brain stem sections shows, that the midbrain is the principal pacemaker. The absence of convulsions on the EEG following high sections and a single convulsion-inducing dose of picrotoxin is not connected with disorders of cerebral blood vessel patency or changes in the functional state of the higher brain segments, because administration into the general circulation of methylene blue solution caused staining of the brain above the level of the section, and because every one of the sections caused characteristic EEG changes. Orig. art. has: 2 figures.

[WA-50; CBE No. 41] [XF]

SUB CODE: 06/ SUBM DATE: 02Apr67/ ORIG REF: 005/ OTH REF: 012

Card 2/2

ACC NR: AT9009418 SOURCE CODE: UR/3473/67/000/018/0059/0066

AUTHOR: Vishnyakov, S. V.

ORG: none

TITLE: Possible reasons for a plague epizooty in the mountains of Tientsin and means of suppressing it

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut. Trudy, no. 18, pt. 3, 1967, 59-66

TOPC TAGS: epizootiology, plague

ABSTRACT: The increase in the flea population accounts for the increased incidence of plague in a mountainous area of Tientsin. The fleas can harbor plague agents for a long time in their relatively long-lived and dense populations. Moisture, nest density of rodents and other factors cause intense variation of flea populations within the area. Because of the mountainous terrain, antiparasite measures are not suitable and rodent control must be practiced instead. Orig. art. has: 4 tables.
[WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 013

Card 1/1

ACC NR: AT9009417 SOURCE CODE: UR/3473/67/000/018/0053/0058

AUTHOR: Vishnyakov, S. V.; Gorbunov, M. A.; Konosh, L. I.; Vasyuta, Yu. S.; Klug, A. S.; Retina, T. N.; Martsinkevich, C. I.; Yevladov, A. V.; Kurcheyeva, L. I.; Kuznetsova, K. V.; Filippenkova, Ye. D.; Klug, L. S.; Baran, I. T.; Kochetov, V. A.

ORG: [Vishnyakov, Gorbunov, Konosh] TsNIDI; [Vasyuta] GSEU Ministry of Health RSFSR (GSEU Minzdrava RSFSR); [Klug, Retina, Martsinkevich, Yevladov, Kurcheyeva, Kuznetsova] Republic SES Bash ASSR (Respublikanskaya SES Bash ASSR); [Filippenkova, Klug] Ufa City SES; [Baran, Kochetov] Professional Department, Ufa City Disinfection Station (Profotdeleniya Ufimskoy gorodskoy dezstantsii)

TITLE: Effectiveness of forest rodent control in the spring in natural foci of the Ufa renal hemorrhagic fever

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut. Trudy, no. 18, pt. 3, 1967, 53-58

TOPIC TAGS: hemorrhagic fever, rodent, disease vector, pest control

ABSTRACT: Spring rodent control in the vicinity of Ufa in the spring of 1965 lowered the expected incidence of renal hemorrhagic fever for that

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ACC NR: AT9009417

year. Rat control did not eliminate all local foci of the disease however, and it is thought that repeated yearly treatments will be necessary. The area treated was the so-called "Old Ufa Focus" and the untreated area is the "New Ufa Focus." In all, an area of 5000 ha was treated. After rodent control measures had been applied, the rodent population increased slowly through the summer. By September, an increase of only 3—4% had been noted but by the end of October the number had grown to 30—40% of normal and in some places to 60—70%. Orig. art. has: 3 tables and 1 figure. [WA-50; CBE No. 41] [LP]

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

Card 2/2

ACC NR: AP9010686 SOURCE CODE: RU/0023/69/014/001/0053/0055

AUTHOR: Vita, A.; Minecan, N.; Cuciureanu, G.; Micu, I.; Mihul, V.; Stanciu, C.

ORG: Infectious disease clinic IMF, Iasi (Clinica de boli infectioase)

TITLE: *Salmonella typhimurium* detected in a case of splenic abscess

SOURCE: Microbiologia, parazitologia, epidemiologia, v. 14, no. 1, 1969, 53-55

TOPIC TAGS: salmonella, human ailment, serology, serologic test

ABSTRACT: A case of splenic abscess caused by *Salmonella typhimurium* is described. Hemocultures of *S. typhimurium* were isolated and agglutinin titers of 1:3200 were found. The patient lived in a rural environment and spent much of his time outdoors. A splenectomy was performed and the patient recovered. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: 08Jul68/ ORIG REF: 016/ OTH REF: 001

Card 1/1 UDC: 616.981-022.3-022.714.9

ACC NR: AP9010681 SOURCE CODE: RU/0023/69/014/001/0001/0010

AUTHOR: Voiculescu, C.

ORG: Dr. I. Cantacuzin Institute, Bucharest (Institutul "Dr. I. Cantacuzino")

TITLE: Discussion of immunoglobulins important in viral infections

SOURCE: Microbiologia, parazitologia, epidemiologia, v. 14, no. 1, 1969, 1-10

TOPIC TAGS: immunoglobulin, immunogenesis, gamma-globulin, antigen

ABSTRACT: The nomenclature, classification, possible structure, and physical and chemical properties of immunoglobulins important in viral diseases are discussed. Three degrees of specificity of immunoglobulins have been discovered: isotypic, allotypic and idiotypic. A summary of antibody activity with respect to viruses, primarily based on foreign literature, follows. Orig. art. has: 3 figures. [WA-50; CDE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: 07Sep68/ OTH REF: 051

Card 1/1 UDC: 615.375:616.983

ACC NR: AP9008017 SOURCE CODE: UR/0183/69/000/001/0016/0019

AUTHOR: Vol'f, L. A.; Kotetskiy, V. V.; Meos, A. I.; Khokhlova, V. A.; Yemets, L. V.

ORG: none

TITLE: Biological activity of fibers

SOURCE: Khimicheskiye volokna, no. 1, 1969, 16-19

TOPIC TAGS: antiblastic fibers, synthetic fiber

ABSTRACT: Biologically active fibers are used extensively in clinical medicine as bandages, prosthetics, tampons, and towels. Other special fabrics have other specialized biological activity of varying character, for example insecticidal and antifungal materials. Many of these medicinal media contain in their structure atoms of nitrogen as amines or imines, or are quaternary ammonium compounds and other cation-active materials; some polymers are also used. Hemostatic and anticoagulating materials are impregnated with various alcohols, metal salts and other compounds. The pH of many of these medicinal substances are usually less than 7 (weakly acid) or are applied to carboxyl or sulfhydryl-fibers as sodium salts. Anesthetic fibers impregnated with Novocain

Card 1/3 UDC: 677.46

Table 1. Antibacterial activity of polyvinyl alcohol fibers with covalent bonds to antiblastic preparations after various environmental factors have acted on them

Type of fabric treatment	Character-istic action	Most stable coupling product	Antibacterial effect of the fiber content			
			In liquid medium	On solid medium	Aerosol infection method	
			In veal peptone bouillon (ml)	Diameter of inhibition zone during growth of test culture	Decrease in bacterial fertilit	
			Staphylococcus			E. coli
Thermostabilization at 220°C for 10 minutes	Mixed with water	—	<100	0	0	0
Acetylation with formaldehyde	Mixed with hot water	—	<100	0	0	0
Acetylation with 5-(5-nitro-furyl-2)acrolein	"	--	1500	18	76.7	91.4
	Autoclaved at 1/2 atmosphere for 30 min	O_2N-(furan)-CH=CH-C(=O)H	Not proved		89.9	93.9
	Extraction with acetone for 7 days	—	100	10	Not proved	
	Same, with subse-quent treatment in 0.1 in H_2SO_4 solution	O_2N-(furan)-CH=CH-C(=O)H	1000	21	"	

Table 1. (Cont.)

Acetylation with chloroacetaldehyde and treatment with streptocidin	Washing with hot 0.5 in NaOH solution and water	—	Not proved	10	0
	Same with subsequent boiling in 0.1 in H_2SO_4 solution	O=C(H)-CH_2-NH-(benzene)-SO_2NH_2	"	14	0
Acetalation with furfural, bromination and treatment with streptocidin	Washing in hot 0.4 in NaOH solution and water	—	0	10	0
	Same, with subsequent boiling in 0.1 in H_2SO_4	O=C(H)-(furan)-NH-(benzene)-SO_2NH_2	0	17	0

* Volume in which one gram of fiber completely inhibits the growth of the test bacteria

have been tested *in vivo* in rabbits. Some of the antibacterial activities of polyvinly fibers are shown in Table 1. Thermostable and formalinized polyvinly alcohol fibers do not show biological activity although they contain specific antiblastic groups within their structure. Orig. art. has: 2 tables. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: 24Oct67/ ORIG REF: 015

ACC NR: AT9009410 SOURCE CODE: UR/3473/67/000/018/0016/0021

AUTHOR: Volkova, A. P.; Grin', N. R.

ORG: none

TITLE: DDVP toxicity data for warmblooded animals

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut. Trudy, no. 18, pt. 3, 1967, 16-21

TOPIC TAGS: insecticide toxicology, mammal, bird, poison effect/(U) DDVP insecticide

ABSTRACT: In tests of Soviet manufactured DDVP, it was established that the LD_{50} for mice varies between 75—175 mg/kg; the LD_{100} from 125—275 mg/kg; LD_{50} (82% technical grade DDVP) for mice is 100 mg/kg and the LD_{100} is 125 mg/kg. The MLD of technical grade DDVP for mice is 75 mg/kg and the LD_{50} for rats is 75 mg/kg. Rabbits are especially sensitive to this substance, which in 50—100 mg/kg doses kills within 10 min after administration. Doses of 5—10 mg/kg are toxic but not lethal. In rabbits the intake of DDVP causes a gradually ascending fibrillation of the muscles within minutes after administration, accompanied by disruption of coordination, rapid pulse, breathing,

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ACC NR: AT9009410

asphyxia, salivation, running eyes, diuresis and more frequent defecation. The compound has only weak cumulative effects, and is quickly metabolized by the body. Mice can also become accustomed to repeated doses, and injection through the skin does not cause a generalized toxic reaction. Upon inhalation of 0.5% aqueous solutions applied as an aerosol (100 ml/m^3) for varying durations from 3 hr—1 mo, rabbits, mice and rats displayed minor changes of the blood and organs, but most results were inconclusive, differing little from those obtained from control animals which inhaled only water droplets.

[WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 005/ OTH REF: 005

Card 2/2

ACC NR: AT9009416 SOURCE CODE: UR/3473/67/000/018/0044/0045

AUTHOR: Volkova, A. P.; Ramkova, N. V.

ORG: none

TITLE: Toxicity of a bactericidal smokepot containing hexachlorophene and pentachlorophenol

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut. Trudy, no. 18, pt. 3, 1967, 44-45

TOPIC TAGS: bactericide, bacteriostasis, fumigation

ABSTRACT: Disinfection via the ignition of a bactericidal hexachlorophene-pentachlorophenol smokepot is simple since the smokepot is easily portable. Its contents include a thermic mixture of the bactericide and fumigant which generates aerosol particles with a diameter of less than 10^{-5} cm. Variations in environmental temperatures between +10 to -8°C do not affect the efficiency of a hexachlorophene-pentachlorophenol mixture. The optimum amount is considered to be 7—9 g/m^3 for practical use at ridding a place of *Staphylococci* when applied 3 times in 2 wks. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 1/1

ACC NR: AT9009145 SOURCE CODE: UR/3473/67/000/018/0081/0083

AUTHOR: Volkova, A. P.; Shcheglova, G. V.; Mal'tseva, T. A.; Virnik, A. D.; Rogovin, Z. A.

ORG: none

TITLE: Toxicological testing of antiblastic cellulose fibers

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut. Trudy, no. 18, pt. 1, 1967, 81-83

TOPIC TAGS: antiblastic fiber, cellulose, toxicology

ABSTRACT: Antiblastic cellulose fibers were tested for their toxicity. These fibers were either coated with antiseptic substances (industrial fungicides, 1.6% silver, 16% hexachlorophene, 7.8% n-cetylpyridine, or 2.3% copper) or were themselves antiblastic or bactericidal in nature. All fibers were antiblastic toward *Staph. aureus* and *E. coli* but lost some of their bactericidal properties after extensive testing. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 1/1

ACC NR: AT9009341 SOURCE CODE: UR/3481/67/000/015/0019/0029

AUTHOR: Vorontsov, A. I.

ORG: Moscow Forest Technology Institute (Moskovskiy lesotekhnicheskiy institut)

TITLE: Criteria for initiating chemical measures against leaf eating insects

SOURCE: Moscow. Lesotekhnicheskiy institut. Sbornik rabot, no. 15, 1967. Voprosy zashchity lesa (Aspects of forest protection), 19-29

TOPIC TAGS: pest control, chemical pest control, agriculture crop, forestry, economic entomology

ABSTRACT: Recommended measures for control of tent caterpillars in forests include: physical, chemical and biological control measures. Seriously infested trees must be destroyed so as not to spread the infection further. Trees which can still be saved should be sprayed and a conscientious spraying program for surrounding areas must be pursued. In the forest-steppe zone, more rigorous insect control should be practiced. In other cases, means of pest control must be adopted to the peculiarities of the region. Orig. art. has: 2 tables.
[WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 1/1

ACC NR: AT9009344 SOURCE CODE: UR/3481/67/000/015/0079/0084

AUTHOR: Yafayeva, Z. S.

ORG: Moscow Forest Technology Institute (Moskovskiy lesotekhnicheskiy institut)

TITLE: Tables of silkworm parasite species

SOURCE: Moscow. Lesotekhnicheskiy institut. Sbornik rabot, no. 15, 1967. Voprosy zashchity lesa (Aspects of forest protection), 79-84

TOPIC TAGS: parasite, parasitology, host parasite relationship, taxonomy

ABSTRACT: Tentcaterpillar (Siberian silkworm) parasites are composed of eight families: Ichneumonidae, Braconidae, Chalcididae, Eurytomidae, Perilampidae, Pteromalidae, Eupemidae, Proctotrupidae. Over 158 species of these families have been identified in Europe and Asia. A table (in Russian) describes the species of each family and the stage of the insect life cycle in which parasitism occurs. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 1/1

ACC NR: AT9008862 SOURCE CODE: UR/3463/68/000/008/0012/0028

AUTHOR: Yelkin, I. I.; Yashkul', V. K.

ORG: Geographical Society SSSR (Geograficheskoye obshchestvo SSSR)

TITLE: Content and basic tasks of epidemiological geography

SOURCE: Geograficheskoye obshchestvo SSSR. Doklady otdeleniy i komissiy, no. 8, 1968. Meditsinskaya geografiya (Medical geography), 12-28

TOPIC TAGS: epidemiology, medical geography, epidemiologic map, biologic conference

ABSTRACT: This paper was presented at the Second Scientific Conference on Problems of Medical Geography, 23—27 November 1965. The basic goal of epidemiological geography is not only to study the geographic distribution of infectious human diseases but also to discover the reasons for the outbreak and spread of these diseases on a continental or worldwide scale. To do this, the relationship between the activities of a population and the etiological factors of the surrounding environment are studied according to etiological, epidemiological and geographical methods. In studying the etiological aspects of these diseases, the infectious pathology in isolated

individuals is studied. In such cases, the reasons are investigated for the outbreak and development of infectious diseases of individuals in response to a given organism on the basis of the general susceptability of that person. Thus, an individual can have a specific, characteristic response to the surrounding environment and to the infectious agent. Therefore, something must be known about the reasons for the distribution of infectious diseases in human society — the epidemiological aspect which treats the reactions between groups of people and etiological factors. This phenomenon of parasitism explains much of the behavior of the development of infectious disease epidemics, this is discussed in detail. Since many of the most serious infective disease agents are not spread directly from human to human, the human being only an incidental host, the epidemiological aspect of such studies takes into account the contacts between groups of people and wild animal vectors, synanthropic and domestic animals and miscellaneous animals and insects. These disease vectors have definite population structures and relationships with the surrounding environment, such as herds of agricultural animals, the relationship of these animals to human habitation etc. Table 1 summarizes some of these ecological and social factors affecting the contacts between humans and animal disease factors. The geographic aspect of medical geography has as its basic goal the study of the geographical environment, its heterogeneous character and the distribution within it of

ACC NR: AT9008862

Table 1. Ecological and social economic trends in an epidemiological study of infectious pathology of humans

		Naturally focal zoonoses	Zoonoses of synanthropic animals	Zoonoses of agricultural animals	Anthroponoses
Ecological trends	Individual ecology	Study of individual response to environmental factors, the relationship of the individual to its habitat (living conditions). Study of the relationship between agent and the host organism, and also between the agent and the human body, as a biological system. Study of the infectious pathology of individuals, ecological (ecophysiological) relationships of the "host parasite" biological system			
	Population ecology	Study of the relationship of populations to the environment, the conditions and means of population formation, their structures, dynamics and processes of interpopulation contact (the field of population ecology of wild and synanthropic animals)		Study of population ecology of zoonosis agents in livestock and also the population ecology of human disease vectors	

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ACC NR: AT9008862

Table 1. (Cont.)

Ecological trends	Echological relationships (biocenoses)	Study of the formation, structure and dynamics of existing relationships (natural biosynosis and the biosynoses of synanthropic animals) and their response to the environment. Study of parasitic systems and biocenotic links between their members (the field of epizootiology of wild and synanthropic animals)		The ecology of wild and synanthropic animals in connection with the transmission of zoonosis agents or anthroponosis agents via livestock	
Social and economic trends	Economic and epizootiology of agricultural animals			Structure and organization of animal raising societies, the population dynamics of livestock and their relation with the disease agent or an agent vector population	
	Sociology	Study of organization, structures and dynamics of human society (in the world sense)			
	Epidemiology	Study of the process of interaction between groups of people and populations of agents in natural and synanthropic biocenosis		Process of interaction between groups of people and agents of domestic animal diseases	Process of interaction between groups of people and populations of human disease agents

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Table 2. Basic groups of infections, conditions for their formation into epidemiological complexes

		Infections most common to cities and populated areas	Infections more typical of agricultural areas	Ubiquitous diseases
Anthroponoses	Infections with a short agent life cycle: scarlet, coughing, smallpox, influenza and other virus diseases)		Infections whose distribution depends on natural and geographical factors: malaria, cholera, helminthoses and others	Infections with a long agent life cycle: typhoid, paratyphoid, dysentery, tuberculosis and others
Zoonoses			Infections spread among livestock: brucellosis, glanders, anthrax, and others - naturally focal infections, found in wild areas: plague, tularemia, tick-borne encephalitis, some fungus diseases and others	Certain zoonoses of synanthropic animals: murine typhus, others. Zoonoses with a wide range of carriers: trichinellosis and others

separate factors, properties, and quantities the development and spread of infectious human diseases and the questions of the range of physical and economic factors affecting outbreaks and spread of diseases. In the field of physical geography, the baric task is the study of the natural living conditions of human society and the geography of abiotic and biotic elements within the environment, the geographical distribution and territorial spread of infectious human diseases. In this study, types, structures and area dynamics of agent species are mapped. Also discussed are the concepts of "nosogeography" and nosoareas." Other aspects of medical geography are regional and historical epidemiological studies showing the establishment and development of human infectious pathology on a world scale, the history of formation and distribution of epidemiological regions of the world and its links with evolution of nature and human society. Each of these regions is characterized by special epidemiological conditions. Orig. art. has: 2 tables. [VA-5U; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 029/ OTH REF: 002

ACC NR: AT9009140 SOURCE CODE: UR/3473/67/000/018/0050/0055

AUTHOR: Yevdokimova, M. P.; Timonich, O. P.; Savel'yeva, A. R.; Pavlovskaya, L. G.; Mazurova, L. P.; Corshechnikova, T. M.; Gvozdeva, I. V.; Polyakova, G. M.; Yelistratova, V. K.; Tukhlanova, V. N.

ORG: none

TITLE: Study of the epidemiological effectiveness of terminal disinfection in dysentery foci

SOURCE: Moscow. Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut. Trudy, no. 18, pt. 1, 1967, 50-55

TOPIC TAGS: dysentery, communicable disease, epidemiologic focus

ABSTRACT: A study of dysentery morbidity in an unidentified city from July 1963 to December 1964 indicated that it was impossible to evaluate the effectiveness of terminal disinfection because all cases were not registered and because sanitary and epidemiological conditions in areas of focal infection and in control areas were unequal, which made it impossible to evaluate the data objectively. An accurate evaluation of the effectiveness of terminal disinfection for dysentery control requires that data on transmission through water sources be eliminated, that foci where patients remain at home and where continuous disinfection is

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ACC NR: AT9009140

practiced be omitted from data to be evaluated, that data from childrens institutions and general living quarters be omitted, that not less than 25% of the foci studied be subject to bacteriological control, that bacteriological examination of contacts be done no less than twice during the study, and that the effectiveness of disinfection be evaluated by two indices, namely, according to focalization and according to the results of bacteriological control of the quality of disinfection.

[WA-50; CBE No. 41] [XF]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AP9009524 SOURCE CODE: UR/0438/69/031/001/0027/0031

AUTHOR: Yus'kiv, R. V.

ORG: Institute of Microbiology and Virology AN URSR (Institut mikrobiologii AN URSR)

TITLE: Toxicity of different strains of *Stachybotrys alternans* and *Stachybotrys lobulata*

SOURCE: Mikrobiolohichnyy zhurnal, v. 31, no. 1, 1969, 27-31

TOPIC TAGS: microorganism toxicity, poison effect, bacterial toxin

ABSTRACT: The toxicity of 21 strains of *Stachybotrys alternans* and 16 strains of *Stachybotrys lobulata* fungi was determined orally and by skin tests in albino mice and guinea pigs, and in rabbits, respectively. All the fungal strains were toxic when fed to mice and guinea pigs. Ether extracts of 19 *alternans* and 12 *lobulata* strains caused a necrotic reaction on depilated rabbit skin. Stachybothriotoxins were detected in ether extracts of intact organisms, mycelia, conidiophores, conidia and sterigmas by a color reaction with resorcinol in HCl. Orig. art. has: 2 tables. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: 20May67/ ORIG REF: 008/ OTH REF: 001

Card 1/1 UDC: 528.288.1

ACC NR: AP9007123 SOURCE CODE: UR/0297/69/014/001/0055/0061

AUTHOR: Zak, A. F.

ORG: Department of Antibiotics /head--prof. L. M. Yakobson/, Control Scientific Research Institute of Medical and Biological Preparations im. L. A. Tarasevich, Moscow (Otdel antibiotikov Kontrol'nogo nachno-issledovatel'skogo instituta meditsinskikh biologicheskikh preparatov)

TITLE: Biological activity of antibiotics in experimental dysentery infections of tissue cultures

SOURCE: Antibiotiki, v. 14, no. 1, 1969, 55-61

TOPIC TAGS: dysentery, human ailment, antibiotic, tissue culture

ABSTRACT: The biological activity of streptomycin, neomycin and monomycin were evaluated in monolayer tissue cultures infected with *Shigella sonne* and *Shigella flexneri*. All three antibiotics decreased the number of viable *Shigella* cells when added in 1000 Units/ml doses, and in a few cases, streptomycin completely sterilized the tissue culture. The pathogenicity ratings of the *Shigella* strains tested did not affect their penetration into the tissue culture, their multiplication in the culture or their resistance to antibiotics. Orig. art. has: 3 figures. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: 24Oct67

Card 1/1 UDC: 615.33.036.8.076.7:576.851.49

ACC NR: AP9008108 SOURCE CODE: UR/0177/69/000/001/0047/0051

AUTHOR: Zalmover, I. Yu. (Colonel; Medical service); Znamenskiy, V. A. (Lieutenant colonel; Medical service); Ignatovich, V. O. (Colonel; Medical service); Vishnyakov, A. K. (Major; Medical service); Serov, G. D. (Major; Medical service)

ORG: none

TITLE: Clinical aspects of Far Eastern scarlet fever-like disease

SOURCE: Voyenno-meditsinskiy zhurnal, no. 1, 1969, 47-51

TOPIC TAGS: epidemiology, clinical medicine, human ailment, pseudotuberculosis

ABSTRACT: 570 Persons suffering from Far Eastern Scarlet Fever-like disease were examined between 1959—1966. Most of these were males between 20—25 yr. The majority (83.8%) were examined between March and June; 100 of them had been bacteriologically checked for pseudotuberculosis. This disease was characterized by polymorphism and some cyclic tendencies. Five stages of the disease were identified: initial, rash, remission, recividism, acute stage and recovery. Usually there is no rash until the end of the first feverish period, which was observed in 97.4% of the patients. In 2.6% of the patients, a rash

 UDC: 616.911-07

appeared during the first hours of illness. There is a rather long incubation period, usually lasting between 5—11 days, from the appearance of symptoms to the observation of the rash. Commonly, the illness appears in the acute form: 87% of the patients reported headaches, 90.5% — dizziness, 97.4% — general weakness, and, simultaneously with the above symptoms, 38.6% had symptoms of localized infections. Nausea and digestive upsets appeared in 19.3%, vomiting in 9.1%, coughing in 3.1%, intestinal pains in 5.6%, pains in the upper respiratory tract and coughing in 12.2%, throat pains and difficulty swallowing in 24.4%. Symptoms of intoxication were general among the patients. Most of the patients (92.9%) suffered from fever for an average of 3.3 days. In 3% of the cases, meningeal symptoms appeared. Observations of the patients revealed hyperemia of the face, neck and chest, reddening of the conjunctiva, irritation of the schlera and also general sensitivity to touch. Scarlet fever-like symptoms appeared on the first to sixth day of the disease. Eleven percent of the cases had some hemorrhaging. Some of the patients (3.3%) suffered from acute gastroenteritis and terminal ileitis (24.7%). Pains in the fingers and toes ranged from moderate to acute. Intense difficulty in breathing was experienced by the 1.2% of the patients who were most severely affected. Symptoms of liver disorders appeared in many of the patients: jaundice — 5.5%, yellowing of the schlera — 19.4%, increased bilirubin content in the blood, bilirubin in the urine — 48.4%, and

ACC NR: AP9008108

positive yellow pigment reactions — 6.6%. Leucocytosis was noted in 66.5% of the patients and 30.9% of the patients had normal amounts of leucocytes. In 2.6% of the patients, the leucocyte count was below normal. Fifty percent of the patients had an accelerated ESR. Five percent of the patients displayed symptoms of focal nephritis. By the second to fourth week, 35% of the patients were well on their way to recovery while 45.5% of the patients experienced remission during this period. Most of the patients (97.2%) were recovering after 15 days. The most frequent side effects observed were intestinal tract disorders (in 76.8%). The clinical form appeared most frequently (54.8% of the cases) and a scarlet fever-like form was present in 20.4% of the cases. Of the 100 bacteriological studies mentioned above, pseudotuberculosis bacteria were isolated from 82 persons who displayed the clinical symptoms of the disease. Orig. art. has: 1 table.

[WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 3/3

ACC NR: AT9008708 SOURCE CODE: UR/0000/67/000/000/0104/0109

AUTHOR: Zasukhina, G. D.; Chekova, V. V.; Frolova, N. M.; Bragina, T. A.

ORG: Institute of Poliomyelitis and Viral Encephalidites AMN SSSR, Moscow (Institut poliomiyelita i virusnykh entsefalitov AMN SSSR); Order of Lenin Institute of Chemical Physics AN SSSR, Moscow (Ordena Lenina Institut khimicheskoy fiziki AN SSSR)

TITLE: Specificity of the mutagenic effect using TBE virus as a model

SOURCE: Vsesoyuznyy simposium po khimicheskomu mutagenezu, 1st, Moscow, 1967. Spetsifichnost' khimicheskogo mutageneza (Specificity of chemical mutagenesis). Moscow, Izd-vo "Nauka", 1968, 104-109

TOPIC TAGS: chemical mutagen, tickborne encephalitis, arbovirus, DNA, RNA

ABSTRACT: The mutagenic effects of six chemical compounds were compared with those of ultraviolet light with TBE virus as a test-organism. Mutagenic effects were compared both on the basis of number of mutations produced and on the variety of mutations produced. N-nitroso-N-ethylurea (NEM) and 1,4-bis-diacetylbutane had the broadest

Card 1/5 UDC: 575.23:547.495.4:576.858:547.467

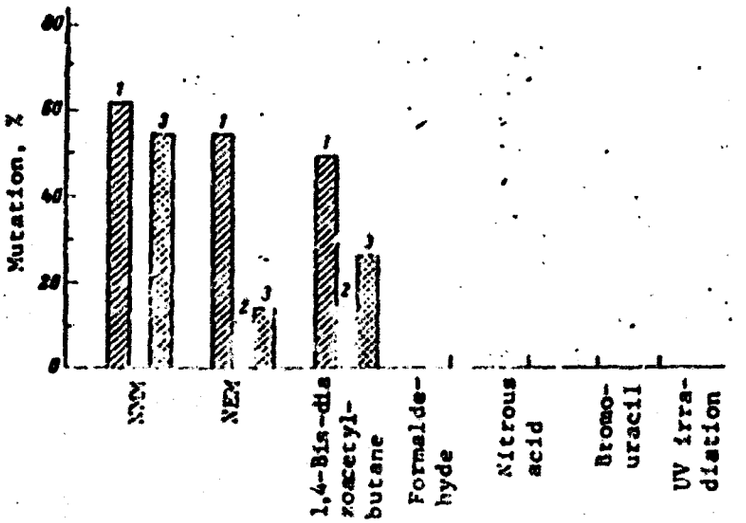

Fig. 1. Specific effects of mutagens on TBE viruses as judged by an 0.8—1 order lowering of viability (assayed in mice)

1 - Apathogenic via all means of infection; 2 - apathogenic via periferal infection; 3 - small plaque mutants

Cont 2/5

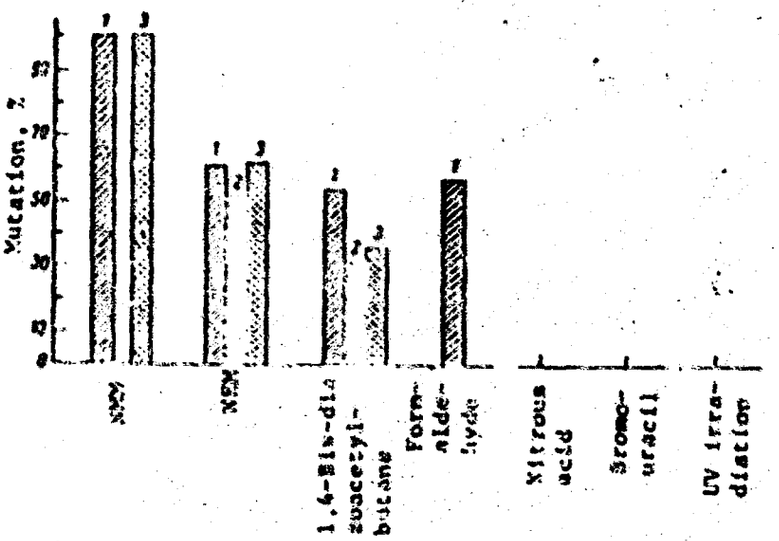

Fig. 2. Evaluation of mutagenic activity of mutagen according to yield of TBE virus mutants

1 - Apathogenic via all means of infection; 2 - apathogenic via periferal infection; 3 - small plaque mutants

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ACC NR: AT9008708

Table 1. Tabulation of genetic markers in TBE virus clones as distinguished by their pathogenicity for mice

Mutagen	N_c^-						N_p^-						N_p^+					
	s^+	s^-	rct_{42}^+	rct_{42}^-	T_{50}^+	T_{50}^-	s^+	s^-	rct_{42}^+	rct_{42}^-	T_{50}^+	T_{50}^-	s^+	s^-	rct_{42}^+	rct_{42}^-	T_{50}^+	[illegible]
N-nitroso-N-ethylurea	21	7	5	2	0	5	1[illegible]	5	6	6	1	[illegible]	7	3	2	1	0	1
1,4-Bis-diazoacetylbutane	21	20	2	0	0	2	2[illegible]	17	7	2	0	9	[illegible]	10	1	2	2	3
N-nitroso-N-methylurea	26	16	3	4	0	2	0	1	0	1	0	1	[illegible]	0	0	0	[illegible]	[illegible]
Formaldehyde	47	0	3	1	0	4	1	0	1	[illegible]	0	1	[illegible]	0	0	0	0	0
Population of strain F	0	3	4	1	0	5	0	33	[illegible]	4	2	9	0	17	6	1	[illegible]	[illegible]
Total	115	44	17	8	0	15	[illegible]	[illegible]	21	13	3	[illegible]	[illegible]	[illegible]	11	4	5	[illegible]

Table 2. Additional data on some genetic markers of TBE virus mutant clones

Clone no.	s	N	rct_{42}	T_{50}	V_1	V_2	I_m
442 (Pan)	—	N_p^-	—	—	+	+	+
450 (Pan)	—	N_c^-	+	—	+	+	—
453 (Pan)	+	N_p^-	—	—	+	+	—

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ACC NR: AT9008708

Table 2. (Cont.)

Clone no.	s	N	rct_{42}	T_{50}	V_1	V_2	I_m
54 (Fateyev)	—	N_p^-	—	—	—	+	+
54 (Fateyev)	—	N_p^-	+	—	—	—	+
4 (Pan)	+	N_c^-	—	—		+	—
7/15 (Kurg)	+	N_c^-	—	—		+	—

action spectrum, inducing a wide variety of hereditary changes. The largest yield of mutations was obtained with N-nitroso-N-methylurea (NMM). Tables 1 and 2 illustrate the comparative effects of these chemical mutagens. Orig. art. has: 2 tables and 2 figures.

[WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 5/5

ACC NR: AP9007434 SOURCE CODE: BU/0019/68/009/004/0326/0330

AUTHOR: Zhekov, S.; Paparkova, K.; Naparkova, K.

ORG: ISUL Sofia, Chair of Microbiology /Head--Professor D. D. Khadzhidimova/ (ISUL, Katedra po mikrobiologiya)

TITLE: Storage medium for the isolation of *Salmonella* bacteria

SOURCE: Epidemiologya, mikrobiologiya i infektsiozni bolesti, no. 4, 1968, 326-330

TOPIC TAGS: Salmonella, culture medium

ABSTRACT: An experimental citrate-acetate storage medium was tested for the storage of *Salmonella* bacteria based on Christenson's medium. This is a good differential medium and is economical to prepare. It is especially useful in differentiating such organisms as: *E. coli Proteus* spp. and *Shigella sonnei* from *Salmonella*. Orig. art. has: 2 tables. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: 00Mar68/ ORIG REF: 001/ OTH REF: 005

Card 1/1

ACC NR: AP9007210 SOURCE CODE: UR/0177/68/000/011/0068/0071

AUTHOR: Zhuk, L. N. (Lieutenant colonel; Medical service; Candidate of medical sciences)

ORG: none

TITLE: Diagnosis and treatment of botulism infection and intoxication

SOURCE: Voyenno-meditsinskiy zhurnal, no. 11, 1968, 68-71

TOPIC TAGS: botulism, clostridium botulinum

ABSTRACT: The incubation period for botulism varies from 7 to 8 hours to 2 days and occasionally as much as 5 or 7 days and is directly proportional to the size of the infective dose. In the case of use of botulinus toxin as a BW agent, an incubation period of several hours should be expected. Standard laboratory diagnosis consists of determination of botulinus toxins in the neutralization reaction with mice or guinea pigs, which takes 2 to 4 days. More rapid determination of toxin can be made with the indirect hemagglutination reaction or by determination of the opsonin-phagocytic index, both of which take only a few hours. Treatment of botulism is difficult. Treatment is

Card 1/2 UDC: 616.981.553.08

ACC NR: AP9007210

begun with specific antibotulinus sera in doses of 10,000 IU for types AC or E serum or 5,000 IU of type B serum. Botulinus toxoid should also be administered to increase resistance to the toxin. Serum and toxoid should be introduced in parts of the body remote from each other and with a different syringe and needle. To get toxin out of the blood, bloodletting, transfusion of blood or plasma, use of artificial kidneys, stimulation of diuresis and the use of synthetic blood substitutes [poly(vinylpyrrolidone) and poly(vinly alcohol)] are recommended. In addition, the stomach can be washed out and various adsorbents (oils and alkalis) fed. Severe cases of botulism should be kept in iron lungs. Severe botulism resulting from aerosol infection, should be treated as soon as possible, even during the incubation period.
[WA-50; CBE No. 41] [JS]

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

Card 2/2

III. ENVIRONMENTAL FACTORS

ACC NR: AR9002616 SOURCE CODE: UR/0169/68/000/005/B035/B035

AUTHOR: Al'ter-Zalik, Yu. Zh.

TITLE: Method of calculating turbulence characteristics from aerological data

SOURCE: Ref. zh. Geofizika, Abs. 5B313, 1968

REF SOURCE: Tr. Leningr. gidrometeorol. in-ta, vyp. 31, 1967, 117-125

TOPIC TAGS: atmospheric wind field, atmospheric turbulence, turbulent motion scale, turbulent kinetic energy, turbulence coefficient

ABSTRACT: A method, given for the calculation of turbulence characteristics (scale of turbulent motions, kinetic energy of turbulence, coefficient of turbulence), is based on the Laykhtman—Zilitinkevich theory. All types of atmospheric soundings may be used as the basic data, and the vertical distribution of wind directions and speeds and of atmospheric temperatures can be derived. A gradient rule and nomograms are given which greatly accelerate and simplify the computational processes involved. [Translation of abstract].

[WA-50; CBE No. 41] [ER]

SUB CODE: 04

Card 1/1 UDC: 551.551.1

ACC NR: AR9002617 SOURCE CODE: UR/0169/68/000/005/B040/B040

AUTHOR: Arifkhanova, M. A.

TITLE: Calculation of the wind field during southern cyclones

SOURCE: Ref. zh. Geofizika, Abs. 5B339, 1968

REF SOURCE: (Tr.) Tashkentsk. politekhn. in-ta, vyp. 43, 1967, 134-141

TOPIC TAGS: atmospheric wind field, wind direction, scalar velocity, maximum speed, cyclonic situation

ABSTRACT: Tables are compiled to determine the types and phases of processes involved during air mass intrusions into Central Asia from the south. These tables present data on the frequency of winds of given directions and the mean scalar velocities, maximum speeds, prevailing directions, and average speeds of winds of these directions. This makes it possible to make a detailed determination of the wind field for a specific type of weather. Types are identified on the basis of previous research, each of the types being subdivided into three to four phases of development. Data from 13 to 33 aerological stations were used for each type, the total number of instances varying between 23 and 100 for periods of from 5 to 17 years. The study was made to provide weather data to be used by the Soviet army and economy. A similar study

Card 1/2 UDC: 551.515.1

ACC NR: AR9002617

will be carried out to investigate the effects of cold air mass intrusions. [Translation of abstract]. [MA-50; CBE No. 41] [ER]

SUB CODE: 04

Card 2/2

ACC NR: AR9002619 SOURCE CODE: UR/0169/68/000/005/B055/B055

AUTHOR: Babich, A. D.

TITLE: Microclimatic effects of an irrigated forested oasis on a surrounding steppe

SOURCE: Ref. zh. Geofizika, Abs. 5B450, 1968

REF SOURCE: Sb. Materialy Khar'kovsk. otd. geogr. o-va Soyuza SSR. Vyp. 4, Khar'kov, 1967, 113-118

TOPIC TAGS: microclimatology, oasis microclimatology, steppe microclimatology

ABSTRACT: Results are presented of microclimatological studies carried out on profiles across the Askaniya-Nova oasis. Since the oasis is dense, discontinuous, and planted along irrigation canals, it exerts a greater effect on the winds than is customary with oases in which the growth is arranged in the usual manner. Both the dynamic and physical properties of the air flows are affected, i.e. wind speed and structure, air temperature and humidity, etc. [Translation of abstract]. [MA-50; CBE No. 41] [ER]

SUB CODE: 04

Card 1/1 UDC: 551.584.3(477)

ACC NR: AP8037936 SOURCE CODE: UR/0050/68/000/010/0039/0043

AUTHOR: Nikitanova, R. A. (Candidate of physico-mathematical sciences); Solyanik, Ye. G.; Terziyev, F. S.

ORG: Ukrainian Scientific Research Hydrometeorological Institute (Ukrainskiy nauchno-issledovatel'skiy gidrometeorologicheskiy institut)

TITLE: Results of experiments in combatting evaporation fogs in Kola Bay in the winter of 1966—1967

SOURCE: Meteorologiya i gidrologiya, no. 10, 1968, 39-43

TOPIC TAGS: weather modification, fog dispersal, surfactant, sea fog, chamber experiment /(U) Voskhod research ship

ABSTRACT: This paper continues the description of experiments carried out on Kola Bay to test the use of non-saponifying alcohols (C_{18}—C_{23}) as surfactants spread to inhibit the development or initiate the dispersal of sea fogs (see ATD abstract no. AT8032181, CBE Factors No. 39). Since earlier studies had indicated the desirability of further studies of the significance of surface temperatures in the dispersal investigations, laboratory investigations were undertaken to simulate as closely as possible the fog-forming conditions in the bay, i.e. water surface temperatures close to 0° and air temperature of -15°. These

Card 1/2 UDC: 551.509.615

ACC NR: AP8037936

experiments were carried out in the 18.5 m^3 ("cold chamber") facility at the Ukrainian Scientific Research Hydrometeorological Institute in which, by using 2 compressors, temperatures as low as -20° were attained. During the tests, however, the air temperature was dropped to -15 ± 2.5°; the water temperature was controlled by thermostats accurate to 0.5°. These experiments indicated that the temperature of the surfactant should be somewhat higher than the surface water temperature in order to produce a surfactant film in the shortest time. The time required for film formation also depended on the solution concentration, i.e., with a 1% surfactant solution the time was minimal. Optimum conditions selected for use in 4 tests carried out in 1966—1967 on the research ship "Voskhod" were: 1% solution of surfactant in kerosene and the solution controlled to a temperature range of 20—30°. Aboard ship, the weather data observed included gradient measurements of wind, air temperature, and humidity at h = 0.5, 2 and 10 m taken every 3 hours; other data collected included current directions and visibility in the fogs (MA-1 and M-71 instruments). These tests indicated that areas of 3 km^2 could be cleared of fog with these procedures and that the visibility in the cleared patches was 10—12 km as against a visibility in the fog of 100—200 m. Orig. art. has: 3 figures. [WA-50; CBE No. 41] [AT]

SUB CODE: 04/ SUBM DATE: 19Nov68/ ORIG REF: 004/ OTH REF: 00;

Card 2/2

ACC NR: AT8032278 SOURCE CODE: UR/3213/68/000/008/0049/0056

AUTHOR: Bakhtiyarov, V. G.

ORG: none

TITLE: Effect of multiple and coherent scattering on the determination of particle sizes by the transparency method

SOURCE: Nalchik. Vysokogornyy geofizicheskiy institut. Trudy, no. 8, 1968. Fizika oblakov i osadkov (Physics of clouds and precipitation), 49-56

TOPIC TAGS: atmospheric physics, light scattering, aerosol, atmospheric model, particle size analysis, error analysis, atmospheric transparency

ABSTRACT: Experimental transparency methods of measuring particles of various dimensions in dispersed systems are examined. The models used were two-dimensional turbid media; the particles were silver haloids in gelatin in which N (the number of particles per unit volume of the dispersed system) varied between 10^7 to 6×10^7 per/cm^2. Particle concentrations, determined with optical microscopes, showed that the transparency g^* (v^*) increased as N increased but that no simple proportionality existed between these values; the reason suggested for this divergence was that the particles were aspherical and that while

Card 1/4 UDC: 551.593

ACC NR: AT8032278

the fractions of multiple scattering that were incident on the receiver was small, all increased as N increased and were distributed under the condition

$$l > 4r, \quad l > \lambda, \tag{1}$$

where l is the distance between particles, r is the size of the particle, and λ is the wavelength at which the coherent scattering can be neglected. All of the maximum values of $g^*(v^*)$, when graphed, fell in a relatively narrow interval of wave numbers γ^* (0.14—0.16 μ^{-1}), indicating that the maximum in the particle distribution f(r) changed very little in all models. These $g^*(v^*)$ values were then used to estimate the parameters of other models. Graphed functions of $\tilde{m}(a)$ and $\tilde{f}(a)$ were calculated by the following equations

$$\tilde{m}(a) = -\frac{1}{n}\left\{\Delta x \sum_{i=1}^{n} g\left(\frac{x_i}{2}\right)\omega(ax_i) + c_0 \tau \omega_0(a\tau) + \frac{c_1}{\tau}\omega_1(a\tau)\right\} \tag{2}$$

$$\tilde{f}(a) = \frac{\tilde{m}(a)}{\int_0^\infty \tilde{m}(a)\,da}. \tag{3}$$

These graphs showed that the relationship between these two functions and the particle concentrations still held, but was not as clearly defined as was that of the N—$g^*(v^*)$ relation (attributed to equation and extra-

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polation errors). To evaluate the accuracy of the transparency methods normed distribution curves were constructed for each model and compared with distribution curves obtained from the microphotographic examinations. It was assumed that all of the particles in the model had dimensions which equal the distribution mode r_m. In most of the models, the distances between the particles exceeded the longest wavelength (λ_{max} = 1.1 μ). However, the inverse results were essentially identical. There was no systematic deviation of the optical spectra from the microphotographic as N increased, indicating that all samples fell within the range of applicability of the transparency method. A more detailed study of the amount of deviation, made by selecting the mean sum of the calculated spectra, i.e.

$$\delta = \frac{1}{n}\sum_{k=1}^{n}\left[f(r_k) - \tilde{f}(r_k)\right] \%,$$

showed that the deviation did not exceed 10%. However, the variation in the range of N could not be determined, i.e. when the increase in N exceeded 7 x 10^7—8 x 10^7 1/cm^2, particle agglomeration took place, and when N < 5 x 10^7 1/cm^2, the values of g*(v*) were comparable to measurement errors. The linear dependence of N and the intensity of radiation scattering ΔI, established for various wavelengths, demonstrated that the scattering by particles was multiple and non-coherent but that this changed when N > 4 x 10^7 1/cm^2. The deviation occurred

because of errors incurred in making the photographic intensity measurements I(λ). As the wavelength decreased, the ΔI error decreased, indicating a linear dependence of N and ΔI for large concentrations. The values of N were determined by measuring g*(r*) and by calculating $\tilde{f}(r)$ from (2) and (3). Then, using theory of scattering equations, the attenuation coefficient was calculated for particles whose radii equalled the mode of the distribution curve $\tilde{f}(r)$; the values obtained were then compared with the g*(v*) magnitudes. Another method of determining N involved the assumption that the system was monodispersed. Here, the instruments used to determine g*(v*) were calibrated from several samples having known numbers and sizes of particles. Then N was determined by finding the values of ΔI for certain wavelengths and from the compilation of calibration graphs. The results of these studies indicated that the transparency method could be used advantageously in dispersed systems when N_{min} = 1 x 10^4 — 5 x 10^4 1/cm^2 when the accuracy of the photometric procedures for determining $I_0(\lambda)$ and $I(\lambda)$ was no greater than 3—5%. The concluding section of the paper evaluates the effects of measurement errors on the accuracy of the transparency method. Orig. art. has: 4 figures, 1 table, and 6 formulas. [WA-50; CBE No. 41] [ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 004

ACC NR: AT8032277 SOURCE CODE: UR/3213/68/000/008/0041/0048

AUTHOR: Bakhtiyarov, V. G.

ORG: none

TITLE: Possibility of using the visibility method for determining the microstructure of atmospheric aerosols

SOURCE: Nalchik. Vysokogornyy geofizicheskiy institut. Trudy, no. 8, 1968. Fizika oblakov i osadkov (Physics of clouds and precipitation), 41-48

TOPIC TAGS: atmospheric optics, atmospheric aerosol, atmospheric aerosol structure, atmospheric visibility, visibility attenuation

ABSTRACT: A discussion is presented on the application of the visibility method in calculating the spectra of the particles in a dispersed system in the free atmosphere, i.e. to determine the size spectra of atmospheric aerosols. The first section of the paper deals with the difficulties encountered in using the method, i.e. determination of the polydispersed scattering coefficient for the significant IR and short wavelengths, in an atmosphere in which radiation is attenuated by absorption by gaseous components (water vapor, CO_2, ozone, etc.) and by scattering, and along both off-vertical and horizontal paths. Results

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ACC NR: AT8032277

obtained by both American and Soviet specialists are compared. The second section deals with problems encountered in making actual horizontal measurements of atmospheric aerosol visibility in the visible, near UV, and IR ranges over paths 5-10 km above the earth. The following procedure is presented for determining visibility $g^*(v^*)$. The flux of radiation from a source located in the focus of the first mirror passes through the atmospheric layer and, being reflected by the rotational mirror, is incident on the receiving mirror which directs the radiation flux into the entrance slit of a monochromatic illuminator. After being scanned in the illuminator, the rays are directed onto the sensing surface of the receiver. The amplified signal of a wide-band amplifier is detected and measured by a recording device. Using a system of concave spherical mirrors and the same source, another light flux (for checking purposes) is directed into the water slit of the illuminator. This latter is not used to test aerosol attenuation. The ratio of the intensity of the first flux to that of the second is proportional to the light transmitted. The intensity of the radiation passing through an atmosphere containing aerosols is determined by the equation

$$I_1 = I_0 e^{-\alpha l}. \qquad (1)$$

where I_1 is the radiation intensity after traversing the path l, and I_0 is the intensity of the source itself in the l direction. The intensity

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of the control (check) signal is equal to

$$I_2 = I_0 e^{-Ql_1}. \tag{2}$$

The distance $\ell_1 \ll \ell$ is selected in such a way that the scattering from the aerosols is negligible. Taking into account the loss in the intensity of radiation as it is reflected from the mirrors, (1) and (2) are written as:

$$I_1 = r_n I_0 e^{-Ql}, \tag{3}$$

$$I_2 = r_n' I_0 e^{-Ql_1}, \tag{4}$$

where r_n and r_n' characterize the loss in radiation intensity along paths ℓ and ℓ due to reflection. (3) and (4) are solved jointly to become:

$$Q = \left(\frac{\ln \frac{I_2}{I_1}}{l - l_1} + \frac{\ln \frac{r_n}{r_n'}}{l - l_1} \right) \simeq \frac{1}{l} \ln \frac{I_2}{I_1} + \Delta . \tag{5}$$

The dependence of r_n and r_n' on wavelength should be investigated preliminarily at the same time. This method therefore makes it possible to determine the amount of radiation attenuation with an accuracy to some

constant Δ. If the intensity measurement is made at the end and intermediate points, the scattering of radiation by the aerosols between these points can be determined. Account also should be taken of the fact that if the source is a point source, the decrease in measured radiation intensity with distance from the source is caused not only by absorption and scattering but chiefly by decreased intensity in accordance with the inverse-square law. Calculation of this type of attenuation requires the use of neutral filters which compensate the attenuation caused by distance. The radiation attenuation Q along a segment of the path is calculated by

$$Q = k_\varepsilon + g^*(\nu^*), \tag{6}$$

and the k_ε value is calculated by the equation

$$k_\varepsilon = \frac{[illegible]}{2N\lambda^4} \sum_i v_i (m_i - 1)^2 \left([illegible] \right).$$

and the magnitude of the polydispersed coefficient of scattering can then be determined. If the radiation source is the sun, the attenuation coefficient is determined from

$$Q = \frac{\ln I_{\lambda_1} - \ln I_{\lambda_2}}{m_{\lambda_2} - m_{\lambda_1}}, \tag{7}$$

where $m_{z_2} - m_{z_1}$ is the difference in the atmospheric masses between observation points, and I_{z_1}, I_{z_2} are the monochromatic fluxes of direct solar radiation at two heights z_1 and z_2 for a given zenith distance. In these methods it is assumed that the spectral measurements are outside the absorption bands of the gaseous components of the atmosphere. Otherwise, corrections must be introduced for abosrption, and absolute humidity data are required. In measuring the $g^*(v^*)$ magnitudes, it is pointed out that (1) is the correct equation for determining attenuation in a straight line forward I_1. However, when areal measurements are involved the radiation may be from the sides because of the angular characteristics of the photometer. Denoting the angle of taper of radiation of the source as Θ and the receiver aperture as ψ, the equation for intensity of the one-time radiation is:

$$I_2 = \frac{Q I_0}{4\pi} \iint_V \frac{1}{r_1^2 r_2^2} e^{-Q(r_1+r_2)} \beta(\vartheta) \cos\psi \, dv. \qquad (8)$$

where $\beta(\vartheta)$ is the scattering indicatrix, and r_1 and r_2 are the distances from the elementary volume being scattered to the source and receiver, respectively. The total intensity registered by the receiver is calculated by

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$$I = I_1 + I_2 = \frac{I_0 e^{-Qr}}{r^2}(1 + QrC),$$

$$C = \frac{1}{2} \int_0^{\theta} \int_0^{\psi} \beta(\psi + \vartheta) \cos\psi \, d\psi \, d\vartheta. \qquad (9)$$

It follows from (9) that for specific experimental conditions Q and C can be obtained from the relative measurements of I for 3 remote receivers — sources. The last section of the paper deals with the device used to calculate the distribution functions. The particle size distribution curves are calculated rapidly by automating the computations using the equations

$$m(a) = -\frac{1}{a}\left\{\Delta x \sum_{j=1}^{m} g\left(\frac{x_j}{2}\right) w(a x_j) + C_0 \tau w_0(a\tau) + \frac{C_1}{\tau} w_1(a\tau)\right\}. \qquad (10)$$

$$f(r) = \frac{m(a)}{2\pi a r_0^2}. \qquad (11)$$

The schematics for this device are given. Orig. art. has: 2 figures, 1 table, and 13 formulas [WA-50; CBE No. 41] [ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 004/ OTH REF: 005

Card 6/6

ACC NR: AT9004080 SOURCE CODE: UR/3269/68/000/032/0086/0090

AUTHOR: Belinskiy, O. N.

ORG: none

TITLE: Relationship of high winds in the central part of the European USSR to temperature contrast and baric pressure gradient values

SOURCE: Gidrometeorologicheskiy nauchno-issledovatel'skiy tsentr SSSR. Trudy, no. 32, 1968. Prognoz baricheskogo polya i opasnykh yavleniy pogody (Forecasting the pressure field and dangerous weather phenomena), 86-90

TOPIC TAGS: atmospheric circulation, atmospheric wind field, high wind, atmospheric temperature, atmospheric pressure gradient, jet stream

ABSTRACT: All instances in the 1956—1965 period in which winds of 21 m/sec or higher and lasting at least for 1 hour were measured at the weather stations and posts in the European USSR (total of 56 cases) were selected as basic data in an analysis of the relationship of high winds to temperature contrasts and baric pressure gradients. In 46% of the instances, the winds were in the 24—26 m/sec range, with winds of 40 m/sec registered only at Dmitrov in the Moscow area. These high winds never lasted more than 12 hours, but winds in the 16 m/sec range lasted

Card 1/4 UDC: 551.553.8(470)

ACC NR: AT9004080

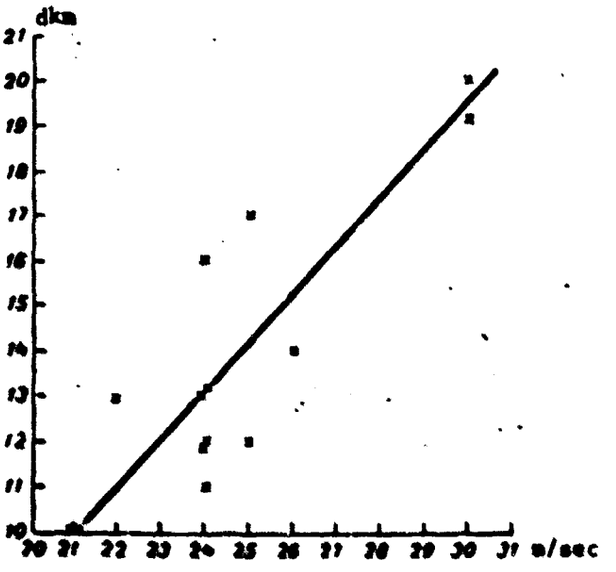

Fig. 1. Relationship between wind speed on the ground and the magnitude of the horizontal gradient at a distance of 500 km

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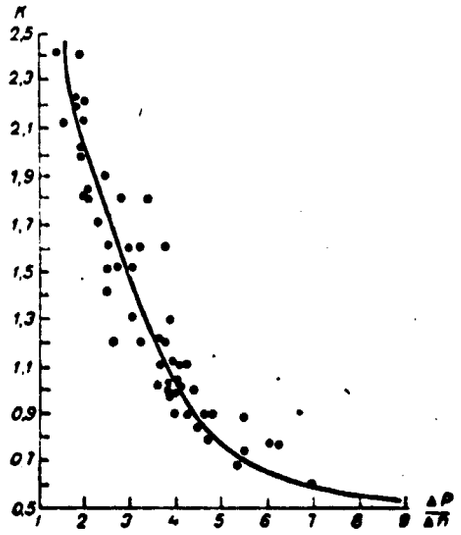

Fig. 2. Dependence of the baric pressure gradient on the K magnitude

for as much as 37 hours. In 48% of the instances the high winds were southeasterlies and in 7%, northwesterly winds, the highest winds generally occurring during the autumn and winter. In almost every instance (93% of the instances) the high winds were associated with the passage of cyclones; local physicogeographic conditions were major contributing factors. The relationships of these winds to the horizontal gradients taken from OT $\frac{500}{1000}$ charts is given in a graph (Fig. 1). The dependence of baric pressure gradient on K is also demonstrated in graphic form (Fig. 2). The author also points out that high winds occur near the ground when the jet stream is rather low (at h = 7—9, and sometimes even 6 km). The more significant role, however, is ascribed to the so-called "mesostream" located at 1.5 km above the ground. Orig. art. has: 2 figures and 2 tables.

[WA-50; CBE No. 41] [ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 003

ACC NR: AT8032275 SOURCE CODE: UR/3213/68/000/008/0025/0031

AUTHOR: Burtsev, I. I.; Burtseva, L. V.

ORG: none

TITLE: Washout of the p^{32} radioactive aerosol by cloud drops according to data obtained in chamber experiments

SOURCE: Nalchik. Vysokogornyy geofizicheskiy institut. Trudy, no. 8, 1968. Fizika oblakov i osadkov (Physics of clouds and precipitation), 25-31

TOPIC TAGS: air pollution, radioactive aerosol, aerosol washout, fog chamber, atmospheric diffusion, coagulation, atmospheric convection

ABSTRACT: Results are presented of studies carried out in a fog chamber to determine the parameters of the p^{32} radioactive aerosol washout by small cloud drops during periods of cloud formation. The concentrations of radioactive material in the droplets were measured at various stages both prior to droplet formation and after the droplets had settled, making it possible to estimate the average number of particles captured by a single drop, the parameters of the removal of radioactive aerosols from the cloud, the washout coefficient λ, and the coagulation coefficient K. It was also possible to determine the dependence of these coefficients

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ACC NR: AT8032275

on a series of parameters, especially the water content of the artificial cloud in the chamber. The concentrations of the radioactivity per unit volume of the chamber varied as a function of the weight of the p^{32} powder being subjected to combustion within the limits of $(2—25) \times 10^{-10}$ curie/liter, and amounted on the average to about 10^6 particles/cm^3 for particles having mean cubic diameters of 0.1? μ. In most of the experiments the droplet diameters D_n of the largest fraction were 4—6 μ, the average water content was w = 3g/m^3, the droplet concentrations were $N_R = (1—3.5) \times 10^3$ 1/cm^3, where N_R was calculated in terms of the mean cubic diameters of the droplets and the water content. Recent studies by G. K. Sulakvelidze, and others (*Formation of precipitation and hail modification processes*, Gidrometeoizdat, Leningrad, 1965) indicated that the water content of convective clouds was much greater than previously reported, i.e. 10—20 g/m^3 or more. The concentration of drops having radii of 4—6 μ and a water content of 2 g/m^3 was about 10^3 1/cm^3, i.e. experimental values did not exceed those found in nature. In the present experiments it was assumed that the air in the chamber was cleared of radioactive particles because of particle capture, and subsequent sedimentation, the concentrations changing in accordance with the kinetic law of the first kind. The decrease in aerosol concentration n in the chamber in unit time for a given drop-size spectrum was described by the equation

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$$\frac{dn}{dt} = -\lambda n, \qquad (1)$$

where λ is the coefficient of washout per sec^{-1}. Taking the activity magnitudes q and q_0 instead of n and n_0, at some moment t the radioactivity concentration in the chamber then became

$$q = q_0 e^{-\lambda t}, \qquad (2)$$

where q_0 and q are the concentrations before the fog formed and after sedimentation, and t is the time between the insertion of the vapor into the chamber and the fog dispersion in the chamber. Therefore, λ can be determined from (2). The magnitude $\tau = 1/\lambda$, the average period of the particle life, was also frequently used (by analogy with radioactive decay processes). Table 1 gives the characteristics of λ and τ for various droplet sizes calculated from (2), determined by two experiments: 1) generation of radioactive P^{32} aerosols in the chamber prior to insertion of vapor (λ_1, K_1, τ_1, A_1) and 2) the same after the vapor had been added (λ_2, K_2, τ_2, A_2). Here A denotes the average fraction of radioactive aerosol washed out by the cloud drops for the lifetime of the drops in the chamber; K^2 is the coagulation coefficient ($\times 10^{-7}$ cm^3/sec); and λ is the washout coefficient ($\times 10^{-4}$ sec^{-1}). The differences in the washout coefficients determined in the two experiments were insignificant. The washout coefficient depended on the droplet

Table 1. Washout characteristics of radioactive P^{32} aerosols by small cloud drops

	Mean cubic drop diameter D_1, μ						
	8	10	12	14	16	18	20
λ_1	5.8	6.4	7.7	7.8	9.1	10.[illegible]	11.7
λ_2	5.3	6.5	7.0	7.2	8.7	9.2	11.0
τ_1	1720	1560	1300	1280	1100	980	850
τ_2	1880	1530	1430	1390	1160	1090	910
A_1	1.5	2.0	2.8	4.2	5.2	7.2	7.9
A_2	1.4	2.0	2.6	3.8	5.0	6.4	7.4
A_1	0.67	0.52	0.61	0.76	0.75	0.73	0.81
A_2	0.64	0.50	0.54	0.71	0.67	0.74	0.77

sizes and increased as the droplet sizes increased. The average λ for small droplets was 9×10^{-4} sec^{-1} and the average lifetime of the radioactive particles in the drops was 20 min. These modeling results are considered to be indicative only. However, in the first approximation, λ may be considered as characteristic of the potential washout in the

initial stages of cloud formation. The dependence of this magnitude on water content, investigated under laboratory conditions, indicated that maximum purification, especially of P^{32} particles, occurred in clouds having the highest water content, e.g. for stratus nimbus ($w = 0.5$ g/m^3)$\lambda \geq 4 \times 10^{-4}$ sec^{-1}; for large cumulus ($\sim \geq 3$g/m^3), $\lambda \geq 8 \times 10^{-4}$ sec^{-1}; for convection clouds having high humidity ($w \geq 6$ g/m^3)λ increased to 1.1×10^{-3} sec^{-1} or more. In the case of P^{32} aerosols, which are hygroscopic, the experiments showed that their anticipated capture due to vapor condensation on the particles was accompanied by coagulation processes. If it is assumed that each contact of a drop with an aerosol particle results in coalescence and to a decrease in concentration, the radioactivity in the air in the chamber resulting from the coagulation of the radioactive particles with the cloud drops as defined by the Smolukhov law, the change in the concentration of the radioactive particles in the air in the chamber could be written in the form

$$\frac{dn}{dt} = -KnN, \qquad (3)$$

when N is the drop concentration for the given experiment. Integration of this equation, assuming that N equaled the average concentration of drops having mean cubic diameters of $\bar{D}_3$, gave

$$n = n_0 \exp[-KNt]. \qquad (4)$$

The activity values, found experimentally, used to estimate the coagulation coefficient K, were determined to vary between 1.1×10^{-7} to 7.8×10^{-7} cm^3/sec, averaging for all experiments 4.8×10^{-7} cm^3/sec. The results obtained in these experiments are compared with results found by other scientists; however, because of the lack of experimental data on the behavior of artificial radioactive products, these data were those determined for natural radioactivity (B. I. Styro and associates — data for K in Cu and Sc; K. P. Makhon'ko — semiempirical determinations of K for the radioactive aerosols of nuclear explosion products). The dimensions of P^{32} particles generated in the chamber corresponded to those of the fission product particles during the moratorium i.e. $K = 6—20.10^{-7}$ cm^3/sec, values close to those found in the present experiments. Detailed analysis of these values indicated that they were proportional to some parameter $x = \pi\bar{D}_3$, characterizing the area of the surfaces of drops having the mean cubic diameters $\bar{D}_3$, corresponding to the droplet spectra. On a graph these values lie on a straight line parallel to the x axis, indicating a proportional dependence between K and $\pi\bar{D}_3$. Therefore, the conclusion is that the capture of the particles by the drops was due mainly to diffusion or other processes connected with the flow of the particles across the particle surfaces. On the other hand, it indicated that the capture of P^{32} particles caused by the coalescence with condensation nuclei was not a predominant feature of the present experiments. A comparison, made of washout constants

determined during chamber experiments (Bricard, Zimin, Levin, Fuks, Greenfield) with those derived by calculations involved three types of diffusion: diffusion in a motionless medium, convective diffusion, and diffusion taking electrical interaction into account. The calculations showed that the experimental values of K and λ were significantly higher than the theoretical values for Brownian and convective diffusion, and these two diffusion types therefore do not play a significant part in the capture process, convection becoming significant only with the largest drops. All theoretically derived estimates of the washout coefficients of radioactive particles by cloud drops were smaller than those derived from direct measurements. It is suggested that a possible reason for this is the fact that each mechanism was treated independently of all other mechanisms. Orig. art. has: 3 figures, 2 tables, and 5 formulas. [WA-50; CBE No. 41] [ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 014/ OTH REF: 001

Card 7/7

ACC NR: AP8031205 SOURCE CODE: UR/0362/68/004/009/1000/1003

AUTHOR: Byzova, N. L.; Makhon'ko, K. P.

ORG: Institute of Experimental Meteorology (Institut eksperimental'noy meteorologii)

TITLE: Interaction of an aerosol with the underlying surface

SOURCE: AN SSSR. Izvestiya. Fizika atmosfery i okeana, v. 4, no. 9, 1968, 1000-1003

TOPIC TAGS: air pollution, atmospheric diffusion, aerosol, atmospheric turbulence, radioactive fallout

ABSTRACT: Calculations of the diffusion of pollutants near the surface of the ground usually involve the well-known turbulent diffusion equation and the boundary condition

$$k_z \frac{\partial q}{\partial z} + wq = bq \text{ when } z = z_0, \quad (1)$$

where k_z is the coefficient of turbulent diffusion, q is the pollutant concentration, w is the rate of gravitational settling, z_0 is the height of the interface, and b is the characteristic of the pollutant interaction with the underlying surface. For steady vertical diffusion with

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horizontally homogeneous concentrations where $w \approx 0$ and $v_g = \varkappa v_*$ ($\varkappa$ is the Karman constant and v_* is the dynamic velocity) the diffusion equation solution becomes

$$q = P\left[\frac{1}{b} + \frac{1}{\varkappa v_*}\ln\frac{z}{z_0}\right]. \qquad (2)$$

Here the vertical pollutant flow is independent of z. If the interface is at the level of dynamic roughness, equations (1) and (2) show that up to the interface the coefficient of turbulent pollutant diffusion is comparable to the coefficient of momentum exchange. But since, in contrast to wind speed, the pollutant concentration at the interface may not always equal zero, the term P/b appears in (2). Experiments carried out in a wind tunnel (Conference on the Atomic Energy Commission's Meteorological Activities, 19—22 May 1964) under conditions similar to the above showed that the pollutant concentration near the active surface varied in accordance with the logarithmic law. These findings made it useful to add two more characteristics, i.e. to proceed along the logarithmic profile of the concentration to the level at which $q = 0$ to obtain the "diffusional roughness" magnitude z_g which is related to b by the equation

$$\frac{z_g}{z_0} = e^{-\frac{\varkappa v_*}{b}} = e^{-\varkappa/B}, \qquad (3)$$

where $B = b/v_*$ is a dimensionless magnitude. Therefore, when all of the pollutants fall to the surface $b = \infty$, $B = \infty$, and $z_g = z_0$, i.e. the

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diffusion and dynamic interaction are identical and for total absorption $b_1 = B = 0$ and $z_g = 0$. The criteria which make it possible to judge the character of the effect of the underlying surface on the vertical distribution of a pollutant are determined from (2) so that when the underlying surface is uneven,

$$\ln\frac{z}{z_0} \gg \frac{\varkappa v_*}{b}, \qquad (4)$$

the fallout is almost total. When the uneveness is opposite in sign the absorption influence is very strong. When concentrations are determined from (2), v_g is related to the surface characteristics b, B and z_g by the equation

$$z e^{-\frac{\varkappa v_*}{v_g(z)}} = z_0 e^{-\frac{\varkappa v_*}{b}} \qquad (5)$$

or

$$v_g(z) = \frac{\varkappa v_*}{\ln\frac{z_0}{z_g} + \ln\frac{z}{z_0}}. \qquad (6)$$

For (6) in particular, if $\ln(z_0/z_g) \ll \ln(z/z_0)$, v_g has almost no relationship to the surface characteristics. These determinations of v_g were applied to the case of global fallout of radioactive dust (highly dispersed particles where $w \approx 0$), using older fission products measured for a period of three months in 1960 at two stations in grass-covered

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flat terrain (r of the aerosol particles ~0.3 μ). Collectors were set at h = 1 m. Meteorological conditions were observed in a stable atmosphere from gradient masts, surface roughness was determined from the wind profile, the coefficient of turbulent exchange was calculated by the Budyko method. Calculations were made of b, B, and $\varkappa/n = \ln (z_0/z_g)$ and are tabulated. The mean value of v_g was found to be 0.8 cm/sec, i.e. comparable to that found by Cambray and Fisher (*AERE-R4384, 1963*) for global radioactive fallout on artificial grass. The b values were in general agreement with the v_g values, both showing a tendency to vary as a function of N; b generally decreased as N increased. The coefficients of correlation r_y between 1-N and y were

y	v_g	b	$B_g = \frac{v_g}{k_1}\varkappa$	$B = \frac{b}{k_1}\varkappa$
r_y	0.35	0.37	0.57	0.53

indicating that the correlations for the dimensionless parameters B_g and B were better than for v_g and b. Comparisons are given of previously reported data along with results from the present study. Wind tunnel experiments had shown that v_g for the grass surface, both in the field and in the laboratory, was proportional to v_*, indicating that the dimensionless value B (and not v_g or b) is characteristic of the surface. No such direct relationship was found between v_* and b or v_g, probably because of moist soils during the field experiments. However, since the correlation between B and B_g and the moisture characteristic 1-N was

better than the similar correlation for b and v_g, this relationship apparently does exist. In the case of heavy particles the boundary condition (1) can be used when b = w. If it is assumed that B is the significant surface characteristic, the equation

$$b = w + Bv_* \qquad (7)$$

is applicable for intermediate size particles. The solution of the equation for heavy particle diffusion in accordance with (2) becomes

$$\frac{P}{w} = \left[\frac{1-\left(\frac{z_0}{z}\right)^{\alpha}}{1+\alpha\frac{\varkappa}{b}}\right], \qquad (8)$$

where $\alpha = w/Bv_*$. Therefore, in order to determine B from the measured values of v_g, the following equation is used

$$B = \frac{w - v_g}{v_*\left\{\frac{v_g}{w}\left[1-\left(\frac{z_0}{z}\right)^{\alpha}\right]-1\right\}}. \qquad (9)$$

Orig. art. has: 2 tables and 9 formulas. [WA-50; CBE No. 41] [ER]

SUB CODE: 04/ SUBM DATE: 05May67/ ORIG REF: 003/ OTH REF. 004

ACC NR: AT9004167 SOURCE CODE: UR/3061/68/000/028/0175/0179

AUTHOR: Chirakadze, G. I.

ORG: none

TITLE: Subdivision of the Kolkhida lowland into microclimatic regions

SOURCE: Tiflis. Zakavkazskiy nauchno-issledovatel'skiy gidrometeorologicheskiy institut. Trudy, no. 28(34), 1968. Gidrometeorologicheskiy rezhim Kolkhidskoy nizmennosti (Hydrometeorological conditions of the Kolkhida Lowland), 175-179

TOPIC TAGS: microclimatology, atmospheric circulation, atmospheric precipitation, atmospheric wind field, atmospheric temperature, breeze

ABSTRACT: Five microclimatic regions are identified in the Kolkida lowland area of the Caucasus: coastal zone occupying a narrow strip along the Black Sea between Kobuleti and Sukhumi; central lowland; eastern border; foothill zone on the northeastern edge; and the foothill zone on the southwestern edge. The principal microclimatic characteristics are caused by the following factors: distance of the various zones from the sea, the physical characteristics of the terrain (swamps, forests, sea coast, arid areas) and orographic

Card 1/2 UDC: 551.584

ACC NR: AT9004167

structure. The interrelationships of these features and circulation processes are analyzed for each zone. Orig. art. has: 1 figure.
[NA-50; CBE No. 41] [ER]

SUB CODE: 04/ SUBM DATE: none

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ACC NR: AP9006972 SOURCE CODE: UR/0050/68/000/012/0045/0054

AUTHOR: Davydov, N. I. (Candidate of geographical sciences; Moscow); Lomonosov, Ye. G. (Candidate of physico-mathematical sciences; Moscow); Cherenkova, I. A. (Moscow)

ORG: none

TITLE: Synoptic and statistical method of identifying and forecasting clear air turbulence

SOURCE: Meteorologiya i gidrologiya, no. 12, 1968, 45-54

TOPIC TAGS: weather forecasting, aviation meteorology, statistic analysis, clear air turbulence, atmospheric gravity wave, numeric forecasting, aircraft bumping

ABSTRACT: Results are reported of statistical studies carried out in the Soviet Union in accordance with a WMO proposal (1964—65) in an effort to better identify and develop criteria for forecasting CAT (Russian abbreviation, TYaN). The data used consisted of reports of bumping encountered by planes over the USSR in the upper troposphere (excepting that in convective clouds) on 5 days: 9—13 December 1964,

Card 1/3 UDC: 551.509.314:551.551.5

ACC NR: AP9006972

10—14 March, 9—13 July, and 8—12 September 1965. The Soviet Union was subdivided into "squares," 2.5° in latitude and 5° in longitude, i.e., at 55°N, approximately 275 and 300 km. Each flight across a square represented one case when the aircraft encountered or did not encounter bumping. A detailed description of the data and the principal results were given in a paper by I. G. Pchelko (*Meteorologiya i gidrologiya, no. 12, 1966 — CBE Factors, no. 16*). The present paper reports the results of a detailed statistical analysis of only a part of the total area, i.e., a belt bounded by the 45—60°N parallels and the 25—95°E meridians, located away from mountainous areas and, in this investigation, the grid squares covering areas of approximately 300 x 300 km. The more than 1200 instances of recorded bumping were divided into two groups: 1 - including all instances of light, moderate, and heavy bumping, and 2 - only instances of moderate and heavy bumping. It was assumed that occurrences of bumping conformed to Poisson distribution and it was found that the probability that bumping would occur was 0.45 for group I squares and 0.19 for group II squares. Similar calculations were made for squares in which no bumping occurred. Both groups were analyzed in terms of frequency as a function of several simple criteria, which were taken from AT_{300} and AT_{500} charts. Initially all instances of bumping were subdivided into 3 wind-speed intervals:

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ACC NR: AP9006972

$c \geq 90$ km/hr (jet); 40 km/hr $\leq c < 90$ km/hr; $c < 40$ km/hr. A statistical-analytical method, based on the Bayes equation, is developed for use in identifying and forecasting clear air turbulence. It is assumed that the criteria ("predictors") are independent. Orig. art. has: 1 figure, 3 tables, and 3 formulas. [WA-50; CBE No. 41] [ER]

SUB CODE: 04/ SUBM DATE: 03Jun68/ ORIG REF: 006

Card 3/3

ACC NR: AT8036415 SOURCE CODE: UR/3430/68/000/005/0034/0038

AUTHOR: Dolgushin, I. P.

ORG: none

TITLE: Relationship between averaged velocity and individual wind gusts

SOURCE: Gorkiy. Gidrometeorologicheskaya observatoriya. Sbornik rabot. Gor'kovskoy i Volzhskoy gidrometeorologicheskikh observatoriy, no. 5, 1968, 34-38

TOPIC TAGS: atmospheric wind field, atmospheric turbulence, wind gust, anemometer, wind vane, meteorologic instrument/(U) M-63 anemometer, (U) M-12 anemometer

ABSTRACT: An M-63 "anemorumbometr" anemometer was installed at the Gor'kiy Hydrometeorological Observatory in July 1964, arranged in series and at the same height (13.6 m) as an electromechanical anemograph and a wind vane. During the period from 1 August 1964 to 31 December 1965 parallel measurements were made with these three instruments to analyze instrumental variations in measuring average and maximum wind speeds. Analyses were made each day for the 0100, 0700, 1300, and 1900 hr observations with the M-12 and M-63 instruments and they were compared with the wind-vane measurements. The results were: the wind speed

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ACC NR: AT8036415

recorded by the M-12, averaged out for 17 months to be 0.1 m/sec higher than that for the wind vane, and those measured with the M-63 were 0.4 m/sec less than those recorded with the wind vane. Differences in readings varied most during the winter months because of the deposition of glaze and rime on the instruments which affected the M-63 more than it did the M-12. An attempt was made to determine the relationship between maximum wind speeds averaged for 10 min obtained with the M-12 and the strong gusts observed with the M-63. The data on wind speeds were analyzed for intervals of 0—2; 2.1—4; 4.1—6, 6.1—8 m/sec, etc. The equation relating them is $y = 1.55x + 0.7$. Orig. art. has: 1 figure, 3 tables, and 1 formula. [WA-50; CBE No. 41] [ER]

SUB CODE: 04/ SUBM DATE: none

Card 2/2

ACC NR: AT8036414 SOURCE CODE: UR/3430/68/000/005/0003/0033

AUTHOR: Dolgushin, I. P.

ORG: none

TITLE: Analysis of wind velocity profile measurements measured on the television tower at Gor'kiy

SOURCE: Gorkiy. Gidrometeorologicheskaya observatoriya. Sbornik rabot Gor'kovskoy i Volzhskoy gidrometeorologicheskikh observatoriy, no. 5, 1968, 3-33

TOPIC TAGS: atmospheric wind field, atmospheric boundary layer, meteorologic facility, meteorologic tower, television tower, wind profile, wind velocity

ABSTRACT: Wind characteristics have been and are still being studied in detail in the Soviet Union in many projects undertaken with relatively sophisticated instruments installed on high towers. Foremost in these investigations has been the work carried out at the 300-m tower at Obninsk, now an integral part of the complex of the Institute of Experimental Meteorology (formerly administered by the Institute of Applied Geophysics). Results of these studies were published in a series of special volumes and in numerous periodicals beginning in 1963. Other

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towers, from which meteorological data have been obtained, are located at Kiev, Leningrad, and Gor'kiy; plans also call for studies to be carried out on the 537-m television tower at Ostankino which is "to be finished in the near future." The present paper gives a detailed summary of the results of studies which were carried out at the 13.6- and 104-m levels of the Gor'kiy tower (h = 180 m) to determine mean and average maximum wind speeds. Comparable data were collected during the same period at the weather station operated by the Observation Division of the Gor'kiy Hydrometeorological Observatory located 5 km south of the television tower. M-12 anemographs and standard pressure plate and non-pressure plate anemometers were the principal instruments used. Information included in the present paper covers: 1) description of the terrain of both sites, 2) details of the type of installation and repair of instruments, and 3) types of observations and number of observation periods and 4) analytical methods employed. Individual sections of the report are as follows: 1) analysis of vertical variations in wind speed, including the ratios of the mean wind speeds at the 13.6- and 104-m heights, the wind speed ratios for different Ri numbers, and the maximum wind speed ratios; 2) logarithmic interpolation procedures and results; 3) wind-speed regimes at h = 13.6- and 104-m, including construction of curves for wind-speed distributions, and analyses of the distribution curves for winds of average and maximum speeds at these levels; and 4) analyses of the diurnal changes in wind speeds. Seven

appendices contain tabulated data as follows: 1) maximum wind speeds, averaged for 10-min, at h = 13.6- and 104 m for 0100, 0700, 1300, and 1900 hr, and the ratios of these speeds; 2) means of maximum wind speeds for each year, and their ratios for h = 13.6 and 104 m; 3) values of the A and B coefficients for calculating average maximum wind speeds in the layer between 13.6- and 104-m; 4) mean and mean maximum wind speeds by season and for entire years (1960—1965); 5) distribution of mean wind speeds by the intervals of 0100, 0700, 1300, 1900 hr, and for days; 6) distribution of maximum wind speeds by the intervals of 0100, 0700, 1300, and 1900 hr, and for days; and 7) absolute maximum hourly wind speeds (m/sec). Orig. art. has: 10 figures, 16 tables, and 5 formulas. [MA-50; CBR No. 41] [ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 015

ACC NR: AP8037935 SOURCE CODE: UR/0050/68/000/010/0031/0038

AUTHOR: Galakhova, T. A.

ORG: Hydrometeorological Scientific Research Center SSSR (Gidrometeorologicheskiy nauchno-issledovatel'skiy tsentr SSSR)

TITLE: Scheme for calculating vertical velocities of air taking frontogenesis into account

SOURCE: Meteorologiya i gidrologiya, no. 10, 1968, 31-38

TOPIC TAGS: weather forecasting, atmospheric wind field, vertical velocity, frontogenesis, numeric analysis

ABSTRACT: A method is proposed by which the full equation for vertical velocity can be obtained and the equation is solved taking into account the real distribution of the stability parameter c^2. The initial equations are:

heat flux

$$\frac{\partial T}{\partial t} - \frac{RT}{p_0}(T_a - T)\tau = -\frac{1}{f}(H, T) + \frac{\varepsilon}{c_p}, \quad (1)$$

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ACC NR: AP8037935

eddy velocity

$$\Delta\frac{\partial H}{\partial t} = -\frac{1}{f}(H, \Delta H) - (H, f) - (f^2 + 3H)\left(\frac{\partial u}{\partial x} + \frac{\partial v}{\partial y}\right) - \\ - \frac{\partial \Delta H}{\partial p}\tau + \frac{R}{p}\left(\frac{\partial \tau}{\partial x}\frac{\partial T}{\partial x} + \frac{\partial \tau}{\partial y}\frac{\partial T}{\partial y}\right). \quad (2)$$

statics

$$\frac{\partial H}{\partial p} = -\frac{1}{\rho}, \quad (3)$$

state

$$\rho = \frac{p}{RT}, \quad (4)$$

continuity

$$\frac{\partial u}{\partial x} + \frac{\partial v}{\partial y} = -\frac{\partial \omega}{\partial p}. \quad (5)$$

where x, y, p, t are independent variables. Eliminating $\frac{\partial u}{\partial x} + \frac{\partial v}{\partial y}$ from (2), using (5) and $\Delta\frac{\partial H}{\partial t}$, with [illegible] and converting to the variable $\zeta = \frac{f}{p}$, the following equation for [illegible] velocity is obtained:

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$$\Delta\tau + \frac{P\zeta}{\zeta^2}\frac{\partial\tau}{\partial\zeta} + \frac{R}{\zeta^2}\left[\frac{\partial T}{\partial x}\frac{\partial\tau}{\partial\zeta\,\partial x} + \frac{\partial T}{\partial y}\frac{\partial\tau}{\partial\zeta\,\partial y}\right] -$$

$$-\frac{RPT}{\zeta^2}\left(\frac{\partial\zeta}{\partial x}\frac{\partial\tau}{\partial x} + \frac{\partial\zeta}{\partial y}\frac{\partial\tau}{\partial y}\right) + \frac{\zeta R}{\zeta^2}\Delta T\frac{\partial\tau}{\partial\zeta} = \tag{6}$$

$$= \frac{PR\zeta}{l\zeta^2}\Delta(H, T) + \frac{P\sigma}{l\zeta^2}\frac{\partial}{\partial\zeta}(H, \Delta H) - \frac{RP\zeta}{\zeta c_p}\Delta\varepsilon,$$

where

$$\Delta = \frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2}.$$

Taking into account that

$$\frac{P\sigma}{l\zeta^2}\frac{\partial}{\partial\zeta}(H, \Delta H) = -\frac{RP\zeta}{l\zeta^2}[(T, \Delta H)H, \Delta T)],$$

and introducing the dimensionless coordinate

$$x' = \frac{x}{\zeta}, \quad y' = \frac{y}{\zeta},$$

equation (6) becomes

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$$\Delta\tau + \frac{P\sigma\zeta}{\zeta^2}\frac{\partial\tau}{\partial\zeta} + \frac{R\zeta}{\zeta^2}\left(\frac{\partial T}{\partial x}\frac{\partial\tau}{\partial\zeta\,\partial x} + \frac{\partial T}{\partial y}\frac{\partial\tau}{\partial\zeta\,\partial y}\right) -$$

$$-\frac{RPT}{\zeta^2}\left(\frac{\partial\zeta}{\partial x}\frac{\partial\tau}{\partial x} + \frac{\partial\zeta}{\partial y}\frac{\partial\tau}{\partial y}\right) + \frac{R\zeta}{\zeta^2}\Delta T\frac{\partial\tau}{\partial\zeta} = \tag{7}$$

$$= -\frac{PR\zeta}{l\zeta^2\zeta^2}[\Delta(T, H) + (T, \Delta H) + (H, \Delta T)] - \frac{PR\zeta}{\zeta c_p}\Delta\varepsilon.$$

In conformity with the estimate of the orders of magnitude of the terms in equation (7), terms which depend on the spatial changes in τ are 10—20 times smaller than other terms in the equation and, in simplified form the equation for τ becomes

$$\Delta\tau - \frac{P\sigma\zeta^2}{\zeta^2}\frac{\partial\tau}{\partial\zeta} + \frac{R\zeta}{\zeta^2}\left[\frac{\partial T}{\partial x}\frac{\partial\tau}{\partial\zeta\,\partial x} + \frac{\partial T}{\partial y}\frac{\partial\tau}{\partial\zeta\,\partial y}\right] +$$

$$+\frac{R\zeta}{\zeta^2}\Delta T\frac{\partial\tau}{\partial\zeta} = -\frac{PR\zeta}{l\zeta^2\zeta^2}[\Delta(T, H) + (T, \Delta H) + (H, \Delta T)] \tag{8}$$

Equation (8) contains terms (the last two terms in the left-hand side) which take into account the influence on vertical velocity of large horizontal temperature gradients as well as of the combination of the horizontal and vertical derivatives on τ which are related to the

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nonhomogeneous solenoidal field. Equation (8) is solved using the following boundary conditions:

$$\psi = 0 \text{ when } \zeta = 0, \tag{9}$$

$$\psi + \lambda \frac{\partial \psi}{\partial \zeta} = -b S H_0 \text{ when } \zeta = \zeta^0. \tag{10}$$

Here, ζ^0 is the magnitude of ζ at the top of the friction layer,

$$\lambda = \frac{1}{\beta}\left(\delta_p - \frac{1}{2k}\right), \tag{11}$$

δ_p is the thickness of the friction layer (in mb),

$$k = \frac{1}{g}\sqrt{\frac{f}{2\mu}};$$

$$b = \frac{g^2}{f}\sqrt{\frac{\rho_0}{2\mu f}},$$

and, μ is the turbulent viscosity coefficient. Equation (8) is then solved by simple iteration methods, first assuming that the vertical

velocities are computed for each surface by the Pyatygina method. The atmosphere is subdivided into the following layers: $\delta\zeta$ = 0—0.1 (1st); 0.05—0.20 (2nd); 0.10—0.30 (3rd); 0.20—0.40 (4th); 0.30—0.50 (5th); 0.4—0.70 (6th); 0.50—0.85 (7th); and 0.70—1.00 (8th) for the corresponding surfaces ζ = 0.05, 0.10, 0.20, 0.30, 0.40, 0.50, 0.70, and 0.85. Then for the first, third, fourth, and eighth layers the $\frac{\partial^2 \psi}{\partial \zeta^2}$ derivatives in (8) are replaced by finite differences in the form of

$$\frac{\partial^2 \psi}{\partial \zeta^2} = \frac{1}{(\delta\zeta)^2}(\psi_{k+1} + \psi_{k-1} - 2\psi_k), \tag{12}$$

where the subscript k denotes surface number. The replacement by finite differences is made in accordance with the numerical differentiation equation for unequally spaced grids

$$\frac{\partial^2 \psi}{\partial \zeta^2} = a_{k-1}\psi_{k+1} + a_{k-1}\psi_{k-1} - a_k\psi_k, \tag{13}$$

where

$$a_{k+1} = \frac{2}{(\zeta_{k+1} - \zeta_{k-1})(\zeta_{k+1} - \zeta_k)};$$

$$a_{k-1} = \frac{2}{(\zeta_{k-1} - \zeta_k)(\zeta_{k-1} - \zeta_{k+1})};$$

$$a_k = \frac{-2}{(\zeta_k - \zeta_{k+1})(\zeta_k - \zeta_{k-1})}.$$

If the γ magnitude is substituted in the expression for c^2,

$$\gamma = -\frac{\partial T}{\partial \zeta} = \frac{g}{R}\frac{(p_1 + p_2)}{(p_2 - p_1)}\frac{(T_2 - T_1)}{(T_1 + T_2)},$$

then

$$c^2 = \frac{R^2}{2}\frac{(T_1 + T_2)\gamma_a}{g} - \frac{R}{2}\frac{(p_2 + p_1)}{(p_2 - p_1)}(T_2 - T_1), \qquad (14)$$

$$p_2 > p_1.$$

After substituting the first and second derivatives of τ and c^2 from (14), equation (8) becomes

$$c_k (T_{i,j,k-1} - a_k T_{i,j,k+1})\,\Delta\tau_{i,j,k} + d_k(\tau_{i,j,k+1} + e_k \tau_{i,j,k-1} - f_k \tau_{i,j,k}) + s_k\{(T_{i+1,j,k} - T_{i-1,j,k})[(\tau_{i+1,j,k+1} - \tau_{i+1,j,k-1}) - (\tau_{i-1,j,k+1} - \tau_{i-1,j,k-1})] + (T_{i,j+1,k} - T_{i,j-1,k})[(\tau_{i,j+1,k+1} - \tau_{i,j+1,k-1}) - (\tau_{i,j-1,k+1} - \tau_{i,j-1,k-1})]\} + m_k \Delta T_{i,j,k}(\tau_{i,j,k+1} - \tau_{i,j,k-1}) = -F_{i,j,k}, \qquad (15)$$

where

$$F = (T, \Delta H) + \frac{\partial^2 H}{\partial x \partial y}\left(\frac{\partial^2 T}{\partial x^2} - \frac{\partial^2 T}{\partial y^2}\right) + \frac{\partial^2 T}{\partial x \partial y}\left(\frac{\partial^2 H}{\partial y^2} - \frac{\partial^2 H}{\partial x^2}\right) + \frac{l}{2}\frac{\partial H}{\partial y}\frac{\partial T}{\partial x}; \qquad (16)$$

the subscripts i, j, k characterize the change in values relative to the coordinates x, y, ζ, respectively, and k = 0, 1, 2, ..., k + 1:

$$c_k = \frac{[illegible]}{2R\zeta};$$

$$d_k = \frac{[illegible]}{[illegible]};$$

$$s_k = \frac{l\,\tau_l^2\,(\delta x')^2}{8P\,\delta\zeta};$$

$$m_k = \frac{l\,\tau_l^2\,(\delta x')^2}{2P\,\delta\zeta}.$$

The magnitudes τ_0 and τ_{k+1} are excluded using the boundary conditions (9) and (10). According to (9) $\tau_0 = 0$. The boundary condition (10) is written in finite differences form as

$$\tau_k + \lambda\frac{\tau_{k+1} - \tau_{k-1}}{\delta\zeta} = -b\,\Delta H_0, \tag{17}$$

where

$$\delta\zeta = \zeta_{k+1} - \zeta_{k-1};$$

$$\tau_k = \tau_l = \zeta^*.$$

From (17)

$$\tau_{k+1} = -\frac{\delta\zeta}{\lambda}\tau_k + \tau_{k-1} - \frac{b\,\delta\zeta}{\lambda}\Delta H_0 \tag{18}$$

is obtained. Then for τ_k when $\zeta = \zeta^*$, equation (15) becomes

$$\begin{aligned} &c_k\,(T_{i,j,k-1} - a_k\,T_{i,j,k+1})\,\Delta\tau_{i,j,k} + 2\,d_k\,(\tau_{i,j,k-1} - f_k\,\tau_{i,j,k}) - \\ &-s_k\,[(T_{i+1,j,k} - T_{i-1,j,k})\,(\tau_{i+1,j,k} - \tau_{i-1,j,k}) + \\ &+ (T_{i,j+1,k} - T_{i,j-1,k})\,(\tau_{i,j+1,k} - \tau_{i,j-1,k})] - \\ &- m_k\,\Delta T_{i,j,k}\,(\tau_{i,j,k} + q\,\Delta H_0) = -F_k + n_k\,\Delta H_0, \end{aligned} \tag{19}$$

where

$$q = \frac{b\,\delta_\zeta}{2{,}2\lambda};\quad n_k = \frac{2\,b/2\,\zeta^2\,\tau_l^2\,(\delta x')^2}{\lambda\delta\zeta}.$$

The F_k functions in the right-hand sides of equations (15) and (19) were computed from temperature and geopotential data for 396 grid points on the 50, 100, 200, 300, 400, 500, 700, 850, and 1000-mb surfaces. The computations of τ were made on an electronic computer using the above scheme for 140 grid points on the 50, 100, 200, 300, 400, 500, 700, and 850-mb surfaces. These computations were then compared with those obtained by the Pyatygina method for 192 grid points. Analyses of the calculations indicated that the vertical velocities were in good agreement with the isohypse fields and with the character of cloud percipitation distribution. The value of τ attained 62 mb/hr on the 850-mb surface in a well-developed low. Its maximum value in rising motions occurred on the 500--400-mb surfaces (to 140 mb/12 h at 400 mb); above this it decreased and on the 50-mb surface generally amounted to a first-order magnitude and rarely

was of a second-order. On the average, descending motions were smaller in absolute magnitude than the rising motions and the sign of ζ was reversed frequently in passing through the tropopause. The signs of τ obtained by the proposed method and by the Pyatygina method were not identical, i.e. in areas where the absolute magnitudes were small. The roles of the last two terms in the left-hand side of (8) — called the "full" equation — are determined by making supplemental calculations using (8) but without taking into account the "frontal terms," i.e. the incomplete equation. The comparisons indicated that in frontal zone areas on the 850-mb surfaces, vertical elocities calculated by the full equation exceeded in absolute magnitude the value of τ calculated by the incomplete equation by values of from 3 to 25 mb/12 hr. This difference disappeared with height. A quantitative evaluation of the results obtained was made along a front at six sounding stations and at three stations located in the source region of large descending currents. Temperature stratification curves, which took into account advection and the vertical velocities determined by the Pyatygina method, were calculated using (8) and (10). Absolute and relative errors averaged separately for the stations in the frontal zone and in the descending currents were calculated from the temperature stratification curves. The tabulated results indicate that the proposed method of calculating τ makes it possible to calculate precisely the temperatures at all of the levels studied. The results are less favorable for descending motions

ACC NR: AP8037935

than they are for rising motions. These results are described as "preliminary" since they are based on a small amount of data. Orig. art. has: 1 figure, 1 table, and 21 formulas. [WA-50; CBE No. 41] [ER]

SUB CODE: 04/ SUBM DATE: 21Jan68/ ORIG REF: 010

ACC NR: AT8036427 SOURCE CODE: UR/0000/67/000/000/0243/0249

AUTHOR: Gayvoronskiy, I. I.

ORG: none

TITLE: Artificial dispersal of clouds and fogs

SOURCE: Meteorologiya i gidrologiya za 50 let Sovetskoy vlasti; sbornik statey (Meteorology and hydrology during the 50 years of Soviet power; collection of articles). Leningrad, Gidrometizdat, 1967, 243-249

TOPIC TAGS: weather modification, cloud modification, fog dispersal

ABSTRACT: This paper presents a concise review of the research carried out in the Soviet Union over the past 50 years on the artificial dispersal of fogs and clouds, beginning with works by Mendeleyev, Voyeykov, Klossovskiy, and Obelenskiy, followed by the studies carried out in the 1940's at Hydrometeorological Service establishments (Piotrovich at the Central Institute of Forecasts, Nikandrov, Krasikov, Kiryukhin, etc. at the Main Geophysical Observatory, and others at the Central Aerological Observatory) and subsequent research carried out at the Institute of Applied Geophysics. The various

Card 1/2 UDC: 551.(5+48+509)

ACC NR: AT8036427

steps taken in these studies (field and laboratory) are described (tests made with various reagents, development of apparatus, detailed studies of the physical and microphysical processes involved). Plans for research to be carried out in the near and distant future are mentioned briefly. Orig. art. has: 2 formulas.

[WA-50; CBE No. 41][ER]

SUB CODE: 04/ SUBM DATE: none

Card 2/2

ACC NR: AP8031200 SOURCE CODE: UR/0362/68/004/009/0941/0949

AUTHOR: Gkhosh, K. M.

ORG: Moscow State University (Moskovskiy gosudarstvennyy universitet)

TITLE: A model of turbulence which is symmetrical relative to a fixed axis

SOURCE: AN SSSR. Izvestiya. Fizika atmosfery i okeana, v. 4, no. 9, 1968, 941-949

TOPIC TAGS: hydrodynamics, aerodynamics, hydrodynamic model, hydrodynamic equation, atmospheric turbulence, fluid turbulence

ABSTRACT: A mathematical model is presented for the stationary turbulence of a liquid which is infinite in all directions, symmetrical relative to an axis fixed in space, and discontinuous only in directions perpendicular to the axis, which is assumed to parallel the mean flow and to be the source of the turbulence. The discontinuity is considered only in a direction transverse to the axis. When only kinematic conditions are used, this turbulence model is as difficult to calculate as was that derived by Bass (*University of California Publications in Statistics, v. 2, no. 3, 1954*) for isotropic or cylindrically symmetrical turbulence. In the present paper, the main problem derives from the fact that the

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ACC NR: AP8031200

turbulent energy apparently is not attenuated with distance from the axis. In addition, from the kinematic conditions and the finite expansions of the definitive scalars occurring in the velocity correlation functions, iso-mean curves (corresponding to iso-correlation isotropic turbulence curves) which presumably are closed, i.e., homothetic to ellipses, are obtained. Other proposals are suggested which could be verified if appropriate instruments were used. For example, iso-mean curves of the following type:

$$\omega_{\parallel} - m_0 = m_3 x_2 + m_4 x_2^2 + m_5 x_3^2,$$

Orig. art. has: 1 figure and 26 formulas. [WA-50; CBE No. 41] [ER]

SUB CODE: 04/ SUBM DATE: 14Apr67/ OTH REF: 005

Card 2/2

ACC NR: AP9001050 SOURCE CODE: BU/0011/68/021/010/1057/1060

AUTHOR: Godev, N.

ORG: Institute of Geophysics, Bulgarian Academy of Sciences

TITLE: Effect of friction and orography on changes in atmospheric pressure

SOURCE: Bulgarska akademiya na naukite. Doklady, v. 21, no. 10, 1968, 1057-1060

TOPIC TAGS: atmospheric boundary layer, atmospheric pressure field, friction effect, orographic effect, atmospheric turbulence

ABSTRACT: Equations are derived to describe the effects of friction and orography on changes in atmospheric pressure in large-scale atmospheric processes. Systems of equations and the boundary conditions are given for: 1) the free atmosphere in which frictional force is minimal; 2) a planetary boundary layer which is about 1 km thick in which frictional forces are significant. It is found that the role of orography in inducing changes in atmospheric pressure in the boundary layer is dependent on turbulence. [Paper submitted by Academician L. Krastanov on 4 July 1968]. [Original article in English]. Orig. art. has: 12 formulas. [WA-50; CBE No. 41] [ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 002

Card 1/1

ACC NR: AT8032272 SOURCE CODE: UR/3213/68/000/008/0005/0008

AUTHOR: Khorguani, V. G.

ORG: none

TITLE: Nature of the movement of individual large or small particles with a system of particles

SOURCE: Nalchik. Vysokogornyy geofizicheskiy institut. Trudy, no. 8, 1968. Fizika oblakov i osadkov (Physics of clouds and precipitation), 5-8

TOPIC TAGS: atmospheric physics, particle motion, aerosol, coagulation, drop capture, precipitation

ABSTRACT: Results are reported of a series of studies on the motion (fallout rate) of individual particles of large and small sizes from within a polydispersed system of multi-size particles. The fallout rate of single particles moving in this type of system was measured as a function of the distance between the centers of these particles. These experiments showed that when large particle concentrations are present a system of large particles and a system of smaller particles fall at essentially the same rate (when α—the dimensionless distance between

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ACC NR: AT8032272

particle centers equals 5—10), the difference being only about 8—20%. Later, because the system of large particles is captured by the system of smaller particles, they fall as one. When $a \sim 20$, the difference in fallout rates is as high as 60%, the falling small-size particles in the system of large particles are not captured, and the smaller particles lag behind the large particle system. Orig. art. has: 2 figures and 3 tables. [WA-50; CBE No. 41][ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 001

Card 2/2

ACC NR: AT9002808 SOURCE CODE: UR/3444/68/011/000/0150/0155

AUTHOR: Kontar', V. A. (Candidate of technical sciences)

ORG: none

TITLE: Relationship of toxicity to particle size

SOURCE: Moscow. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk. Sbornik trudov, v. 11, 1968. Zemledel'cheskaya mekhanika (Agricultural mechanics), 150-155

TOPIC TAGS: air pollution, pesticide toxicity, aerosol size, environmental biology

ABSTRACT: A mathematical scheme is presented by which the relationship of particle size to toxicity can be described. For the particle — surrounding medium relation, the first law of thermodynamics is written as

$$dE = dq - dw, \qquad (1)$$

where E is the energy of the system, q is the amount of heat, and w is the energy of the surrounding medium. When a chemical reaction occurs, (1) becomes

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$$dE = dq - dw + \sum \mu_i \, dN_i, \qquad (2)$$

where N is the number of moles and μ_i is the molecular chemical potential. After transformations a more general condition of equilibrium is obtained which does not include gravitational and electrical forces occurring at constant pressure p and at a constant temperature T and which is written as

$$dG_{T,p} = \sum \mu_i \, dN_i + \sum \gamma \, d\Omega, \qquad (3)$$

where γ is surface tension and Ω is the contact area. The first summing is made for all components and all phases and the second, for all contact areas. With one component G and two phases L, (3) is written as

$$dG_{T,p} = \mu_G \, dN_G + \mu_L \, dN_L + \gamma \, d\Omega. \qquad (4)$$

In a system in which the number of molecules is constant the relation is written as

$$dN_G + dN_L = 0, \qquad (5)$$

and therefore

$$\mu_G = \mu_L + \gamma \left(\frac{d\Omega}{dN_L} \right)_{T,p}. \qquad (6)$$

If the gas formation phase is continuous and the liquid (solid) phase is divided uniformly into M identical spheres having the radius r, the total contact area is

$$\Omega = 4M\pi r^2, \qquad (7)$$

and the total volume of the dispersed liquid or solid phase is

$$N_L V_L = \frac{4}{3} M\pi r^3. \qquad (8)$$

Assuming that the total volume of molecules V_L does not vary in the liquid and solid phases at identical pressures and temperatures, the principal relationship between the total contact surface Ω and the total number of molecules in the dispersed phase is written as

$$\Omega = \frac{3N_L V_L}{r}. \qquad (9)$$

Since N_L and r are independent variables, the area of the phase contact may vary either with a change in the number of molecules of the liquid and with constant particle radii, or with a change in radius for an unvarying number of particles. Therefore,

$$d\Omega = \left(\frac{\partial \Omega}{\partial N_L}\right)_r dN_L + \left(\frac{\partial \Omega}{\partial r}\right)_{N_L} dr \qquad (10)$$

and

$$\frac{d\Omega}{dN_L} = \left(\frac{\partial \Omega}{\partial N_L}\right)_r + \left(\frac{\partial \Omega}{\partial r}\right)_{N_L} \frac{dr}{dN_L}. \qquad (11)$$

From (9) it is found that

$$\frac{d\Omega}{dN_L} = \frac{3V_L}{r} - \frac{3N_L V_L}{r^2} \cdot \frac{dr}{dN_L}. \qquad (12)$$

From (8) it follows that

$$\frac{dN_L}{dr} = 4\left(\frac{M}{V_L}\right)\pi r^2 = \frac{3N_L}{r}. \qquad (13)$$

Therefore,

$$\frac{d\Omega}{dN_L} = \frac{3V_L}{r} - \frac{V_L}{r} = \frac{2V_L}{r}. \qquad (14)$$

Substituting (14) in (6) gives

$$\mu_e = \mu_L + \frac{2\gamma V_L}{r}. \qquad (15)$$

The pressure of saturated vapor pressure on a flat surface is designated as p_0. Applying the equation of state, (15) is written as

$$\mu_e = \mu_L + kT \ln\left(\frac{p}{p_0}\right). \qquad (16)$$

where k is the thermodynamic constant. Equating (15) and (16) gives

$$kT \ln\left(\frac{p}{p_0}\right) = \frac{2\gamma V_L}{r} \qquad (17)$$

or

$$\frac{p}{p_0} = \exp\left(\frac{2\gamma V_L}{kTr}\right). \qquad (18)$$

Equation (18) shows that the vapor pressure of spherical particles decreases with an increase in particle radius and becomes equal to the saturated vapor pressure when the radii of curvature of the spheres tend toward infinity (flat surface). Since at equal temperatures the relation of vapor pressure to matter concentration is linear,

$$C = C_\infty \exp\left(\frac{2\gamma V_L}{kTr}\right), \qquad (19)$$

where C is the concentration of matter on the surface of the particle, and C_∞ — the concentration of the matter which has the same chemical composition as the particles near the flat surface. The biological parameters of the "biological object — biologically active particle" system are as follows. Biological objects are subdivided by sensitivity to pesticides in accordance with "death-rate — dosage" curves. It is assumed that the distribution of the number of biological objects of equal sensitivity are described by the normal logarithmic law:

$$n = \frac{n_{popul}}{\sigma\sqrt{2\pi}} \exp \frac{-(\ln C - \ln C_{0.5})^2}{2\sigma^2}, \qquad (20)$$

where n is the number of biological objects which perish during pesticide concentrations equal to C, $C_{0.5}$ is the concentration of pesticides which

destroys half of the biological objects, and σ is dispersion in the mathematical sense and the measure of the grouping of the population by sensitvity in the biological sense. The value of the concentration C from (19) is substituted into (20) and the conversion is made from the normal — logarithmic law into linear functions. Equation (20) then becomes

$$Y = K_1 + K_2 \frac{1}{r}, \qquad (21)$$

where Y is a function which is the inverse of the probability integral

$$K_1 = \ln C_\infty - \frac{\ln C_{0.5}}{\sigma}; \quad K_2 = \frac{2\gamma V_L}{kT}.$$

Equation (21) shows the relationship between the dispersion of the particles, the physical and chemical characteristics of the particle material, the state of the medium, and the toxicological characteristics of the biological objects. It is assumed that the spatially inhabiting biological objects completely occupy a stationary monodispersed aerosol system which has reached a state of saturation. The toxicity of the poisonous substance therefore is considerably increased as the particle sizes decrease. Since biological effects are unchanged, the process depends on the physicochemical and geometric parameters of the particles.

If a specific compound is used, its characteristic constants are determined and

$$C = C_\infty \exp \frac{\varphi}{r}, \qquad (22)$$

where

$$\varphi = \frac{2\gamma V_L}{kT}. \qquad (23)$$

It is easy to show that the concentration C and the biological activity of the aerosol particles begin to increase sharply in a range of particle sizes which is determined by the condition

$$r < \frac{2\gamma V_L}{kT} = \varphi. \qquad (24)$$

This means that there is some critical dimension of a biologically active aerosol particle

$$r_{cr} = \frac{2\gamma V_L}{kT}, \qquad (25)$$

which is determined by the physicochemical nature of the substance of which the particles are made. The larger a particle is, the greater the

surface tension and the number of molecules in the compound. The critical size decreases with a rise in temperature, i.e. comparatively large particles can assure high water vapor concentration if the temperature is high enough. Particles sizes that are smaller than critical are of the most interest in selecting biologically active compounds for crop protection. In sanitary hygiene harmful biologically active particles should be of large sizes. Since the liquid particles are nearly spherical, equation (21) requires minimum corrections in making calculations for spraying, especially for liquid aerosols made of pure compounds. The equation is also useful for non-spherical solid particles; here, however, r is not the radius of a spherical particle, but the radius of curvature of some surface and, for irregularly shaped solid particles, (21) becomes

$$C = C_\infty \exp \beta \frac{\gamma V_L}{kT}, \qquad (26)$$

where β is the shape factor. The equivalent radius [illegible] substance reserve in the particle but the particles may differ in shape. A statistical mean which varies with the substance is used in practice when large amounts of substance are involved. For each i-th fraction there is a known constant β_i which, in addition to the chemical and physical parameters, characterizes the biological activity. Orig. art. has: 26 formulas. [MA-50; CBE No. 41].[ER]

SUB CODE: 06, 04/ SUBM DATE: none

ACC NR: AP9004736 SOURCE CODE: UR/0115/68/000/012/0066/0069

AUTHOR: Lekhtmakher, S. O.; Ruzer, L. S.

ORG: none

TITLE: Measurement of radioactive aerosols

SOURCE: Izmeritel'naya tekhnika, no. 12, 1968, 66-69

TOPIC TAGS: radioactive aerosol, aerosol measurement, measurement accuracy, error analysis, radiometer, radioactive isotope, radioactive decay

ABSTRACT: Analyses are presented of the following types of errors made in measuring aerosol radioactivity: instrumental errors; statistical errors; errors associated with self-absorbing radiation (especially α-radiation) in the sample; errors associated with non-correspondence of the source specimen and the aerosol sample relative to radiation energy, geometry, and other factors; and procedural errors. L. M. Levin's equation

$$A = \frac{C_0}{C_\infty} = 1 - 0.8k + 0.08k^2 + \ldots \qquad (1)$$

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ACC NR: AP9004736

is used to determine the aspiration coefficient A. Here, k is the dimensionless parameter (Stokes number):

$$k = \frac{\rho d^2}{18\eta} \cdot \sqrt{\frac{4\pi u^3}{Q}};$$

ρ is the density of particles; d is the particle diameter, u is the linear velocity of the air flow entering the instrument (equals the geometric sum of the flow rate of the non-turbulent flow and the particle sedimentation rate u_s); η is the coefficient of air viscosity; and Q is the volume of air sucked through the pipe in unit time. This equation becomes of lower accuracy as k increases, i.e. when k = 0.25, the error is 1% and when k = 0.5, about 2.5%. This equation also is applicable for apertures if the mean flow rate into the aperture is greater than 4 u. Equation (1) shows that failure to take the effectiveness of sample intake into account leads to larger errors. In addition, the aspiration coefficient depends greatly on the density and diameters of the aerosol particles. Figures 1a, 1b, 1c, and 1d give curves of identical aspiration coefficients calculated by (1) as functions of aerosol density and diameter for flow rates in the collecting pipe of 5, 20, and 100 l/min and air flow rates of 1 and 2 m/sec. These curves can be used to calculate the aspiration coefficient for particles having a diameter of 5 μ at a density of 15 g/cm^3, Q = 6 m^3/hr (100 l/min) and a ventilation rate of 1 m/sec. The coefficient is

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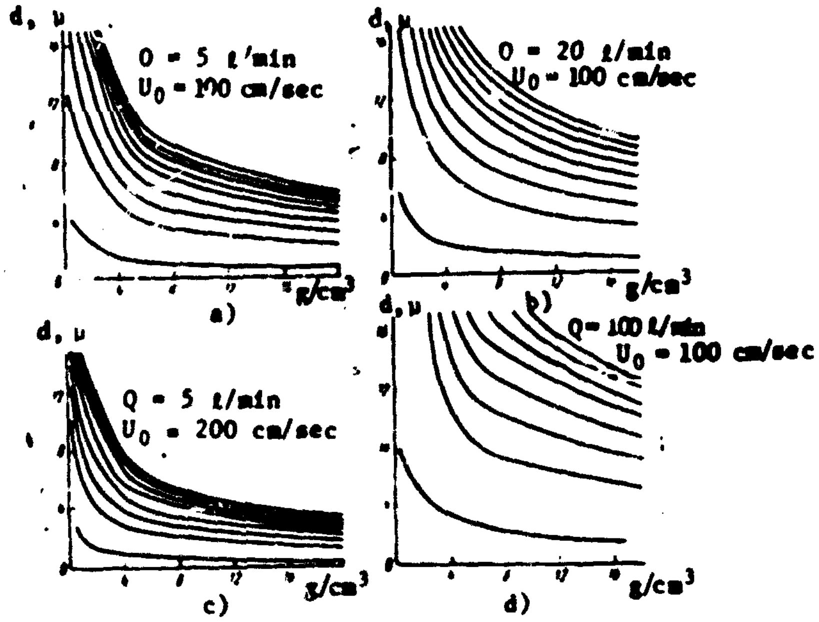

Fig. 1

~0.90 and 0.82 for Q = 20 ℓ/min. The coefficient of diffusional settling of finely dispersed aerosols as they pass through the collecting pipe Э

(laminar flow in a cylindrical pipe) is calculated from:

$$Э = 1 - 0,9149e^{-1.884\mu} + 0.0883e^{-22.33\mu} + $$
$$+ 0.0258e^{-151.0\mu}.$$

where

$$\mu = \frac{Dx}{R^2\bar{u}} = \frac{\pi x D}{Q}.$$

where D is the particle diffusion coefficient; x is the length and R is the radius of the pipe; and $\bar{u}$ is the mean linear velocity of the flow in the pipe. The dependences of Э on the function $\frac{x}{Q}$ is illustrated in Figure 2. The method recommended for determining the efficiency of filters (rate at which the filters inhibit the passage of radioactive particles) is the "filter pack" technique. The smallest coefficient of inhibition, obtained for the NEL filter tape made of FPP-15 material, is about 75% for natural aerosols. The determination of the volume of air passing through can be made with errors of 1—2%. It is noted that with the radiometers used in actual tests, the errors amount to about 60—70%. The self-absorption of α-radiation in the filter material and the settling dust layer are calculated with the equation:

$$\frac{N}{N_0} = \begin{cases} \frac{2 - h/R_0}{4} & \text{when } h < R_0 \\ \frac{R_0}{4h} & \text{when } h > R_0. \end{cases} \qquad (2)$$

where N_0 is the number of α-particles formed in unit time by the source; N is the number of α-particles registered in unit time at the angle 2π; and h is the total thickness of the dust and filter layers, in mg/cm^2. The equations used to calculate the spectral distortion of α-particles

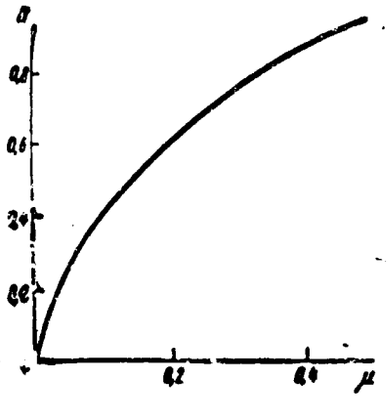

Fig. 2.

from a horizontal source also can be used to calculate the changes in output $\frac{N}{N_0}$ as a function of radiator energy for a given thickness.

Figure 3 shows that in measuring naturally radioactive aerosols, the

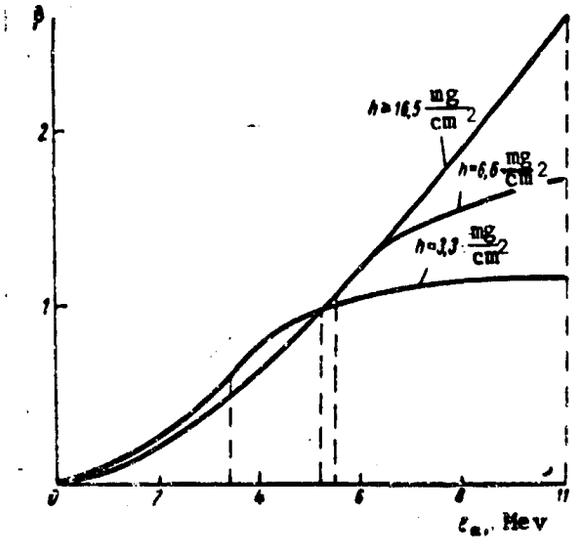

Fig. 3.

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correction coefficients for RaC' and ThC' are rather large. In the spectrophotometric method developed at the All-Union Scientific Research Institute of Physicotechnical and Radiotechnical Measurements and with USA-1 and USA-2 apparatus and special sources it is possible to measure accurately the concentrations of radon and thoron decay products. This apparatus can be used in the future as a prototype for measuring other types of radioactive aerosols. Orig. art. has: 4 figures and 3 formulas.
[WA-50; CBE No. 41] [ER]

SUB CODE: 04, 18/ SUBM DATE: 25Sep67/ ORIG REF: 009/ OTH REF: 003

Card 7/7

ACC NR: AT9004077 SOURCE CODE: UR/3269/68/000/032/0074/0075

AUTHOR: Masterskikh, M. A.

ORG: none

TITLE: Vertical component velocity of the Novorossiysk bora

SOURCE: Gidrometeorologicheskiy nauchno-issledovatel'skiy tsentr SSSR. Trudy, no. 32, 1968. Prognoz baricheskogo polya i opasnykh yavleniy pogody (Forecasting the pressure field and dangeous weather phenomena), 74-75

TOPIC TAGS: atmospheric wind field, local wind, bora

ABSTRACT: Approximate calculations of the wind speed during the bora winds at Novorossiysk which are caused by the descent of cold air as it passes over the mountains generally are made with the equation (1)

$$v = \sqrt{2gh\frac{T_1 - T_2}{T_1}}, \qquad (1)$$

where v is the wind speed at Novorossiysk, g is gravitational acceleration (9.8 m/sec), h is the altitude of Markhotskiy pass, in meters,

Card 1/2 UDC: 551.555.4(471.62)

ACC NR: AT9004077

and T_1 and T_2 are the temperatures of the warm and cold air masses (absolute scale). However, observations do not indicate that wind speeds do not show that gravitational waves are solely responsible. The author postulates that the divergence between the computed and factual velocities are due to failure to take into account frictional flow and turbulent exchange in the surrounding air mass. Two flow components are postulated — a horizontal component which is not large, and a vertical component. In addition, the existence over the mountains of an area of maximum wind is a major contributing factor. Orig. art. has: 2 formulas. [WA-50; CBE No. 41] [ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 005

Card 2/2

ACC NR: AR9002621 SOURCE CODE: UR/0169/68/000/005/B068/B068

AUTHOR: Mikhaylenko, N. M.

TITLE: Influence of a large city on the formation of weather conditions complicating aviation

SOURCE: Ref. zh. Geofizika, Abs. 5B549, 1968

REF SOURCE: Sb. Prirodn. i trud. resursy Levoberezhn. Ukrainy i ikh ispol'z. Tezisy dokl. Vyp. 4. Khar'kov,1967, 44-45

TOPIC TAGS: air pollution, aviation meteorology, urban air pollution, fog, high wind

ABSTRACT: Data are presented on the difference in the frequency with which conditions unfavorable for aviation occur at Kiev and in its suburbs. On the average, the number of foggy days at Kiev is 20—25% greater than at Borispol', 35 km from the center of Kiev. Intramass clouds originate earlier in the city and their bases rise later than they do in the environs. High winds are rarely observed in the city. High buildings have effects similar to those produced by different types of orography, increasing the precipitation from the updrafts and convective currents. The number of days with thunderstorms and high winds is fewer in the city than in the surrounding area. On the whole, the frequency

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ACC NR: AR9002621

of unfavorable conditions is greater in the city than in the surrounding areas and this difference will become greater as the city grows. [Translation of abstract]. [WA-50; CBE No. 41] [ER]

SUB CODE: 04

Card 2/2

ACC NR: AT9004076 SOURCE CODE: UR/3269/68/000/032/0057/0062

AUTHOR: Mineyeva, M. N.

ORG: none

TITLE: Relationship between air parcel trajectories calculated from data on the factual or geostrophic winds

SOURCE: Gidrometeorologicheskiy nauchno-issledovatel'skiy tsentr SSSR. Trudy, no. 32, 1968. Prognoz baricheskogo polya i opasnykh yavleniy pogody (Forecasting the pressure field and dangerous weather phenomena), 57-62

TOPIC TAGS: atmospheric circulation, air particle trajectory, factual wind, geostrophic wind, wind component

ABSTRACT: An analysis is made to determine which of two air-parcel trajectories (paths), i.e., those calculated using u_g, v_g — geopotential wind components — or those calculated by the synoptic method, most closely approximate trajectories calculated using u_f, v_f — factual wind components — as functions of the structure of the geopotential field. The data used were observations made over the European USSR, western Europe, the Caucasus, Central Asia and parts of western

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ACC NR: AT9004076

Siberia. The results indicated that: trajectories calculated on a M-20 computer using geostrophic wind fields by time intervals adequately characterized the transfer of air masses and better approximated trajectories calculated with u_f, v_f fields than those constructed by the synoptic method; geostrophically determined trajectories are inadequate when the lows are small, the depressions are multicentered, or the field gradients, are small when the air masses move at low speeds and in low-gradient fields, the deviations of trajectories calculated from u_g, v_g from those calculated from u_f, v_f may exceed the length of the trajectory, and the direction of trajectories constructed by the synoptic method may differ from those calculated by u_f, v_f by values which are somewhat less than the geostrophic; in a straight flow, especially in high-speeds, trajectories calculated from the geostrophic wind components almost coincide with those calculated with u_f, v_f. Orig. art. has: 3 tables and 4 formulas.

[WA-50; CBE No. 41] [ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 006

Card 2/2

ACC NR: AR9002614 SOURCE CODE: UR/0169/68/000/005/B006/B006

AUTHOR: Popov, N. I.

TITLE: Investigation of the accuracy of rawinsonde observations made with a "Malakit" radiotheodolite with the range operating as a function of secondary reflectors set up at the station site and in the adjacent area

SOURCE: Ref. zh. Geofizika, Abs. 5B56 , 1969

REF SOURCE: Sb. rabot Rostovsk. gidrometeorol. observ., vyp. 6, 1967, 82-97

TOPIC TAGS: atmospheric wind field, rawinsonde observation, UHF radio wave, signal reflection

ABSTRACT: A discussion is presented of the theory of the reflection of UHF radiowaves from secondary reflectors set up in the area around a radio theodolite and of their effect on the accuracy with which angular coordinates are determined. Error criteria are given and a comparison is made between the conclusions derived and the results of check observations made at the following aerological stations: Rostov-na-Donu, Mineral'nyye Vody, Volgograd, Kursk, Tambov, and Divnoye village. It

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ACC NR: AR9002614

is concluded that secondary reflectors installed in the areas of these stations had no significant influence on the accuracy of rawinsonde observations. [Translation of abstract]. [WA-50; CBE No. 41] [ER]

SUB CODE: 04

Card 2/2

ACC NR: AP8030649 SOURCE CODE: UR/0020/68/181/005/1115/1118

AUTHOR: Pressman, A. Ya.

ORG: Institute of Applied Geophysics (Institut prikladnoy geofiziki)

TITLE: Model for calculating the fallout of the heavy, heterogeneous pollutants from a source in space during winds which vary with height

SOURCE: AN SSSR. Doklady, v. 181, no. 5, 1968, 1115-1118

TOPIC TAGS: atmospheric pollution, atmospheric model, atmospheric wind field, heavy particle fallout

ABSTRACT: A simplied model is presented for the distribution of pollutants in an atmosphere in which the wind speed varies with height. This model is based on physical simplifications which make it possible to avoid various types of computing difficulties and to obtain a solution for the "volumetric" fallout of heavy polydispersed particles onto the underlying surface. Limits established by Pressman (*Inzh. fiz. zhurnal*, *v.* 2, *no.* 11, 1959) and by Karol' (*Yadernaya meteorologiya*, 1962) for the dispersion of the pollutant (fallout rate w caused by vertical turbulent diffusion and that due to the presence of components of various sizes and weights). By assuming that at these limits all pollutant fractions fall out at identical rates w, a semiempirical turbulent

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diffusion equation can be written in which the coefficient of vertical turbulent diffusion K_z is omitted and the simplified solution of the equation becomes

$$dc/dt + u_x(z)dc/dx + u_y(z)dc/dy - wdc/dz = K(d^2c/dx^2 + d^2c/dy^2) \quad (1)$$

(where c is the "volumetric" concentration of a given weight fraction, and K is the coefficient of horizontal turbulent diffusion) for the horizontal components of the wind $u_x(x)$ and $u_y(z)$ given as arbitrary functions of altitude z in the $0 \leq z \leq h$ interval. The coefficient of heavy pollutant particle dispersion is taken as a magnitude which is inversely proportional to the fallout rate w, i.e. here proportional to the period that the particles remain in the atmosphere $t = h/w$. In the case of an instantaneous point source of unit intensity

$$c|_{t=0} = \delta(x)\delta(y)\delta(t-h) \quad (2)$$

the expression for the surface concentration of individual weight fractions settling on the underlying surface $z = 0$ becomes

$$p_1(x, y; h, w) = \int_0^\infty wc|_{z=0}(x, y, t; h, w)\,dt = \frac{1}{2\pi\sigma^2}\exp\left\{-\frac{[x - U_x h/w]^2 + [y - U_y h/w]^2}{2\sigma^2}\right\}, \quad (3)$$

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where the dispersion σ^2 is a function of $t = h/w$, and is related to the coefficient of horizontal turbulent dispersion K by the relation

$$\sigma^2(t) = 2\int_0^t K(\tau)\,d\tau.$$

In (3) $U_x(h)$ and $U_y(h)$ — the components of mean wind velocity — represent the resulting vectors of the horizontal transfer of particles as they fall in the layer $0 \leq z \leq h$, and

$$U_x(h) = \frac{1}{h}\int_0^h u_x(z)\,dz, \quad U_y(h) = \frac{1}{h}\int_0^h u_y(z)\,dz. \quad (5)$$

If it is assumed that

$$\sigma^2(h) = \sigma^2 V^2(h)(h/w)^2, \quad (6)$$

where

$$V^2(h) = U_x^2(h) + U_y^2(h), \quad (7)$$

the distribution on the plane $z = 0$ of the surface concentration $p_1(x, y; h, w)$ is symmetrical with respect to the point of maximum concentration

$$x_0 = U_x(h)h/w, \quad y_0 = U_y(h)h/w. \quad (8)$$

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Then, from (3) and (8) it follows that all weight fractions starting to fall from identical heights regardless of the fallout rate w will form on the plane of distribution p, (x, y; h, w), with the maximum falling on the ray

$$y = xU_y(h) / U_x(h). \qquad (9)$$

If the nonhomogeneities of the pollutant particles at the source have a density distribution N(h, w), the surface concentrations of the polydispersed pollutant issuing from a point source located at height h will have an integral for all velocity ranges w such as

$$p_2(x, y; h) = \int_0^\infty N(h, w)\, p_1(x, y; h, w)\, dw. \qquad (10)$$

The function $p_2(x, y; h)$ will be symmetrical relative to the ray (9). In two-parameter form it becomes

$$N(h, w) = \frac{a^{n+1}}{\Gamma(n+1)} w^n e^{-aw}, \qquad (11)$$

where a(h) > 0, n(h) > -1, and a simple analytical expression can be derived to calculate the surface distribution on the plane z = 0. In an instantaneous flat source located at the same height, $p_2(x, y; h)$ is

integrated with the initial dispersion of the pollutant at the source $L(\xi, \eta)$, where ξ and η are the horizontal coordinates on the plane z = h. The expression is simplest when the pollutant is dispersed at the source at the moment t = 0 in accordance with the Gaussian law

$$L(\xi, \eta) = \frac{1}{2\pi\sigma_0^2} \exp\left[-\frac{\xi^2 + \eta^2}{2\sigma_0^2}\right], \qquad (12)$$

where the initial dispersion σ_0^2 generally is a function of the source height. Integrating $p_2(x, y; h)$ with $L(\xi, \eta)$ on the plane z = h, the expression for the surface concentration on the plane becomes

$$p_3(x, y; h) = \iint_{-\infty}^{+\infty} p_2(x - \xi, y - \eta; h)\, L(\xi, \eta)\, d\xi\, d\eta =$$

$$= \int_0^\infty \frac{N(h, w)}{2\pi\left[\sigma_0^2(h) + \sigma^2(h)\right]} \exp\left\{-\frac{\left[x - U_x(h)h/w\right]^2 + \left[y - U_y(h)h/w\right]^2}{2\left[\sigma_0^2(h) + \sigma^2(h)\right]}\right\} dw. \qquad (13)$$

The surface concentrations from an instantaneous "volumetric" source are determined by integrating (13) with the plane N(h) which characterizes the pollutant distribution at the height of the source in the layer $0 \le h \le H$:

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$$p_s(x, y) =$$

$$= \int_0^H \left[\int_0^\infty \frac{M(h) N(h, w)}{2\pi [\sigma_0^2(h) + \sigma^2(h)]} \exp\left\{ - \frac{[x - U_x(h) h/w]^2 + [y - U_y(h) h/w]^2}{2[\sigma_0^2(h) + \sigma^2(h)]} \right\} dw \right] dh. \quad (14)$$

In both examples, it is assumed that in the function N(h, w) the parameter n = 0 and the parameters a and σ_0 are identical at all levels. Orig. art. has: 2 figures and 15 formulas. [Paper presented by Academician Ye. K. Fedorov on 9 October 1967]. [WA-50; CBE No. 41] [ER]

SUB CODE: 04/ SUBM DATE: 060ct67/ ORIG REF: 006

Card 6/6

ACC NR: AT8032273 SOURCE CODE: UR/3213/68/000/008/0009/0012

AUTHOR: Sarkisov, S. L.; Stepanov, G. V.; Shvedov, S. V.

ORG: none

TITLE: Nature of the sedimentation of solid aerosols in impactor traps

SOURCE: Nalchik. Vysokogornyy geofizicheskiy institut. Trudy, no. 8, 1968. Fizika oblakov i osadkov (Physics of clouds and precipitation), 9-12

TOPIC TAGS: atmospheric physics, atmospheric precipitation, aerosol trap, impactor, aerosol mechanics

ABSTRACT: In contrast to most aerosol traps of the impactor type, the automatic model developed at the High Mountain Geophysical Institute (VGI) effectively captures submicron particles (0.02—0.05 μ), i.e. smaller than R_{min}. To investigate the sedimentation mechanism, an impactor was used which was originally designed for use with optical microscopes. The experiments were carried out in a hygrostat in which the temperature and humidity could be varied over a wide range; the flow-through rate was in the sonic range. Determinations made on different days with different amounts of dust showed the dependence of the initial atomization on the temperature and humidity of the air and that changes in the

Card 1/2 UDC: 551.508.91

ACC NR: AT8032273

concentrations of particles in the air had no significant effect on the initial atomization. Other experiments, carried out to determine the dependence of the effectiveness of aerosol sedimentation on the humidity of the air, using fixed aerosol concentrations, indicated that the coefficient of capture increased significantly with increasing humidity. With low humidity, despite considerable adiabatic cooling in the nozzle, not all of the small particles became large enough to become cooled. When working with high humidities, the plate on which the sample was collected was covered with gelatin to increase the capture coefficient; this also made it possible to work with humidities as high as 100% and the number of aerosols in the impactor was increased. Particles smaller than 0.3 μ were examined with electon microscopes. In this case a special plastic-covered plate was used in conjunction with a metal screen. Orig. art. has: 2 figures.

[WA-50; CBE No. 41] [ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 006/ OTH REF: 004

Card 2/2

ACC NR: AP8035428 SOURCE CODE: UR/0050/68/000/009/0011/0021

AUTHOR: Shakina, N. P. (Candidate of physico-mathematical sciences); Velichenko, L. M.; Kapitanova, T. P.

ORG: Central Aerological Observatory (Tsentral'naya aerologicheskaya observatoriya)

TITLE: Problem of the mesostructure of the wind field in jet streams

SOURCE: Meteorologiya i gidrologiya, no. 9, 1968, 11-21

TOPIC TAGS: atmospheric wind field, wind field structure, jet stream, wind shear, jet stream structure

ABSTRACT: Data collected during summertime flights (1964—1965), selected for incidences of flights in jet stream, are the basic data used in harmonic analyses of wind velocity characteristics in the jet-stream areas using electronic computers. The planes either covered several "areas" at different altitudes or made single flights at definite altitudes. The deviation in wind speed from the mean at each given altitude was represented as the sum of the harmonic components for different wavelengths. Distances were spaced at 100-km intervals and the velocity modulus was expanded into a Fourier series for each interval. Wind-direction changes, being negligible, were not taken into consideration.

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A total of 5 flights was analyzed (differed only in weather conditions, the nature of the flow, and flight line relative to the wind direction). Comparison of the data of these flights showed that: in areas of large horizontal wind gradients, the fluctuations in velocity with wavelengths of 100—75 km are greater than in uniform flows; during flights across the flow, short wave fluctuations were most noticeable, and along the flow direction, the long wave fluctuations (of the order of 100 km), possibly sometimes indicating anisotropic disturbances; when the jet-stream axis was clearly evident, the fluctuations were most noticeable to the left of the axis at or in the vicinity of the level of maximum wind; that the wave amplitudes in the wave lengths investigated could reach 30—50% of the velocity of the mean flow, at other times 10—15%, sometimes 20%, or might even be "slight;" in an essentially parallel, stably-stratified jet, the disturbances generally were small; and the amplitudes of the fluctuations in velocity were generally smaller along the flow direction than they were transverse to the flow. The study gave only a general preliminary idea of the mesoscale flow structure and detailed experimental and theoretical studies are required. One possible theoretical approach is described, i.e. to study the stability of the jet streams relative to the character of the distrubances occurring in them, particularly the effects of the Coriolis force and thermal stratification . Preliminary analysis indicates that some simplifications can be made if the disturbances are relatively small, i.e., if the vertical extents are of the order of hundreds of meters and the

horizontal dimensions are of the order of tens of kilometers. In these cases, thermal stratification can be dropped from consideration, only the Coriolis force having to be taken into account, and under some conditions, in these small disturbances the jet-stream stability may diminish. Orig. art. has: 5 figures and 10 formulas.

[MA-50; CBE No. 41] [ER]

SUB CODE: 04/ SUBM DATE: 18Mar68/ ORIG REF: 004/ OTH REF: 004

ACC NR: AP9006295 SOURCE CODE: UR/0030/68/000/012/0121/0123

AUTHOR: Sinadskiy, Yu. V. (Doctor of biological sciences)

ORG: none

TITLE: Study of the desert areas of Central Asia and Kazakhstan

SOURCE: AN SSSR. Vestnik, no. 12, 1968, 121-123

TOPIC TAGS: desert geomorphology, desert soil, desert agriculture, desert biology, desert climatology, desert hydrology, solar energy, scientific conference, ecology

ABSTRACT: A resolution of the Presidium of the USSR Academy of Sciences dated 13 January 1967 called for the organization of a Scientific Council on the "Multi-discipline study and utilization of the desert areas of Central Asia and Kazakhstan" (chairman, M. T. Mechayeva, Academician of the Turkmenian Academy of Sciences). The Council determined principal scientific trends and immediate tasks and for a short time guided and coordinated the research work of the scientists, and determined future research on the arid regions. This activity resulted in the convening of the Second All-Union Conference on the Study and

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ACC NR: AP9006295

Utilization of the Desert Areas of Central Asia in Ashkhabad on 1—8 October [1968]. About 400 scientists and specialists representing almost all of the union republics took part in the meetings. By prior agreement, the Fifth Biological Sciences Conference, devoted to arid zone research (conducted by the Division of General Biology of the Academy of Sciences USSR, at the Academy of Sciences of the Turkmenian Republic) was one of the sections at the October meetings. This section dealt mainly with research related to the international biological program. After an opening address by P. A. Azimov, President of the Turkmenian Academy of Sciences, the following papers were presented at the plenary session: A. G. Babayev (Desert Institute, Academy of Sciences of the Turkmenian SSR), "Principal results and tasks of the multi-discipline investigation and utilization of the deserts of Central Asia and Kazakhstan;" I. S. Rabochev (Desert Institute, Academy of Sciences of the Turkmenian SSR), "Prospec of utilizing the land and water resources of Central Asia;" Ye. M. Lavrenko (Botanical Institute of the AS USSR), "Tasks of biological research in arid zones;" I. V. Larin (All-Union Academy of Agricultural Sciences - VASKHNIL), "Present status and prospects of utilizing desert pastures;" M. P. Petrov (Leningrad University), "Classification of the world's deserts;" S. Yu. Geller (Institute of Geography, AS USSR), "Caspian and Aral problems;" A. K. Bostanov (Turkmenian Agricultural

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Institute), "Zoogeography and utilization of the deserts of Central Asia;" N. T. Nechayeva (Desert Institute, AS USSR), "Phytocenological and agrometeorological bases for the amelioration of desert pastures;" N. G. Kharin (Desert Institute, AS Turkmenian SSR), "Present status and prospects of the development of aerial methods for desert study;" and O. V. Zalenskiy (Botanical Institute, AS USSR) reported on his six-month trip in the Chilean deserts. Additional work, discussed at the meetings of eight sections, involved about 400 papers and communications. Section meetings covered such problems as the physicogeographic and natural zones of the deserts and semiarid regions, studies of the biological aspects of deserts and of ways of increasing their productivity, economic evaluations of the natural conditions and resources of the deserts, determination of the interrelationship of oases and deserts, and the development of methods of studying arid-zone land forms. Other topics discussed dealt with studies on pasturage, the characteristics of plant photosynthesis, and protection against termites, harmful insects, ticks, and rodents in the desert. Methods of restraining mobile sands, of securing canal banks, road embankments, of protecting gas pipes, and of growing forests in the deserts were also discussed. Special attention was devoted to water supply problems, including the use of mineralized ground water and runoff from takyr drainage basins, and the hydrogeological basis of water utilization. Power supply problems were

dealt with in another special session; the discussions centered on such problems as the utilization of wind and solar power, solar stills, wind vanes, etc. One group of papers covered research on physiological adaptation in deserts, the influence of ecological factors in the arid zones on organs controlling the blood, digestion, brain, etc. [WA-50; CBE No. 41] [ER]

SUB CODE: 08,06/ SUBM DATE: none

ACC NR: AT9004074 SOURCE CODE: UR/3269/68/000/032/0023/0034

AUTHOR: Sorochinskiy, M. A.; Koshel'kova, G. A.; Yushenko, G. P.

ORG: none

TITLE: Storm winds in the USSR for the 1956—1965 period

SOURCE: Gidrometeorologicheskiy nauchno-issledovatel'skiy tsentr SSSR. Trudy, no. 32, 1968. Prognoz baricheskogo polya i opasnykh yavleniy pogody (Forecasting the pressure field and dangerous weather phenomena), 23-34

TOPIC TAGS: atmospheric wind field, weather forecasting, storm wind, local wind

ABSTRACT: A statistical analysis is made of dangerous winds recorded in the 10-year period of 1956 through 1965 at weather stations which were equipped with pressure-plate anemometers measuring speeds up to 40 m/sec and anemometers measuring speeds up to 60 m/sec. The data used were wind speeds registered at observation times of 21 m/sec or more, rounded off for 2-min intervals, selected from IM-1 tables for the 1956—1960 information and for the 1961—1965 information-observations made between the standard observation periods. Squall winds

Card 1/4 UDC: 551.553(47)

ACC NR: AT9004074

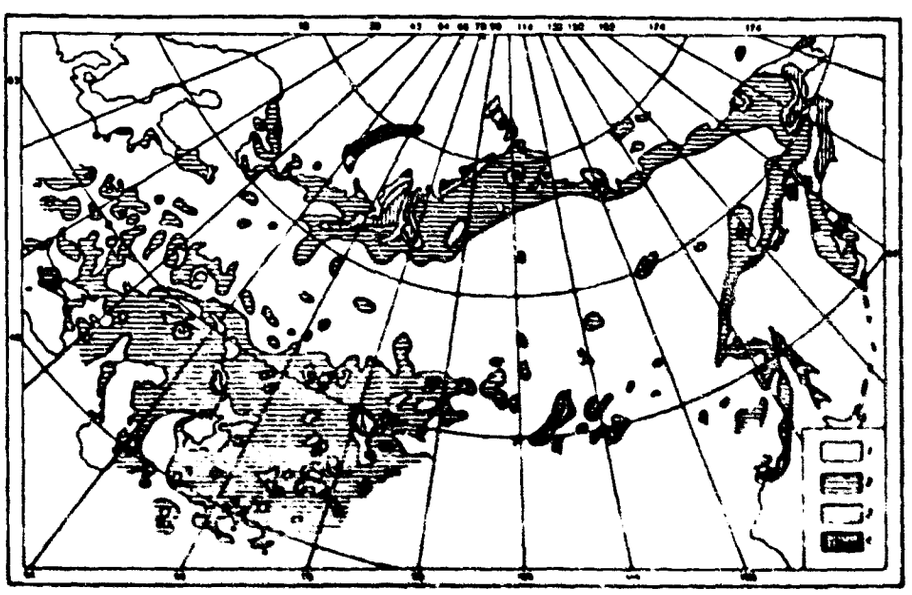

Fig. 1. Maximum wind speeds for the 1956 through 1965 period

1 - wind speed ≥ 21 m/sec not observed; 2 - 21—34 m/sec; 3 - 35—39 m/sec; 4 - ≥ 40 m/sec

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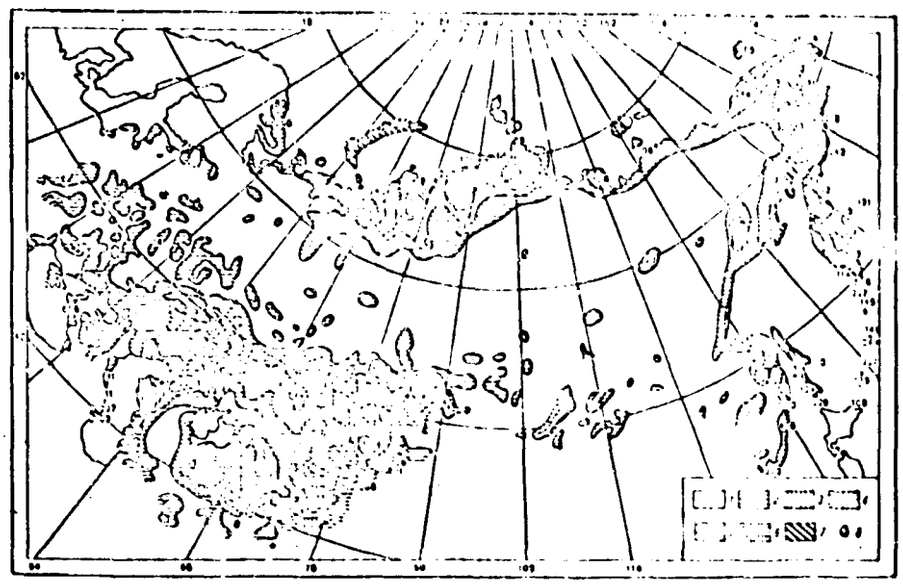

Fig. 2. Number of days with wind speeds of ≥ 21 m/sec for the period 1956 through 1965

1 - wind speed ≥ 21 m/sec not observed; 2 - 1—4 days; 3 - 5—9 days; 4 - 10—19 days; 5 - 20—49 days; 6 - 50—99 days; 7 - 100—200 days; 8 - > 200 days

are not taken into account. For each station, storm wind frequencies were represented in the form of integral sums (≥ 21, ≥ 25, ≥ 29, ≥ 33, ≥ 41, and ≥ 51 m/sec). The results are given in tabular form and are incorporated on two charts (Figs. 1 and 2). Special note is made of individual areas which are subjected to heavy winds: Arctic Ocean, especially the Laptev and East Siberian Seas, the Caucasus Mountains, the Black and Caspian Seas, the local winds of Central Asia (at Dzhungaria Gate, Mugodzhar, Kartau, Fergana valley, Issyk-Kul' valley, southern portions of Krasnoyarskiy kray, Baykal, Primorskiy kray, coastal areas of the Japanese Sea and around Kamchatka and the Kurile Islands. Orig. art. has: 2 figures and 2 tables. [WA-50: CBE No. 41] [ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 008

ACC NR: AT9004165 SOURCE CODE: UR/3061/68/000/028/0076/0099

AUTHOR: Sukhishvili, E. V.

ORG: none

TITLE: Winds in the Kolkhida lowland

SOURCE: Tiflis. Zakavkazskiy nauchno-issledovatel'skiy gidrometeorologicheskiy institut. Trudy, no. 28 (34), 1968. Gidrometeorologicheskiy rezhim Kolkhidskoy nizmennosti (Hydrometeorological conditions of the Kolkhida Lowland), 76-99

TOPIC TAGS: atmospheric wind field, sea breeze, valley wind, wind power, wind speed, wind direction

ABSTRACT: A detailed report is given on the types, velocities, directions, and frequencies (monthly, seasonal, yearly) of winds in the Kolkhida lowland plain extending from Sukhumi on the north to Batumi on the south (Caucasus). The data used were obtained at 20—30 weather stations located near the coast and also inland toward the mountains. The information is summarized and presented in the form of detailed tables, small-scale maps, and wind roses. An analysis is also made of the amount of wind power available. The prevailing winds are of the monsoon type, westerly and southwesterly during the summer months

Card 1/2 UDC: 551.55

ACC NR: AT9004165

(April or May to August or September) and then easterly and northeasterly during the winter months. Breezes occur in the coastal areas for most of the year. The mean annual maximum wind speed varies between 1.3—5.0 m/sec, and on an annual basis is greatest during the winter and smallest during the summer. High-speed easterly winds occur most frequently in the Rioni river valley. The magnitudes of possible maximum wind speed, determined by statistical extrapolations for the time intervals of 1, 5, 10, 15 and 20 years, showed that they varied within wide limits: V_1 = 13—36 m/sec; V_5 = 17—47 m/sec; V_{10} = 19—51 m/sec; V_{15} = 21—53 m/sec; and V_{20} = 22—55 m/sec. Orig. art. has: 5 figures and 11 tables. [WA-50; CBE No. 41] [ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 015

Card 2/2

ACC NR: AT9004166 SOURCE CODE: UR/3061/68/000/028/0165/0174

AUTHOR: Sukhishvili. E. V.

ORG: none

TITLE: Atmospheric phenomena in the Kolkhida lowland

SOURCE: Tiflis. Zakavkazskiy nauchno-issledovatel'skiy gidrometeorologicheskiy institut. Trudy, no. 28(34), 1968. Gidrometeorologicheskiy rezhim Kolkhidskoy nizmennosti (Hydrometeorological conditions of the Kolkhida lowland), 165-174

TOPIC TAGS: atmospheric phenomenon, local climatology, atmospheric circulation, thunderstorm, hailstorm, fog, dry wind

ABSTRACT: Atmospheric phenomena (thunderstorms, hail, fog, hot dry winds), which form as the result of lasting changes in air temperature and humidity and occur in varying degrees of dependence on the ground terrain, are the subjects of the present analysis of their frequencies and intensities in the Kolkhida lowland of the Caucasus. Tabulated data are presented for the number of days per month and year on which thunderstorms, hailstorms, hail, and hot dry winds ("sukhovey") of $\geq$ 8 m/sec and < 8 m/sec occurred at 25 weather stations in the area. These data show that thunderstorms may occur throughout the year but are most

Card 1/2 UDC: 551.59:63

ACC NR: AT9004166

frequent during the summer (beginning in May), and least frequent during the winter. Fogs are rather rare, because of the prevalence of high temperatures and foehn-like winds. Orig. art. has: 7 tables.
[WA-50; CBE No. 41] [ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 004

Card 2/2

ACC NR: AT9006345 SOURCE CODE: UR/0000/68/000/000/0102/0109

AUTHOR: Titova, Yu. V.

ORG: none

TITLE: Character of changes in wind speed on the Novosibirsk reservoir

SOURCE: Vodnyye resursy i vodnoye khozyaystvo Sibiri (Water resources and economy in Siberia). Novosibirsk, Izd-vo "Nauka", 1968, 102-109

TOPIC TAGS: atmospheric wind field, wind speed, open water wind, water land interface

ABSTRACT: Observations of wind speeds and their changes at the Novosibirsk reservoir made by the Ob' Hydrometeorological Observatory of the Western Siberian Administration of the Hydrometeorological Service coastal station and on the open water (islands) during the open-water seasons of 1962 through 1965 are the basic data used in an analysis of winds in the vicinity of and on the reservoir. Analyses are made of the effects of the difference in the underlying surface (land - water) and of the orography in the vicinity of the stations, and the temperature stratification above both surfaces, on wind speeds. Wind-speed frequencies are determined for both island and mainland

Card 1/2 UDC: 551.55

ACC NR: AT9006345

stations in the ranges of 0—5, 6—10, 11—15, and + 20 m/sec relative to wind direction and changes in time (diurnal, seasonal, monthly, and annual). A sketch map shows the station locations and their wind-frequency roses. The transition of the K coefficient (ratio of wind speed over water to wind speed over land), determined from mean monthly data, was found to be stable and equalled 1.3. The transfer coefficient varies very little over the reservoir and has noticeable seasonal and diurnal variations, i.e., 1.2—1.6 during ice-free periods; 1.1—1.8 in a single day in the spring; 1.3—1.8 in the summer; and 1.0—1.4 in the autumn. The coefficient and its variations are maximal in wind speeds of 6.0 m/sec or less. Orig. art. has: 3 figures and 3 tables. [WA-50; CBE No. 41] [ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 004

Card 2/2

ACC NR: AP8035437 SOURCE CODE: UR/0050/68/000/009/0119/0120

AUTHOR: Vasil'yev, A. A.; Glazova, O. P.

ORG: none

TITLE: [Conference on disastrous weather phenomena]

SOURCE: Meteorologiya i gidrologiya, no. 9, 1968, 119-120

TOPIC TAGS: meteorologic conference, weather forecasting, disastrous weather, clear air turbulence, tropical storm, cloudburst, hailstorm, thunderstorm

ABSTRACT: A scientific symposium was held on 8—12 April (1968) at the Hydrometeorological Center of the USSR on the topic "Forecasting expecially dangerous weather phenomena in the USSR and in tropical zones." About 400 representatives from different organizations of the Main Administration of the Hydrometeorological Service and other departments participated. The opening address by Academician V. A. Bugayev of the Uzbek Academy of Sciences was followed by a paper by M. A. Sorochenskiy and A. D. Chestyakova. I. S. Nikolayev reported on "Requirements being presented to provide aviation with adequate meteorological information." A total of 43 papers dealt with the following problems: "Methods of forecasting dangerous weather phenomena of maximum significance" (squalls,

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ACC NR: AP8035437

heavy cloudbursts, hailstorms, thunderstorms, high winds, etc); "Methods of forecasting primarily of service to aviation" (fog and low clouds, clear air turbulance, etc.); "Methods of forecasting primarily for the navy" (tropical cyclones and ship icing); "Use of satellite data in forecasting dangerous weather phenomena;" "Prospects of artificial modification of clouds and fog;" and "Methods of long-range forecasts of temperature anomalies and droughts." Recent research in these fields has led to the introduction of new observational procedures on instruments such as: radar to observe the development and movement of convective clouds which produce cloud bursts and related phenomena; weather satellites like Meteor to collect weather information particularly over regions for which ground-based observations are inadequate, to detect and track tropical storms, and to determine the positions and structures of fronts, their cloud systems, zones of convection and turbulence. Features now standing in the way of more accurate forecasting of dangerous weather conditions are said to be the lack of quantitative data on the state of the atmospheric boundary layer and the lack of theoretical studies of meso- and microprocesses. [MA-50; CBE No. 41] [ER]

SUB CODE: 04/ SUBM DATE: none

Card 2/2

ACC NR: AP9009436 SOURCE CODE: UR/0421/69/000/001/0159/0160

AUTHOR: Vasil'yev, O. F.; Pritvits, N. A.

ORG: none

TITLE: All-Union Conference on Experimental Methods and Apparatus for Research on Turbulence

SOURCE: AN SSSR. Izvestiya. Mekhanika zhidkosti i gaza, no. 1, 1969, 159-160

TOPIC TAGS: scientific conference, atmospheric turbulence, fluid mechanics, gas dynamics

ABSTRACT: The Scientific Council on Fluid and Gas Mechanics of the Department of Mechanics and Control Processes of the Academy of Sciences USSR, the Hydrodynamics Institute, and the Institute of Theoretical and Applied Mechanics of the Siberian Department of the Academy of Sciences USSR, in compliance with a resolution of the 1967 Symposium on Problems of Turbulent Flows held at Kiev, conducted an All-Union Conference in Novosibirsk from 31 October through 2 November 1968 on the topic "Experimental Methods and Apparatus for Research on Turbulence." The participants included more than 200 scientists and specialists from 75 scientific-research institutes of the Academy, the Siberian Department

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ACC NR: AP9009436

of the Academy, the academies of the union republics, branch scientific research institutes, some of the instrument design bureaus, universities, educational institutes, and the leading scientific research and planning organizations of the USSR involved in this field. Fifty-two papers and reports presented at the plenary meetings dealt with methods of measuring turbulence, and the design of measuring, recording, and analytical devices used in research on the turbulence of the atmosphere, oceans, rivers, boundary layers, and jet streams. The following papers were presented on the measurement of turbulence under different conditions: V. M. Bovsheverov and L. R. Tsvang, "Methods of measuring atmospheric turbulence developed at the Institute of the Physics of the Atmosphere of the Academy of Sciences USSR;" V. M. Bovsheverov, A. S. Gurvich, and S. L. Zubovskiy, "Measurement of a rotor [second-order eddy] in a turbulent atmosphere by the acoustic method" (Moscow); V. N. Ivanov and A. A. Shushkov, "Two-component sonic anemometer for station observations" (Obninsk); B. A. Fidman and V. M. Lyatkher, "Investigation of turbulence by the photographic and moving picture methods" (Moscow). Some evaluations were also made of the accuracy of determining turbulence characteristics by visual methods in a report by Z. V. Zalutskiy (Kiev). A paper by V. V. Orlov, Ye. S. Mikhaylova, and Ye. M. Khabakhpasheva described a method of stroboscopic viewing which had been developed at the Institute of Thermal Physics of the Siberian Department of the Academy of Sciences USSR to measure turbulence

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characteristics and gave a description of apparatus used for automatically calculating and analyzing observational results. A report by E. V. Zalutskiy (Kiev) described the application of this method in studying flow in the near-wall area of a turbulent boundary layer. G. V. Smirnov presented a paper describing the instruments and measurement methods used at the Aerodynamics Laboratory of the Leningrad Polytechnical Institute. R. V. Ozimov gave a paper on the research on oceanic turbulence being carried out at the Institute of Oceanology of the Academy of Sciences USSR (Moscow) using visually observed luminescent dyes. A paper by V. T. Pak and V. I. Dedkov (Kaliningrad) discussed problems relating to the organization of and equipment for research on the small-scale structures of the hydrophysical fields of the ocean using towed devices. N. A. Panteleyev, V. Z. Dykman, and O. I. Yefremov described a self-contained apparatus complex for studying oceanic turbulence which was built at the Marine Hydrophysical Institute of the Ukrainian Academy of Sciences (Sevastopol'). A review of optical methods of measuring turbulence in liquid and gas flows was presented in a paper by A. M. Trokhan (Moscow). A. P. Burdukov and V. Ye. Nakoryakov (Novosibirsk) discussed results obtained in using an electrochemical method of turbulent jet research, and G. V. Vasil'chenko (Minsk) described his experience in using the electrochemical method to measure velocity in investigating large-scale turbulent flows. V. N. Zykov (Novosibirsk) described Doppler velocity measurements (ultrasonic and

optical). A description was given of the apparatus built at the Scientific Research Station of the Gidroproyekt (Moscow) to record and analyze stationary random processes under conditions prevailing at hydroengineering installations. The use of electronic computers for analyzing experimental results was the subject of reports by V. A. Alekseyev and V. A. L'vov (Novosibirsk), M. K. Yukhatov (Tallin), and in part by Ye. P. Anisimova and A. A. Speranskaya (Moscow) and V. N. Ivanov and A. A. Shushkov. A. N. Domaratskiy, V. V. Zykov and L. N. Ivanov described a correlator built at the Institute of Automation and Electrometry of the Siberian Department of the Academy of Sciences USSR for real-time investigations of turbulence. The design and the use of hot-wire anemometer techniques were the subjects descussed by V. S. Sobolev, A. A. Stolpovskiy, N. I. Tkachev, and Ye. I. Utkin in their paper "Self-adjusting hot-wire anemometers produced at the Institute of Automation and Electrometry of the Siberian Department of the Academy of Sciences USSR." Other papers presented on related topics included the following: I. P. Ginzburg, V. A. Zazimko, V. I. Sedov, and D. A. Yartsev: "Tape hot-wire constant-temperature anemometer and a high-frequency arc anemometer" (Leningrad); V. V. Zykov, Ye. M. Romanov, and Ye. I. Khakhilev: "Technology of manufacturing hot-wire anemometric sensors;" L. I. Ilizarova: "Testing of the DIZA tape constant-resistance hot-wire anemometer (Zhukovskiy);" Ye. U. Pepik and V. S. Ponomareva: "Effect of wall proximity on hot-wire anemometer readings in measuring velocity in

the turbulent boundary layer; L. M. Nikitina: "Utilization of a hot-wire anemometer for measuring intermittance [sic] [mixing (?)] in inhomogeneous flows;" L. G. Markova: "Measurements with hot-wire anemometers with insulated wires in molten metal" (Moscow). S. S. Zolotov and E. M. Lyubavin, T. V. Orlov, and M. G. Selyaninov discussed hot-wire anemometers with semiconductor sensors. Several authors dealt with their research on measurement accuracy in using the hot-wire anemometer method. Related procedural and methodological problems discussed included: Ye. P. Dyban, E. Ya. Epik: "Evaluation of the errors and prospects of the electrical hot-wire anemometer method in measuring turbulence characteristics" (Kiev); V. M. Filippov: "Heat transfer from the wires of a hot-wire anemometer into an air flow" (Zhukovskiy); A. I. Popov: "Accuracy of the measurement of the transverse components of turbulent pulsations of velocity using hot-wire anemometers" (Leningrad); V. A. Shcherbakov, N. A. Zheltukhin, V. N. Glaznev: "Evaluation of the effectiveness of accepted methods of studying the frequency characteristics of a hot-wire anemometer;" and V. N. Glaznev: "Evaluation of the accuracy of variable pressure measurements" (Novosibirsk). The calculation and analysis of piezoelectric turbulent pressure fluctuation receivers was described by Ye. B. Kudashev and A. I. Popov. G. P. Morozov—Rostovskiy (Leningrad) dealt with the application of similar receivers. Some modifications of the hot-wire anemometer were described in the reports of R. M. Garipov, V. V. Zykov, and V. A. Tetyenko

(Novosibirsk). S. M. Gorlin presented a paper on the effect of initial turbulence on the aerodynamic characteristics and streamlining of bodies. L. N. Voytovich discussed the effect of pushing the nozzle down on the attenuation of turbulent fluctuations. A paper by B. I. Bakum, L. V. Novikov, and G. S. Komarov reported on research on the turbulent fluctuations in the functional flow in a hypersonic wind tunnel and the dust turbulization in the functional flow in a hypersonic nozzle. A. A. Speranskaya and A. S. Orlov described work on the spectral functions of velocity fluctuations in a tube at different Reynolds numbers. A paper by O. F. Vasil'yev, V. I. Bukreyev and V. V. Zykov (Novosibirsk) described the experimental methods and techniques used in the United States in research on turbulence. A. K. Voynov (Novosibirsk) discussed the experimental research on turbulence at some of the science centers in France. Recommendations made at the conference called for further research efforts to be expended on the following: 1) origination of methods and instruments for measuring velocity, temperature, and pressure for extremely low and extremely high intensities of turbulence, and also supersonic flows and in the sea; 2) further development of hot-wire anemometry as the principal laboratory method of measuring turbulence in air flows and, especially, the development of this method in application to liquids; 3) development of sonic, optical, and electrochemical methods of recording turbulence; and 4) development of recording automation and compact long-term storage and handling of

ACC NR: AP9009436

the data obtained in turbulence research, including research using a visual method. Another resolution stressed the need of producing standards to be used in comparing the different instruments and of devising methods of measuring turbulence. It was indicated that it would be advantageous to set up an interagency commission for testing low-turbulence wind tunnels and especially precise instruments used to measure turbulence. It was also recommended that special measurements be made for comparing different methods and apparatus used under field conditions. The principal papers (previously unpublished data) on the proposed methods and apparatus are to be published in the *Izvestiya Akademiya nauk SSSR* series. The next conference will be convened in 1972. [WA-50; CBE No. 41] [ER]

SUB CODE: 04, 20/ SUBM DATE: none

Card 7/7

ACC NR: AR9002615 SOURCE CODE: UR/0169/68/000/005/B022/B022

AUTHOR: Vereshchagin, M. A.

TITLE: Role of cyclonic activity and horizontal macroturbulent exchange in the heat advection above the European USSR

SOURCE: Ref. zh. Geofizika, Abs. 5B216

REF SOURCE: Geogr. sb. Kazansk. un-t, vyp. 2, 1967, 97-100

TOPIC TAGS: atmospheric circulation, atmospheric turbulence, turbulent exchange, advective heat, cyclonic circulation

ABSTRACT: Cyclonic circulation and horizontal macroturbulent exchange are estimated to determine their roles in heat advection by using daily pressure-pattern charts to calculate the magnitude of heat influx caused by average and turbulent motions. The relation

$$A_t = -\left(C_p \rho U \frac{\partial T}{\partial x} + C_p \rho V \frac{\partial T}{\partial y}\right),$$

derived on the basis of these calculations, is supplemented by the statics equation integrated for height and averaged for time. These

Card 1/2 UDC: 551.524.35

ACC NR: AR9002615

calculations were made for 22 sites in the European USSR. [Translation of abstract]. [WA-50; CBE No. 41] [ER]

SUB CODE: 04

Card 2/2

ACC NR: AT9004079 SOURCE CODE: UR/3269/68/000/032/0083/0085

AUTHOR: Veselov, Ye. P.

ORG: none

TITLE: Effect of relief on the wind field in the White Sea area

SOURCE: Gidrometeorologicheskiy nauchno-issledovatel'skiy tsentr SSSR. Trudy, no. 32, 1968. Prognoz baricheskogo polya i opasnykh yavleniy pogody (Forecasting the pressure field and dangerous weather phenomena), 83-85

TOPIC TAGS: atmospheric wind field, coastal wind, sea wind, geostrophic wind, friction, orographic effect

ABSTRACT: The mean ratio of the velocities of the factual winds C_f and the geostrophic winds C_g, adopted as empirical coefficients k, were calculated for 28 stations located on the coast and islands of the White Sea. Determinations were made of the k coefficients due to the relief characteristics of the areas around these stations. Significant differences in wind speeds were found to occur when the pressure gradient was the same. A brief discussion is given which

Card 1/2 UDC: 551.553.8(268.42)

ACC NR: AT9004079

enumerates wind - speed variations as functions of the types of relief, coastal configuration, and wind direction (onshore or offshore winds). Orig. art. has: 1 figure and 1 formula. [WA-50; CBE No. 41] [ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 004

Card 2/2

ACC NR: AT9004078 SOURCE CODE: UR/3269/68/000/032/0080/0082

AUTHOR: Veselov, Ye. P.

ORG: none

TITLE: Application of e extrapolation method for wind forecasting

SOURCE: Gidrometeorologicheskiy nauchno-issledovatel'skiy tsentr SSSR. Trudy, no. 32, 1968. Prognoz baricheskogo polya i opasnykh yavleniy pogody (Forecasting the pressure field and dangerous weather phenomena), 80-82

TOPIC TAGS: weather forecasting, wind forecasting, sea storm wind, Arctic Ocean storm

ABSTRACT: An analysis was made of 150 storms on the White Sea (1953 to 1957) to determine their occurrence as a function of positions of cyclones on weather maps relative to given regions. Several regions were identified where rising winds are indications that storms will develop on the Sea (6, 12, 18 or more hours later) (see Table 1). In accordance with previous studies by the author, it was found that best results were obtained if the extrapolation was made of the atmospheric boundary layer pressure field rather from factual wind data. Charts, compiled from the tabulated data to show the average trajectories of the

Card 1/2 UDC: 551.533.8

ACC NR: AT9004078

Table 1

Region	Time, hr.	Region	Time, hr
British Isles	-54	Gulf of Bothnia	-24
Faroe Islands		Estonia, Finland	
Shetland Islands	-48	Gulf of Riga	
North Sea		Sortavala, Sviritsa	-18
Southwest coast of		Vyborg, Rybinsk	
Norway, Denmark	-42	Reboly, Kayani	-12
S. Sweden	-36	Petrozavodsk, Segezha	
S. Baltic Sea	-30	Medvezh'yegorsk, Vytegra	
Lithuania,		Kem', Pyalitsa, Kashkarantsy,	-6
Latvia		Zimnegorskiya light, Zhizhgin	
		Island, Gridino, Raznavolok,	
		Lyamtsa	

cyclones crossing particular regions, are also useful in storm prediction. Orig. art. has: 1 figure and 1 table. [WA-50; CBE No. 41] [ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 005

Card 2/2

ACC NR: AM9007597 UR/

AUTHOR: Vinnichenko, N. K.; Pinus, N. Z.; Shmeter, S. M.; Shur, G. N.

SOURCE: Turbulence in the free atmosphere (Turbulentnost' v svobodnoy atmosfere). Leningrad, Gidrometeoizdat, 1968. 336 p.

TOPIC TAGS: atmospheric wind field, atmospheric turbulence, wind field structure, atmospheric convection, statistic analysis, wind observation, stratospheric turbulence, tropospheric turbulence, wind instrument

ABSTRACT: This book is intended for scientists, engineers, and aviation specialists interested in the theory and effects of atmospheric turbulence, particularly those applicable to aviation. After a brief chapter dealing with atmospheric turbulence theory, the authors proceed to discussions of experimental methods used in investigating the free atmosphere (aircraft soundings, Doppler techniques, and hot-wire anemometric, anemoclinometer, acoustic, gyroscopic, radiosonde, and radar methods). A special chapter is devoted to the statistic analysis of measurements and evaluation of measurement accuracies. Other chapters deal with the origins of turbulence as functions of atmospheric structure and stratification, and the relationship of turbulence to such quasi-regular mesoscale motions as waves and convection. In discussing turbulent structures the authors generally present physical analyses of the causes of the particular structures; clouds, jet streams, and the nature of

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ACC NR: AM9007597

the tropopause are also given special attention. One chapter is devoted to the effects of turbulence on aircraft. References are also made to microscale turbulent motions which affect the propagation of radiowaves, light, and sound in the atmosphere. The text is accompanied by an extensive bibliography of 343 entries, 198 of which are of Russian origin and 145 are non-Russian. [WA-50; CBE No. 41] [ER]

Card 2/2

ACC NR: AP8035429 SOURCE CODE: UR/0050/68/000/009/0022/0027

AUTHOR: Vul'fson, N. I. (Doctor of physico-mathematical sciences); Kondratova, A. V.

ORG: Institute of Applied Geophysics (Institut prikladnoy geofiziki)

TITLE: Modification of a cumulus cloud with artificial vertically ascending jets

SOURCE: Meteorologiya i gidrologiya, no. 9, 1968, 22-27

TOPIC TAGS: weather modification, cloud formation, atmospheric convection, cloud modification, cumulus cloud

ABSTRACT: Research and development on methods of producing and forcing hot high-speed jets of air vertically into the atmosphere to induce the formation of or modify cumulus clouds began in 1965 when members of the staff at the Riga Laboratory of the State Scientific Research Institute of Civil Aviation rotated the exhaust to produce vertical jets from RD-3M turbo-jet engines set in horizontal positions. At this time theoretical data were analyzed to estimate the ascent of particles in the jet, using one engine, into a two-layer atmosphere as a function of height h and degree of stability (γ/γ_a) of the upper blocking layer. This study indicated that the height to which the jet penetrated the stable layer

Card 1/4 UDC: 551.509.616

was proportional to the cube root of the number of engines, i.e. would require the use of 8—10 engines to penetrate about 75% of the inversions observed in a summer over the Moscow region. Preliminary field tests were run at Riga in 1966 by N. S. Pozharnov of the Riga Laboratory, using four engines arranged in the form of a cross (see Fig. 1). These

Fig. 1. Equipment for producing artificial vertical heated jets

engines were installed on a stand 16 m long. The fuel tank had a 75 m^3 capacity, the air feed was at a rate of 400 kg/sec, the initial velocity of the jet at the outlet was ~350 m/sec, and its temperature was about 500°C. The fuel (kerosene) was consumed at a rate of 16—20 t/hr. The engines used had a rate of 3700—3800 rpm (improvements in design are expected to increase this by a factor of 1.3—1.5). In 1967, the installations were transferred to Borispol', and investigations were carried out to determine the value of using the vertical jets to modify clouds. Visible tracking of the jet was made possible by setting off 4 or 5 smoke charges (100 kg each) which were visible to h = 400—500 m. Above these levels the jets were tracked from airplanes making oscillographic recordings of the heat field (measured to h = 1200 m but apparently with an effect on cloud formation up to 2000 m). The heights to which the jet penetrated depended on the atmospheric stratification and wind speed. In one morning test, in which the base of a very thick blocking layer was below 400 m and during which time the winds measured 12—15 m/sec, the jet was not detected above 400 m. Usually however, the jets penetrated to higher levels, the height increasing almost linearly with decreasing drop in temperature at the boundaries of the stable layer in which the jet was present. In June and July of 1966 and 1967, 20 experiments were carried out to test the apparatus efficiency in modifying cumulus clouds (different amounts of cloud cover, sometimes two cloud levels, usually with blocking layers of different intensity and thickness

ACC NR: AP8035429

present). During these periods, the level of condensation varied between 1200 and 2700 m. In 3 of these tests, no clouds formed. Usually, however, small cumulus clouds developed and when natural clouds were present during the tests, these clouds became larger in size or became stable, depending on the state of atmospheric stratification above the level of condensation and whether or not a blocking layer was present. In some cases the cumulus clouds darkened at the base and in some cases rain fell, suggesting that rainfall can be induced with vertical hot jets. However, additional information is required to demonstrate this fully. Present plans call for the use of 10 jet engines of the same type in similar research. Orig. art. has: 4 figures and 2 tables.

[WA-50; CBE No. 41] [ER]

SUB CODE: 04/ SUBM DATE: 19Jun68/ ORIG REF: 002/ OTH REF: 002

Card 4/4

ACC NR: AP9007949 SOURCE CODE: PO/0026/68/016/004/0341/0350

AUTHOR: Wojciechowski, K.

ORG: Chair of Experimental Physics, University of Warsaw (Katedra Fizyki Doswiadczolnej, Uniwersytet Wroclawski)

TITLE: Distribution of air pollution originating from many point sources

SOURCE: Acta geophysica polonica, v. 16, no. 4, 1968, 341-350

TOPIC TAGS: air pollution, point source, pollutant dispersion

ABSTRACT: An evaluation is made of two methods currently used in determining the distribution of atmospheric pollutants emitted into the atmosphere from several point sources: 1) calculations made for each source separately and the results added; and 2) a group of m point sources is replaced by a single source which has a mean height $h = \sum_{i=1}^{m} h_i/m$ and a gaseous pollutant rate $Q = \sum_{i=1}^{m} Q_i$. Results obtained by both methods are found to be at great variance from the true data. A new method of calculating this type of pollutant distribution is given. On the basis of Fig. 1 and equation (1),

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$$x_k = r\sin(\alpha-\psi_k),$$
$$y_k = r\cos(\alpha-\psi_k),$$
$$x_{km} = x_k - d_i\sin(\beta_i-\psi_k), \qquad (1)$$
$$y_{km} = \sqrt{r_i^2 - x_{km}^2},$$
$$r_i^2 = d_i^2 + r^2 - 2rd_i\cos(\alpha-\beta_i),$$

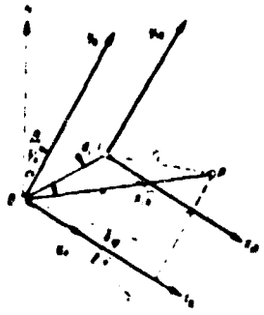

Fig. 1

the concentration C(r, α) at point P(r, α) can be calculated by equation (2):

$$C(r,\alpha) = \sum_{k=1}^{8} f_k\{C(x_k, y_k : u_k, h_0) + \sum_{i=1}^{m-1} C(x_{km}, y_m : u_m, h_i)\}. \qquad (2)$$

Here f_k denotes the wind frequency in the direction k, and u_k is the mean wind speed in this direction. Wind-direction fluctuations are taken into account by substituting (3) in (2)

$$\frac{1}{8}\{f_k + (f_{-5°} + f_{+5°})a_1(x) + (f_{-10°} + f_{+10°})a_2(x)\}. \qquad (3)$$

as proposed by Laykhtman and Kaplan (*Trudy LGU, no. 32*), and $a_1(x)$ and $a_2(x)$ are taken from Table 1. An elaboration of the Turner method

Table 1.

x [km]	0.6	1	2	3	4	5	7	10
a_1	0,713	0,684	0,649	0,634	0,688	0,593	0,571	0,548
a_2	0,337	0,222	0,177	0,151	0,137	0,125	0,106	0,077

(*Journ. of Applied Meteorology, no. 3, 1964*) is also given. Orig. art. has: 8 figures, 3 tables, and 5 formulas. [MA-50; CRE No. 41] [ER]

SUB CODE: 04/ SUBM DATE: 27Apr68

ACC NR: AP8035436 SOURCE CODE: UR/0050/68/000/009/0115/0116

AUTHOR: Zakharov, V. N.

ORG: none

TITLE: [Conference on fog dispersal over airports]

SOURCE: Meteorologiya i gidrologiya, no. 9, 1968, 115-116

TOPIC TAGS: scientific conference, research program, aviation meteorology, fog dispersal, weather modification

ABSTRACT: On 11 June [1968] the Scientific and Technical Council of the Main Administration of the Hydrometeorological Service convened to discuss papers by V. Ya. Nikandrov on the status of attempts to devise methods of dispersing warm fogs over airports. Results of the research carried out during the last few years at the Main Geophysical Observatory, the Central Aerological Observatory, the Institute of Experimental Meteorology, the Ukrainian Scientific Research Hydrometeorological Institute and other organizations now permit evaluation of the effectiveness of various methods, i.e. hygroscopic and surface-active materials (surfactants), the heat and electrical methods, etc. The Council established heat methods as the studies to be emphasized in the next

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ACC NR: AP8035436

few years. The leading organization participating in this program is to be the Main Geophysical Observatory. Until 1 November this organization will have the cooperation of the Central Aerological Observatory and the State Scientific Research Institute of Civil Aviation to develop a research program. [WA-50; CBE No. 41][ER]

SUB CODE: 04/ SUBM DATE: none

Card 2/2

ACC NR: AT8032281 SOURCE CODE: UR/3213/68/000/008/0083/0090

AUTHOR: Zel'manovich, I. L.; Lobkova, L. M.; Milyutin, Ye. R.

ORG: none

TITLE: Calculation of the attenuation coefficients of 0.6—14 μ waves passing through fog

SOURCE: Nalchik. Vysokogornyy geofizicheskiy institut. Trudy, no. 8, 1968. Fizika oblakov i osadkov (Physics of clouds and precipitation), 83-90

TOPIC TAGS: atmospheric optics, wave attenuation, atmospheric aerosol, fog, mist, visible spectrum, electromagnetic wave, meteorologic laser

ABSTRACT: Precise and approximate equations are derived for use in determining the coefficient of attenuation α 1/km of electromagnetic waves in mists and fogs. The simplified equations are:

in unabsorbed polydispersed aerosols:

$$\alpha = \frac{\pi \beta^2 N \cdot 10^3}{\Gamma(\mu+1)} \sum_{i=1}^{4} I_i, \qquad (1)$$

$$I_1 = \frac{2\Gamma(\mu+3)}{\beta^{\mu+3}},$$

 UDC: 551.593

$$I_2 = -\frac{2}{c} \frac{\Gamma(\mu+2)}{[\beta^2 + (2c)^2]^{\frac{\mu+2}{2}}} \sin\left[(\mu+2)\operatorname{arc\,tg}\frac{2c}{\beta}\right],$$

$$I_3 = \frac{1}{c^2} \frac{\Gamma(\mu+1)}{\beta^{\mu+1}},$$

$$I_4 = -\frac{1}{c^2} \frac{\Gamma(\mu+1)}{[\beta^2 + (2c)^2]^{\frac{\mu+1}{2}}} \cos\left[(\mu+1)\operatorname{arc\,tg}\frac{2c}{\beta}\right],$$

$$c = \frac{2\pi}{\lambda}(m-1),$$

in absorbed polydispersed aerosols:

$$\alpha = \frac{\pi \beta^2 N \cdot 10^3}{\Gamma(\mu+1)} \sum_{i=1}^{4} I_i, \qquad (2)$$

$$I_1 = \frac{2\Gamma(\mu+3)}{\beta^{\mu+3}},$$

$$I_2 = -\frac{4(\cos\nu)^2}{\delta} \frac{\Gamma(\mu+2)}{(\delta^2+\varphi^2)^{\frac{\mu+2}{2}}} \sin\left[(\mu+2)\operatorname{arc\,tg}\frac{\delta}{\varphi}\right],$$

$$I_3 = \frac{4\cos\nu\sin\nu}{\delta} \frac{\Gamma(\mu+2)}{(\delta^2+\varphi^2)^{\frac{\mu+2}{2}}} \cos\left[(\mu+2)\operatorname{arc\,tg}\frac{\delta}{\varphi}\right],$$

$$I_1 = -\frac{4(\cos\nu)\cdot\cos 2\nu}{b^2}\,\frac{\Gamma(\mu+1)}{(b^2+q^2)^{\frac{\mu+1}{2}}}\cos\left[(\mu+1)\operatorname{arc\,tg}\frac{b}{q}\right],$$

$$I_2 = -\frac{4(\cos\nu)\cdot\sin 2\nu}{b^2}\,\frac{\Gamma(\mu+1)}{(b^2+q^2)^{\frac{\mu+1}{2}}}\sin\left[(\mu+1)\operatorname{arc\,tg}\frac{b}{q}\right],$$

$$I_0 = \frac{4(\cos\nu)^2\cos 2\nu}{b^2}\,\frac{\Gamma(\mu+1)}{2^{\mu+1}},$$

$$b = \frac{4\pi}{\lambda}(n-1),\ l = b\ \operatorname{tg}\nu,\ q = l+\beta.$$

Comparative calculations were made for several laser wavelengths in the spectral windows of atmospheric transparency. The optical properties of the water drops used as sols were: n and x = up to $\lambda < 9$ μ when t = 20°C, and $\lambda > 9$ μ when t = 18°C. Droplet sizes used were: 0.2 (0.2) 1 (0.4) 5 (0.5) 14 (2) 60 (numbers in parentheses are steps in the computations); the mean droplet radii were: 1 (mist), 2, 3, 5, 7, 10, and 15 μ, i.e. dense mist and fog. It was assumed that the droplet concentration N = 1 in 1 cm^3 of air. The 0.63 μ wavelength of a He-Ne laser was used to determine the effect of the μ parameter on the attenuation coefficient and the optical constants of the water - air medium were n = 1.3318 and x = 0. The variation in the attenuation coefficient in fogs as a function of μ = 2—20 did not exceed 20%. In mist and fog μ was assumed to be 2 and $\bar{r}$ = 1, 2, 3, 5, 7, 10, and 15 μ.

Results obtained in calculating a using a M-20 electronic computer and those obtained in using equations (1) and (2), when N = 1 in 1 cm^3 air, are tabulated. They indicate that the use of these approximate equations results in errors which are only about 18% larger than those derived from precise and tedious equations. Electromagnetic waves in the 10—12 μ spectra passed through fogs with minimal attenuation. In heavy, optically dense fogs (for short wavelengths) the coefficient of attenuation was not selective. Orig. art. has: 1 figure, 2 tables, and 22 formulas. [MA-50; CBE No. 41] [ER]

SUB CODE: 20, 04/ SUBM DATE: none/ ORIG REF: 009/ OTH REF: 004

ACC NR: AT8032285 SOURCE CODE: UR/3213/68/000/008/0152/0166

AUTHOR: Zel'manovich, I. L.; Shifrin, K. S.

ORG: none

TITLE: Optical characteristics of a polydispersed cloud for IR radiation

SOURCE: Nalchik. Vysokogornyy geofizicheskiy institut. Trudy, no. 8, 1968. Fizika oblakov i osadkov (Physics of clouds and precipitation), 152-166

TOPIC TAGS: atmospheric physics, atmospheric optics, IR radiation, cloud physics, polydispersed cloud, meteorologic computation

ABSTRACT: A calculation scheme is presented for the determination of the optical characteristics of cloud drops in the IR range of the spectrum. Major characteristics include the coefficients of polydispersed attenuation, scattering, and light pressure, the dispersed scattering indicatrix, the degree of scattered light polarization and the probability of quanta survival. Calculations, made with a M-20 computer for 20 wavelengths, were selected taking the following into account: atmospheric transparency windows (0.714, 1.7, 3.9, 4.1, 9.18, 11.4, and 12.055 μ); absorption band (2.811, 2.821, 3.176, 3.3, and

Card 1/2 UDC: 551.593

ACC NR: AT8032285

5.97 μ); effects of variations in n when x = const on the optical characteristics of the cloud (2.811, 2.821, 3.3, and 9.18 μ); and 5% overlapping of a significant range of wavelengths with changes in the selected values for n and x (0.3—1.2, 1.6—1.8, 2.77—2.85, 3.1—3.3, 3.8—4.2, 5.9—6.2, 8.2—9.6, 11.0—11.6, and 11.7—12.5 μ). Computations were made of the coefficients of attenuation, scattering, and light pressure for droplet radii of 0.2(0.2)1(0.4)5(0.5)14(2)60 μ (total of 56) along with computations of the coefficients of the scattering factor and degree of polarization, p=0.5(0.5)6(1)20(2)50(5)100 (a total of 51). The distribution curve for drop-sizes f(a) was constructed for a γ-distribution using the parameter μ = 6 and a mean radius of $\bar{a}$ = 5 μ. The computational results are presented in extensive tables and are summarized in graphs. The accuracy of the computational results is given as ≈4%. Orig. art. has: 3 figures, 4 tables, and 16 formulas. [MA-50; CBE No. 41] [ER]

SUB CODE: 20,04/ SUBM DATE: none/ ORIG REF: 005/ OTH REF: 001

Card 2/2

ACC NR: AP8031198 SOURCE CODE: UR/0362/68/004/009/0915/0929

AUTHOR: Zilitinkevich, S. S.; Chalikov, D. V.

ORG: Institute of Oceanology, Academy of Sciences SSSR (Institut okeanologii Akademiya nauk SSSR)

A

TITLE: Calculation of vertical turbulent fluxes in the atmospheric surface boundary layer using gradient observational data

SOURCE: AN SSSR. Izvestiya. Fizika atmosfery i okeana, v. 4, no. 9, 1968, 915-929

TOPIC TAGS: atmospheric boundary layer, atmospheric turbulence, turbulent friction stress, heat flux, water vapor flux, gradient observation

ABSTRACT: An analysis is made of the ranges of applicability of methods of determining atmospheric fluxes which utilize gradient measurements of heat, humidity, wind, etc. The approach uses principles discussed by Kazanskiy and Monin and observational data obtained by modern improved instruments. The basic assumptions are that the underlying surface is flat and uniform and the surface boundary layer over either a land or sea surface is no more than several tens of meters thick, with the turbulent fluxes τ, H, and E being constant regardless of height in the layer. Computational procedures are based on the Monin-Obukhov similarity theory.

Card 1/2 UDC: 551.551.8

ACC NR: AP8031198

Required information includes friction velocity $v_* = \sqrt{\tau/\rho}$, the buoyancy parameter $\beta = g/T$, and the heat $H/c_p\rho$ and humidity E/ρ fluxes. Mathematical methods of determining v_*, H, and E from observational data for two atmospheric levels (2 m and 0.5 m) are presented and nomograms based on those methods are given for each of these fluxes. Calculations and nomograms are also given for these values for specific surface roughness characteristics, for the case when the number of measurement levels is arbitrary, and with the humidity stratification effect taken into account. Cases of calculating turbulent fluxes above the sea and above a sloping surface are discussed in a separate section. Another section presents comparative analyses of methods of calculating turbulent fluxes in which the methods are based on different expressions for the universal profiles of the meteorological elements (Kazanskiy-Monin, Monin-Obukhov, Obukhov, Laykhtman, McVehil, Blackadar), using experimental data reported from near Tsimlyansk (USSR), O'Neill (USA), and Kerang (Australia). The most accurate methods result in relative errors in friction velocity of about 25% and for heat flux, about 30—35%. Orig. art. has: 10 figures, 2 tables, and 23 formulas. [MA-50; CBE No. 41] [ER]

SUB CODE: 04/ SUBM DATE: 21Sep67/ ORIG REF: 011/ OTH REF: 006

Card 2/2

ACC NR: AT8035452 SOURCE CODE: UR/2667/68/000/053/0057/0088

AUTHOR: Zvereva, Ye. P.

ORG: none

TITLE: Maximum wind speeds in the free atmosphere above the USSR

SOURCE: Moscow. Nauchno-issledovatel'skiy institut aeroklimatologii. Trudy, no. 53, 1968. Voprosy aeroklimatografii vetra nad miron (Problems of the aeroclimatology of the wind above the earth), 57-88

TOPIC TAGS: atmospheric circulation, maximum wind speed, tropospheric wind, stratospheric wind

ABSTRACT: Ravinsonde data collected at 51 weather stations (more or less evenly spaced over the USSR - see Fig. 1) during the five-year period of 1957—1961 are analyzed to determine the patterns and speeds of the distribution of the levels of maximum winds in the 5—25-km atmospheric layer. Tables, compiled on the position of the level and the maximum wind speeds recorded at the time of each ascent, incorporate the following maximum-wind characteristics, summarized by month: 1) frequency (%) of maximum winds at 1-km altitude intervals; 2) frequency (%) of maximum winds by 10 m/sec gradations at these heights; 3) average height of the maximum wind level, km; and 4) average speed

Card 1/5 UDC: 551.557

ACC NR: AT8035452

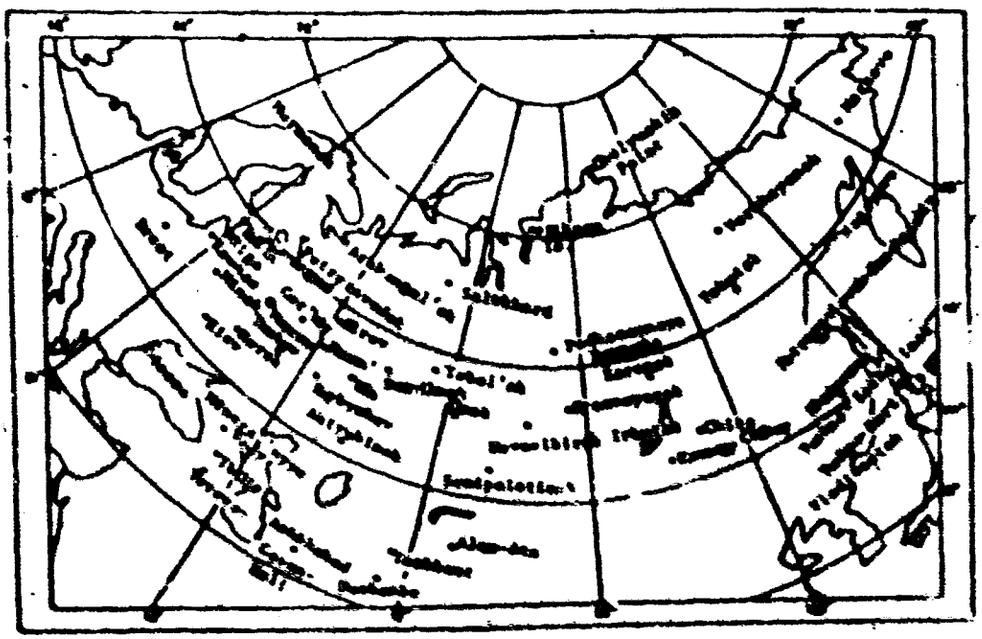
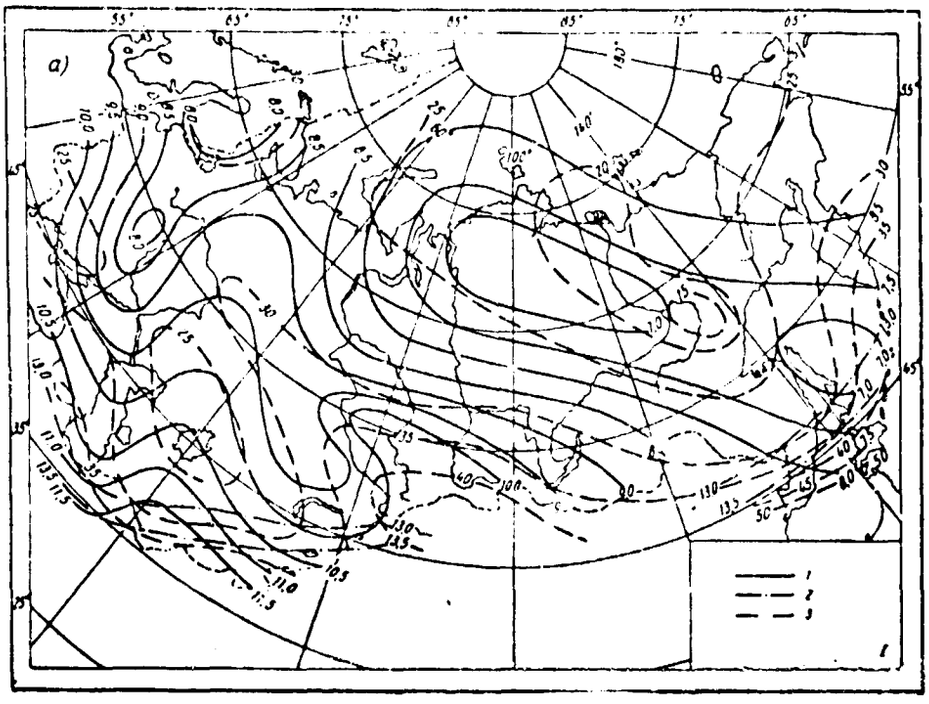


Fig. 1. Aerological stations on the USSR used in investigation of the distribution of maximum winds

Card 2/5

ACC NR: AT8035452



Card 3/5

ACC NR: AT8035452

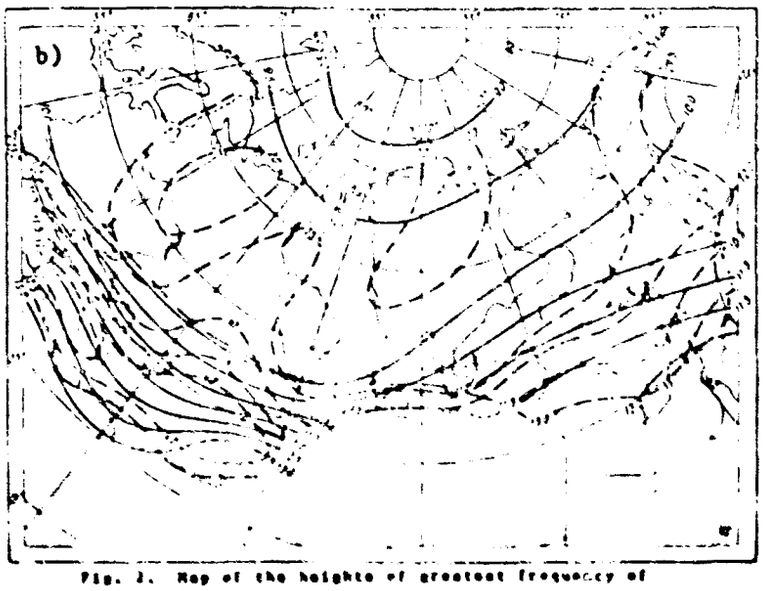


Fig. 1. Map of the heights of greatest frequency of maximum wind

1 - isohypses (km) of greatest frequency of maximum wind in the troposphere; 2) the same in the stratosphere; 3) isotachs (m/sec). Mean maximum wind at the level of greatest frequency, a) January, b) July.

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ACC NR: AT8035452

of the maximum wind, m/sec. Vertical profiles are used liberally to portray the frequency distribution of the maximum wind speeds as a function of the position of the tropopause; isopleths are constructed to portray variations in frequencies of maximum winds for various periods of time and for various levels over several of the stations. Two small-scale charts show the heights of the greatest frequency of maximum winds by isohypses (km) constructed for these winds in the troposphere, the same for stratosphere, and by isotachs (m/sec); the first depicts the mean maximum wind speeds at the level of maximum frequency for January (see Fig. 2a) and for July (see Fig. 2b). These maps indicate that over the northern and middle latitudes there are two areas where the maximum winds are light, i.e. up to only 20 m/sec. Moving then to the south, these values increase in concert with an increasingly higher level for the maximum winds. Over the southern portion of the Soviet Far East, the mean maximum speed increases to 35—37 m/sec. Over the Caucasus and Central Asia there are clearly defined areas in which the maximum winds attain their highest velocities. These areas are defined by the 40 m/sec isotachs. In the Caucasus area, the mean maximum speeds are 45 m/sec. Orig. art. has: 13 figures and 13 tables.

[WA-50; CBE No. 41] [ER]

SUB CODE: 04/ SUBM DATE: none/ ORIG REF: 022/ OTH REF: 003

Card 5/5

ACC NR: AP9006297 SOURCE CODE: UR/0030/68/000/012/0127/0127

AUTHOR: none

ORG: none

TITLE: New institutes in the Siberian Division of the Academy of Sciences USSR

SOURCE: AN SSSR. Vestnik, no. 12, 1968, 127

TOPIC TAGS: research facility, petroleum chemistry research facility, atmospheric optics research facility

ABSTRACT: A resolution calling for the organization in 1969—1970 at Tomsk of an Institute of Petroleum Chemistry and an Institute of Atmospheric Optics in the Siberian Division of the Academy of Sciences USSR has been adopted. The Siberian Division, in cooperation with the Physical and Technical and Mathematical Sciences and the Chemical Engineering and Biological Sciences of the Academy, has been commissioned to prepare proposals concerning the main scientific research problems and tasks and the structure of the new institutes.

[WA-50; CBE No. 41] [ER]

SUB CODE: 08,04/ SUBM DATE: none

Card 1/1

ACCESSION NUMBERS FOR ENVIRONMENTAL FACTORS

AP9009083
AP9009084
AP9009085
AP9009667
AP9009670

IV. GENERAL

ACC NR: AP9009475 SOURCE CODE: UR/0433/69/000/001/0035/0035

AUTHOR: Kondrat'yev, V. N. (Engineer)

ORG: none

TITLE: APB aerosol dispenser

SOURCE: Zashchita rasteniy, no. 1, 1969, 35

TOPIC TAGS: spray nozzle, agricultural machinery, insecticide application

ABSTRACT: A made-to-order APB aerosol dispenser can be attached to the OTN-8-16 spraying machine, which is used for the chemical treatment of cotton and other crops. The dispenser consists of an air pump (2) with two filters (1), a tank (3), a mixture control (6), a stovepipe (4), and two kinds of working components (5 and 7). The total weight of the dispenser is about 130 kg. It can be operated as a fine-droplet sprayer or thermomechanically. In both cases, the pump, sucking the air through the air filters, drives the air into the stovepipe and on to the working components, to which a hose is attached which feeds the working liquid. In the first version (Figure 1a), the pesticide-water mixture is sucked from the misture control into the working components by a stream of air, is atomized, and is sprayed onto the plants by the same stream of air.

Card 1/3 UDC: 632.982.02

ACC NR: AP9009475

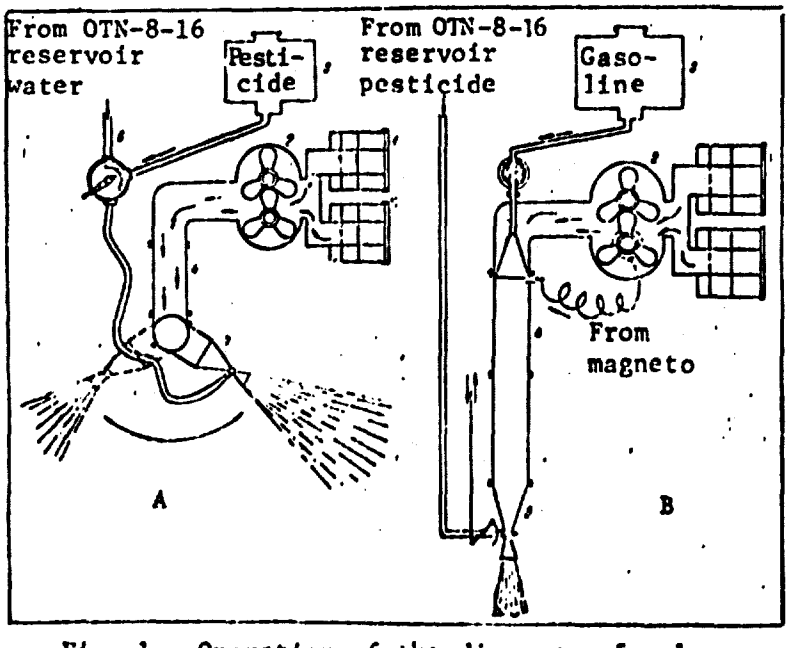

Fig. 1. Operation of the disperser for low-volume spraying (a) and thermomechanical treatment (b)

Card 2/3

ACC NR: AP9009475

The tip (a Venturi tube) is mobile and makes horizontal sweeping movements. The range of the spray is 16 rows of cotton with intervals of 60 cm between rows. The working liquid can be prepared right in the reservoirs of the sprayer. In this case, the tank is detached, and the handle of the mixture control is set at the last figure, 9. This method is unsuitable, however, for pesticides which are highly toxic to man. In the second version (Figure 1, b), the pesticide is dissolved in diesel fuel (or some other mineral oil) and is fed from the OTN-8-16 spraying machine. The small tank is filled with gasoline and is attached to the jet of the stovepipe. The pump feeds compressed air into the jet diffuser and atomizes the gasoline. The gasoline is ignited by a spark plug wired to a magneto which is mounted on the pump. At the same time, the pesticide is fed through a hose from the reservoir to the working components, is sucked into them by the stream of air, and evaporates at 800°C. Leaving the nozzle, the mixture quickly cools, forming a poisonous mist. The dispenser is serviced by the tractor driver. Orig. art. has: 1 figure. [WA-50; CBE No. 41] [FT]

SUB CODE: 02, 13/ SUBM DATE: none

Card 3/3

ACC NR: AP9003661 SOURCE CODE: UR/0433/68/000/011/0025/0026

AUTHOR: Lott, D. A. (Senior research associate); Fratkin, A. B. (Section chief)

ORG: none

TITLE: Storage of flammable chemical poisons

SOURCE: Zashchita rasteniy, no. 11, 1968, 25-26

TOPIC TAGS: insecticide, insecticide storage, flammable substance

ABSTRACT: Safety instructions are given for storing and handling the following easily explosive or inflammable substances: DNOK (dinitro-orthocresol) also known as selinon, cresotol or nitrosan; methyl bromide and dichloroethane; zinc phosphide; calcium cyanamide; sulfur preparations; organophosphorus compounds such as metaphos, carbophos, trichlorometaphos-3, methylmercaptophos, intrathionine, phosphamide or Bi-58, butiphos or technical chlorophos; Zineb, also known as novozir, perozin or thiecin, concentrated DDT emulsions, hexachlorane, polychloropinene, polychlorocamphene, keltane, preparation 30 and propanide; and esters of 2,4-D. One of the primary precautions involved

Card 1/2 UDC: 632.951/.958

ACC NR: AP9003661

in handling these compounds is that no metal equipment should be used to open the sealed drums since a single spark could ignite the contents. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none

Card 2/2

ACC NR: AP9004503 SOURCE CODE: UR/0063/68/013/006/0684/0690

AUTHOR: Semenov, V. K.

ORG: none

TITLE: Group protection from weapons of mass destruction

SOURCE: Vsesoyuznoye khimicheskoye obshchestvo. Zhurnal, v. 13, no. 6, 1968, 684-690

TOPIC TAGS: CW protective equipment, BW protective equipment, CBR protective equipment, radioactive aerosol, CW aerosol

ABSTRACT: The following figures show different types of ventilation systems for protective shelters. A mathematical description of the

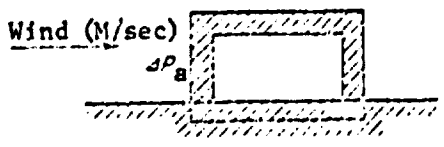

Fig. 1. Diagram of the formation of various degrees of pressure (ΔP_a) by wind action

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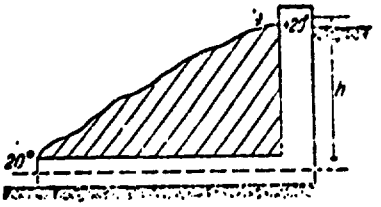

Fig. 2. Diagram of a mine shaft with galleries. Temperatures at the entrance -- -20°C, at the top of the shaft -- 20°C

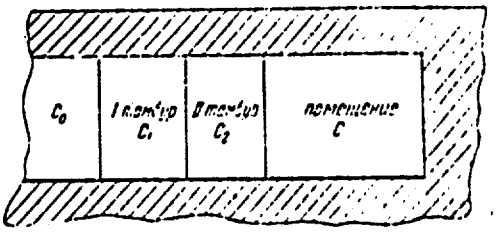

Fig. 3. Diagram of the distribution in concentration of a harmful mixture

C_1 - In the first tambour; C_2 - in the second tambour; C - in a storage structure; C_0 - in the outside air. Trapping substances are silica gel and activated charcoal

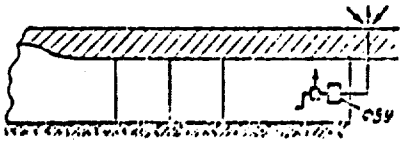

Fig. 4. Scheme of a structure with a filtration ventilation device. Arrows indicate air movement

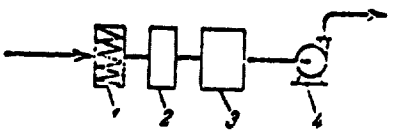

Fig. 5. Design of a ventilation system which protects and purifies

1 - Screening device; 2 - antidust filter; 3 - filter; 4 - ventilator

ACC NR: AP9004503

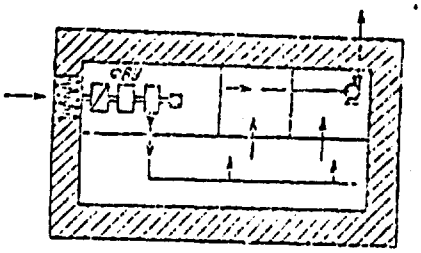

Fig. 6. Design of a structure with a pneumatic filtration ventilation system and an exhaust fan ventilator system. Arrows indicate air flow

ventilation systems is provided. A shelter should provide protection against: shock waves from nuclear explosions, radiation hazards, light and heat, radioactive aerosols, chemical and biological aerosols and flaming mixtures such as naplam. Orig. art. has: 10 figures.
[WA-50; CBE No. 41] [LP]

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

Card 4/4

ACC NR: AP9004502 SOURCE CODE: UR/0063/68/013/006/0675/0683

AUTHOR: Sergeyev, N. V.; Mikhaylov, M. I.

ORG: none

TITLE: Individual protective measures

SOURCE: Vsesoyuznoye khimicheskoye obshchestvo. Zhurnal, v. 13, no. 6, 1968, 675-683

TOPIC TAGS: Q fever, tularemia, gas mask, CW protective clothing, BW protective clothing, bacterial aerosol, BW filter, /(U) PTM 1 protective mask, (U) SHB 1 Lepestok respirator, (U) RPP 57 respirator/ (U) RPB 5 respirator/(U) F 63 Astra respirator/(U) U2 respirator

ABSTRACT: Means of individual protection discussed in the article include: means of protecting the respiratory system, guarding against vapors of poisonous substances, protective substances for antigas filters, antigas filtration devices, a device for isolating antigas, respirators, means of protecting human skin, isolating and filtering protective materials, means of protection made of isolating and filtering materials, and simple, available materials for protecting

Card 1/3 UDC: 623.445:4

the skin. Isolating gas masks can protect against toxic substances poorly retained by ordinary antigas filters, or in cases where there is an oxygen shortage. Contemporary masks should protect against radioactive dust, highly poisonous, slightly volatile aerosols and bacterial aerosols. Modern poisonous chemicals can be applied as an aerosol whose particle sizes vary within a wide range. Although the

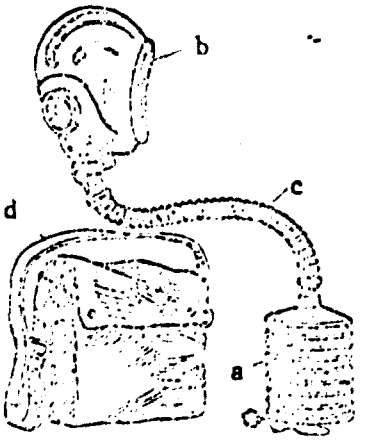

Fig. 1. Military antigas filter pack

a - Antigas vessel; b - hood and mask; c - connecting tube; d - pack

lethal dose of sarin is estimated at 0.7 mg-min/1, the unprotected human can take in as much as 20—90 mg at a pulmonary ventilation rate of 30—40 1/min, which is in excess of the lethal dose. Therefore the mask must protect against both the primary gas attack and secondary, delayed fall-out. Bacterial aerosols consist of particles with dimensions between 1—5 μ, the most dangerous of which are about 5 μ because they penetrate the respiratory system readily and pulmonary clearance of them is not easy. Also, very little would be required to produce infection since it is estimated that the infective dose of Q-fever is not more than 10 organisms and for tularemia 10—50 organisms. How dangerous the secondary fall-out dust would be depends on the viability of the microorganism in the air which in turn depends on a variety of environmental factors. Since the type of sorbent needed depends on the type of gas encountered, a variety of filtering materials should always be on hand in the pack. Contemporary aerosol filters consist of fibrous filters such as cellulose-asbestos or synthetic fibers. An isolating apparatus with its own oxygen supply is also described, as are a variety of respirators. Protective clothing protects the whole body against both dust and vapors. In case of contamination, simple detergents can be used for washing, and ordinary clothing for protection. All such measures are for short terms only. Orig. art. has: 1 figure and 2 tables. [WA-50; CBE No. 41] [LP]

SUB CODE: 06/ SUBM DATE: none/ ORIG REF: 025

ACC NR: AP9007637 SOURCE CODE: UR/0391/69/000/001/0042/0045

AUTHOR: Yavorovskaya, S. F. (Moscow)

ORG: Institute of Industrial Hygiene and Occupational Diseases AMN SSSR (Institut gigiyeny truda i profzabolevaniy AMN SSSR)

TITLE: Gas chromatography- a new method for studying the degree of contamination of air

SOURCE: Gigiyena truda i professional'nyye zabolevaniya, no. 1, 1969, 42-45

TOPIC TAGS: gas chromatography, air pollution

ABSTRACT: This article appears in Chemical Factors

Card 1/1 UDC: 614.72-074:543.544.25

APPENDIX I. SOURCES

Acta geophysica polonica (Polish transactions in Geophysics)

Alma-Ata. Gosudarstvennyy meditsinskiy institut. Trudy (Alma-Ata. State Medical Institute. Transactions)

AN EstSSR. Izvestiya. Khimiya, geologiya (Academy of Sciences of the Estonian SSR. News. Chemistry, Geology)

AN GruzSSR. Soobshcheniya (Academy of Sciences of the Georgian SSR. Communications)

AN SSSR. Doklady (Academy of Sciences of the USSR. Reports)

AN SSSR. Izvestiya. Fizika atmosfery i okeana (Academy of Sciences of the USSR. News. Physics of the atmosphere and ocean)

AN SSSR. Izvestiya. Mekhanika zhidkosti i gaza (Academy of Sciences of the USSR. News. Fluid and Gas Mechanics)

AN SSSR. Izvestiya. Seriya khimicheskaya (Academy of Sciences of the USSR. News. Chemistry series)

AN SSR. Sib otd. Izv. Ser biolog-medn. (Academy of Sciences of the USSR. Siberian Branch. News. Biological and Medical Sciences Series)

AN SSSR. Vestnik (Academy of Sciences of the USSR. Herald)

Antibiotiki (Antibiotics)

AN UkrSSR. Dopovidi. Seriya B. Heolohiya, ' sofizyka, khimiya ta biolohiya (Academy of Sciences of the Ukrainian SSR. Reports. Series B. Geology, Geophysics, Chemistry and Biology)

Armyanskiy khimicheskiy zhurnal (Armenian Journal of Chemistry)

Baku. Azerbaydzhanskiy nauchno-issledovatel'skiy institut meditsinskoy parazitologii i tropicheskoy meditsiny. Trudy (Baku. Azerbaydzhan Scientific Research Institute of Medicine Parasitology and Tropical Medicine. Transactions)

Barnaulino. Kazakhskiy nauchno-issledovatel'skiy institut lesnogo khozyaystva. Trudy, Issledovaniya po lesnomu khozyaystvu i agrolesomelioratsii (Barnaulino. Kazakh Scientific Research Institute of the Forestry. Transactions, Investigations on Forestry and Agricultural and Forestry Land Improvement)

Bulgarska akademiya na naukite. Doklady (Bulgarian Academy of Sciences. Reports)

Epidemiologiya, mikrobiologiya i infektsionni bolesti (Epidemiology, microbiology and infectious diseases)

Farmakologiya i toksikologiya (Pharmacology and Toxicology)

Fiziolochichnyy zhurnal (Physiological Journal)

Frunze. Kirgizskiy gosudarstvennyy meditsinskiy institut. Sbornik nauchnykh rabot (Frunze. Kirgiz State Medical Institute. Collection of scientific papers)

Geograficheskoye obshchestvo SSSR. Doklady otdeleniy i komissiy (Geographic Society SSSR. Reports of Divisions and Commissions)

Gidrometeorologicheskiy nauchno-issledovatel'skiy tsentr SSSR. Trudy. Planetarnaya tsirkulyatsiya atmosfery (Hydrometeorological Scientific Research Center of the USSR. Transactions. Planetary circulation of the atmosphere)

Gidrometeorologicheskiy nauchno-issledovatel'skiy tsentr SSSR. Trudy. Prognoz baricheskogo polya i opasnykh yavleniy pogody (Hydrometeorological Scientific Research Center of the USSR. Transactions. Forecasting the pressure field and dangerous weather phenomena)

Gidrometeorologicheskiy nauchno-issledovatel'skiy tsentr SSSR. Trudy. Prognoz osadkov i temperatury (Hydrometeorological Scientific Research Center of the USSR. Transactions. Forecasting precipitation and temperature)

Gigiyena i sanitariya (Hygiene and Sanitation)

Gigiyena truda i professional'nyye zabolevaniya (Labor Hygiene and Occupational Diseases)

Gorkiy. Gidrometeorologicheskaya observatoriya. Sbornik rabot Gor'kovskoy i Volzhskoy gidrometeorologicheskikh observatoriy (Gorkiy. Hydrometeorological Observatory. Collection of Papers of Gorkiy and Volga Hydrometeorological Observatories)

IUPAC International Symposium on Macromolecular Chemistry (Kinetics and mechanism of polyreactions)

Izmeritel'naya tekhnika (Measurement techniques)

Izvestiya vysshikh uchebnykh zavedeniy. Khimiya i khimicheskaya tekhnologiya (News of Institutions of Higher Learning. Chemistry and Chemical Technology)

Journal of hygiene, epidemiology, microbiology, and immunology (English, French and German)

Kazan'. Universitet. Geograficheskiy sbornik. (Kazan. University. Geography collection)

Khimicheskiye volokna, (Chemical Fibers)

Khimiya geterotsiklicheskikh soyedineniy (Chemistry of Heterocyclic Compounds)

Kosmicheskaya biologiya i meditsina (Space Biology and Medicine)

Meditsinskaya geografiya (Medical geography)

Meditsinskaya parazitologiya i parazitarnyye bolezni (Medical parasitology and parasitic disease)

Meditsinskiy zhurnal Uzbekistana (Uzbekistan Journal of Medicine)

Meteorologiya i gidrologiya (Meteorology and Hydrology)

Meteorologiya i gidrologiya za 50 let Sovetskoy vlasti; sbornik statey (Meteorology and hydrology during the 50 years of Soviet power; collection of articles)

Microbiologia, parazitologia, epidemiologia (Microbiology, Parasitology, Epidemiology)

Mikrobiolohichnyy zhurnal (Journal of Microbiology)

Moscow. Lesotekhnicheskiy institut. Sbornik rabot, Voprosy zashchity lesa (Aspects of forest protection)

Moscow. Nauchno-issledovatel'skiy institut aeroklimatologii. Trudy. Voprosy aeroklimatografii vetra nad mirom (Moscow. Scientific Research Institute of Aeroclimatology. Transactions. Problems of the aeroclimatology of the wind above the earth)

Moscow. Sel'skokhozyaystvennyay akademiya. Doklady, Agrokhimiya, fiziologiya rasteniy, pochvovedeniya (Agrochemistry, plant physiology and soil science) (Moscow. Agricultural Academy. Reports)

Moscow. Tsentral'nyy nauchno-issledovatel'skiy dezinfektsionnyy institut. Trudy. (Moscow Central Scientific Research Desinfection Institute. Transactions)

Moscow. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk. Sbornik trudov, Zemledel'cheskaya mekhanika (Moscow. All-Union Academy of Agricultural Sciences. Collection of Papers. Agricultural mechanics)

Nalchik. Vysokogornyy geofizicheskiy institut. Trudy. Fizika oblakov i osadkov (Nalchik. Alpine Geophysical Institute. Transactions. Physics of clouds and precipitation)

Nauchnyye dokaldy vysshey shkoly. Biologicheskiye nauki (Scientific Reports of the Higher Schools. Biological sciences)

Nauchnyye raboty aspirantov i klinicheskikh ordinatorov (Scientific papers of postgraduate students and staff physicians)

Ref. zh. Geofizika, Abs. (Journal of Abstracts. Geophysics)

Ryazan. Meditsinskiy institut. Tsentral'naya nauchno-issledovatel'skaya laboratoriya. Nauchnaya konferentsiya, 1st, 1967. Voprosy teoreticheskoy i klinicheskoy meditsiny; materialy konferentsii (Ryazan. Medical Institute Central Scientific Research Laboratory. Scientific Conference. (Problems of theoretical and clinical medicine; materials of the conference)

Sb. rabot Rostovsk. gidrometeorol. observ. (Rostov Hydrometeorological Observatory. Collection of Papers)

Sb. Materialy Khar'kovsk. otd. geogr. o-va SSSR (Khar'kov Department of the Geographical Society SSSR. Collection of materials)

Sovetskaya meditsina (Soviet Medicine)

Tiflis. Zakavkazskiy nauchno-issledovatel'skiy gidrometeorologicheskiy institut. Trudy. (Tiflis. Transcaucasian Hydrometeorological Scientific Research Institute. Transactions)

Tr. Leningr. gidrometeorol. in-ta, vyp (Leningrad. gidrometeorologicheskaya institut. Trudy (Leningrad. Hydrometeorology institute. Transactions)

(Tr.) Tashkentsk. politekhn. in-ta (Tashkent Polytechnic Institute. Transactions)

Turbulence in the free atmosphere (Turbulentnost' v svobodnoy atmosfere)

Veterinariya (Veterinary Medicine)

Vestnik sel'skokhozyaystvennoy nauki (Agricultural Science Herald)

Veterinarno meditsinski nauki (Veterinarian Medical Sciences)

Vodnyye resursy i vodnoye khozyaystvo Sibiri (Water resources and economy in Siberia)

Voprosy meditsinskoy khimii (Problems of Medical Chemistry)

Voyenno-meditsinskiy zhurnal (Military Medical Journal)

Vrachebnoye delo (Medical affairs)

Vsesoyuznoye khimicheskoye obshchestvo. Zhurnal (All-Union Chemical Society. Journal)

Vsesoyuznyy simpozium po khimicheskomu mutagenezu, list, Moscow. Spetsifichnost' khimicheskogo mutageneza (Specificity of chemical mutagenesis)

Zashchita rasteniy (Plant Protection)

Zdravookhraneniye Turkmenistana (Public Health of Turkmenistan)

Zhurnal mikrobiologii, epidemiologii i immunobiologii (Journal of Microbiology, Epidemiology and Immunology)

Zhurnal neorganicheskoy khimii (Journal of Inorganic Chemistry)

Zhurnal nevropatologii i psikhiatrii (Journal of Neuropathology and Psychiatry)

Zhurnal obshchey biologii (Journal of General Biology)

Zhurnal obshchey khimii (Journal of General Chemistry)

Zhurnal organicheskoy khimii (Journal of Organic Chemistry)

Zoologicheskiy zhurnal (Zoological Journal)

APPENDIX II. AUTHORS